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THE LANCASTER FARMER.

A MONTHLY NEWSPAPER:

DEVOTED TO

AGRICULTURE AND HORTICULTURE, PRACTICAL ENTOMOLOGY, DOMESTIC ECONOMY AND GENERAL MISCELLANY.

EDITED BY PROF. S. S. RATHVON.

VOLUME XI.—1879.

LANCASTER, PA.:
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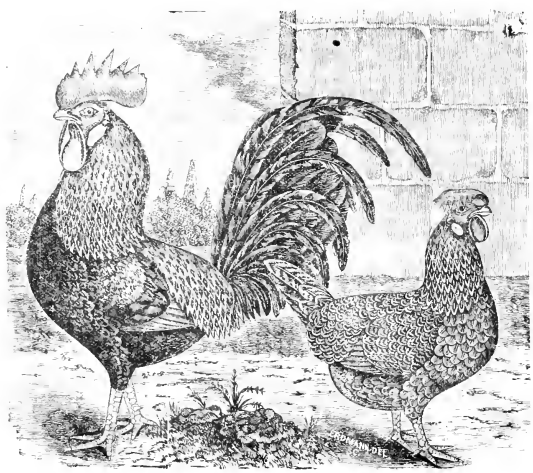

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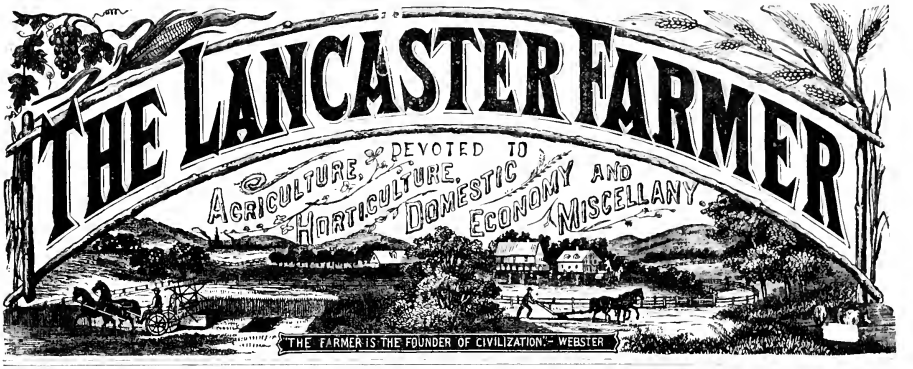

Dr. S. S. RATHVON, Editor. LANCASTER, PA., JANUARY, 1879. JOHN A. HIESTAND, Publisher.

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The Lancaster Farmer.

Dr. S. S. RATHVON, Editor. LANCASTER, PA., JANUARY, 1879. Vol. XI. No. 1.

TO OUR PATRONS AND THE PUBLIC.

With this number we commence the XI. Volume of THE LANCASTER FARMER, and our experiences during the past ten years afford us some appreciation of the task that is before us. We have never abated any of the feeble energies with which we are endowed heretofore, and we have no intention to abate them now. We are on the threshold of the new year—young, vigorous and hopeful 1879—and we have not lost confidence in its ultimate propitiating influences. We confidently look to it as a point of departure to a better and more prosperous state of things; not only for our patrons and ourselves, but also for the "toiling, moiling millions," who have been suffering almost to the last stretch that patient waiting can sustain, for the past three or four years, and for whom humanity desires a surcease of idleness. We look for such times as will enable them to become more liberal and punctual patrons of the farming public. That the return of prosperity to our whole people will increase the existing "vacancy" for our journal in the county, the State, and elsewhere we have not a doubt, and our aim shall be to make it worthy of public patronage. There are many new features we desire to introduce into its general composition, and we look chiefly to our agricultural friends to sustain us in our progressive enterprise. The great county of Lancaster—a commonwealth of no mean dimensions in itself—occupies a too prominent position in the Union to act the part of a mere subordinate in the march of events. The eyes of the whole country are upon her, and she is looked to as a second "mother country" to a large portion of the agricultural population in other counties and States, who either have resided within her borders themselves, or whose ancestry have had their origin here. Editorial intercourse with our farmers during the last ten years has convinced us that they possess the literary and intellectual ability to make their thoughts and experiences known through the medium of the press to an extent that will compare favorably with any other portion of the "Keystone State," and in this respect, during the same period, they have made much more than the ordinary progress. We desire to make this ability—which we know they possess—more available in the future than it has been in the past. Besides the general good of diffusing their knowledge among their agricultural brethren, they will be instructing and greatly benefiting themselves, intellectually, morally and socially. The minister in his pulpit, the professor in his laboratory, the tutor in his school room, and the editor in his sanctum are equally benefited in the exercises of their various functions with those whom they are instructing. These acts come under the denomination of those that are "twice blessed," blessing the giver as well as the receiver. The practical deductions of the farmer's experiences in his honorable calling are not exempt from the operations of the same rule. Every experience or observation he records, and every essay he composes and writes out fixes the facts and principles involved in them the more deeply in his own memory. By such a process many men have educated themselves who have never had the opportunity to become educated at a school, a seminary or a college.

Our aim is to diffuse the *facts* pertaining to agriculture among the people—such facts as experience has demonstrated to be of paramount value in the field, the orchard, the garden, the barn and the household. If the light exists it should be shed abroad. We are admonished, from the very highest authority, that our candle should not be hidden under a bed, or under a bushel, but should be set on a candlestick, and none are so poor but that they have *some* light. We are not always the best judges of the quality of our own light. The poor ferryman knew nothing about algebra, and astronomy, and poetry, and the classics, but he could *swim;* and, therefore, when the boat foundered in the middle of the stream, that knowledge was worth more to him than all the philosopher's lore, and for the want of which the latter went to the bottom, whilst the former reached the shore in safety. This is not intended to discredit the learning of the philosopher, but to illustrate the worth of the practical knowledge of the illiterate or the humble. Therefore, friends, give us your facts, no matter how commonplace they may be, or how ungrammatically they are written. We will see that they are not discreditable to you, nor prejudicial to ourselves, in placing them before the public. It is not absolutely necessary that we should be a practical farmer to edit an agricultural journal (although it would not disqualify us if we were), our function being to make our columns a reflex of the thoughts, the experiences, and the practices of those who contribute to them for the instruction and edification of the farming public.

By an announcement in another column, the patrons of THE FARMER will perceive that there has been a change in the publisher. This arrangement was absolutely necessary from the very nature of the case. The former publisher's duties as a printer, precluded the possibility of giving the necessary attention to the usual details so essential to the successful issue of the publication. Hence a change was made, and we congratulate our patrons on the change as a progressive one. The new publisher was born and reared on a farm, and is allied by consanguinity with some of the best farmer blood of the county. His experience, and his position as publisher of one of the oldest and most influential newspapers in Lancaster county, is a guarantee of his ability to make our local journal the peer of any in our country. Of course, the more hearty and liberal the co-operation of the people is in his efforts the more efficiently will the progressive work be accomplished. Every subscriber in the county, or elsewhere, should at least add one name more to his own to begin the volume of 1879. "Knowledge is power," and knowledge also dissipates prejudices and suspicions. The knowledge we have gained during the last two years has given us clearer ideas of what it costs to print a paper than we ever had before. And now, dear patrons, we have endeavored to portray our objects, aims, ends and needs, as well as the relations we sustain to each other and our joint relations to the world at large. Having said this much, we cannot more properly conclude than by wishing you a healthful, a prosperous and a *Happy New Year.*

WRITE FOR THE FARMER.

The County of Lancaster, we are convinced, has as many practical thinkers and workers among its population, proportionally, as any other district in the State of Pennsylvania; and any one who is a practical thinker and worker, in this age of the world, is able to write or dictate a practical article on subjects relating to his secular occupation. We are not particular as to the grammatical construction of the article, so that it contains the *facts* of the subjects, as they have been developed through the experience of the writer or dictator. We know that many competent persons plead that they cannot write, but this may be owing to the circumstance that they wont try, rather than to a want of time or ability. Writing stimulates research and develops ideas that would lie unused and rusting without such stimulant. There is no merit in keeping our knowledge "hidden under a bushel," merely because we have a notion that it is of no importance, or we may not be able to diffuse it in as elegant phraseology as we would like. "Freely ye have received, freely give" ought to admonish us to let our "light so shine that men may see it." And to facilitate this end, if the patrons of THE FARMER will kindly furnish us with the results of their experiences in relation to the various departments of agriculture, we will see that they appear in our columns in a creditable form.

TO CONTRIBUTORS.

As it is proposed in future to issue THE FARMER within the first week of each month, our contributors will confer a special favor by sending in their papers intended for publication, at least within the last week of the preceding month rather earlier than later. If those having essays to read before the society will furnish us the manuscript in time we will put them in type and furnish them with a slip, as well as return the manuscript. This will give them an opportunity to read their papers from a printed copy, and also make the necessary connections, before they appear before the public. By this means we will be able to issue our journal within a day or two after each meeting of the society. The regular publication of the proceedings of the society and the discussions which take place will constitute a valuable epitome of the agricultural progress of the county, especially as the society contains some good and practical off-hand speakers, who may not have the time, even if they have the inclination to write their remarks on paper. We hope we are understood.

All essays, contributions, communications, queries and other papers intended for publication in THE FARMER should be sent to the editor, No. 101 North Queen street. All matters of finance, subscriptions, advertisements, exchanges and general business should be transacted, whether personally or by letter, with the publisher, No. 9 North Queen street, (*Examiner* building). Also all accounts due THE FARMER for subscriptions, advertising or otherwise, previous to January 1st, 1879, which have not been settled up to that date, should be settled with the present publisher as above, who has full authority to settle and receipt for the same.

SECOND CROP PEARS.

Mr. John Grossman, of Warwick township, Lancaster county, has a pear tree which has bloomed twice every season for twenty years, but the present is the first year that he has noticed that it formed any fruit. The fruit it formed this year, a specimen of which is now before us, measured nearly two inches in circumference when green, and about an inch in length. Of course second crop fruit, even in this latitude, is not an unusual thing, but it is not usual for fruit trees, especially pears, to bloom twice every season for twenty years in succession. This is a small yellow pear, without any special name, which ripens about the middle of July, and seldom, if ever, fails to bear a crop. If such a pear tree were removed to the Carolinas, Georgia, or Alabama, or perhaps to any of the Southern States, might we not reasonably suppose it would mature two crops of pears; for a second blooming for twenty years in succession seems to indicate that this extra effort at fruition has become a fixed characteristic? This tree seems never to have been enervated by its duplicate bloom.

ANNUAL MEETING OF THE STATE BOARD OF AGRICULTURE.

The following is the programme of the annual meeting of the Pennsylvania Board of Agriculture, to be held at Harrisburg, commencing Wednesday, January 22, 1879, at two p. m. :

Reading of minutes; election of officers; reception of credentials of newly elected members; reports of standing committees; reports of special committees; reports of secretary.

Essays and Subjects for Discussion.

1. Grape Growing in Pennsylvania; Varieties and Treatment, by Dr. James Calder, President of State College.

2. Foreign and American Agriculture, by John P. Edge, member at large.

3. The Industrial Education of Europe as it Affects Agriculture, by Prof. J. P. Wickersham, Superintendent of Public Instruction.

4. Farm Drainage, by Prof. F. A. Allen, member from Tioga.

5. Drainage with Stone, by Col. James Young.

6. Drainage with tile, by the Secretary.

7. The usefulness and profit of farming, and the relation which it bears to the other interests of the State, by W. G. Moore, member from Berks.

8. How we may elevate the standard of agriculture, by C. C. Musselman, member from Somerset.

9. Sunny and shady sides of farm life, by George W. Hood, member from Indiana.

10. The Guenon system; negative side, by Eastburn Reeder, member from Bucks.

11. The care of fruit trees, by Calvin Cooper, President Lancaster County Agricultural Society.

12. The production of milk, by J. P. Barnes, member from Lehigh.

13. Mineralogy as related to agriculture, by F. Prime, jr., Assistant State Geologist.

On Wednesday evening, January 22d, there will be a lecture by Dr. H. Leffmann, Microscopist of the Board. Subject. "Fungi—large and small—and their relations to agriculture."

Subject for general discussion—"Tickets of admission to county fairs and their price."

Other subjects will be discussed if time will permit, and any question of a proper nature, handed to the Secretary by a member of the Board, will be referred, by the President, for an answer.

MONTHLY REMINDERS.

January is unfavorable to out-door labor; in the garden especially but little can be done. The forcing-beds and green-houses will, of course, require particular attention; and the active man may find something to do in preparing for a more congenial season. Poles and rods for beans and peas may be made ready to be used when needed; manure collected; compost heaps formed (by the way, compost is beyond all comparison the best form in which to apply fertilizers, to most vegetable crops, and ample supplies may be readily made by proper attention, as the materials present themselves from time during the year). Fruit trees pruned; hedges clipped—those formed of evergreens not till after frost has disappeared; asparagus beds top-dressed, preparatory to being dug when frost has ceased; when new ones are to be made, plant the Colossal. Hot-beds for early forcing may be made, and other jobs will present themselves in anticipation of spring. Where there exists the will to work the opportunity for useful disposition of time is ever present.

ENTOMOLOGICAL MANIPULATIONS FOR THE MONTH.

Farmers, gardeners, fruit-growers, and even citizens of the towns, should now give some attention to their trees, shrubbery and plants, as well as outhouses, sheds, fence-corners, and other "nooks and corners." During the season when the trees and shrubbery are leafless, the cocoons and chrysalids of such insects as hibernate, in that form, may be distinctly seen adhering to, or dangling from their branches. If these are now collected and burned a great nuisance will be abated, and much vexatious labor saved through the summer season. The spindle-shaped follicles of the "basket worm" may now be plainly seen. The egg-bands of the "American tent catterpillar" may also be seen encircling the branches. Clusters of the eggs, or of the young, of the "spring web-worm" may also be seen in the forks of the branches. If they are out of reach a small swab of tar, on the end of a pole, will effectually remove them if properly used. The naked chrysalids of the "white cabbage butterfly" will be found hanging angularly on the under sides of fence rails, window frames, door frames, or in almost any secluded corner. A few days ago we saw one in the angle of a window sash, one about midway on a vertical sash, and one absolutely fastened to the glass itself. If these are carefully gathered in this and the next month and destroyed it will not only save a great deal of vexatious labor next summer, but also much of the cabbage crop. It will not do to delay this work until too late in the season, for only a year ago we found some of these butterflies evolved and on the wing in the months of February and March, in one instance even when the ground was still covered with snow. Look also under the loose bark of dead trees, and under the chips of bark of living trees, for the "apple moth," the "squash bugs," and the large "northern lady bird," (yellow with black spots). The "potato beetle" also hibernates in cellars, under door steps, and many other places; therefore keep a bright lookout for them early in the season, and get beforehand with them.

MISCELLANEOUS NOTES AND QUERIES.

Gold Fishes.

To anxious inquirers in regard to "Gold Fishes" or "Golden Carp" (*Cyprinus auratus,*) we would say that most of them die for the want of oxygen; the most vital element in the composition of atmosphere and water. The great mistake people make is in getting fishes that are too large for their aquariums. Two fishes of six or seven inches in length should have at least six gallons of water, and a sufficient number of healthy and growing aquatic plants to maintain the normal equilibrium. Plants absorb carbon and give off oxygen. The fishes absorb oxygen and give off carbon; so, it will be seen, that one, when rightly proportioned, supports the other. When fishes suspend themselves vertically in the water with their noses at the surface gasping for air, it is a certain indication that they do not find enough oxygen in the water to support their lives. If one or two persons were confined in a small room, as entirely cut off from nature's great reservoir of oxygen as fishes are in a small tank, the would soon suffocate for the want of oxygenated air. It is true, this difficulty may be in a great measure, or entirely overcome by the frequent changing of the water; but then this involves a vast deal of labor—more than is commensurate with pleasure.

The gold fish was originally brought from China, about two hundred years ago, when it was a greater curiosity than it is now. Some, therefore, imagine that they must be kept in water that is several degrees above the freezing point (or lukewarm,) because they originally came from China. If other things are "all right," they will live and thrive in water that is thickly covered with ice. They do not want much food, and need not be fed more than once or twice a week, and then nothing more than they will devour at a time. The overplus if it remains in the tank will ferment or putrify, and this renders it unhealthy, and often leads to their death. They don't want to be pampered, they only want a plain living. Many ponds are in the United States and Europe where they thrive and greatly multiply withouthout the least care; but, if from any cause the water becomes impure, they are almost certain to die. They can "stand" a good deal, but not poisoned water.

A New Grain.

A new grain, resembling rye somewhat, only twice as large, with straw and beardless head, resembling wheat, is the subject of comment in some of the California exchanges. When cut, as it is passing into milk, it is said to make hay far superior to wheat hay. The discovery of this grain is claimed by a farmer in Surprise Valley, in the north part of the State, who took it from the crop of a wild goose which had been shot. Sowing the seed immediately he had the satisfaction in due time of reaping more than a hundred fold. He considers it in every respect superior to rye.

If it is only superior to rye it may not be quite the thing we want at this time, but let it "circulate," it may have *quantity* if not *quality*, and that is *something*.

Mr. W. L. H., Rapho township, Lancaster county, Pa.—The long whip-like or tail-like plant, growing at two places along the margin of the Little Chickies creek, on your farm, is called "Scouring Rush" (*Equisetum hyemale,*) and is used in some places where it abounds plentifully, for purposes of scouring. This property is derived from its finely corrugated external structures, and the presence of an immense number of minute silicious granules on its surface and in its internal composition. It belongs to and is the typical genus of the EQUISETACEE, or "Horsetail" family; the name of which is derived from *equus*, a horse, and *seta*, a hair. We need not tell you that it never bears leaves, for that fact must have been apparent to you whenever you saw it during the summer. It only, however, exhibits one of those singular links in the long chain of vegetation which unites in a harmonious whole, the various productions of the vegetable kingdom, and of which every clime produces its counterparts.

As Others See Us.

NEWARK, Dec. 17th, 1878.

MR. RATHVON—*Dear Sir:* I am so well pleased with THE LANCASTER FARMER that I have received this last year that I enclose $1.25 for the renewal of my subscription, and 20 cents, in postage stamps, for *Scribner's Lumber and Log Book*. Hoping all your patrons will do the same as I have done, I remain, respectfully, yours, *W. R. A., 143 Belleville avenue, Newark, New Jersey.*

[Next to the echoes from home, where we ought to be best known, we value those from abroad, and none are more welcome than those that reverberate from the "Jarseys." Thank you kindly; these are the oases in the desert of our editorial days. May they ever continue fresh and green.—ED.]

SALISBURY, N. C., Dec. 16, 1878.

MR. EDITOR—*Dear Sir:* On Saturday last, by request of Ransom Jaco's, I sent you for him by mail (together with the extra papers you mailed to him,) $1.00 in currency to pay his subscription up to first of January, 1879. You may continue sending THE LANCASTER FARMER to me upon former conditions. If this proposition meets with your approbation let me know through THE FARMER.—*Yours truly, Martin Richwine.*

[All right. Let us hear from you often, and send us all the new names you can, for we do not wish to conceal our light "under a bushel."—ED.]

QUARRYVILLE, Dec. 15, 1878.

DR. S. S. RATHVON—*Dear Sir:* I send you this morning the long looked-for female opossum. I am sorry it is dead, and not "playing possum." Possibly I may send you a live one some of these days. Please let me know if you received it all right, and oblige yours truly, *R. C. E.*

[Your "opossum" (*Didelphis virginianus,*) came safely to hand, and in due time will be scientifically, if not gastronomically, discussed. Please accept our thanks.—ED.]

"IT STANDS TO REASON"

That THE LANCASTER FARMER must be the best advertising medium in the county of Lancaster, in everything of a permanent and useful character that relates to farming, gardening and housekeeping. It is a fireside journal; is convenient to refer to; always near at hand; and is a permanent institution of the household, the workshop, the manufactory and the farm. This "stands to reason."

INSECT SAGACITY.

The oleander in Los Angeles, like the orange tree, is infested with the black scale bug. A fresh plant set out is so quickly covered that an inquest was held. Behold! an army of red ants, each well loaded, was observed to be transporting these aphides from plants already failing to new quarters for fresh pastures. The scale bug is the red ant's cow. By titulation the ant coaxes the bug to exude drops of luscious nutriment, which is at once appropriated. How very much like the human brain and human cogitation! It reasons that the sap of that plant feeds the bug, and that the bug propagates there. Naturalists go so far, but no further.

A curious freak of the army worms (caterpillars) occurred at the Sonora foundry, California. The worms, having gobbled up everything green in the neighborhood, entered the foundry in force. Not finding grub, and not willing to give it up so, they pitched into the molders' sand, which was to be used for castings next morning. The castings were a dead failure. Investigation revealed thousands of worms quartered in the sand, which they deranged in struggling to get out.—*S.*

The above comes to us through the columns of a recent number of the Baltimore *Sun*. We wish the writer had made a clearer distinction between "scale bugs" and "aphides." Scale insects (*coeci*) are usually so immovable, often so large, and always so adhesive, that we can hardly see how they could be detached and transplanted from one place to another by ants, unless they were very large ants, and very loose bugs. Moreover, the *coeci* are not as remarkable for the excretion of honey-dew as are the *aphides*. And yet the cocons of the orange does exude a sweet mucus that attracts the ants, and we have often noticed this on the orange tree in our possession. But scale insects in this latitude are not remarkable for this quality, at least not to any great degree. It is common, however, to *aphids*, or "plant lice" as they are popularly called, known also in England as "ant cows." But surely a shepherd or a dairyman, who should drive his flock or his herd from an exhausted pasture to one more luxuriant, in order to increase their volume of flesh or their quantity of milk, could not have acted more rationally in effecting that end than these insects did, if the above record be a veritable one. Ants are well known to have transplanted aphides to their own homes—and not these alone, but also their food—and to herd and feed them there, in order that they themselves might feast on their saccharine excretions. About the bare fact of propagation, we presume the ants have no further interest in it than it may increase the amount of the honey product.

The "curious freak" of the army worms alluded to may not be so very curious after all. After they had "gobbled up every green thing," it is probable they were ready to undergo their pupal transformation, and finding the molders' sand afforded the necessary conditions, they may have chosen that in preference to the hard earth on which they had traveled. The army worms creep into the earth and change to a pupa after they have completed their larval period and remain there until they come forth a moth.

THE FOX SQUIRREL.

Sportsmen in this part of the county seem to be somewhat in uncertainty as to what is meant by a fox squirrel. Some entertain the opinion that the term applies to the common or more familiarly denominated red squirrel in this part of the county, which opinion has thus far deterred many from shooting these animals. Bingby, in his history of animated nature, one of the most complete natural histories extant, does not say anything about the fox squirrel, consequently we are inclined to think that no squirrels of that name exist, but that it may probably be the local name of some species of gray squirrel. Will some member of the Legislature, or some naturalist be kind enough to help our sportsmen out of this quandry?—*Correspondent New Era.*

It is questionable whether there is a specimen of the true "fox squirrel" (*Sciurus Vulpinus*) to be found in Lancaster county, if in the State of Pennsylvania. The fox squirrel is the largest squirrel known to North America, but belongs to the Southern States, from North Carolina down to Texas. It measures twelve inches or more from the nose to the root of the tail, and the tail has a length of fifteen inches. The ears and nose are always white, but otherwise the color is very variable, from a gray above and white beneath, through all shades of rusty to a uniform black. The Western fox squirrel (*Sciurus ludovicianus,*) is confined mainly to the Mississippi Valley. It is nearly as large as the Southern species, but the tail is only the length of the body. The nose and ears are never white. The color is a rusty gray above and a bright ferruginous (the color of iron-rust) beneath.

Intermediate between these two species, and of nearly the same size in body, is the "Cat Squirrel," also called the fox squirrel, (*Sciurus cinereus,*) of Pennsylvania, with a geographical habitat extending from New Jersey to Virginia; but its tail is two inches longer than the Western species, and one inch or more shorter than the Southern species. In color it nearly resembles the Southern fox squirrel, but organically it is heavier than either of the other two. The ears and nose are never white. It is most abundant in the Alleghanies, but thirty and forty years ago it was frequently met with in Lancaster county; it was, however, seldom met with on the western side of the Alleghanies. There is at least one specimen of it in the museum of the Linnæan society. Our common gray squirrel (*sciurus carolinensis,*) is about ten inches in length to the root of the tail, and that appendage is about one inch longer than the body; and, although it may vary in the shade of gray above, it is always a pure white beneath.

We have not the game laws before us, and therefore we cannot recall what species people are prohibited from shooting, but if it says fox squirrel it does not mean the "red squirrel" (*Sciurus hudsonius,*) or "chicaree," as it is called in some places—but must refer to *cinereus* our "cat squirrel," so called from the "stumpiness" of its ears.

In enacting laws relating to the animal world, legislators only create confusion, when they ignore scientific nomenclature. The scientific names ought to be, at least, inclosed in parenthesis, as we have them in this article, and then the reader, if he chooses, can skip over them without destroying the sense. They will be land marks, or rather a compass, to point out the direction in which the reader is sailing, for there is no reliance generally, in local common names. The Southern species is specifically named *vulpinus*, which is from *vulpes*, a fox, and that is perhaps the only species that is entitled to the common name of "Fox Squirrel."

In conclusion, we may be permitted to say, that Bingby's history of animated nature can not be very "complete," or it surely would have said something about an animal so common as the fox squirrel. There are many so-called histories of animated nature that might just as well never have been written, for all the help they afford in solving scientific problems; for, do as we will, we cannot absolve ourselves from the aid of science.

TWELVE HUNDRED CATERPILLARS TAKEN FROM A SINGLE TREE.

Mr. G. Lemon, of East Chestnut street, brought us two compact masses of caterpillars, which he found had been depredating upon his German walnut tree, containing about twelve hundred in number—rather more than less. These are the larvæ of Datana ministra, the "Hand-Maid" or "walnut moth." The color of these larvæ is so near that of the branches of the tree that they sometimes strip off all the leaves without their presence being suspected, which was the case with Mr. Lemon, he not knowing that they were present until he found them all huddled and matted together on the ground, and on the trunk of the tree. Length, one and a half inches; head, jet black; color, maroon brown; pectoral legs, six; prolegs, ten; a medium yellowish marginal line or stripe on each side the entire length; three finer lateral lines on each side, of the same color and length; sparsely covered with whitish hair; at rest, much in the habit of adhering by the prolegs and raising the head and front part of the body upward and backward; or, when disturbed at feeding, apt to assume this position with a sudden jerk, or suddenly throwing the front part of the body from side to side.

The foregoing, however, mainly represents these caterpillars before their last moulting. After that period the former lines and coloring become obliterated and the animal is black all over, as to the head and body, and the hair becomes thicker, whiter and longer. The head also becomes larger and blacker; and if Mr. L. could have seen his "batch" of worms to-day, he probably would have failed to recognize them they would have been so greatly changed.

This is sometimes called the "walnut moth," and although it infests all kinds, it is partial to the cultivated kinds of walnuts, but must not be confounded with the "Imperial walnut moth" (Dryocampa imperialis), the larva of which attains to three or four inches in length, and as thick as a man's thumb, with half a dozen prominent horns on the front part of the body. The species we have been considering often surprises people by its sudden departure. Perhaps the tree is full of them to-day, and you apply some pow-wow remedy for their removal, such, for instance, as hanging old horseshoes on the limbs, boring a gimlet hole into the trunk and filling it with sulphur, or rubbing the trunk and larger branches with the kidneys of a he-owl; and behold, the next day it is found that all the caterpillars have vanished, and the remedy is recorded as a success. But the caterpillars having completed their larval development, have only crept into the ground to undergo their pupal transformation, after which they come forth in the form of a brownish yellow moth, expanding from two to two and a half inches, the head and thorax covered with a thick velvety coat of fur, of a rich brown color, and then each female is ready to found a new colony. They are, however, liable to many casualties, or the country might soon be overrun with them.

Mr. Lemon was fortunate in trapping them as he did; and here we may say that we know of no caterpillar that is easier to destroy than this one, for they are so gregarious in their habits that they always collect together in compact masses on the trunks of the trees when they are done feeding, or at nights, and make no attempt to escape.

There are sometimes two broods of these moths in one season; indeed, a little farther South this is always the case. But when they come down from the trees so late as the 7th of August, to perform ther last moult, it is quite likely the pupæ would remain in the ground until next spring.

ANTIDOTE FOR CURRANT WORMS.

A correspondent writes to the *Country Gentleman:* Seeing occasionally in your paper some one recommending soapsuds, carbolic acid, white hellebore, etc., for currant worms, let me state my experience.

My bushes have borne well during all the passed years, and we have had currant pies, currant jelly, etc., (we are temperate—so we don't make currant wine), while our neighbors have stood back and wondered. Some said it was because we lived on a cross-road, that currant worms, like tramps, preferred the main lines. A few made their appearance every year; we picked them off and saw them no more. This year one bush had a good many on it, and we picked off the leaves where they had been at work, but the worms were gone. "What did they leave for?" "Where did they go?" "What carried them off?" were questions we asked ourselves. So we investigated.

Near by was a large colony of ants, and we have seen numbers of them running over the bushes. Knowing what inquisitive things ants are, we set the pail down on the knoll and awaited results. Presently one mounted the pail, went down into it and returned with a worm larger than himself, and off he went home. When he returned he brought with him his brothers and sisters, his father and

mother, and each got a worm; then they brought their friends, until the pail was black with them. The carrying off of those in the pail, however, was not so much what we wanted as those on the bushes, so we removed it. We have looked for worms since, but have found none, and are satisfied that the ants take care of them.

There is no patent on this, Mr. Editor, and anyone is at liberty to try it if they choose; for our part we prefer it to the time and expense of using the various lotions recommended, to say nothing about the danger of using some of them. With ants for currant worms, hens for potatoe bugs, and turkeys for grasshoppers, we see no reason why we cannot be prosperous.

Good, perhaps, so far as it goes, but a feeble read to lean on. Suppose we have a hundred,or a thousand infested currant bushes and a few or no ants? How then? Does the writer intend to suggest their colonization?

IMPERIAL WALNUT MOTH.

The magnificient, horned, green worm, submitted to our inspection, is the larva of the "Imperial Walnut Moth," (*Dopocampa imperialis*) and its food is the foliage of the common walnut tree (*Juglans nigra*). It has undergone its last moulting and is now ready to bury itself in the ground and be transformed to a black chrysalis, where it will remain until next spring, when the walnut is in foliage, when it will evolve from its pupal sleep, as a most magnificent moth, with reddish-brown and orange colors, and expanding about six inches from "tip to tip" of the front or anterior wings.

This larva (before us) measures five inches in length and three inches in circumference; dark green in color; an orange colored head and caudal prolegs, with pectoral feet of the same color. The prolegs are all black and there are six black spines arranged transversely on each segment of the whole body. The spines on the three anterior segments are orange colored at the base and lower half, and four of those on the second and third segments, are from a half to three-quarters of an inch long, and slightly bent like the horns of an antelope, and on the whole it presents a very formidable appearance. There are also two large black spots or maculations between the second and the third segments. We have known of this insect for a very long time. Nearly sixty years ago one fell from a walnut tree, under which we and a number of boys were resting, and produced a great consternation among us. We, however, gathered sufficient courage to capture him and convey him into the town, where he was a seven-days' wonder.

We have never known the walnut moth to become numerous, and they confine themselves entirely to the different kinds of walnut. They are difficult to raise, and we never, but once, succeeded in producing the moth, but often failed.—*Lancaster, Sept.* 1, 1878.

"COLD SNAP."

The very cold weather which has thus far accompanied the incoming New Year, has been pretty general throughout the northern region of our country, and has even extended far down into the southern region. In Lancaster county the thermometer was "boxing about" somewhere between *four* and *twelve* degrees below *zero;* but this was nothing to the markings between *sixteen* and *sixty* which it made in the British possessions, on the north of our territory. Cold weather, however unfriendly it may be to some people, has yet its compensations; and the whole, vegetation—and, perhaps, also the human family—suffers, generally, less from extreme cold than it does from extreme heat. January may be regarded as a precarious month; because, vegetation revived during that month, is very certain to be overtaken by a "cold snap" before the opening spring. This *may*, also, be the case if such a contingency occurs during February or March, but it is sure to follow the germinations of January. Cold weather secures that perfect repose of the vegetable world which is so necessary in our latitude to secure its uninterrupted and vigorous activity after the cold season has subsided. We want cold weather for at least two months to come.

ABOUT EELS.

I have witnessed the spring migration of eels, from one and a half to three inches long, up the Susquehanna river, in countless thousands, (perhaps millions). Has any other individual residing along that stream, or elsewhere, witnessed a similar phenomenon? I make this inquiry because in nearly all I read upon the subject of eels (that has recently been published) that characteristic has been but incidentally and vaguely alluded to; or, if more distinctly stated, it has not been from the writer's own personal observation.

Any information on this subject, together with dates, localities and special circumstances will be thankfully received by *S. S. Rathvon*, 101 *N. Queen street, Lancaster, Pa.*

URANINE.

This is the most recently discovered, and perhaps the most remarkable, of all the coal tar or aniline group of coloring substances, now so extensively used for the adornment of the finest fabrics. Uranine is said, by chemists, to be the most highly florescent body known to science. Its coloring power is astonishing; a single grain will impart a marked color to nearly five hundred gallons of water.

A most interesting experiment, which anybody may try, consists in sprinkling a few atoms of Uranine upon the surface of water in a glass tumbler. Each atom immediately sends down through the water what appears to be a bright green rootlet, and the tumbler soon looks as if it were crowded full of beautiful plants. The rootlets now begin to enlarge, spread and combine, until we have a mass of soft green-colored liquid. Viewed by transmitted light the color changes to a bright golden or amber hue; while a combination of green and gold will be realized, according to the position in which the glass is held. For day or evening experiment nothing can be prettier than these trials of Uranine, which are especially entertaining for the young folks. We are indebted for examples of the color to the editors of the *Scientific American*, who are sending out specimens, free of charge, to all their readers. The subscription to the paper is $3.20 for a year, or $1.60 half year; and a better investment for the money could hardly be named.

PENNSYLVANIA FRUIT GROWERS' SOCIETY.

The twentieth annual meeting of this society will be held in "Alder Hall," near Court House, Reading, Pa., commencing, January 15th, 1879, at 2 o'clock, P. M., and continuing over Thursday 16th.

A cordial invitation is extended to fruit growers, horticulturists, both amateur and professional, and all others who feel interested in the discussion of these and kindred topics, to meet with us and give results and benefit of their experience. We also invite such as feel interested in the welfare of our society to become members thereof and thus aid in extending its influence and usefulness more generally throughout the State. The object of our organization was to gather and systematize pomological and horticultural knowledge and disseminate the same for the benefit of all engaged in similar pursuits. The published reports of the society, which are issued annually, free to all members, form a valuable library for reference and are well worth the fee of membership.

"Mishler's Hotel" will board members and delegates at $1.50 per day, including free transportation from and to the depot. It may, therefore, be considered headquarters for the society.

Excursion tickets will be issued by the Philadelphia & Reading Railroad Company from the following stations, on January 14th and 15th, good until Saturday 18th, inclusive: Philadelphia, Williamsport, Harrisburg, Lancaster, Allentown, Catawissa, Norristown, Columbia, Lebanon, Downingtown and Lititz. The Willmington & Northern Railroad Company will also issue excursion tickets from Waynesburg Junction, Coatesville and Chadd's Ford, on the 15th and 16th, and good until the 18th.

Persons having new varieties of fruits, or any fine specimens of fruits, flowers or vegetables, or any improved horticultural implements in their possession, are respectfully requested to exhibit them at the meeting. Articles intended for exhibition may be sent to E. B. Engle, Secretary, Mishler's Hotel, Reading, Pa.

In again convening the members of this society the officers are happy to announce that an unusually full and interesting meeting may be expected. Some of the leading horticulturists of the State have promised to meet and address the society upon interesting and appropriate horticultural subjects.

Essays and Addresses.

"Disease of the Pear," by E. Satterthwait, Jenkintown, Pa.

"Modern Fruit Huses," by Hon. Geo. D. Stitzel, Reading, Pa.

"Profit and Pleasure in Gardening," by Thos. Meehan, editor *Gardeners' Monthly*, Germantown, Pa.

"Sewage—How to utilize the same, its application to Fruit Growing, and how to obtain best results," by A. R. Sprout, Picture Rocks, Pa.

"Uses and Abuses of Pruning," by President Calder, State College, Pa.

"Lepidoptera (moths and butterflies,) of North America," by Herman Streeker, of Reading, Pa.

"Culture and Training of the Vine," by H. M. Engle, Marietta, Pa.

"Mulching and its Benefits," by Alexander Burnett, Reading, Pa.

Mr. Casper Hiller, of Conestoga, Pa., has also promised a paper, subject not yet announced; and several other prominent horticulturists are expected to prepare articles, but have not yet responded.

Committees for 1878.

General Fruit Committee.—John I. Carter, Chester county, chairman; Casper Hiller, Lancaster county; Morgan Rufe, Bucks county; A. R. Sprout, Lycoming county; S. W. Noble, Montgomery county; E. J. Evans, York county; G. H. Small, Dauphin county; A. S. Sheller, Union county; W. L. Shaeffer, Philadelphia; J. Murdoch, sr., Allegheny county; H. S. Rupp, Cumberland county; G. D. Stitzel, Berks county; H. Leh, jr., Lehigh county; Jos. Lewis, jr., Delaware county; Rev. James Calder, Centre county; Jacob Heyser, Franklin county; W. M. Pannebaker, Mifflin county.

Committee on Orchards.—E. Satterthwait, Montgomery county, chairman; W. S. Bissell, Philadelphia; J. G. Engle, Lancaster county; E. H. Cocklin, Cumberland county; T. M. Harvey, Chester county.

Committee on Nomenclature.—H. M. Engle, Lancaster county, chairman; Calvin Cooper, Lancaster county; J. H. Bartram, Chester county; A. W. Harrison, Philadelphia; J. W. Pyle, Chester county.

Committee on Floriculture.—Chas. H. Miller, Philadelphia, chairman; Thomas Meehan, Germantown; Peter C. Hiller, Lancaster county; H. S. Rupp, Cumberland county; S. H. Purple, Lancaster county.

Committee on Arboriculture.—Geo. Achelis, Chester county, chairman; D. G. Engle, Lancaster county; H. A. Chase, Philadelphia; G. H. Small, Dauphin county; Wm. Hacker, Philadelphia.

Committee on Insects.—S. S. Rathvon, Lancaster county, chairman; J. S. Stauffer, Lancaster county; Herman Strecher, Berks county.

Committee on Arrangement and Reception.—Geo. D. Stitzel, Berks county, chairman; J. L. Stichter, Berks county; P. C. Hiller, Lancaster county; E. B. Engle, Lancaster county.

Officers of the Society.

President.—Josiah Hoopes, West Chester.

Vice Presidents.—H. M. Engle, Marietta; A. R. Sprout, Picture Rocks; John I. Carter, West Grove.

Recording Secretary.—E. B. Engle, Marietta.

Corresponding Secretary.—W. P. Brinton, Christiana.

Treasurer.—Geo. B. Thomas, West Chester.

Professor of Botany.—Thos. Meehan, Germantown.

Professor of Entomology.—S. S. Rathvon, Lancaster.

Professor of Horticultural Chemistry.—S. B. Heiges, York.

LETTER FROM IOWA.

HOLLAND, Iowa, Dec. 10th, 1878.

EDITOR FARMER: The weather, that ever fruitful topic of conversation, has been extremely fine during the present fall. On Sunday we had a light fall of snow, the first of the season, which soon bid farewell, and now we are again favored with the best of weather.

Farm Work.—The farmers of this county are through picking corn, the crop having yielded largely, even beyond their expectation; the quality is excellent, being fully matured, no soft corn being found. For all that the crop was good it seems though it might be vastly improved by planting better varieties. The essay of Mr. Engle, on corn cultivation, before the Lancaster County Agricultural Society, was published in the local paper here, and we hope that some may be benefited by it. The varieties planted here are a small grained, thick cob variety. A large acreage of ground has been ploughed during this fall, so that farmers are in good shape for the spring campaign.

Live Stock.—The hog crop in this county is very large, and but a comparatively small amount are being sold, on account of the low prices, yet a Lancaster county farmer would think the market brisk if he saw the amount shipped from this place alone. We saw a drove of seventy-two brought in yesterday, weighing 25,566 pounds, averaging a fraction over 355 pounds. They were splendid hogs, for the greater part were Berkshire breed. Cattle—But few have been offered as yet, though there are large herds that will be ready for market early in 1879.

Tobacco.—This county bids fair to become a tobacco growing county. The experiment has been tried the past summer, and we are informed with very satisfactory result. Quite a number of farmers intend going into the business next spring. That veteran tobacconist, John S. Gable, of your city, who, by the way, owns large tracts of land in this county, is of opinion that the soil of this county is well adapted to the growth of the weed, and says, that from the samples which he saw and examined, he is free to say that tobacco culture in Grundy county will form one of the main features of her agriculture. All that is wanted are men who understand how to grow and cure the crop, and success will be certain. He told us some months ago, that "somebody will come here and make a fortune in raising tobacco in this county."

Game.—This section of county abounds with feathered game. Prairie hens are abundant, as are also quail, the latter however are not molested, as there is better game on the wing. Wild geese come here in large flocks, as also ducks and brants. We are told that at Wall Lake, Storm Lake, and some others northwest from here, game is more than plenty.

The Markets.—Corn is being brought here in large quantities. The grain men are driving a brisk trade; immense corn cribs are being erected, (the corn being all in the ear,) holding thousands of bushels. One crib was finished to-day, being four hundred feet long, fourteen wide and fourteen feet high; there is fair prospects of many more being built. Grain is also coming in lively; the two elevators, mill and three grain warehouses are running two sets of hands, night and day in handling grain. Though that the grain crop was a failure there are large quantities of grain in the county, and farmers are not as particular as they should be in the manner their grain comes into market. Large quantities of barley are raised here. Butter is plenty here at present. Mr. Anthony Traser, in the grocery business here, (formerly from Lincoln, Lancaster county,) took in on Saturday last five barrels of butter; this is good for one store. There are three others in town. Eggs are not very plenty; the farmers do not give their chickens the necessary attention. Live poultry is being brought in, though not in large numbers.—*W. H. Spera.*

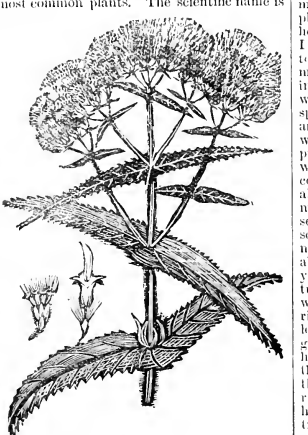
N. B. PROF. RATHTON: Please send me a copy of THE FARMER. Of whom can I procure the Large Gourd Corn, and Small Gourd Seed—only small quantities for trial in this county.

The above corn can be obtained at the reliable agricultural, implement and seed store of WM. D. SPREHER, of this city.—ED.

For THE LANCASTER FARMER.

THOROUGH WORT.

This plant is dedicated to Eupator Mithridates, who first brought it into notice. Dioscorides mentions this plant in his work on botany. Mithridates, King of Pontus, surnamed "Eupator" and "the Great" was the son of Mithridates VI., the first king of that country who entered into an alliance with the Romans. At the death of his father, 123 B. C., he succeeded to the crown when he was only about twelve years of age. But I am not giving the biography of Mithridates, which I find quite lengthy and interesting, but subject matter in connection with our most common plants. The scientific name is



Eupatorium perfoliatum, the specific name refers to the stem apparently growing through the united leaves. Hence we find the many common names—such as Thorough Wort, Thorough Stem, Thorough Wax, Cross Wort, besides that of Indian Sage and Bone-Set. This latter name is quite common. Who has not been recommended to drink "Bone-Set tea?" This odd name comes from an early belief that it aided in joining or knitting broken bones. Plants have their history, as well as uses. I shall not give a description how to recognize the plant, because the cut shows it, and it is found in flower from midsummer to September from Nova Scotia to Florida, usually growing in meadows and boggy soils. It belongs, of course, to the extensive order of Compositæ, or what are termed compound flowers, that is a number of tubular or strap-shaped flowers on a common receptacle surrounded by a common involucre.

Every part of the Eupatorium has an intensely bitter taste, combined with a flavor peculiar to the plant, but without astringency or acrimony. This bitter principle is alike soluble in water and in alcohol, imparting its sensible qualities to both, and neither solution being rendered turbid, at least for some time, by the addition of the other solvent. Tannin exists very sparingly in this plant. Dr. Anderson, of New York, who details numerous experiments, concludes that a single decoction forms the best tonic stimulant, given in moderate quantities. The substance, cold infusion or decoction, promote digestion, strengthens the viscera and restores tone to the system. Like other vegetable bitters, however, if given in large quantities, especially in warm infusion or decoction, it proves emetic, sudorific and aperient. Even in cold infusion it tends to bring on diaphoresis, (promotes perspiration).

It may be prescribed in the low stages of fever to support strength, promote a moisture of the skin, without materially increasing the heat of the body. And as a tonic in loss of appetite and other symptoms of dyspepsia, as well as in general debility of the system.—*J. Stauffer.*

For THE LANCASTER FARMER.

MOONLIGHT.

I have not written anything for THE FARMER for some time, but as there appears to be a little more "moonlight" desired at Dobbs' Ferry, N. Y., I thought I would "rise" again. I have no experience in potato planting with reference to the moon. But I may say, potatoes want loose soil. Therefore, plow in the rising of the moon, if the soil is heavy or clayey. If the soil is naturally loose I don't look to the moon. Should the soil be too light and loose, plow in the setting of the moon. Haul the manure on the ground you intend for potatoes in the fall, even if it is washy. Then wait until you want to plow; spread it evenly; plow early in the spring; any time between now and spring, so that it will freeze after it is plowed. As to the proper time to plant, that will depend somewhat on the character of the weather. According to my experience the best time is about the middle of April. When I commenced farming I planted three times every season. The first time as early as I could—sometimes in March—the second time in the middle of April, and the third time on or about the 1st of May. This I did for several years, and nearly always the middle planting turned out the best. On stiff soil it would be well if we could work the soil always in the rising of the moon. But there might be too long an interval between; the weeds would get too far ahead. A farmer told me one of his neighbors runs a subsoil plough through the rows just before he lays the potatoes in; that is, he harrows it out as usual and then runs the subsoil plow through, and he beat all his neighbors in raising potatoes. I intend to try that plan the present year.—*J. G., Warwick, January* 1, 1879.

For THE LANCASTER FARMER.

RANDOM THOUGHTS—No, 7.

Fodder Crops.

For some years past there has been much seeking after new plants for fodder crops that would answer better the ends than any of the old species. As far as quantity is concerned there is no doubt but that at least two plants have been brought forward that far outstrip all the old species.

Among the most prominent of the old species may be enumerated the following:

Hungarian Grass, a millet, was introduced probably more than twenty years ago, but it did not come into general favor over the country until considerably later, and it is even now condemned by many, they thinking it injurious to horses, that it lessens the flow of milk in cows, &c. There may be some weight in the latter claim, and I have no doubt but that it has lessened the flow of milk, but not from any inherent fault in the grass but from the fact that in many cases it has been allowed to over-ripen and thus become worth little more than straw for feeding purposes. I have never heard any complaint when the grass was cut early enough so as to have a nice green color when dry. Its quick growth and heavy yield should certainly make

it a favorite, it being possible to raise a good crop after the farmer sees that the other crops on which he depended for hay or fodder will be a failure.

Peas and oats, or oats by itself is raised at many places for the purpose of making hay. I do not think that either will be ever very popular in this section on account of the uncertainty of the oats reaching any respectable height. North of us where oats is a pretty sure crop, peas and oats are no doubt in much favor, for the pea vines make a great bulk of fodder equal in value to clover hay.

Rye has been tried to some extent, but does not seem to grow in favor, for unless taken very young the fodder will be hard and wiry and not relished by stock.

Corn is the stand-by as a fodder crop over a larger extent of country than probably all the others combined, and its numerous good qualities give it right to this prominence. It seems to have only one fault of any prominence, and that is the difficulty of curing it, unless the weather is favorable. It is some satisfaction to know that in no country have they more favorable weather to harvest all crops than in this country.

All the above crops are also useful for soiling, cutting and feeding green in stalls, but rye is the least so, on account of its becoming hard so soon, and, in fact, the only good claim rye has is its earliness, being generally fit to cut two weeks or more before any of the other crops used for soiling come in.

Of the new candidates for favor we have two:

Prickly comfrey was disseminated a few years ago with a great flourish of trumpets. It was not claimed as a real fodder plant, but for the purpose of soiling was said to be unequaled, producing as much as one hundred tons of green feed to the acre on rich soil, and that it was greatly relished by cattle, pigs, sheep and horses, and that it put them in a thriving condition.

Now for the reports.

Its great yield is generally acknowledged, and I think in one case ninety tons reported, which comes near enough for a new plant for which so much was claimed. One man reports that his cattle will not touch it; and that, though it may be eaten by some poor foreign cattle, he does not think an intelligent American cow could be made to do so unless driven thereto by starvation. Others report that their cattle would not eat it at first, but were educated to it by throwing cornmeal on it. One man, probably a Yankee, whose cattle somewhat tabooed the new introduction, hit upon the novel plan of throwing it upon some kind of scaffolding, where the cows could hardly reach it, and then they went for it with a whim; these cows probably had in them considerable human nature, that is of the contrary kind. One man reported that his cattle liked it both green and *dry*.

There is no doubt but that in very rich soil it is unsurpassed for soiling, but it will take time to determine its real claims to quality and usefulness in this respect. It requires good culture and plenty of manure to bring it to perfection.

That parties not acquainted with it may have some knowledge as to what kind of a plant it is I will state that it is a near relative to the common comfrey (swartz wurzel) of the garden, the botanical degree of relation being closer than that of rye to wheat.

Pearl millet, also called Egyptian millet, is a newer candidate than the last mentioned, this being the first year that there were any extended trials made in the North, and I have this far seen but two of the reports, both being found in the *American Agriculturist*, and which I condense for these columns.

Mr. Peter Henderson, near New York city, prepared a piece of good strong loamy soil, as if for beet or turnip, applying ten tons manure to the acre and plowing ten inches deep. The millet was sown on May 15th, in drills 18 inches apart, at the rate of 8 quarts to the acre. Twelve days afterwards it was cultivated, after that cultivation being unnecessary, as the rapid growth smothered all weeds that came up. First cutting, July 1st, being seven feet high, weighed, *green*, at the rate of 30 tons per acre, 6½ tons, *dried*, as hay. Second cutting, August 15th, height 9 feet, weight 55 tons green; 8 tons dried. Third crop started as rapidly as the second, but the cool nights in September lessened the growth, but when cut, on October 1st, weighed 10 tons green; 1½ tons dried. Total, 95 tons green fodder, or 16 tons when dried to hay. Resembles cornfodder, and supposes it equally nutritious. Horses and cattle ate it greedily, whether green or dry. If sown broadcast about 16 quarts seed should be used.

A. Coindet, of Montreal, sowed a paper on May 20th, in his yard, soil not manured, and had the sun only about two hours each day. Cut July 15 when five feet high; again September 15 when six feet high; last time, October 1st, when the stalks were nine feet high. Both his horses and cows were very fond of the millet, green or dry.

When reports from such widely distant points coincide as these two do, there must be some merit in the millet. I have no doubt but what it will to some extent displace corn as a soiling and fodder crop, because it can be cut oftener for soiling and more weight of fodder raised. The heavy manuring given by Mr. Henderson will be apt to strike some farmers with dismay, the amount being more than the average quantity applied to that manure-devourer, tobacco. But then consider sixteen tons of hay from one acre! With a few acres of this what a number of cattle could be kept, and I am afraid the farmer would get frightened at the size of his manure pile.

Suppose that clover would be a failure, and the farmer had only the timothy to cut which gives no aftermath. As soon as the hay was off the field he might sow it to this millet, and forty-five or fifty days afterward cut a mass of stuff that would make eight tons of hay, as was done in the second cutting as reported by Mr. Henderson, who can be relied on as saying just what he knows.

Tea Raising.

In December number of THE FARMER J. B. G. thinks that the article in October number under the above heading "might lead some people to infer or suppose this plant can be cultivated anywhere." I did not intend that my remarks should lead to any such impression, and think that the second sentence wherein it is stated that the Agricultural Department was sending out plants "to such places as seemed suitable for the growing," would put people on their guard. Further, our florists are now-a-days so liberal with their lists and catalogues that few could help but know that *Thea* (Chinese Tea Plant,) was classed in the *green-house* collections.

The plant is probably not quite as tender as the remarks of Mr. G. would seem to imply, for it is cultivated in Japan as far north as the northern boundary of North Carolina, but it is probable that there are varieties that are more hardy than others, just as in some of our fruit trees.

I am in the habit of putting off writing articles intended for publication to the last minute, and then have not time to prepare them as they should be. I hope Mr. G. will give me a "rowing up" on all such occasions, and I will then as now thank him for it.

Laying Down to Grass.

I have often seen it recommended that this or that grass should be more used in seeding to grass. I will give the price it would cost per acre, as the seed was sold one year ago by one of our most reliable seedsmen:

Red Top, (*Agrostis vulgaris*,) $2.25; Meadow Foxtail, (*Alopecurus pratensis*,) $15.00; Rescue Grass, (*Bromus schraderi*,) $24.00; Meadow Fescue, (*Festuca pratensis*,) $12.00; Italian Rye Grass, (*Lolium Italicum*,) $10.50.

Red Top is the only kind that is at all reasonable in price, and this is not much raised in Lancaster county. All the others are entirely too high in price, unless it could be shown that they are much superior to the varieties now in vogue, and even then the laying down must be more permanent than is usually the case with us. The Rescue Grass is in great favor with English farmers, they being able to remove from four to five green crops each year. I suppose this is accomplished by means of irrigation.

Meadow Foxtail and Red Top do well in this country; of the others I have no knowledge.—*A. B. K.*

For THE LANCASTER FARMER.

PRACTICAL HINTS FOR YOUNG FARMERS.

Another year has passed and a new one has begun. But had we not the stores of the year that is past we could not live. All is frozen and dead, and we depend for months upon our treasures of the past, until mother earth gives life and vigor again to the vegetable kingdom.

At this season of the year not much is to be done on the farm, except the feeding of the stock, which should be well cared for, and not wholely trusted to the boys. When boys feed stock watch them closely, or some animals may not get enough to eat and others get more than they can eat and become "stalled;" and the stable doors and shutters may remain open in cold, stormy weather and be closed when the weather is mild and warm.

HORSES.—When hay is plenty horses can be kept in in good condition with very little else than good hay, during the winter season, or while they have no work to do. Give them daily one or two quarts of oats, cornecb meal and bran mixed together. Mix a little chaff with it and moisten it with pure water. Give them enough of good hay; curry them daily; water them twice every day; remove their shoes and let them walk or stand shoeless; but at the same time have one or two shod sharply, to drive to market and to mill, and to do other work necessary to be done; but those should have a little more grain than those that are standing idle. As spring approaches, and when they begin to change their coats, increase their food a little, gradually, so that they will get strong enough to endure labor when spring opens to work. Keep their stables comfortably warm; stop all holes where the cold air comes in; open the south side doors or windows while the sun shines warm, but close them again before the stall gets cold. On mild days open both sides, that the air may pass through, and clean the stables once, twice or thrice a week, but never less than once.

COWS.—Attend well to the cows; have their stables warm; shut up all the holes in cold weather; let no manure freeze behind the cows; open on the south side during midday when the sun is shining, but close again as early as three or four o'clock in the afternoon. Feed well three times a day—say at 5 o'clock in the morning, at 11 in the forenoon, and at 6 o'clock in the evening. Mix corncob meal and bran in equal parts together, and feed to each cow two quarts or more every meal. Mix it with cut cornfodder or chaff, and moisten it with clean water. Cut cornfodder is the best, but hay dowers can also be mixed with the feed. After that give them as much hay as they will eat up clean; water them at midday, once a day. On warm days turn them out of the stables into the barnyard for an hour or two, but when it is cold put them into the stable as soon as they are done drinking. Bed them with straw, but let neither straw, hay nor fodder go to waste, even if you don't need it. It may transpire that the next year's crop may be short or a failure, and then it will be needed and come handy.

CALVES.—To wean calves at first give them the milk from the cow, until they get accustomed to drinking out of a bucket. Then mix a little skimmed milk and a little bran and hot water. Increase the quantity of skimmed milk gradually until you have no sweet milk amongst it any more. In addition to this give them young clover hay. Of course the

longer they are fed on this milk diet the better, but when milk is scarce they can become accustomed to water after several weeks, but then they must have some bran and oats, besides hay, or we cannot expect them to thrive.

YEARLINGS.—Calves of a year old must have one or two quarts of bran, oats or cob meal, or something similar to it, besides hay, or they will not come out well. Also a little salt daily—indeed all animals should have salt.

SWINE.—Hogs are mostly all slaughtered for the present winter; but we now must care for the stock of next year or next season. Young pigs and shoats should have a warm stable. If the pig stable is not well closed and warm put cornfodder around it to keep off the cold winds. Leave only the south side open, which should also be closed at night. Have plenty of straw in the stable for the pigs to creep under. Feed them regularly and well, but never overfeed them. I am perfectly satisfied that some pigs are fed to death. Give them as much as they will eat up readily and cleanly, but not that they will let some remain in the trough untouched when you come to feed again. Milk is the best food for quite young pigs, indeed young pigs just taken from the sow are hard to raise without milk for awhile. Scald some shipstuff with water, then stir in the milk and a little corn and oats, increasing the quantity as the pigs grow older. After a few weeks the milk can be omitted and the shipstuff increased. Keep them healthy, give them a little wood ashes occasionally, alternated with charcoal and a little powder or sulphur. Also throw into the stable some rotten wood, and some sod when it can be gotten. Many farmers are discouraged with pig raising because they are so cheap, but I think they make a mistake. I think now is the right time to raise them, because they will not remain so cheap as now. Hogs change in price very often, and some times very suddenly. I think next fall we can get a better price for fat hogs. I have just seen a letter from a hog-feeder in the west; he had his hogs ready for market but could not sell them. He is, of course, discouraged and says, "Never mind, if I get rid of these I will never have another hog on my farm again." He is not the only one, however, that talks in that way. Some people think that their bread must always fall with the buttered side upwards or all is wrong.

POULTRY.—Feed chickens well and give them a warm, dry roosting place, or they will lay no eggs the whole winter. Also, provide a sheltered place on the sunny side of a fence, a wall, a building or a hill, where they can sit in the sunshine during the day and have access to a sand bath. Feed in the morning coarse cornеob meal and bran mixed together and moistened with boiling water, with salt, as for table use. Feed in a trough and supply them with pure, fresh spring water. Give them broken oyster shells every day. In the afternoon feed them with some kind of grain—such as wheat screenings and corn—and if they can have thick milk, cheese, or meat crumbs it will be all the better for them. An onion cut fine and mixed with their feed occasionally; also a little charcoal or sulphur; also boiled potatoes mashed fine. Of course we do not mean that these articles, or those hereafter mentioned, should be fed to them at the same time, but that they should be occasional and alternated; in this way there may be a change in their diet almost daily. The milk and potatoes can be fed every day if they are plenty. Turnip tops and cabbage offal are also excellent during the winter. The feeding trough can be made of two boards five and six inches wide; nail the edges together. This will make a triangular trough. Let the ends be three inches higher than the trough, and nail a board flat on them about as wide as the upper angles of the trough, to prevent the chickens from going in with their feet. They can stand on both sides to feed and have a space between the trough and the top board of three inches, plenty wide enough to get in with their heads, but they cannot get in with their feet. A coal bucket is a good implement to put in the feed.

EARLY CHICKENS.—If you want early chickens you must have a warm place. Somewhere in the barn, or somewhere where hens can set; and then have food and water convenient, so that they will not stay too long off the nest in search of food. When the chicks are hatched put them in a coop and keep them in the barn or stable during cold and wet weather, but on nice days put them in the sunshine, where they will be protected from the wind and storm. Towards evening carry them in the barn again. If persons have time and patience to attend to them hens may be set during this month. Early chickens always demand a good price in market. Feed moistened bread crumbs, cheese, wheat screenings, cracked corn, potatoes and hard boild eggs cut fine.—*J. G., Warwick, January*, 1879.

For The Lancaster Farmer.

FRUITS AS A STANDARD ARTICLE OF FOOD.

The vast apple crop of 1878 will, I trust, have a favorable impression upon all who have availed themselves of its salutary effects. Although in some sections, on account of its great abundance, it proved more of a burden than profit, from the very low prices which it brought; while in other sections the crop was either a total or partial failure.

Not for many years was so large a section of the country so well supplied with fine winter apples at such low rates as now. To our present admirable railroad arrangements is due the extensive distribution of this vast crop. No family, over a large extent of territory, however poor, is necessarily deprived of a reasonable enjoyment of one of the most wholesome esculents given to man. From the prevailing custom of long standing, large quantities are consumed in lunching, or as an addition to regular meals, and will continue to be thus used so long as people consider fruits simply as a relish, containing but little if any nutriment. That it is better to eat them in this way than not at all we will admit, but as people learn that fruits contain as much or more nutrition, in proportion to bulk and cost, than many other articles of diet in common use, the demand for the former will be equal to the supply, as for any other article of food.

It is now generally admitted that fruits are a valuable adjunct to other food to give tone to the system; but it has also been demonstrated by facts that they not only support healthy material to build up the wastes of the body, but that man can labor and endure fatigue on fruit diet alone far beyond the general belief in its nutritious properties.

One striking instance among many is the case of Wherryman, (his real name I have forgotten) the great boat racer, who won his great races on fruit diet alone. These facts have been related to me by Dr. Wood, of New York, he having boarded with Wherryman during the time of his exploits; both were strict vegetarians by principle and practice. One of the strongest evidences that the human system demands fruit are the natural cravings of children for it to such an extent that they do not stop to examine whether it is ripe or not. The serious effects which often follow the excessive eating of fruit, especially when unripe, does not at all prove that it is injurious when eaten in proper quantites as part of a meal. Dr. Smith, in his work entitled, "Fruits and Farinacia the proper food for man," has collected such a mass of evidence that should convince any reasonable person that the title of his book is not a misnomer. While eminent physiologists differ upon this question, it has been fully demonstrated that man *can* live, and be not only healthy, but can also labor and endure fatigue beyond him who uses stimulating food and drinks. Could we even convince the public that this theory is correct, the counter arguments continue that it would not be practical on account of its being more expensive.

That this is an erroneous notion can easily be proven by testing the various leading articles of diet separately, keeping a correct account of the expenses of each. For instance, Graham flour, oatmeal, crushed barley and other cereals, which need not cost more than 4 to 8 cents, say 6 cents per pound as an average. One pound of either cooked into porridge, and five cents worth of stewed apples, and a pint of good milk make a palatable, healthy and invigorating breakfast for a family of five or six, costing not over three cents each, as neither butter nor coffee is needed to relish such a meal. "*Good gracious!*" our coffee tapers will say, in amazement, "*breakfast without coffee.*" *Yes, breakfast*, such as above described, can be relished just as much as any other, by persons in a normal condition and with unperverted appetites. It is, however, not expected that persons whose bodies are thoroughly infused with the fumes or liquid of tobacco, or liquor, or even of coffee, spices and condiments can fully relish such a meal as just described. But why not give the children a chance to grow up healthfully and in a more normal condition? Many of the aches, pains and doctors' bills would be avoided by adhering to a more simple bill of fare. There is no doubt in the mind of the writer that those much dreaded scourges—scarlet fever, diptheria, and eruptive diseases generally, would not afflict so many families were a farinacious and fruit diet, in connection with pure air, substituted for pork, and the abomination of the frying pan abolished. The fumes of the latter would not be carried about in the clothes of so many, to fill the olfactories of whomsoever they meet unsupplied with such aroma.

But to return to the more pleasant subject fruits: We have reason to believe that the abundance and cheapness of apples this winter have induced many families to supply themselves to such an extent as to make innovations upon their former bill of fare by incorporating apples more largely therewith.

We have such strong faith in fruits as food as to believe that if the result of the consumption of the apple crop of 1878 could be computed, including its hygienic effects, it would make interesting reading, and would, no doubt, tend to increased consumption of all fruits throughout the year.

We are all aware how innovations upon customs and habits are resisted, ridiculed and frowned down at times, so that there is little hope for an article like the foregoing to make any serious impression upon the public mind. Should it, however, interest but a few, the writer will consider his efforts not spent in vain, for according to a saying wisely applied, that "a little leaven leaveneth the whole lump;" although this will not fully apply to the above saying, it may, in part, and should it effect no more than simply to elicit discussion, the results may prove more gratifying than we expect.—*H. M. Engle, Marietta, Jan. 3*, 1879.

LETTER FROM NORTH CAROLINA.

SALISBURY, N. C., Jan. 2, 1879.

Lancaster Farmer: Allow me to congratulate you in having worked your way thus far, and I think under disadvantages, which I hope will not be so in the future. Having entered into a new year, I hope 1879 will be one of *prosperity* with *you* in *every* sense of the word, and hope your people will support and uphold it for all time to come, both with brains and means, and do not see any valid reason why they should not. Yours is regarded the best agricultural county in the United States, the wealthiest people upon a whole, hold more United States government bonds than any other county in the Union. During 1876 I traveled in and through several States, and nowhere did I see as good horses for all work; cattle, sheep, swine and poultry of all kinds, such as is generally raised in America. Your lands were better cultivated than any I had ever seen on this continent. I do not say these things to flatter the folks of your great county, and know whereof I speak. I will say and do all I can to promote

the welfare of all concerned in THE FARMER, though distant from you, and not *directly* concerned in the welfare of your county and its people. Hence I believe your county farmers, and others living there, ought to put their shoulders to the wheels of THE FARMER and push it onward and upward, and never say go on, but say come on. With all good wishes for THE FARMER and all interested in its welfare, we remain your friend, *M. R.*

PRESIDENT'S ADDRESS.*

To the members of the Lancaster County Agricultural and Horticultural Society:

GENTLEMEN: In addressing you for the third time since my election as your chairman, and the thirteenth since the organization of the society, it is with feelings of gratitude to a wise Creator, for the bountiful harvest of the year passed; for the general prosperity of our country; for the removal of the terrible pestilence that visited a part of our land, and for the peace, good-will and prosperity prevailing over this glorious union of States. May the bonds of friendship be drawn together so tightly that no sectional strife will ever be able to tear them asunder.

I wish to call your attention to the harvests of the past year; to impress upon you the importance of applying the skill and best judgment of every tiller to his soil, to endeavor by all the means within his power—good culture and every other recourse at hand—to have many recurrences of abundance as the crops of the season of 1878. I am well aware that all does not depend on man, but I am also equally confident that he who cultivates best and most carefully observes the changes of our seasons, is generally amply repaid with remunerative crops, fully rewarding him for the extra toil and skill employed that his garners may be well filled. A more thorough system of cultivation—both before and after the crop has been planted—will, in my opinion, do more to insure a good reward than most of us are aware. If a little cultivation will add five per cent. to the production of every acre, it is a plain problem that thorough tillage may add ten, fifteen or twenty per cent. above the usual crop. The varied experiments (the successful ones I mean) of our most progressive farmers, should convince every skeptical mind that it is necessary for us, with the high price of land in this section, to adopt the means that will accomplish the best results. If A can increase the product of an acre of wheat by ten or twelve bushels, with the expenditure of two or three dollars in cultivation at a time when the plant is weak and tender (and particularly if the season seems unfavorable,) B surely will not remain in the old rut while his more progressive neighbor reaps as much from two acres as he does from three.

Crop fertilization is one of the most important subjects to the farmer, and perhaps the least understood. All manures to act and feed the crop for which it is applied must be in a condition to be absorbed by the tender rootlets, and through them supply the plant's food during the early growth. From observation and experience I am fully convinced that all our cereals would be much benefited by the application of some good, well decomposed fertilizer put in with the seed, to act at once, as the plant begins to grow. As the germ passes through the kernel it finds food to strengthen and nourish it, and better enable it to withstand the changes of the climate. The better quality of the grain and the productiveness of some of the less fertile districts of the State, where they have adopted this system of sowing, abundantly attest that we are not making as much progress in agriculture as some of our neighboring yeomen.

I do not wish to be understood that I advocate the use of the many patent manures that are flooded upon the market, though doubtless some of them would be very valuable if they could be bought with a little less sand. A careful husbandry of the excrement and urine of the farm animals, and, indeed, the sewerage of the house, and the use of the many absorbants, always to be found on any farm, as ashes, leaves, chaff, sawdust and chip dirt, the sweepings and dust of the buildings, and the dry mould itself, than which there is nothing better. All may be used to take up the excess of moisture, that it may be conveyed to some building made for the purpose, where, in stormy weather, the hands may work and sift it over until reduced to that condition which is most desirable to apply. I sincerely believe that if every farmer would use the matter that usually wastes and leaches through his manure heap, making obnoxious streams across the public highway, and along the gutters, thus causing malaria—oftentimes taken by the human family—all of which might have been avoided, and he would have had at hand a sufficient amount of fertilizers, of the very best, to apply with the sowing of all his crops.

Those interested in horticulture have made many grave errors by planting and experimenting with varieties of fruit not adapted to this soil and climate. Our ambition has been too great to find something not in the possession of a neighbor. Something new. Never stopping to inquire whether suited or acclimated to their section. We have been too easily persuaded by the highly-colored plates, made from the choicest specimens of fruit that could be found (and some that only grew in some fertile imagination) and plant sorts unsuited to their locality. If the planter, before setting his trees, would first inquire in his immediate neighborhood, what kind of apple, pear, peach or other fruit is best adapted to his own section, and plant mostly of those of known merits, our failures in fruit crops would be less frequent, and the thousands of dollars now taken to distant parts and expended to supply our market with the fruit that should be grown at home, would largely contribute towards supplying necessary comforts to many a needy home. I do not wish to discourage the introduction of new fruit of real merit, but I do earnestly caution those planting such as do not originate in this locality, to plant sparingly until thoroughly tested. The many new varieties of fruit originating in our county, that have graced our tables at their proper seasons, affords us sufficient proof that we have at home plenty of experimenters who are ever ready to supply our market with horticultural novelties. For instance: The "Saunders," the "Wilder" and other peaches of Marietta, the "Sener" and many others equally good of Lancaster, the "Lancaster Cherry" of very recent introduction, gives promise of a high rank in that class of fruit; among the apples the "Mellinger" and the "Ritter seedlings," with many others, might be more generally disseminated. In small fruits we are being constantly supplied with new novelties, some of which will, doubtless, prove valuable acquisitions to the lists now promising well. It is, however, always advisable to plant the new varieties with great caution, that have not been tested in various locations and soils, notwithstanding the sanguine assurance of the originators or their agents.

The subject of exhibitions for the coming year, having recently been discussed by this society, and not fully disposed of, should, before being decided in the affirmative, receive your careful consideration. The suggestion of Dr. Rathvon, in reference to a charter, is, doubtless, of the greatest importance should you resolve upon a fall fair. By it you become an incorporated body—"a body politic in law." The act of incorporation in itself would not have a sustaining influence without the co-operation of its members, but would give more permanency and add greatly to its importance as an organization, and give it legal existence. With good management and fair weather I fully believe this county could have a creditable exhibition, which would be a financial success. It is a burning disgrace upon Lancaster county, with its boasted agricultural wealth, that it can have only its semi-annual horse races, while Chester, Berks, Lebanon, Dauphin, York and other neighboring counties are having their very creditable fall shows, which, for weeks previous, are looked to by the residents as a joyous and grand social holiday, where old and young congregate, challenging each other by their production of fine grain "big pumpkins," or aught else they may have, and exchange views in a social way of the various means adopted in achieving such good results.

During the last year your officers have had two very able lectures delivered before this society by men of large, practical and scientific experience, men who have given the subject of agriculture their careful attention, and devoted the prime of their lives in experimenting, and who now generously give their results to all who are willing to give them an attentive ear. I fully believe that if you were to adopt a rule to have a lecture on some subject pertaining to agricultural or horticultural once in every three months—say February, May, August and November—and have it announced through the press a few days beforehand, this room would soon be too small to hold the assemblage.

The growing disposition in the rural districts to have a modern style of architecture and landscape adornment is indicative of a higher standard of sociability and refinement. While, on the other hand, the disposition of some (who cannot afford it) for show and display to the fashionable world have harrassed themselves and brought discredit and bankruptcy, and oftimes much misery and suffering in consequence. The disposition to excel is to be deprecated. Home comforts, conveniences and pleasures are not to be found in display and gorgeous equipments. The prudent yeoman will always put a check-rein on his vicious horse; so also it behooves us to curb an ambition that points to ruin and disgrace.

In conclusion, I humbly extend to you my most grateful thanks for the uniform courtesy that has been extended while acting as your presiding officer. Doubtless my rulings have seemed to some rather arbitrary, but my greatest ambition has ever been the good of the society, believing that much good may yet come out of our organization.

*Delivered before the Lancaster County Agricultural and Horticultural Society, by Calvin R. Cooper.

PROGRESSIVE AGRICULTURE.*

So much has been written and spoken on the improvement of agriculture and horticulture that one may find it quite a task to add anything that is new, either in theory or in practice. But let us take a view of the present and the past—of the useful in the arts and sciences in their relations to agriculture, and the march of improvement which we see and daily experience. Let us go back twenty years, and compare the discussions of our societies then with the discussions of the present—not the abilities of the members, but the subject matter of their discussions. Doubtless some of those who participated in those discussions then are present to-day. Our wheat and corn crops were then comparatively small. Instead of well-filled graneries and grain bins, we talked of short crops, and almost gave way to despondency. Instead of our export trade being over $200,000,000 in our favor, we had nothing but cotton, which we regarded as *king* among our agricultural productions. In addition to that we had but few things to export, and the balance of trade was against us to the amount of $50,000,000 a year, while it took $50,000,000 in gold to pay the interest on our bond to the money kings of Europe.

Instead of the balance of trade being against us, and our agricultural products diminished in quantity and high in price, we have so far improved our condition so that at the present time we are able to export to the different nations of Europe sufficient to change the balance of trade in our favor at the rate of from $250,000,000 to $300,000,000 a year, and all told, we may not owe more than $200,-

*Read before the Lancaster County Agricultural and Horticultural Society, by P. S. Reist.

000,000 to Europe on our national debt. With our graneries and storehouses filled from the Atlantic to the Pacific, our wholesale and retail stores stocked to overflowing, many of our factories and machine shops in active operation, with the numberless cattle, sheep and swine, produced by the Western and Southwestern States, we have a supply of material which no nation or government ever had before—nearly enough to sustain us three years without replenishment.

The question arises, "How was all this brought about? From whence did it come? Did all this come spontaneously—grow up like mushrooms? Or was it the result of labor, of energy and of enterprise, as well as industry and economy?" To which we will and must answer, to all these influences combined; but more, much more to the favor of that superintending Providence, which admonishes us to "seek first the kingdom of God and his righteousness, and all these things will be added unto you." Labor, economy, science, arts, machinery and manufactures all combined have made our country, under God, what it is in material wealth. All our material substances have their origin in, and must be produced from mother earth, so far as we can have any sensuous consciousness of them. Steamboats, canals, railroads and other modes of transportation will avail us nothing without tonnage, and tonnage cannot be obtained without productions which are elaborated by labor and machinery. As to the best modes and the most ample facilities by which to increase our productions we meet here to-day to discuss, and this ought to be a leading object among all individuals as well as societies. As already stated, it is by individual energy, aided by invention, society or organization, and government encouragement, that we have attained a position which no government or nation ever before occupied.

People may talk about dull times, but what will they say when we compare the present with the time when the balance* of trade was against us, and no supply of anything—when an acre cost $3.00, and a day's wages from $1.50 to $2.00; a pound of coffee from 30 to 40 cents; a yard of muslin from 20 to 30 cents, and other things in proportion. Through discussion, through the interchange of opinion, through art and science, through agricultural and horticultural associations, much has been accomplished. Then let us proceed with the good work. The *iron* mouldboard of the plow took the place of the wooden one. The cultivator took the place of the spike-harrow, the seed-drill superceded hand sowing, the reaper takes the place of the cradle and the scythe, the threshing machine and the steam engine have taken the place of the flail and the horse tramping, together with the improvements in fertility; so that twice as much may be brought out of the soil now as formerly, all of which indicate progress.

The railroad has taken the place of the Conestoga teams, the telegraph has taken the place of the stage lines, and the various kinds of machinery have taken the place of hand labor; and there are many improvements in implements, &c., of which we cannot have a full appreciation, unless we were entirely deprived of them. A great deal is accomplished by means of meeting together periodically in associations, and by the aid of newspapers and such sterling agricultural journals as THE LANCASTER FARMER, which, as a reflex of our local views, is of paramount advantage to the county and the country. If we have not done as much good heretofore to ourselves and our fellow-beings as we ought to have done, let us console ourselves with the reflection that we have tried to do some good in our humble way, and have endeavored to keep along with the tide of invention, improvement and progress. The time may not be far distant when our farms may be plowed by steam, and the same element may be utilized in drawing our wagons over our common roads, and our general economies be entirely revolutionized. In addition to this we may light and heat our houses by the economical introduction of gas, steam, or electricity.

In conclusion, let us hope that in the future, as in the present, things may continue cheap and abundant, and that peace and prosperity may be ours; and, in this connection, I wish to be understood as meaning a uniform system of cheapness—not product sacrificed on the part of one class and extortions practiced by the other class. I think that experience will successfully demonstrate that our country has enjoyed more *real* prosperity when things were uniformly cheap than when they were uniformly dear. People may say that it amounts to the same whether all things are cheap or dear, but it does not. There is not the same stimulation to speculation and extravagance in cheap times as there is in dear times. Our recent past and present extravagances had their origin in the high prices and the redundancy of money which ruled during the rebellion. The people lost their mathematical reckonings and spent very much at random.

*The "balance of trade" is a sort of enigma to many people. On paper that nation *seems* to be the most prosperous that has the balance of trade in its favor, and perhaps it is so; but somehow we do not seem to be prospering in any very particular sense at the present time, although the balance of trade has been in our favor for some time past. Perhaps it is too much yet to look for the advantages of such a contingency. We appear to be somewhat muddled upon the subject, at least no one has so far been able to make it specifically clear that a nation is prospering in any degree corresponding to the balance of trade in our favor. The *fact* as to whom that balance is due, and what they are doing with it, may have something to do with the question. A rich nabob in a community may have a large balance of trade in his favor and may not be of much pecuniary advantage to the community in which he lives, if he keeps it in his coffers and engages in no enterprise that would enect its circulation among the people. We would like to see the balance of trade and the present depressed times satisfactorily harmonize, if the thing is at all possible.—ED.

[From our Regular Correspondent.

OUR PARIS LETTER.

The French as Seen with American Eyes—What Our Correspondent Has Learned During His Eight Months' Visit in the Gay Capital.

HOTEL DU LOUVRE, PARIS, January 6th, 1879.

The extravagance of French politeness is as remarkable in the present as in the past. Three centuries ago there was such an ado when two people met that the Chevalier Warin said that all conversation began with a ballet. Fourscore years ago graceful antics and high blown compliments were still in vogue; but the deep triplicate salutation, with the "Beautiful marquise, your bewitching eyes make me die of love," passed away with the revolution of '93. The eccentricities of gallant speech and gallant acts constitute one of the principal arteries running through the body politic from its earliest history to the present time. Under cover of the French dictum, that it is impossible to be too polite, singular extremes are reached, especially by the elderly men, who affect something of the Regency manners. In some cases it is carried to a point where it might be called the gymnastics of social intercourse, where the man insists on keeping his bald head uncovered in a hot sun, or runs with hot haste to convey a lap dog to a woman waiting, or bows low with a grand swoop of the hat to another man whom he sees two or three times a day. There is an historical instance of a well-known aged nobleman, who, descending the stairway, meets a youth of twenty mounting, the nobleman stops to let him go up and the youth does the same, inviting the former to pass down; the nobleman stands firm and requests the youth to continue, who responds, Jamais! with hand on heart; he knows too well what youth owes to age; upon which the elder commands him to mount, when the young man, with a bow, says: "Youth owes obedience to age," and passes, thus saving the situation, as he believes.

There is an elasticity and adaptability in the Frenchman in the presence of the woman, of which the Anglo-Saxon has but a meagre share. The former, before all classes of these, eat-like, falls on his feet, be she countess or grisette; and to be brought unexpectedly in contact with any of them never seems to disconcert or even surprise him. The Anglo-Saxon is taken at a disadvantage under similar circumstances from which he does not rally immediately. The susceptibility of the newly arrived foreigner, for example, is put to a rude trial when he buys a pair of gloves. Behind the counter stands several smiling, self-possessed young women, whose eyes turn on him with disconcerting steadiness. He approaches the nearest of them, and signifies his desire to make a purchase. Are the gloves for monsieur? They are. Will monsieur give himself the trouble to set down before the counter? He slips on to a high stool which brings his head on a level with hers. She smilingly inquires his number, which he generally does not know, when she daintily measures the masculine hand, holding it, after the tape measurement, lightly by finger tips, to examine the form of the glove required. She in the same tone inquires his color, to which a Frenchman would probably reply, "Whatever your taste may suggest;" but to which the newly-arrived foreigner gives an answer destitute of any kind of embroidery. When she softly takes his hand in hers again, and looks into his face with a smile, Americus begins to think that this is indeed a tender business. Before, however, he has any time to make many reflections on the situation, she is at work on his hand, and slips on the glove, caressingly introduces the fingers, the operation sandwiched with arch glances and chirrupy speech, and then the glove is buttoned, and the last fold is smoothed out with a gentle pat. This incendiary performance is followed with the question whether monsieur will have his other hand treated in the same way. The moth, of course, will have another go at the candle, and by the time he is through he is naturally somewhat singed. Happily for family peace, the betrothed Mary Jane or the espoused Mary Ann cannot look into his heart at that moment. The eyes of the feminine Mephistopheles behind the counter follow out his retiring figure with a slight elevation of the eyebrows and a terrible monosyllable uttered to one of her companions. The modest foreigner goes through another ordeal with the flower girl. With a smile as bright and attractive as her flowers, she asks him if he will not have one. He would prefer not to encounter those winning eyes, and endeavors to pass on, but he may not do so; she holds him as securely as the Ancient Mariner held the wedding guest, and he signifies his acceptance of the tendered opening bud. He may not receive it with his hands; she with her nimble fingers will attach it to his buttonhole, and the embarrassed man stands while the girl fondles over the region of his heart, and looks into the whites of his half-averted eyes. And the havoc thus committed in ten short minutes may not be repaired in six months. There is no fixed price for such a favor, and he is told with an expression that would have troubled the soul of St. Anthony, that it is anything he may please to give. His betrothed Bilinda, alas! would think it dear at any price.

The wide dissemination of art-feeling among the French has a refining tendency on the manners of all classes. Beautiful squares and parks, with walks and shady forests, fountains and lakes, are open to all. The eyes of the people are made familiar with architectural beauty, as exhibited in the boulevards, bridges and public edifices of the great city. The magnificent art galleries are free to all who wish to see them, and the working people visit them frequently, especially on Sunday and fete days, when they are kept open for their benefit. Thus the man in blouse is often familiar with the great pictures of French masters. In the houses of the poor there are no rapid, keepsake heads, in glowing colors, but copies of pictures exhibiting more or less merit. The deep red and blue Daniel in the Lion's Den, and the doll-faced Mary Ann, surrounded with an inch of bright mahogany, are not seen on their walls. The square, loud-striking and loud-ticking clock,

in red wood, and plaster of Paris rabbit or cat, painted in unnatural hues, have no places on their mantles. In humble cafes are found pictures which would be considered fit to hang in some of the best restaurants of London and New York. The signs over shops show a talent not possessed by our sign painters, and many a *gargote* has grapes and vine-leaves painted over its door which merit a better place.—*Louis.*

COOKING FEED FOR STOCK.

We have received a copy of the report of the last meeting of the Montgomery County (O.) Farmers' Club, with a request that we publish the part relating to the above subject. This was a paper read by Simon Emerick, and consisted mainly of extracts from the published opinions of various persons who had tested the matter. It cannot fail to be interesting to all farmers who have given this subject any attention, but who are still undecided as to whether it will pay to cook food for stock or not. The question was the same discussed by our Farmers' Club last winter—"Does it pay to feed cooked food to stock?"

The one chief obstacle that men in business have to contend with these stringent times is, that there are no profits. This is no less true with those commanding an extensive trade and employing large capital than it is with persons conducting a small business; no less true with the farmer than with the manufacturer. The complaint is well nigh universal that there is no margin in business or trade. The cost of production of an article seems to be about equal to the price obtained for it, though often it does not bring so much as that. Now, with a view to solve this problem for myself, as a farmer I have been induced to investigate whether cooking food for stock would not yield the much sought for profit.

I take some statements from the evening discussions of the New York State Fair, 1867—Subject: "Cooking food for domestic animals." Hon. T. Geddes, of Syracuse, New York, said that "there was no branch of farming that was less understood, and promised more advantages than the preparation of food. He had thoroughly proved years ago that cooking food, whether ground or not, doubled its value for animals." George A. Moore, of Erie county, said "he had fed two hundred sheep on cooked food, and had fully satisfied himself that the value of food was tripled by cooking." Mr. E. W. Stewart, who had eleven years' experience in cooking food for stock, said that "the cooking rendered the food soft and in a condition to be eaten even in the more perfect manner than by cutting, and proved by experiment that two bushels of steamed hay were equal to three of unsteamed, and that steamed fodder was similar in its character to fresh pasture, and that horses diseased by coughs or heaves have been cured by such food."

Professor Mapes says—Transactions American Institute, 1864, page 373, "the experiment often tried has proved that eighteen or nineteen pounds of cooked corn are equal to fifty pounds of raw corn for hog feed." Mr. Mason, of New Jersey, says that "pork fed on raw grain cost 12½ cents per pound, and that from cooked 4½ cents; that cooked corn stalks are as soft and almost as nutritious as green stalks; that cattle can be fattened at about half the expense upon cooked food as upon uncooked."

The American Agriculturist for January, 1860, says: "Experiments made by C. M. Clay, of Kentucky, showed that one bushel of dry corn made 5 pounds 10 ozs. of pork; of boiled corn 14 pounds 7 ozs., and boiled meal 16 to 18 pounds.

The Practical Farmer (published in Philadelphia), in October, 1868, says: "We consider the cooking of food for stock as no longer an open question; its economy has been demonstrated by scores of our best practical farmers."

I could add much more like this—enough, it would seem, to settle the question, but how is it that so many farmers who have incurred the expense of fitting up for cooking food for their stock, have discontinued it? I have interviewed some of those farmers in this way: Does it pay to cook food for stock? The answer generally is, "Yes." Well, why don't you continue it? "Oh, it is too much trouble." Now, this disposition of the cooking business won't do. If the above statements are correct as to the gain by cooking food for stock, it would certainly be too much trouble to raise grain, and then throw fifty or even twenty-five per cent. of it away, when there is always a cash market for it.

Mr. Dodds, of Bloomington, Ind., in replying to my inquiries in the agricultural columns of the Cincinnati *Gazette* on this subject, states that he fed six steers last winter one and a half bushels of boiled corn per day, and they gained 1,810 pounds in three months. The business of stall-feeding cattle for market I am familiar with, and I do not hesitate to say, that if farmers could obtain such results as Mr. Dodds did, by cooking food, that would be a good margin for profits. But as young converts are proverbially zealous, this testimony is insufficient to put this question at rest; so, to obtain the experience of others, I addressed numerous farmers, living in ten different States, who have been engaged in cooking or steaming food for their stock, these questions: How long since you commenced feeding cooked food to your stock? Have you discontinued it; if so, for what reason? Have you made any tests to ascertain the approximate gain by feeding cooked food?

In order to better understand and determine the proper value of the replies I received, I will first give a summary of those from parties who have but recently commenced the business.

A gentleman of Fulton county, Indiana, writes that "he commenced feeding steamed food last January to his cattle, and continued till he turned them out to pasture; expects to use it again this fall for both hogs and cattle; thinks that one cord of wood will steam one hundred bushels of corn on the cob—steam ten bushels of corn in one hour by renewing the fire once; has not made any test to ascertain the relative value of steamed food, but thinks there is a saving of one-third by steaming."

Another gentleman, of Knox county, Ohio, says that "he has been using steamed food the past season; has not discontinued it nor does not expect to as long as he has anything to do with stock feeding; thinks that a practical test would show a saving of one-third by feeding steamed food." A party in Michigan writes that "he has been using steamed food for one year, and considers that fifty per cent. is saved by its use; has not made a practical test."

Another party in Indiana states that "he has been steaming food a few months; is confident that it is healthier for stock, and that one-third less grain is required." Another in Pennsylvania writes that "the steaming of food would result in great benefit to all farmers who are in the stock raising business."

I might add extracts from other letters, but the statements here given are a fair sample of those who wrote me who have been but recently engaged in steaming food. Now, to properly estimate the value of these statements, it is well to bear in mind that it is natural for men to recommend that in which they think they are more progressive than their neighbors, and also that when a party purchases an implement and takes an agency to sell it he will recommend it as a matter of business. I notice that some of the gentlemen who wrote me are acting as agents to sell the machine they are using for cooking food.—*Practical Farmer.*

I FIND that six bushels of peas are equal to ten bushels of corn for fattening my hogs, and that peas yield a larger number of bushels to the acre than corn.—*Toronto Globe.*

LAYING OUT THE FARM.

One great mistake farmers usually make is in not giving sufficient thought and attention to laying out the farm, and distributing the crops and labor in the best possible manner. There are few kinds of business which require such careful forethought and study as planning the year's crops on a farm in such a manner as to distribute the labor throughout the season as evenly as possible, and get the largest returns for the land under cultivation, and the money invested in labor.

When we consider the variety of crops which may be raised with profit on almost any farm, the great number of causes which influence their growth, the nature and condition of the soil, the prospects of the markets, the possibilities of double cropping, the relation of this year's crops to a rotation and the distribution of labor, so as not to have more at any one time than it is possible to do, and yet to have enough at all times, the question becomes interesting and at the same time exceedingly complex—yet all these things should be carefully considered, not only each by itself, but in relation to each other, and whoever overlooks one of them is likely to make serious blunders. He may sow his seed on soil not in proper condition, and so fail of a good crop, or he may raise a good crop and have no market, or he may be so crowded with work as not to be able to give it the proper attention at the critical time.

My manner of laying out a farm is this: In a book I write the name of each field, and the different crops for which the soil by its nature and present condition (with the fertilizers which I put on it) is beft adapted; also the time of sowing and harvesting, with the amount of labor required and the times of year it will be needed. I then compute, as nearly as I am able from past experience and the condition of the market, the probable proceeds of each crop per acre, deducting cost of seed and labor. This will show which of all the crops for which each field is adapted will give the largest probable returns. Having gone through with each field in this way and decided what crop or crops will give the largest net returns, I next put them all together, and see how the labor is distributed, and how much grain of each kind I am to sow or plant. If I find too much labor required at any one season, I turn back to the pages containing the fields with the conflicting crops, and select the best crop which will remedy the labor difficulty.

Much can be gained in the way of economy in farm labor by using the best means and implements. Fall plowing of wet lands and surface draining when needed, greatly facilitate early work in the spring. New and improved tools are also a great advantage in doing work quickly and economically. Farmers often work year after year with old, worn out tools, when the extra crops which could be raised with new labor-saving implements in one year would pay for half a dozen such tools. The neglect of cultivating hoed crops, until the weeds get fairly rooted, not only injures the crop, but adds greatly to the labor of caring for it and destroying the weeds.

Cultivation promotes earliness as well as growth, and partly supplies the place of manure, and, in laying out the year's work, every farmer should be careful not to put in anything which will have to be neglected. Better till five acres well than plant ten acres and leave the crops to fight it out with the weeds. Plan your work carefully, making due allowance for rainy weather and lost time; cultivate thoroughly and manure well, and you will be sure to get the largest possible returns for your labor.—*An Old Farmer in Rural New Yorker.*

THE best time to cut scions is any time during the winter, or in the month of March. They should be kept in good condition in meadow moss, or with the ends stuck into moist earth. We know of no way to keep them so well as in moist meadow moss.

OUR LOCAL ORGANIZATIONS.

Proceedings of the Lancaster County Agricultural and Horticultural Society.

The regular stated meeting of the Lancaster County Agricultural and Horticultural Society was held on Monday afternoon, January 6th, in their rooms in the City Hall. The President, Calvin Cooper, called the meeting to order.

The following members were present: Calvin Cooper, President, Bird-in-Hand; Joseph E. Witmer, Secretary, Paradise; Johnson Miller, Corresponding Secretary, Warwick; Levi W. Groff, Treasurer, West Earl; Henry M. Engle, Marietta; W. J. Kaffroth, West Earl; Dr. S. S. Rathvon, city; C. M. Hostetter, Eden; F. R. Diffenderffer, city; Levi S. Reist, Manheim; Peter S. Reist, Lititz; M. D. Kendig, Manor; Casper Hiller, Conestoga; Henry Kurtz, Mt. Joy; John C. Linville, Salisbury; Wm. McComsey, city; Daniel Smeych, city; C. L. Hunsecker, city; Israel L. Landis, Manheim.

On motion, the reading of the minutes of the previous meeting was dispensed with.

Phares B. Schwarr was admitted to membership.

Fertilizers.

Johnson Miller, chairman of the Committee on Fertilizers, reported that very little had been done, and requested that the committee be continued. He reported the season as having been very unfavorable to experiments.

Casper Hiller had done a little in the matter, but not enough to be worth a report.

M. Brosius, of the committee, made remarks of a like kind, and at his request the committee was continued.

Joseph F. Witmer, another member of the committee, briefly related several experiments he had made.

H. M. Engle suggested that Mr. Hiller read the report he had made of his experiments, which was agreed to and Mr. Hiller read the following:

Artificial Fertilizers.

Artificial fertilizers are often said to be more in the nature of stimulants than manure, and occasionally comes a warining against their use, as in a brief article a few weeks ago in the *New Era*, because they will, after a few years, fail to produce good crops, or in other words, that they will exhaust the soil. This bugbear that they exhaust the soil is at this age of experience too absurd to talk about. Twenty-five or more years ago the late Major Hoopes used guano on the old commons of Martic township, and raised twenty bushels of wheat per acre. The same prediction, that guano exhausts the soil, was then made. This land was so poor that not a head of wheat would have made its appearance without the use of the guano. Suppose it had been as poor after the crop as before; the fact was here that the wheat was worth more than the cost of guano and labor combined. But it was not as poor. Major Hoopes sowed clover among the wheat, and the result was a crop of hay and a sod for future improvement.

The late Mr. Boyd, of Martic township, who had no superior as an improver of soil, and, as a good farmer told me, that he could distinctly trace the effects of an artificial fertilizer ten years after the application. John I. Carter, of the Eastern Experimental Farm, has shown that a dressing of acidulated South Carolina rock had a decidedly better effect on the crops of a five years' rotation than stable manure.

Prof. Stockbridge, of Conn., says that chemicals are better than manure, because they may be more cheaply transported, handled and carried to distant parts of the farm and more thoroughly mixed with the soil. They are better than yard manure, because they not only enable us to grow as abundant crops with less labor, but their supply can equal any demand. They enable the farmer to crop his land, sell the crops, and yet maintain the fertility of his soil. In my experience I have seen nothing to cast and discredit on the professor's opinion. Good commercial fertilizers are composed of nitrogen, phosphoric acid and potash. These ingredients are all to be found in stable manure, and when they are all abstracted therefrom there is little of value left.

I believe that under certain circumstances, and in certain localities, it would be entirely feasible and profitable to sell all the hay, straw, fodder and corn, except what is wanted for the few horses needed and for feeding as many cows as would supply the family with milk and butter. The amount of labor saved by such a course would be very great.

These special fertilizers have sometimes been brought into disrepute by taking it for granted that because an extra crop of wheat has been raised by their use, the same can be done again and again by an annual dressing of the fertilizer. In many cases this has proven unsatisfactory. Suppose we had a field that had a proper supply of nitrogen and potash, and if on this we apply a fertilizer, rich in phosphoric acid, and from this we raise a first-class crop of grain, might it not reasonably follow, that in repeating the process for several years we would exhaust the nitrogen and potash, and the consequence would be poor crops?

Stable manure has a similar effect. I know of a case where stable manure was applied annually on wheat ground, with the following result: First year, forty-five bushels; second do., about twenty-five; third do., twelve; fourth do., almost a total failure. Would you say the manure exhausted the soil? Very little of our land is adapted to special crops. It wants rotation. Our main crops are clover, corn and wheat. Oats should be discarded altogether. They rarely pay cost of production, and are the most exhaustive of all cereals. Our artificial fertilizer rotation should begin with a clover sod. Apply a fertilizer rich in the elements that corn requires. In the fall sow the corn-stalk ground in rye, and the following summer, when in bloom, plow it down and let it lie fallow until time to sow wheat. Or, if you will raise tobacco, haul on this ground the manure made by your stock. When the time for seeding wheat comes, apply the proper artificial fertilizer for wheat. Follow with a one or two year's run of clover, and the land will be in better condition without a doubt than if it had received the usual dressing of stable manure. Better, because in the rotation, it received two dressings of fertilizers and had a green crop plowed down,

If we depend on stable manure for our fertilizer, we must see to it that our manure pile is not only of large dimensions, but it must be of good quality. I have known farmers who would not sell a load of straw for love or money and who hauled stuff on their fields which they called manure, while others called it straw. If we want a good manure pile we must put all the hay, straw, cornfodder, oats and corn that are raised on the farm into the pile, and if we can run several car loads of Western corn into it, it will be all the better. When all this is done there will still be a goodly corner of the farm crying for more. When we take into consideration the value of these raw materials, together with the vast amount of labor required we find it to be a very costly pile.

I do not say that it does not pay to do all this, for I do know many farmers who follow this plan that are eminently successful. But we cannot all be cattle feeders. The experience of the last ten years with artificial fertilizers has fully shown that it is not necessary that we should be.

William McComsey stated that he had also read the article in the *New Era*, and had cut it out. He requested the Secretary to read it, which was done.

H. M. Engle said that in this progressive age when fertilizers have been tested so thoroughly we cannot regret the beneficial effects known to arise from them. It is a mistake to regard fertilizers as mere stimulants. In some crops they may not be so good because they contain elements not required by the crop. But some other crop may take up the ingredients and in this way they are not wasted. The soil will hold them until needed. However, we cannot dispense with barnyard manure. What a fertilizer is worth cannot be told from a single crop, but a test of a number of years must decide the question. We should have fertilizers adapted to the crops intended to be grown, and for this reason they should all be labeled with the ingredients they contain, to show the farmer what he needs. He told of an experiment made with a fertilizer on corn and potatoes. The results in the first named crop were excellent, but very discouraging in the latter.

William McComsey advocated the use of barnyard manure. He hoped the committee will continue their experiments and determine how valuable artificial fertilizers are to our soils. He had tried them but the results hardly wrrranted their use largely. If they are all that is claimed for them, it is well that fact should be known.

Henry Kurtz had tried various kinds of artificial fertilizers and believes they are a stimulant. They may benefit one crop but fail in another. Clover plowed down is worth all the fertilizers. The price of fertilizers is too high; the manufacturers make all the money and the farmer can make nothing. Most of them are not worth the bags that hold them. One hundred bushels of lime are worth two tons of fertilizers.

H. M. Engle said that if the farmers of Pennsylvania have been humbuged it is their own fault and not the fault of the fertilizer. And it will be so until the Legislature enacts that every manufacturer mark on each bag exactly what it contains. An article sold in a State in which the law prevents adulteration of fertilizers may be very good, but when sold in this State it is not worth anything. We should have a law to protect fertilizers.

John H. Linville seriously questioned whether it paid to use fertilizers; to put $10 worth of fertilizer on an acre of ground and get $20 worth of wheat off of it.

Casper Hiller said it certainly would not pay to use $10 worth of fertilizer for wheat only, but it is well known that the fertilizer benefits all the crops in a five years' rotation. But we must learn what the ground needs, and apply it.

Progressive Agriculture.

On motion, the rules were suspended to allow Peter S. Reist to read an essay on "Progressive Agriculture." [See page 8.]

Election of Officers.

On motion, the society proceeded to elect officers for the ensuing year.

Calvin Cooper was nominated for re-election as President, but immediately arose to decline. He said that he had served the society faithfully for three years, sometimes under pecuniary loss, and thought they might relieve him for one year at least.

H. M. Engle objected to his declination. He believed in adopting any measure that conferred the greatest good on the greatest number, and moved that Mr. Cooper be re-elected. The members were unanimous for his election and Mr. Cooper gracefully submitted, declaring that he would do his best to advance the interests of the society, but that if business called when the society also claimed his attention he would obey the former call.

For Vice Presidents, W. H. Brosius, Jacob B. Garber, M. D. Kendig, H. M. Engle and Casper Hiller were nominated, and the nominations closed.

For Recording Secretary, Joseph F. Witmer was nominated; for Corresponding Secretary, Johnson Miller; for Treasurer, Levi W. Groff; for Librarian, Simon P. Eby; for Agricultural Chemist, Jacob Stauffer, and for Entomologist, Dr. S. S. Rathvon.

The nominations then closed, and C. L. Hunsecker was instructed to cast the vote of the society for the officers nominated.

Auditing the Treasurer's Accounts.

On motion, a committee of three, Casper Hiller, Johnson Miller and W. J. Kaffroth, were appointed to audit the Treasurer's accounts. They reported them correct, and a balance in the treasury of $86.23.

Fair or no Fair.

C. M. Hostetter proposed that the question of holding a fair be opened for discussion.

John C. Linville thought the hour was too late to begin such a question. It should be deferred until next meeting.

William McComsey thought the question should be settled to-day or some day in the near future. If the discussion is postponed until next month measures should be taken to have a full attendance on the day of meeting. It has been said that the State Agricultural Society meets at Harrisburg soon to select a place for holding its next fair. If the society has any inducements to offer to persuade them to hold the fair in this city, he thought a committee should be appointed to lay them before them.

Daniel Smeych moved that a committee be appointed to confer with other societies, and bring the matter in a business shape before the next meeting of the society.

His motion was carried and the following committee was appointed: D. Smeych, C. M. Hostetter, H. M. Engle, M. D. Kendig and John C. Linville.

Essays to the Farmer.

Dr. Rathvon, editor of THE LANCASTER FARMER, said it was proposed to issue THE FARMER as early in the month as possible, and therefore he requested all who were to read essays to send them to him not later than the 25th of the month. They can then be put in type, and the essayists can read them from printed slips.

Business for Next Meeting.

It was announced that John H. Landis will read an essay next month.

A question, "Will it pay to chop corn for hogs?" was referred to Joseph F. Witmer.

"With labor and land at present prices can we raise wheat at $1 per bushel?" Referred to Levi W. Groff.

Lecture in Prospect.

H. M. Engle said that he had written to Professor Calder, President of the State Agricultural College, asking him to deliver a lecture before the society. The professor had consented, and will probably lecture next month.

It was suggested that there would be too much business before the next meeting to be disposed of in the short time allotted.

On motion, it was resolved to hold the February meeting at one o'clock in the afternoon, thus gaining an hour.

On motion, it was also resolved to postpone the lecture until the March meeting.

Business Committee.

President Cooper appointed the following Business Committee: M. D. Kendig, I. L. Landis and John C. Linville.

Report of Fruit Committee.

The Fruit Committee reported the following varieties of apples as of most importance in such dry and hot seasons as the one just past. They hang well on the tree and are keepers: York Imperial, Roxbury Russet and English Russet. Adjourned.

THE LANCASTER COUNTY POULTRY ASSOCIATION.

The following named gentlemen interested in poultry breeding, met in one of the parlors of the Cooper House on Monday afternoon, December 16, and took steps to organize a permanent county association.

Tobias D. Martin, New Haven; Milton J. Kaffroth, West Earl; Frank B. Buch, Lititz; B. F. Evans, Lititz; Rev. D. C. Tobias, Lititz; Jacob A. Buch, Lititz; L. B. Martin, Spring Garden; G. A. Geyer, Spring Garden; Chas. E. Long, Lancaster; J. B. Lichty, Lancaster; H. G. Hirsh, Lancaster; J. H.

Minnich, Spring Grove; Colin Cameron, Brickerville; John F. Evans, Lititz; William Shoenberger, Lancaster; H. H. Tshudy, Lititz; Joshua H. Habbaker, Spring Garden; F. R. Diffenderffer, Lancaster; J. M. Johnston, Lancaster; John F. Reed, Lancaster, were present.

The meeting was organized by calling Rev. D. C. Tobias to act as chairman, and John F. Reed to act as secretary.

The chairman stated the object was to form a poultry society. An informal meeting was held at Lititz some time ago, which resulted in the determination to call a meeting in this city. About all that it is designed to do is to elect the proper officers and committees, and to draft a set of by-laws. He thought men should be selected who have heretofore shown an interest in the subject. Men sometimes are willing to accept such positions, but give little attention to the matter afterwards.

H. H. Tshudy approved the idea of having a committee on by-laws and a constitution, but he saw no use in the other committee. Men who have the organization at heart are the ones who should be chosen.

Colin Cameron said it was not a pleasant task to get up and say that man was not acceptable; if two sets of officers were proposed there would be a choice to select from.

H. H. Tshudy, of Lititz, remarked this was a preliminary meeting towards effecting a permanent organization. Perhaps we ought not to elect officers to-day. It might be left to a committee. He asked for an expression of opinion.

Chas. E. Long agreed with Mr. Tshudy. He favored a committee of five to select and propose permanent officers for the government of the society.

Colin Cameron thought several committees should be appointed; one to name officers.

Chas. E. Long thought that the two committees would give us more suitable officers. The two committees could not fail to propose acceptable men.

Colin Cameron proposed that two committees of three persons each be appointed to propose the names of permanent officers, and one of three to propose by-laws. Carried.

W. J. Kaffroth suggested the committee meets to-day a week to attend to the duties assigned to them.

Chas. E. Long concurred in the last suggestion.

The chairman thought the time should be extended to a later period on account of the holidays.

Mr. Tshudy favored the views of the chairman. The present is a very busy time for almost every one.

Colin Cameron suggested a permanent meeting day be fixed, and the first Monday in every month be the time.

Charles E. Long moved the second Monday in January be appointed as the regular meeting day.

Colin Cameron offered an amendment to Mr. Long's motion, that the society meets on the first Monday of each month at 10:30 a. m. Carried.

The chairman appointed the following committees: On organization and by-laws, Charles E. Long, Frank R. Diffenderffer and J. B. Lichty; first committee on selection of officers, H. H. Tshudy, Colin Cameron, Jacob A. Buch; second committee on selection of officers, William Schoenberger, J. M. Johnston and John F. Reed.

It was moved the next meeting be held at the Cooper House, Lancaster.

A motion to adjourn was made and carried.

January Meeting.

The adjourned meeting of the proposed Poultry Association of Lancaster County was held on Monday morning, January 6th, at the Cooper House, Rev. D. C. Tobias in the chair. The role was called and the following members were present:

Tobias D. Martin, New Haven; Frank B. Buch, Litiz; Rev. D. C. Tobias, Litiz; J. N. Buch, Litiz; G. A. Geper, Spring Garden; Charles E. Long, Lancaster; Colin Cameron, Brickerville; Wm. Schoenberger, city; H. H. Tshudy, Litiz; F. R. Diffenderffer, city; J. F. Reed, city; Clair Carpenter, city; J. B. Lichty, city; W. J. Kafroth, West Earl; M. D. Kendig, Manor; Jos. F. Witmer, Paradise.

The minutes were then read and adopted. The following new names were then proposed for membership; John C. Barnes, city; Charles Lippold, city; O. F. Heubener, Litiz; Frank Howell, city; M. K. Brubaker, Landisville; David Brosey, Manheim; R. T. Robinson, city; Amos Ringwalt, city; A. H. Shreiner, Manheim; Milton Ruth, city; Martin L. Grider, Mount Joy; J. H. Miller, Spring Garden; Samuel E. Stauffer, Adamstown; J. A. Stober, Schœneck; John E. Schum, city.

Chas. E. Long, Chairman of the Committee to prepare a Constitution and By-Laws, then read the rules drawn up by the committee, and recommended them to the society for their adoption.

On motion of H. H. Tshudy, the report was received.

On motion, the constitution and by-laws were then read separately, by sections, for adoption by the society. These are of the usual character that govern similar societies, and are therefore not reproduced here.

The two committees on nominations of officers reported two sets of names for officers of the society, after which the following compromise ticket was offered:

For President, Rev. D. C. Tobias, Litiz; First Vice President, G. A. Geyer, Spring Garden; Second Vice President, W. J. Kafroth, West Earl; Recording Secretary, J. B. Lichty, city; Corresponding Sec'y, Colin Cameron, Brickerville; Treasurer, T. Frank Evans, Litiz; Executive Committee, H. H. Tshudy, Litiz; Chas. E. Long, Lancaster; T. D. Martin, New Haven; Jacob Miller, Spring Garden; and A. H. Shriner, Manheim, who were then elected by acclamation as the officers of the society for the present year.

On motion the members then came forward and paid their initiation fee of $1 each.

On motion of Chas. E. Long, the recording secretary was authorized and instructed to have postal cards printed and distributed, requesting parties to join the society. Agreed to.

On motion, the society then visited the rooms of the Agricultural Society, and after inspecting them accepted the terms offered by the latter organization for holding the regular monthly meetings there, at a cost of seventy-five cents per month.

There being no further business the society then adjourned.

LINNÆAN SOCIETY.

The society met on Saturday afternoon, December 28th. The donations to the museum were quite extensive and interesting. They consisted, 1st, of a fine well-mounted setter dog, of large size, from Mr. George Flick, taxidermist, of this city; 2d, a female specimen of the opossum (*Didelphis Virginiana*), captured near Quarryville and donated by Mr. R. C. Edwards, also well mounted by Mr. Flick for the society; 3rd, a beautiful specimen of the goldfinch, or as the Germans calls it, "Thistle Finch," *Fringilla carduella*, presented by Mr. Charles Lippold, bird fancier, of this city; 4th, two specimens of the golden carp, (*Cyprinus Auratus*,) that had died for want of oxygen in too small an aquarium, per Mrs. Rathvon; several species of Salamanders, *Plethodon* (salamandra) *erythronota*, and *Plethodon glutinosus*, from Rapho township, on the farm of Mr. Washington L. Hershey, found under stones, &c., per Dr. Rathvon; a bottle containing four snakes and a species of "Salamanders," (genus, *Amblstoma*,) per Mr. S. Landis, received by him about ten years ago, said to have been captured in South America. The chairman on Herpetology and Ichthyology, Mr. J. Stauffer, reports that one differs but little from our native species, the ring-necked snake, (*Diadophis punctata*); another agrees with our well-known species, *Storeria Dkaii*, a small reddish-brown snake, having several series of small round dorsal spots; the other two snakes in the bottle are of the same species, and are not found in Pennsylvania, and may prove to be true *Lamprosoma Occipitale* of Dr. Hallowell, and the species figured and so named in the United States and Mexico railroad report should be called *Lamprosoma Annulatum*. Mr. S. has written to Professor Baird, of the Smithsonian Institution, for correction or confirmation of his views, giving a drawing of the reptile and form, &c., of the cephaletic plates, scales, &c. A large circular leaf, fully twenty-two inches in diameter, of the *Nelumbium* (the Ceylonese name is *Nelumbo*). The *N. luteum*, or "water chinquepin," is related to "Lotus, or Sacred Bean of India," very closely. This leaf was donated by S. T. Davis, M.D., of this city, who received it among roots, seed-pods, &c., sent to him from the West to associate with his water lilies growing so finely in a pond in his yard on Prince street. The leaf was pasted on stiff paper by Mr. Stauffer, it being rather dry to handle and too large for the herbarium. A bunch of "scouring rush"—*Equisetum hyemale*—per S. S. Rathvon.

Mr. W. P. Bolton had a plant of the composite family, desiring to have its name. It is the *Cacalia Articulata*, also called "Candle Cactus," from the Cape of Good Hope, in 1775; considered a greenhouse evergreen.

Mr. F. W. Beates, of Londonderry twp., Dauphin co., donated forty arrow-heads and spear-heads found on his farm during the last year, turned up by the plow. This affords food for reflection upon the past. Mr. Henry Bechtold, of this city, donated a fine large specimen of dark-brown *umber*, from Mifflin county, Pa.; on trial it proved to be equal to the best in the market. Mr. Washington L. Hershey donated three specimens of that peculiar "algea florescent" markings, known as the *Dendritic limestone*, from a quarry on his farm.

Historical Relics.

Mr. David M. Stauffer donated eleven specimens, mostly historical or war relics: No. 1, an old-fashioned cartridge box, full of fragments of missles, collected on the battle field of Antietam, 1863, and four others from Harper's Ferry; No. 2, portion of brass rack from the rebel iron-clad Tennessee, Mobile, 1865; No. 3, shell fragments, with those of No. 1; No. 4, a portion of a thick cotton rope from the rebel ram Manassas, destroyed in the attack on New Orleans; No. 6, a portion of a chandelier from the burnt State house, Baton Rouge, La., 1863; No. 7, an old fashioned bayonet scabbard, from Antietam battle field; No. 8, a sugar planter's knife, used as a cutlass on the Rebel ram "Missouri," Red river, 1864; No. 9, the veritable Whitworth steel missle, fired into the United States iron-clad "Essex," Bayou Sera, Louisiana, 1864; No. 10, a United States Navy shaving box. No. 5, a cutlass holder, made out of very thick cotton drilling, used by the rebel seaman. No. 6 marks an old city lard-lamp for two wicks among the deposit.

Additions to the Library.

Part II. April and September, 1878, of the Proceedings of the Academy of Natural Science, Philadelphia; copy of The Lancaster Farmer for December, 1878; quite a number of catalogues of scientific and miscellaneous books and papers published. On motion of Mrs. Zell, Miss M. Gill, of this city, was elected a correspondent.

Papers Read.

Dr. S. S. Rathvon read a descriptive memorandum (No. 506) of many of the things deposited, and also notes on his visit to Mr. W. L. Hershey, who occupies the farm on which the doctor spent seven months, fifty years ago, in his boyhood, of course. He notes the changes, as also some portions highly interesting to the botanist, having been invited to make a birthday visit December 15, 1878, to Mr. Hershey. It was there the doctor collected the scouring rush, and he enumerates the ferns, &c., found on a hillside at this late season—many things new to him in the botanical line; the paper in reading vividly brought to recollection the finding of rare plants, new to the writer, (then twenty years or more ago,) in that same locality, while resident of Mt. Joy, and never since met with in other localities.

J. Stauffer read an illustrated paper (No. 507) on the bottle af Reptilia, deposited and donated by Mr. George S. Landis. The Curators' Report for 1878 was then read (No. 508) by Dr. Rathvon. The donations to the museum during the year may be briefly stated thus: Three mammals, seven birds, two bird's nests and five eggs, seventeen fishes, ten reptiles, six crustaceans, twenty shells, nineteen fossils, and of various kinds of insects, 500 specimens; 250 minerals, fifteen coins, eighteen historical relics, ten old documents, thirty-two old maps, 420 historical clippings, fifteen volumes of books, thirty-eight pamphlets, besides a large number of catalogues, circulars and papers; seventeen original papers read. Few as the active members are in number, they work under all the drawbacks and feel thankful for the many things sent to them. Mr. J. Stauffer read a letter in reply to one of inquiry respecting the fish donated by Mr. Sheetz, of Safe Harbor, and which Mr. S. reported as the *Amia Calva* at a former meeting. Tarlton H. Bean, M. D., now associated with Prof. S. F. Baird, of the Smithsonian Institution, Washington, D. C., says in the letter referred to: "From the drawing sent there is no doubt about the identification of the species, inasmuch as Linnæus name of *Calva* carries in its train twelve synonyms," (these are enumerated,) and he concludes, "that no satisfactory account of its coast range further north on the Atlantic was known than the rivers in the Carolinas." This establishes its northern extent to the Susquehanna river, and is therefore of interest. This shows how men who are not scientific can place into the hands of those who are much valuable information appreciated by the lovers of science and research, and is desirable that they be encouraged in so doing.

Report on Stock Subscriptions.

The report of the Treasurer was read, and although the dues paid in amounted only to $24.14, with the old balance of $10.64, the current expenses were all paid, leaving a balance of $9.44. But the heavy extra expense of $233.65 was incurred, and stock sold to the amount of $206, leaving the association in debt $18.21. Considering the amount of additional cases added to those removed from the Athenæum, the society has no cause of complaint, and looks hopefully forward to an increase of members and means.

Election of Officers.

This being the day of election, and no ambitious aspirants laying claim to rotation in office, a motion was made and seconded that the old board be re-elected. The only change made was that of Assistant Recording Secretary. The ballot being cast, resulted in the election of Rev. J. Stahr, President; Rev. J. H. Dubbs and Prof. J. R. Baker, Vice Presidents; J. Stauffer, Recording Secretary; W. P. Bolton, Assistant Recording Secretary; Rev. D. Geissinger, Corresponding Secretary; Dr. S. S. Rathvon, Treasurer; Mrs. L. A. Zell, Librarian; Messrs. C. A. Heinitsh, S. S. Rathvon and W. P. Bolton, Curators. After some scientific miscellany and propositions discussed, the society adjourned, well pleased with the session held in the well-warmed second floor of the Library rooms of the Y. M. C. A.

Felling Trees.—Mr. Gladstone, the distinguished statesman, as our own Horace Greely was, is fond of the axe. He has been giving a correspondent some leaves from his note-book. He considers Yew the most difficult tree to fell; next come Beech and Ash; Oak, though very hard, fells well; but the easiest of all is Spanish Chestnut.—*Gardeners' Monthly.*

AGRICULTURAL.

Couch-Grass as a Hay Plant.

No one who has been for many years conducting an agricultural journal but picks up at times an "eye-opener" of a considerable size; but we do not know when we have been more astonished than when recently we read in an Eastern agricultural journal a recommendation to cultivate the couch or twitch grass as a hay plant. Our eulogist finds it thrive wonderfully well on dry, poor soil, and as such demands attention to its merits.

All this is very well. It recalls the story of the Western farmer, who, familiar with the fact that the black snake ate rats and mice, introduced the "critter" to his barns and stables. The vermin soon disappeared under his snakeship's rule, but so did eggs, chickens, ducks, etc., until in this instance our farmer friend thought the great serpent was quite as black as he is painted, and he was banished, if no worse fate befell him.

This couch-grass is worse than a black snake. True it does bear tolerably heavy in very hard places. We remember once seeing a small patch which had taken possession of an old stone quarry, which made a thick dense mass of herbage from two and a half to three feet high. It would cut probably a ton and a half to the acre—pretty good for a dry, barren, worthless piece of ground. But no one would want to have a crop of hay forever in the same ground; and when the time for change comes how is this grass to be disposed of its hold upon the soil. The snake might be discharged, couch-grass never.

For our part we should taboo couch-grass at once and forever, no matter how great its good qualities might be; and we cannot regard, as a friend to agriculture, any one who would seriously recommend its culture. With as much reason might one recommend the culture of the Canada thistle. It is an excellent food for jackasses, and moreover we have heard New Yorkers, when they failed to eradicate it from their premises, praise it as making excellent "cow-hay." But, somehow, whether couch-grass or thistles, we prefer to let them alone.—*Telegraph.*

Planting Corn in Old Times.

We suppose thirty to forty years ago means "old times." In preparing corn ground at that time a different process was followed than the present, but not as we see it stated, by merely throwing two rough furrows of unplowed ground together, and, after running cross furrows, to simply plant the corn on the top of the ridge. We do not pretend to say that this miserable way was not pursued by some lazy or ignorant farmers, but it was not the comman way by any means; indeed we never saw it followed, though accustomed to notice farming for nearly sixty years.

This, however, was the way mostly followed: Manure and plow the land, harrow thoroughly, then run two opposite furrows and also run like cross furrows. Planting on top of the little ridge by this means made the rows uniform both ways, and admitted freely of plowing both ways if necessary. This plan was more laborious than the present one and was more "scientific." The crops produced by it on good farms were as abundant as now. For many years after the present method was introduced this was continued as the best, and that looked upon as lacking in skill and good sense. But as a rule far more attention is paid to the crop now than forty or fifty years ago.

It was always customary to either manure in the hill or apply "plaster" after the plant had grown two or three inches. And we repeat that we have witnessed as fine crops of corn by the old method as we have by the new. This much we feel enjoined to say in behalf of the way our fathers and grandfathers cultivated the corn crop.

Length of Roots.

The nature of the soil has much to do with the length and number of the roots. In light, poor soil I find roots of June grass four feet below the surface. People are apt to underestimate the length, amount and importance of the roots of the finer grasses, wheat, oats, etc. A young wheat plant when pulled up only shows a small part of its roots. They often go down four or six feet or more. The roots of a two-year old peach tree in light soil were found seven feet four inches long. In dry, light soil, this season we pulled up one parsnip three feet and a half long. Of course, smaller roots went down still further. The noted buffalo grass on the dry, Western prairies is described in the agricultural reports at Washington as having very short roots; but Mr. Felker, one of our college graduates, found, where a well was being dug, that the roots went down seven. The roots grow best where the best food is to be found. They grow in greater or less quantity in every direction. If a root meets with good food it flourishes and sends out numerous branches. Roots do not "search" for food as vegetable physiologists now understand it. Many of the smaller roots of trees die every autumn when the leaves die, and others grow in spring.

Near a cherry tree in my yard was a rustic basket without bottom filled with rich soil. On removing the basket and earth, which had been there several years, cherry roots were found in large numbers in this rich soil. Roots in such soil will grow up as well as down.

The Wheat Crop.

The October returns of the Department of Agriculture did not materially change the aspects of the wheat crop as foreshadowed by the monthly reports of condition. The December returns, including estimates of yield per acre, confirm and somewhat enlarge previous estimates. A computation from all the returns show an aggregate crop of about 425,000,000 bushels. But, on account of the strongly expressed public anxiety for reliable figures, a portion of the inquiries have been referred to the statistical correspondents for revision. It is now believed that the result will be materially different. The increase in the final out turn of the crop is due to the large increase of acreage which was at least one-sixth greater than of the previous year.

Many of the larger wheat-producing States very greatly reduced their average yield per acre. Virginia fell from 10.4 bushels to 7.2; Tennessee from 8 to 5; Kentucky from 12.5 to 9.3; Illinois from 16.5 to 13.6; Wisconsin from 15 to 12; Minnesota from 18 to 12; Iowa from 14.5 to 9.4; Missouri from 14 to 11. On the other hand other States show a marked increase. New York rose from 18 to 19; Pennsylvania from 13 to 15; Ohio from 15 to 18; Michigan from 17.5 to 18.5; Indiana from 14.5 to 15.8; Kansas from 13.5 to 16.3; California from 9.5 to 18.4. The Territories show an immense expansion of wheat cultivation, with the high average yield characteristic of virgin soils. The yield of some of the Territories was considerably more than double that of the previous crop.

Water for Farmers.

The past very dry summer and autumn in Pennsylvania, at least, put many farmers to great inconvenience in supplying stock with suitable water, some having to drive their cattle twice a day from one to two miles to streams, and even some of them were nearly dry. Now, we have often referred to this subject and suggested how farmers could supply themselves with water at all times at a moderate expense. The roofs of buildings which shelter the stock of a farm would furnish a supply at all times, if cisterns of sufficient capacity were dug to hold the water. Where the water does not lie too deep, *wide* wells should be dug and wind power applied, and they would seldom if ever fail. The roofs of the houses, however moderate the rain-fall may be, will furnish water, if run into a cistern, that would supply all the water needed for washiog, bathing, etc. We cannot imagine in what way a small expenditure of money could be expended to more profit than in supplying a premises with an abundance of water. It is of the first importance to every household and farm. Indeed, being liable in droughts to suffer a scarcity is something to look forward to with dread; but when it is shown that at a moderate cost this scarcity can be averted, it seems to us, and must to all thoughtful people, surprising that provision is not made on every farm, where needed, for a good supply of fresh water at all times.—*Germantown Telegraph.*

Surface Manuring.

It was not known until discovered by Way, and confirmed by Liebig and others, that a few inches in depth of surface soil has the power to fix or retain all, or nearly all, the food of plants which our manure contains, such as potash, phosphate of lime and ammonia, thus preventing its passage into the poor subsoil, and it is not even yet known that nearly all the feeding roots of plants are within a few inches of the surface where the nutritious elements are. We now and then find roots many feet below the surface, and because they are so found people have theorized that manure should be planted deep, and that there was a nutritious principle deep down in subsoil culture. Deep soil holds moisture, and so far deep soil is of value. A few roots have to do duty as drawers of water for the community; but such roots are few, and these are the roots the deep explorer finds. But where one little root can be found running down like this, hundreds will be found spreading away beneath the surface, and these are the ones that are collecting the solid food. For these reasons manure should never be buried deep, but be always kept as near the surface as possible.

Save the Liquid Manure.

How strangely we overlook the value of the liquid excrement of our animals! A cow under ordinary feeding furnishes in a year two thousand pounds of liquid. The comparative money value of the two is but slightly in favor of the solid. The urine of herbivorous animals holds nearly all the secretions of the body which are capable of producing the rich nitrogenous compounds so essential as forcing or leaf-forming agents in the growth of plants. The solid holds the phosphoric acid, the lime and magnesia, which holds the seed principally; but the liquid holding nitrogen, potash and soda is forming the stalks and leaves. The two forms of plant nutriment should never be separated or allowed to be wasted by neglect.—*Montreal Gazette.*

HORTICULTURAL.

Dwarf Pears.

We have had our hands full for the past dozen years or more in defending the cultivation of pears grafted on quince stock. Some people, who seem to be ignorant of cultivating any fruit requiring a little nice attention, and fail in all, of course utterly fail in attempting to raise dwarf pears. A writer for an agricultural paper will go upon somebody's premises and notice a number of thrifty growing trees, and not far from them some small scrubby-looking trees, and finds that the latter are grafted upon quince, hence their appearance. He therefore says: "Our conclusions is to advise our readers to plant no more pear trees grafted on quince stocks; they may bear a year or two earlier, but they will not make a lasting tree; they will die in a few years and result in disappointment after a few crops."

And this is what is claimed as information about raising dwarf pears. The fact is that most of these writers are totally ignorant of what they are writing about, and their readers who depend upon them will soon find themselves behind the facts and the times.

All persons may not regard raising pears on quince stock as a profitable business, though we know of a number who have made money by it and have followed it for a number of years.

As to the dwarf trees not making a "lasting tree, and that they will die in a few years," all intelligent growers of these trees know this to be untrue. Within the last five years we have lost more standard than dwarf pear trees by blight, &c. We have now a number of thrifty trees, thirty years old, abundant bearers and which promise to live as long as the usual time allotted to standards.

Dwarf pears require more attention than the standard. They should stand in cultivated ground, and be manured about the same as the rest of the garden crops. But they stand eight feet apart, and vegetables may be grown among them. None should be planted except those with sound roots and the quince stocks clear of worms. Then set full three inches below the union of the pear and quince stock and there will be no fear of worms. Sometimes they take root from the pear stock and make very beautiful pyramidal trees, and are annually abundant bearers. The dwarf pears on our premises fully bear us out in what we say.—*Germantown Telegraph.*

Look to the Fruit Trees.

We consider early winter to be the best time for scraping and washing the trunks of trees, though the present time will do very well when it has not been previously attended to. It is well-known to all observing fruit-growers that the loose bark of trees is the winter quarters of myriads of insects, where they securely remain until the ensuing spring, when the warm, genial weather invites them to quit their cosy homes and begin their destructive operations for the season. We have found a narrow saw, rather fine-toothed, to be an excellent tool in rasping off the superfluous bark. It accomplishes it more uniformly than a hoe, trowel or other scraper; a trowel or a short-handled hoe, however, is very good, when the other may not be possessed. After the bark is removed, the trunks should be washed thoroughly with a preparation of whale-oil soap and water, say in proportion of a pound of the soap to four or five gallons of water. It can be applied to large trees, with a hickory broom or a stiff whitewash brush, and to small trees, especially dwarfs, with the hand scrub-brush. Sickly trees, which can at this season be easily detected by being covered with a species of fungi, or, perhaps more properly, a peculiar insectivorous deposit—should be scrubbed so as to completely remove this. The mixture will of itself benefit the tree, while the removal from the stem of all extraneous and injurious substances will give to it new health and vigor the ensuing season—in some instances to a surprising extent. When whale-oil soap is not obtainable, lye may be used, but it should not be *very* strong, or it might be injurious to the roots of the tree if applied plentifully and the tree small, otherwise it will do no harm.—*Germantown Telegraph.*

The Scarcity of Quinces.

Within a few years past the quince trees have been attacked by a worm, just under the surface of the ground, somewhat similar in appearance and in its effects to the peach worm, and not being properly attended to and the worms removed, the trees have generally died, and the fruit accordingly disappeared from all our markets. The quince can be just as successfully grown as the peach, if a little care is taken to head off its principal enemy, the worm at the root, which requires but little time and trouble each spring and fall in removing the earth from around the stem of the tree, probe for the grub in his hole in the bark with a stiff wire, and filling up around the tree with wood ashes or slacked lime. The cheap gas-lime, from the gas-works, is a very effectual remedy for worms in peach trees, and it would no doubt answer the same purpose around the quince.

FLORICULTURE.

Parlor Flowers.

Who does not love flowers? It is one of the most delightful characteristics of flowers that they are attractive at all seasons of the year, and never more so than when made the objects of household attention throughout the winter months. The presence of flowers in a parlor, or small conservatory, is a never-ending source of gratification. The rarest and most elaborately-carved furniture, pictures and statuary, in which wealth indulges, cannot vie with a few tastefully-arranged flowers in imparting to a room that natural look of elegance which springs from the presence of some vivifying principle, however simple it may be.

There are two things which give to an apartment in winter a charm which nothing else can. These are: a stand of flowers in bloom, and a clear burning fire in an open fire-place. Take away the flowers and leave the fire-place blank; heat the room with a furnace, and however handsomely the room may be furnished the sense of something wanting will immediately make itself felt.

In Paris it is a common thing to cultivate a few simple flowers in an oblong box for the pleasure their few buds and blossoms afford; while in Germany it is usual to grow ivy in pots and train it in festoons over the windows.

The difficulty in attempting to grow flowers in the warm, dry air of an apartment has arisen from a want of knowledge as to the best manner of treating them. The greatest obstacle to success is the dryness of the air, and the following manner is proposed to obviate it: Let a table be constructed the length of the window and two or three inches wide, with boards fitted close, tongue and grooved, and around the edge nail a strip three inches wide. Cover the space thus enclosed with two inches of white sand. Upon this sand place the plants in pots. With a table of this kind the plants can be syringed or sprinkled with water, which is absolutely essential to preserve them in health. The drippings and surplus water are caught and absorbed by the sand, which should be kept wet and even watered for the purpose of tempering the dry air surrounding the plants, the evaporation of the moist sand thereby promoting their growth by the production of artificial atmosphere. If the table is fitted with rollers it will faciliate the operation of watering, and moving back from the windows during very cold nights.

As to the selection of plants, it is better to begin with a few kinds that are easily grown, as experience and skill are required. A few pots of alyssum, mignonette, lobelia, geranium, primula, azalea, calla, cacti, coronilla, heliotrope, spiræa, orange, lemon, petunia, and some bulbs, will render satisfaction.

A common method, practiced about Paris and London, of having a box, generally about ten inches wide on the top and nine inches deep, filled with good soil, and mignonette, sweet alyssum, lobelias, heliotropes and geraniums planted in it according to their size and growth, will flower and make a fine display when placed in a window with a southern exposure. While others have these boxes filled with plants in pots, and removed as they get out of bloom by others to keep up a display the whole season.—*John H. King, Washington, D. C., in Germantown Telegraph.*

Window Boxes.

Procure a box about fourteen inches wide, six inches deep, and of a length to fit your window; if possible have another box two inches smaller every way, and place inside the larger one, filling the space between them with sand or tan or straw; have holes bored in the bottom of both boxes, and place pieces of broken charcoal to insure drainage; fill with the best earth procurable, remembering that good, rich soil will insure you the finest flowers; place in the end of your boxes German ivy, morning glories, madeira vine, and any other climbers that you like, and along the sides maurandia, thunbergia, othonna, nasturtion and kenilworth ivy, and just inside of these oxalis of different colors and varieties; in the centre you must place your tallest plants and the lower growing ones around it; have some cowslips, Chinese primroses, sweet alysium, mignonette and vinca myra; a mountain of snow geranium gives variety to the appearance, as will also the canary bird flower, which will give masses of yellow flowers if it has the sun, and the blue of the lobelia will also heighten the effect.

Lemon Verbena.

It is stated that the well-known, fragrant plant, the lemon verbena, is used by the Spaniards for other purposes than to delight the olfactories. It is regarded by them as a fine stomachic and cordial. They use it either in the form of a cold decoction, sweetened, or as a flavor to tea, the hot tea being poured over five or six leaves in a teacup. The tea thus prepared is said to be simply delicious; and it is added, as a further and very pratical inducement to the use of it, that one who does so will "never suffer from flatulence, never be made nervous or old-maidish, never have cholera, diarrhœa, or loss of appetite."

DOMESTIC ECONOMY.

Bedrooms—How They Should be Ventilated.

The London *Lancet* has some comments on this topic which may be read with as much profit in this country as in London. It says: "If a man were deliberately to shut himself for some six or eight hours daily in a stuffy room, with closed doors and windows (the doors not being opened even to change the air during the period of incarceration,) and were then to complain of headache and debility, he would be justly told that his own want of intelligent foresight was the cause of his suffering. Nevertheless, this is what the great mass of people do every night of their lives without no thought of their imprudence. There are few bedrooms in which it is perfectly safe to pass the night without something more than ordinary precautions to secure an inflow of fresh air. Every sleeping apartment should, of course, have a fire-place with an open chimney, and in cold weather it is well if the grate contains a small fire, at least enough to create an upcast current and carry off the vitiated air of the room. In all such cases, however, when a fire is used, it is necessary to see that the air drawn into the room comes from the outside of the house. By an easy mistake it is possible to place the occupant of a bedroom with a fire in a closed house in a direct current of foul air drawn from all parts of the establishment. Summer and winter, with or without the use of fires, it is well to have a free ingress for pure air. This should be the ventilator's first concern. Foul air will find an exit if pure air is admitted in sufficient quanty, but it is not certain pure air will be drawn away. So far as sleeping-rooms are concerned it is wise to let in air from without. The aim must be to accomplish the object without causing a great fall of temperature or a draught. The windows may be drawn down an inch or two at the top with advantage, and a fold of muslin will form a "ventilator" to take off the feeling of draught. This, with an open fire-place, will generally suffice, and produce no unpleasant consequences even when the weather is cold. It is, however, essential that the air outside should be pure. Little is likely to be gained by letting in a fog or even a town mist.

Butter Making.

Some years ago, when it was first proposed to introduce cheese manufacturing establishments into the eastern counties of this State, our readers will remember that we stated our objections to them, as well as arguments in favor of the making of butter—good butter—for the Philadelphia market, where there was always a ready demand at remunerating prices. While the State of New York and others in the Northwest and West might succeed in building up and maintaining profitable cheese making factories, the eastern part of this State at least was far better adapted to butter making and held out far greater gains. Where the advice was not heeded failure and loss was the consequence. But who has ever heard of the butter making business, where conducted with the least degree of care and industry, coming short of yielding a remunerating profit? We now hear of one or two of these establishments being started, and we have no manner of doubt but that they will be successful.

We know of an establishment in this city, to which sufficient cream is supplied, that yields nearly two thosand pounds per day, the churning of which is done by machinery.—*Germantown Telegraph.*

Burning Green Wood Greatly Wasteful.

Water in passing into vapor absorbs and hides nearly 1,000 degrees of heat. A cord of green wood produces just as much heat as a cord of the same wood dry. In burning the dry wood we get nearly all the heat, but in burning the same wood green, from one-half to three-fourths of the heat produced goes off latent and useless in the evaporating sap or water. Chemistry shows this, and why, very plainly. Therefore get the winter's wood for fuel or kindlings, and let it be seasoning as soon as possible, and put it under cover in time to be dry when used. It will, of course, season or dry much faster when split fine. A solid foot of *green* elm wood weighs 60 to 65 lbs., of which 30 to 35 lbs. is sap or water. As ordinarily piled up, if we allow half of a cord to be lost in the spaces between the sticks, we still have a weight of about two tons to the cord, of which nearly one ton is water or sap. Such wood affords very little useful heat; it goes off in the ton of sap. The great saving of hauling it home dry is evident—as we get the same amount of real fuel for half the team work. Beech wood loses one-eighth to one-fifth its weight in drying; oak, one-quarter to two-fifths.

Accepting Invitations.

In accepting an invitation to fete or party, the note of response should be simply courteous—nothing more. A too familiar and over-cordial note of response is almost as offensive as one which expresses no interest at all in the parties who extend the invitation. There is a happy medium in the formalities of even kindly wishes. It is not unnatural to suspect an acquaintance of insincerity when excesses of language are used in society matters.

Household Receipts.

To Remove Marks of Rain from a Mantle.—Take a damp cloth and damp the place marked with the rain; then take a hot iron and iron the mantle all over, and the marks will be removed.

A Gargle for Sore Throat.—Half a pint of rose-leaf tea, a wineglassful of good vinegar, honey enough to sweeten it, and a very little Cayenne pepper, all well mixed together, and simmered in a close vessel; gargle the throat with a little of it at bedtime, or oftener, if the throat is very sore.

French Mustard.—One ounce of mustard and two pinches of salt are mixed in a large wineglassful of boiling water, and allowed to stand twenty-four hours. Then pound in a mortar one clove of garlic, a small handful of tarragon, another of garden cress, and add to the mustard, putting vinegar according to taste.

Cough Syrup.—Put five cent's worth of pine pitch into a pint of water. Let it simmer until the water is well impregnated with the flavor. Dip out the gum which remains undissolved and add honey enough to sweeten, and make a thick syrup. Strain this and bottle. Dose, a teaspoonful four or five times a day according to the severity of the cough. It will afford speedy relief.

To Dye Black Woolen Cloth Dark Green.—Clean your goods well with beef gall and water, and rinse in warm water; then make a copper boiler full of soft water boiling hot, and take from one pound to a pound and a half of fustic, put it in and boil twenty minutes; to which add a lump of alum as big as a walnut; when this is dissolved in your copper boiler, put in your goods, and boil it twenty minutes; then take it out and add a small wineglass three parts full of chemical blue, and boil again from half an hour to an hour, and the cloth will be a beautiful dark green; then wash out and dry.

Mrs. Reed's Plumb Pudding.—One pound beef suet, three-fourths pound loaf sugar, one pound flour, six eggs, pint of milk, one pound of raisins, one pound of currants, three-fourths pound of citron, two nutmegs, mace, cloves; add at pleasure two glasses brandy. Chop the suet fine, rub it to a cream, add sugar and flour, each time rubbing it well; add the spices fruit and brandy. Beat the egg, add them, then the milk; tie it moderately tight; boil it eight hours. This quantity makes one very large pudding—two if boiled in quart bowls; three if in pint bowls; when cold cover up tight with paper, and put them away until wanted. When one is wanted boil an hour.—*Germantown Telegraph.*

The Hunterdon *Monitor* says: "We feel it our duty to give a recipe for the cure of diptheria, which we know from personal knowledge has cured several severe cases. It is simply to put some pure tar on a plate and apply hot coals to it, not hot enough, however, to create a blaze. Then place a funnel upside down over the tar and let the patient inhale the fumes arising from the burning tar through the spout of the funnel. It will give instant relief, and may be repeated as often as may be necessary. Tar spread on a piece of cloth and applied to the throat in connection with the inhailing process is also good, much better than old flitch or liniments. It should not be removed until the throat is relieved of all soreness."

Salt with Nuts.—One time, while enjoying a visit from an Englishman, hickory nuts were served in the evening, when my English friend called for salt, stating that he knew of a case of a woman eating heartily of nuts in the evening, who was taken violently ill. The celebrated Dr. Abernethy was sent for, but it was after he had become too fond of his cups, and he was not in a condition to go. He muttered, "Salt! salt!" of which no notice was taken. Next morning he went to the place and she was a corpse. He said that had they given her salt it would have relieved her; and if they would allow him to make an examination he would convince them. On opening the stomach the nuts were found in a mass. He sprinkled salt on this and it immediately dissolved. I have known of a sudden death myself, which appears to have been the effect of the same cause. I generally eat salt with nuts and consider it improves them.—*Germantown Telegraph.*

How to Make "Whipped Cream."—A correspondent desires to know the best process for making "whipped cream, such as is used in the Vienna coffee." The following is the process given by "Aunt Addie" in the New York *Times*, but whether it is the same used by the Vienna coffee people we are not prepared to say:

Beat the yolks of five fresh eggs and half a pound of powdered sugar until very light and white; put one pint of milk and one ounce of isinglass in a saucepan and boil 10 minutes, stirring continually; flavor with vanilla and lemon mixed, or any other flavoring; pour the milk on the eggs and sugar; put on the fire, stir well together, but do not let boil; pass through a fine hair sieve into a round dish; when cold set on ice, add two liquor-glasses of Maraschino; keep stirring rapidly all the time; when it begins to thicken stir into it a pint of cream, whipped to a froth; put into a mold on the ice until you wish to use it.

LIVE STOCK.

Saving by Handsful.

One handful of hay is not much, nor, for the matter of that, are twenty handsful; the saving or wasting of so much would neither make nor break a man. But with twenty head of cattle to feed, twice or thrice a day, the saving of a handful apiece every time would amount to something before our pastures are green again upon our frost-bitten hills. Do you ever think of it? We are not hinting at stinting the cattle. But how many of us allow animals to waste a handful each at every feed for want of a little attention to feeding arrangements? How many head of stock on our Northern farms require a handful more of hay at every feed to keep up the animal heat than they would require if their stables had all the cracks stopped that let in the cold winds of winter?

A handful of manure is but a trifle, yet the addition of a single handful in a hill of corn may make the difference between long, full ears and stinted nubbins when the harvest comes. How many handsful of manure are going to waste every day about our yards and buildings? Could you not save half a bushel a day by being careful? And the liquid manure—is there not enough lost every day to make a good many long ears where we shall probably find only nubbins next fall?

Handsful of hay; handsful of manure!—these are small matters say you? Yet upon just such small matters depends many a man's success or failure in life. Here is one man that attends to them carefully, and at the end of twenty or thirty years he has a competency for old age; another neglects them as beneath his notice and is always behindhand; he lives and dies short in pocket and short in comfort. We do not preach niggardliness; it is by saving when we may that we prepare ourselves to be liberal when we will. Save the handsful.—*Rural New York.*

History of Horned Cattle.

The original native home of horned cattle is lost, but up to about four hundred years ago, there were many herds of wild cattle in England. Some of these were captured and have been preserved in some of large parks of the English aristocracy, of one of these the *Zoologist*, a London magazine, says: Herds of this breed are recorded to have existed in a semi-wild state in various portions of England. Those at Burton Constable were all destroyed by a distemper. When Bewick published his *History of Quadrupeds*, at the close of the last century, he was enabled to show that only five herds then existed. Since that date the herds at Wallaton and Gisburne have died out, and the breed having been introduced (subsequently, it is presumed to Bewick's notice) or re-introduced at Cadzow (Hamilton), in Lanarkshire, the ancient seat of the Dukes of Hamilton, there now survive at the present four herds only, of which the following account is given from recent inspection by Mr. A. H. Cocks. Of these the Chillingham breed, belonging to the Earl of Tankerville, are said to be the purest. They are characterized especially by the form of their horns, which may be described as curving, first backward and upward, and then sweeping forward and downward, while the points turn upward. In the skull the forehead is flat or slightly concave, and the occipital ridge between the horns is straight and level. In form these cattle are beautifully shaped, with small heads, straight backs and short legs. Their color is white, except the ears and muzzle which are either red or black, according to the breed. The horns are white, with black tips.

Corn and Cob Meal.

Corn and cob meal, which was formerly largely fed by many farmers, has of late been so severely condemned in the agricultural journals as to deter thousands from continuing its use. Some years ago, however, Professor Mott, of Columbia, Ohio, wrote a prize essay on the subject, in which he takes ground in favor of its use, saying, "Advantages and economy are attained by fattening and feeding stock with corncob and meal together, and also by grinding all kinds of grain."

As we shall want the ensuing winter everything that can be converted into food for our animals, it is to be hoped that the question will be satisfactorily disposed of before the cobs are used for fuel or thrown in the hog-pen to rot, or rather to waste. We have read some strong arguments against the use of the cob at all; and some equally strong, indeed, in our judgment, stronger in favor of grinding the corn and cob together, as food for horses, cattle and swine.

We are ready to open our columns for information on the subject, and trust that our farmers will give us their experience and opinions.—*Germantown Tel.*

How to Choose a Good Cow.—A crumple horn is a good indication, a full eye another. Her head should be small and short. Avoid a Roman nose, which indicates thin milk and little of it. See that she is dished in the face—sunk between the eyes. Notice that she is what stock men call a handler—skin soft and loose, like the skin of a dog, deep from loin to the udder and a very slim tail. A cow with these marks never fails to be a good milker.

POULTRY.

Profit Combined with Amusement.

In a poultry establishment the ornamental can be adopted with the useful, and profit can accompany the pleasure and recreation of attending to fowls; but silly people imagine, because some gentle-people have fine poultry houses with compartments for various kinds all under one roof, and have yards attached to prevent the fowls roaming in their ill-fenced gardens or in their exposed pleasure grounds, &c., that they can shut up fowls and continue to keep them in confinement, so as to make them pay for feeding and attendance. By having unlimited range, fowls can easily be made profitable; for they will pick up at least half a living, and they do not then require one-tenth as much attention as those kept in a yard, which always has a bad odor, however often it is cleaned.

It is extraordinary to find there are men so weak as to attempt to keep great numbers of fowls together with limited range, when, time after time, the folly of all attempts of the kind has been demonstrated. But although no sensible business man will again confine hundreds of fowls in any inadequate space, yet great numbers can be kept on one farm and profit combined with amusement by making tasty ornamental little roosts, and placing them at such distances apart as to prevent any intermixing. These roosts might be made and painted so as to have the appearance of miniature cottages, and so placed about an estate as to be exceedingly picturesque.

I have in my mind at the present moment an island, the property of one proprietor, whose residence stands on an elevated position commanding a view of the whole, with the exception of portions hidden by trees. What a very pretty effect some of these poultry houses would have if interspersed among laborers, cottages and other buildings used as shelter for farm stock, and these also could be made to have such an appearance as would be in unison with the erections all over the island. Imagine a farm neither round nor square but tolerably compact, with a hundred or more roosts, sheds for cattle and for sheep to resort to in stormy weather, and here and there intermingled with these, a cottage prettily adorned with vines, and a handsomely laid-out garden. Then suppose the whole painted alike and, as near as usefulness combined with the ornamental and uniformity will permit, all showing doors and windows and all having ivy or vines of some kind running about or trained around them, so as to give the best effect. If an island, all the outside poultry houses might be for water-fowls, and sweeping down from the mansion might be a well kept, beautiful carriage road which could take a circuit of the farm, so arranged that it would be a delightful pleasure drive, and at the same time it could be used to go around to the different buildings, which would be on the right and left all the way along.

Profit could be all the while combined with the ornamental and the useful, and good, fine square fields could be arranged so that they would not interfere with the buildings or any of those structures or impede cultivation. If wealthy people, when they retire from cities to the country, would first of all lay out their farms so as to have them one beautiful scene of variety with perfect utility, how ornamental would not the arrangement be to the country!

Vermin on Poultry.

A correspondent of the *Southern Poultry Journal* says:

"Many fanciers use the carbolic (or carbolated) powder in order to rid their fowls of lice and mites. It is considered the very best of remedies. My plan is one which, I think, is used by no other breeder; has never failed me in completely ridding my fowls of every insect, and has demonstrated to me its infallibility. It is simply to use the oil of sassafras mixed with sweet oil. To one ounce of oil of sassafras put five or six of sweet oil, and apply a small quantity to different parts of the body of the fowls, selecting those points where the vermin would be most apt to hide.

"In applying the preparation I fill with it a small oil can, so that I can force out as much or little of the oil as I wish. A very small bit can be made to go a great ways, for one drop can be rubbed over two or three inches of space, and is no more trouble to apply than the various insect powders. I use sweet oil, because of its curative powers, but any kind of greese, no matter what, will do to mix with the oil of sassafras. The oil of sassafras is the eradicator, the oil merely the vehicle. I believe common sassafras tea would be wonderfully efficacious.

"Make in a large pot, then, after allowing it to cool, dip the fowl in bodily. In one second the lice will be dead, and in ten seconds the fowl will be perfectly dry, if placed in the sunshine. It is hard to form an idea of the magical effect produced by the oil of sassafras. I have tried the remedy in greater attenuation than that mentioned (one part to five or six), but believe that it would be equally good if composed of one ounce of oil of sassafras to ten or twelve of any other oil or greese."

Muscovy Ducks.

The breeds of ducks recognized in the *Standard*, under the above name, is also known as the Musk duck. This latter, and perhaps more proper name, is derived from the odor of musk prevading the skin, which seems to be particularly strong about the head. This scent is not in the least perceptible, however, when the bird is properly cooked.

The flesh of this bird is very palatable, if eaten when young, but after it gets beyond its youth it is not so highly esteemed. Musk ducks are odd looking birds—generally black and white, not evenly marked, but spotted irregularly, here and there with a patch of black. The drake has a large head and bare cheeks of a scarlet color, the base of the bill being carunculated with the same bright scarlet. With these distinct peculiarities and the fact that the feathers on the back of the head are ruffled and appear to be growing the wrong way, the musk drake is very curious, and certainly is the least comely water fowl it has been our lot to behold, while he is as ugly as he looks in most cases.

Muscovy ducks are capable of sustaining themselves for a quite a time, on their long and powerful wings, and are fond of taking flights about the neighborhood, but in most cases they return punctually to their home, after the manner of pigeons. As they lay fewer eggs than most other ducks, this fact, with the detestable disposition of the drakes, make them an undesirable breed to keep.

The drakes are continually fighting, or "raising a row," in some instances catching an unfortunate duck of another species by the neck and holding its head under the water until drowned.

The Musk duck is domesticated to a considerable extent in this country and Europe, but not nearly so large as in some parts of South America, where they are also plentiful in their natural wild state.

How to Tell That Eggs are Eggs.

A good egg will sink in water.

A boiled egg which is done will dry quickly on the shell when taken from the kettle.

The boiled eggs which adhere to the shell are fresh laid.

After an egg has laid a day or more the shell comes off easily when boiled.

A fresh egg has a lime-like surface to its shell.

Stale eggs are glassy and smooth of shell.

Eggs which have been packed in lime look stained and show the action of the lime on the surface.

Eggs packed in bran for a long time smell and taste musty.

With the aid of the hands or a piece of paper rolled in funnel shape and held toward the light, the human eye can look through an egg, shell and all.

If the egg is clear and golden in appearance when held to the light, it is good; if dark or spotted, it is bad.

The badness of an egg can sometimes be told by shaking it near the holder's ear, but the test is a dangerous one.

Thin shells are caused by a lack of gravel, etc., among the hens laying the eggs.

Many devices have been tested to keep eggs fresh, but the less time an egg is kept the better for the egg and the one who eats it.

Witer Treatment of Poultry.

A correspondent, in addressing us on this subject, says in brief, that each fowl ought to produce 100 eggs a year; that in winter warmth is indispensable; that the fowls must have some of the food they find at other seasons when at large; they must have plenty of room in their house, and it and the laying boxes kept clean; that they must be fed with corn, barley, oats; have a box of sand, oyster or clam shells pounded up, or old mortar; or bones dried and pounded fine; that mashed boiled potatoes and cornmeal are excellent; that fatty matter of any kind, fresh beef, or pork scraps, &c., must form a portion of their diet; that hens are fond of vegetable matter during winter and will eat cabbage, &c.; and they must be kept free from vermin, which nearly always follows entire cleanliness. In case, however, vermin should still make their appearance there is nothing so effective in removing them as rubbing the top of the head, under the wings and upon the back with lard. These suggestions we have made time and again; and have only to add now, that all who desire complete success, and, of course, satisfactory profit from poultry raising must adopt them.—*Germantown Telegraph.*

The production of eggs during the winter season, says the *Live Stock Journal*, is largely under the control of the owner of fowls. If hens have warm, comfortable quarters, and an abundance of suitable food, the owner will be rewarded by a supply of eggs all through the cold weather. But it is essential that they should be provided with a well ventilated house wherein they will not suffer from cold. The food should not consist wholly of grain; all the bits of vegetables from the kitchen table and the scraps of meat should be saved, chopped up fine and given to the hens.

APIARY.

Taming Stubborn Bees.

Every beekeeper has had colonies and queens that would not be controlled by ordinary means. Such will be the interested in following account, contributed to the *American Bee Journal*, by W. E. McBride, of Illinois.

On October 1st I straightened up the combs in one of my bee hives, preparatory to Italianizing the colony. Over half of the bees left for parts unknown, but the queen remaind. October 5th I united the bees that remained with another colony. Caught and eaged both queens, and afterwards killed them. On the evening of October 10th I hung a cage containing an Italian queen in the hive. On the morning of the 12th I opened the hive to release her Italian majesty. No queen cells had been built after I killed the two black queens; but I found freshly laid eggs —also larvæ—so I searched for another queen and I found her and soon had her beheaded. I then removed the cork from one end of the cage and tied a piece of paper over one end,supposing it would work all right. I closed the hive and did not examine it again for some days. When I did I found everything just as I had left it. She had not got liberated, but the bees had started a number of queen cells. I tore them and daubed the queen cage with them, then opened the cage, without removing it from the hive, thinking she would walk out. Some of the bees went in and seemed not to molest her, so I left them to themselves for an hour or so. When I went back I was not at all surprised to find the queen still in her cage. I tried to smoke her out gently, but when she did come she came in a hurry and ran rapidly down the combs, out of the hive, and tried to fly; but I was too quick for her; I caught her, clipped her wing, and ran her in at the bottom of the hive; she remained about a quarter of a minute, and then came out again. I caught her and put her in the top of the hive and administered smoke. Next morning I found her on the bottom board. I gave them smoke to my entire satisfaction, and the queen is now all right, laying nicely.

Protection of Bees Against Wasps.

A British bee-keeper says he has witnessed the destruction, in two weeks' time, of a thriving apiary of five stocks, solely by wasps—which being in a starving condition, and as much for warmth and protection as for food, forced an entrance into the hives. The best defense he has found, both against wasps and robber-bees from stronger colonies, is, first, to keep the stocks uniformly strong, and second, to close the entrance holes to the attacked hives so that only two bees can pass or repass at the same time, thus giving one means of defense which they will not be slow to take advantage of.

Industry of Bees.

A. S. Wilson presents the following facts to show the marvelous industry of bees. Approximately 100 heads of clover yield 0.8 gram of sugar, or 125 heads give 1 gram of sugar, and, therefore, 125,000 heads 1 kilogramme of sugar. As each head contains 60 florets (125,000x60) not less than 7,500,000 flower tubes must be emptied of their honey to obtain 1 kilogramme of sugar. The honey may, roughly, be estimated to contain 75 per cent. of sugar, and hence we have 1 kilogramme equal to 5,600,000 flowers in round numbers, or 2,500,000 visits for one pound of honey.

No FARMER need expect to be successful with bees unless he is willing to give time to them. They will suffer from neglect quite as much as growing, ripening crops. He cannot reasonably expect honey unless there are flowers in the vicinity from which it can be collected. If there are no flowering trees and plants growing naturally, they must be cultivated.

ENTOMOLOGICAL.

The Hessian Fly.

This destructive insect made its appearance in the wheat-fields last fall to a considerable extent and did much damage; but one fact connected with its appearance, or rather reappearance, should be carefully borne in mind—that it is only the early sown wheat that is attacked, and this mostly when early sowing is followed by a long spell of mild weather, like that of last autumn, during which the grain becomes quite rampant. Wheat sown the last of September or the beginning of October—which is early enough in most years—is seldom if ever attacked by the fly. There is a statement now before us of a farmer in Western New York, who says that while he sowed his wheat as late as the 18th and 20th of September, his neighbors sowed in the latter end of August, and that while his crop was wholly free from the fly, and yielded over twenty-nine bushels to the acre, the crops of his neighbors were nearly destroyed. He further says that a barrel of salt to the acre will destroy the midge and cause the grain to ripen from three to six days earlier. We think there is wisdom in his statement.

The Apple Tree Borer.

I have an orchard of two acres, planted eight and twelve years ago. About five years ago I found the borers at work in all the trees, more or less. The bark would turn black and peel off, and then would appear decayed in spots the size of my hand and larger. I commenced to scrape with my knife, and found a white grub working between the bark and tree. In some trees I found as many as ten worms in one tree. They killed two of my largest trees, and injured five others so that they died. I first tried soft soap suds; it seemed to kill them by drowning. I afterward took strong lye, that would float an egg; this killed all that it touched. I dug out several worms after using the lye, and every one was dead. I have washed my trees in May and September ever since, and have not lost a tree.

LITERARY AND PEROSNAL.

IMPOVED WILLOUGHBY GRAIN DRILL, manufactured by J. B. Crowell & Co., Greencastle, Franklin county, Pa. 12 pp., 8 vo.

A. C. YATES' FASHION REPORTER, for fall and winter of 1878, is also a remarkably well executed quarto of 8 pages, devoted to fashion and clothing literature.

L. B. CASE'S BOTANICAL INDEX.—An illustrated quarterly botanical magazine, Richmond, Indiana. 16 pp. octavo, excellently gotten up, and this January number, 1879, is full of valuable matter on the subjects of Roots, Fruits and Flowers.

PREMIUM LIST AND REGULATIONS of the first annual exhibition of the "Germantown Poultry and Pet Stock Association." Parker's Hall, Main and Price streets, Germantown, December 24th, 25th and 26th, 1878. 16 pp., 8 vo.

ADDRESS of Francis D. Moulton, before "First International Dairy Fair," American Institute, New York, Saturday evening, December 7th, 1878. We are under obligations to Mr. J. H. Reall for a copy of this excellent address, an interesting extract from which will be found in this number of THE FARMER, under the caption of "Population and Producton."

THE POULTRY MONTHLY, Albany, N. Y. The January number of this royal 4to of 18 pages and 10 pages of advertisements is before us. Excellent material, beautifully illustrated and printed. No. 1, Vol. 1, is before us. This is a new enterprise, and if it don't succeed the reproach must be on the people and not on the printers and publishers. $1.00 a year.

THE SUGAR INDUSTRY OF THE UNITED STATES AND THE TARIFF.—A report of the assessment and collection of duties of imported sugars; on the results of an economical and financial inquiry into the relation of the sugar industry of the United States in its several departments of production, importation, refining and distribution of product, to the existing federal tariff. By David A. Wells, New York, 1878.

HARD TIMES AND THE WAY OUT.—A speech delivered by Robert G. Ingersoll, at Music Hall, Boston, October 20th, 1878. An 8 vo. pamphlet of 24 pages, published by Gibson Brothers, Washington, D. C. Mr. Ingersoll talks a good deal of "sense and nonsense" in his course through the world; but this pamphlet, although not free from error, contains much that belongs to the category of "sense."

THE FARM.—A journal for the farm, garden and household. Published by Thomas McKenzie & Sons, Dublin, Ireland. A quarto of 16 pages. Two shillings a year in advance. Address of editors, 34 Dawson street. This is a remarkably well gotten up journal, both in its typographical execution and its literary contents. In size, style and general appearance it is not much unlike THE LANCASTER FARMER. We heartily welcome it to our exchange list as a worthy representative of the agricultural and domestic interests of the "Green Isle of Erin."

BABYLAND.—The January number of this juvenile magazine for 1879 is a most excellent specimen of the graphical and typographical arts adapted to babyculture. We have not had a baby born to us for twenty-five years, and we almost regret that we have not a baby, or are not a baby ourself. The illustrations are so pretty, so pure and so characteristic of child life that we feel quite sure *Babyland* will "flow with milk and honey" to all the appreciation of the juvenile world. 50 cents a year. D. Lothrop & Co., 22 Franklin street, Boston, Mass.

THE AMERICAN FARMER.—The December number of this most excellent journal has been received, (somehow for nearly a year we have not seen a copy) freighted as usual with valuable lore to the farming world. We do not recognize an agricultural magazine in the country that is more worthy of the patronage of the farming public, and yet every "once in a while" it becomes evident that that fact needs a clearer apprehension and a more liberal realization at home. 34 pp. royal 8vo. at $1.50 a year in advance. A club of five for $1 each. Samuel Sands & Son, 128 West Baltimore street, Baltimore, Md.

SCIENTIFIC MEN AND THE PRESS ON THE SUGAR QUESTION.—The great Cuban effort to transfer the American refining business to Cuba by a change of the sugar tariff fully detected at last. These are two octavo pamphlets, the former 119 pp., and the latter 20 pp. It is needless to say these pamphlets discuss the sugar question with ability on the negative side—that is, the side opposed to the 2½ cents specific duties on all grades of sugars whatever. The sympathies of the people, the sugar dealers, and the men of science, including the *press*, seem to be with the American refiners; but it would be difficult to say what Congress might do or might not do if the measure is "backed" by such a large sum of money as has been reported at various times.

REPORT of the twenty-seventh annual session of the Teachers' Institute of Lancaster county, Pa., held at the Court House, November 11th to 15th, 1878. This is *number eleven* of the annual reports of the Institute; and, although the preceding ones have been able and interesting, this last and best is in advance of them all, and is, no doubt, a true reflex of the progress which has been made in our system of public instruction. Of course every teacher, in Lancaster county at least, has a copy of this excellent report, and it ought to be in the hands of every teacher in the State. There is no other sixty page royal octavo that can be of more interest to the progressive teachers anywhere than the perusal of what was done by their co-laborers elsewhere, and how and by whom it was done. The faithful teacher in the most remote and secluded corner of the Commonwealth, even though he or she may never have had the privilege of attending the meetings of an institute, may sit down and read these proceedings with almost the same intelligent satisfaction as those that were really present. There are recorded, too, all the names of the teachers in Lancaster county who were in attendance, with their local residences; besides all the essays, lectures, discussions and exercises which then and there took place and were participated in.

THE PHRENOLOGICAL JOURNAL for January begins the sixty-eighth volume of this well-known popular and sterling magazine. There are few, if any, periodicals which have done more to direct man's attention to himself and to such means as will better his condition physically and mentally. The present number opens with an excellent portrait and phrenological and biographical sketch of L. N. Fowler, one of the founders of this *Journal*, and of the old firm of Fowler & Wells. Following this is a most interesting chapter on "Brain and Mind," with several illustrations, and including special directions to be followed in examining heads. An instructive and lively paper is The Study of Entomology, with illustrations. There are also a portrait and sketch of Lord Dufferin, besides very readable sketches on: A Good Figure; One of the Seven Ages; and "Color Blindness;" this last throwing much light on the subject. A rather critical article touches on Butter, and the Use of It. Others discuss The Feet, and the Dressing of them; Hot Springs of Arkansas; Poison Ivy, and Ivy that is not Poison; Self-Knowledge a Social Need; while one finds a good many useful facts in the Scientific Notes, Answers to Questions, etc. The above tends to show the scope and value of this excellent magazine, which has been reduced from $3.00 to $2.00 a year, or 20 cents a number, and offers a Phrenological Bust premium to each subscriber. No one can do better than to send 20 cents in postage-stamps for the January number, and full particulars as to premiums, etc., to S. R. Wells & Co., 737 Broadway, N. Y.

SCIENTIFIC AMERICAN SUPPLEMENT.—We need hardly say anything in reference to the *Scientific American*, for that distinguished journal has deservedly earned a world-wide reputation in its special sphere. The *supplement*, however, which is also published weekly, and is uniform in size with the *Scientific American*, may not be so well known to our readers. We have received a quarto catalogue of the valuable papers contained in the supplement. These papers include a very large number of scientific, mechanical and domestic subjects, mainly relating to chemistry, metallurgy, mechanics, engineering, electricity, light, heat, sound, technology, agriculture, horticulture, botany, rural and household economy, materia medica, therapeutics, hygiene, natural history, biology, meteorology, terrestrial physics, geography, geology, mineralogy, astronomy, &c. This catalogue contains the titles and synoptic contents of about 550 separate papers published in the supplement with references to the particular numbers in which the different papers may be found. Each number of the supplement contains 16 quarto pages profusely illustrated, and is published at $5 per annum, and may be had of MUNN & Co., publishers, 37 Park Row, New York, or at the office of almost any news dealer in the country. We also acknowledge the receipt of a copy of that beautiful little annual *vade mecum* of the patentist, *The Scientific American Hand-Book* for 1879. No one ought attempt to "dabble" in the patent right business without a copy of this little book in his pocket, and its contents in his head; 48 pp. 16mo., beautifully printed, illustrated and indexed, published as above.

D. M. FERRY & Co., the well-known and popular seedsmen of Detroit, Mich., are again before our readers with their annual announcement. Their catalogue, which is mailed free, is offered to all of our readers. We would advise them to avail themselves of this offer.

TO MAKE HENS LAY.—Feed young pullets with boiled potatoes, mashed in the water they have been cooked in, and mixed while hot with cornmeal and cracked wheat. Feed this warm, and every week give some of Bowker & Co.'s Animal Meal along with the food. This will give eggs all through the winter.—*American Agriculturist.*

VICK'S FLORAL GUIDE.—A beautiful work of 100 pages, one colored flower plate, and 300 illustrations, with descriptions of the best Flowers and Vegetables, and how to grow them. All for a five cent stamp. In English or German.

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A HOME ORGAN FOR FARMERS!

THE LANCASTER FARMER,

A MONTHLY JOURNAL,

Devoted to Agriculture, Horticulture, Domestic Economy and Miscellany.

FOUNDED UNDER THE AUSPICES OF THE LANCASTER COUNTY AGRICULTURAL AND HORTICULTURAL SOCIETY.

EDITED BY DR. S. S. RATHVON.

TERMS OF SUBSCRIPTION:

ONE DOLLAR PER ANNUM,

POSTAGE PREPAID BY THE PROPRIETOR.

All subscriptions will commence with the January number, unless otherwise ordered.

This number of "The Lancaster Farmer," issued in January, 1879, is the first number of Volume XI. The publication of the "Farmer" has been transferred by Mr. L. Rathvon to the undersigned, who will continue it in the same form as it has been published in the past, trying at all times to spare neither money or labor to make it a first-class Journal for the Farm, Garden and House. It will always contain the same amount of reading matter, as the advertisements will never be allowed to encroach on that department. We have in view several slight changes that will make it more desirable to the readers, and improve the appearance of it, but these changes they will notice as they are made, and we refrain from saying more about them.

Dr. S. S. Rathvon, who has so ably managed the editorial department in the past, will continue in the position of editor. His contributions on subjects connected with the science of farming, and particularly that specialty of which he is so thoroughly a master—entomological science—some knowledge of which has become a necessity to the successful farmer, are alone worth much more than the price of this publication. He is determined to make "The Farmer" a necessity to all households.

A county that has so wide a reputation as Lancaster county for its agricultural products should certainly be able to support an agricultural paper of its own, for the exchange of the opinions of farmers interested in this matter. We ask the co-operation of all farmers interested in this matter. Work among your friends. The "Farmer" is only one dollar per year. Show them your copy. Try and induce them to subscribe. It is not much for each subscriber to do but it will greatly assist us.

All communications in regard to the editorial management should be addressed to Dr. S. S. Rathvon, Lancaster, Pa., and all business letters in regard to subscriptions and advertising should be addressed to the publisher. Rates of advertising can be had on application at the office.

JOHN A. HIESTAND,

No. 9 North Queen Street, Lancaster, Pa.

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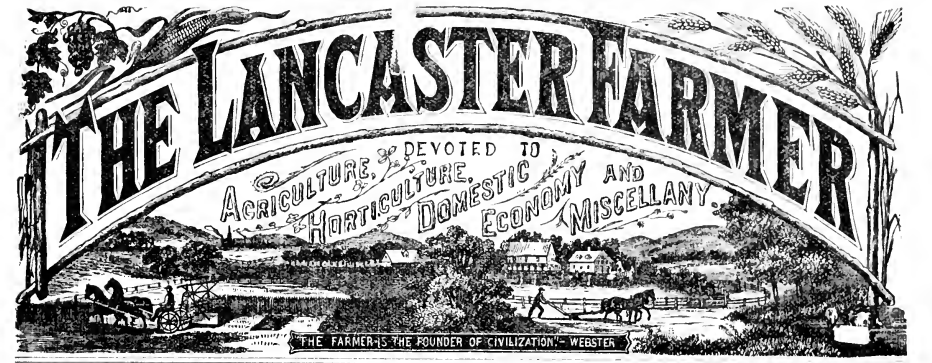

Dr. S. S. RATHVON, Editor. LANCASTER, PA., FEBRUARY, 1879. JOHN A. HIESTAND, Publisher.

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The Lancaster Farmer.

Dr. S. S. RATHVON, Editor. LANCASTER, PA., FEBRUARY, 1879. Vol. XI. No. 2.

EDITORIAL.

NEW SUBSCRIBERS.

We are pleased to be able to state that during the month of January about fifty-eight new subscribers were added to our list. A few friends of THE FARMER who are interested in its success are working to increase the list in their neighborhood all they can. For their efforts they have our sincere thanks, and we trust that their work in this matter will be the means of inducing others to do the same. We would like to see THE FARMER on a good footing, so that it will maintain itself, and that we will not lose money in endeavoring to give the people of Lancaster county a good home journal. It should receive a liberal support from our farmers and those interested in the various topics of which it treats, and we trust that all of the subscribers who receive this number will try and send us two or three new subscribers at least. Some could, no doubt, do more. It would seem like a very little work for each one to do, but if two new names were received from each old subscriber it would increase the list to three times what it is now, and place the paper on a good, sound basis, where it should have been years ago. As we said in the January number, we shall do all we can to make it better each month, and trust our subscribers will appreciate our efforts and lend us such assistance as is in their power. The subscription price is only one dollar a year. We make the following as an inducement to our friends to work for us: To any one who will send us five new subscribers, accompanied by five dollars, we will send THE FARMER free for one year. See if we cannot have a still better report for our next number.

AS OTHERS SEE US.

The first number of THE LANCASTER FARMER, under the proprietorship of John A. Hiestand, Esq., publisher of the Lancaster *Examiner and Express*, conducted by Dr. S. S. Rathvon, shows a general excellence that might be imitated with profit by other periodicals making agriculture their leading feature. It is well printed, carefully arranged, and conducted with great ability. The subscription is only one dollar a year.—*Germantown Telegraph.*

There is no man on the editorial staff whose good opinion we more highly esteem than that of the veteran editor of the *Telegraph*. We do not desire to be pharisaical in our claims to distinction, but we may be permitted to say that the Major knows as well the quality of our journal as we do that he publishes the best family paper—either for "king or cotter"—that is issued in Pennsylvania.

THE LANCASTER FARMER for January enters upon its eleventh volume, hopeful that it may be more generally sustained by the community in which it is published and for whose interest it labors. We have neglected heretofore to state that there has been a change in its publishers. Mr. Linnæus Rathvon having sold out to Mr. John A. Hiestand, proprietor of the *Examiner and Express*. Dr. S. S. Rathvon still retains the position of editor, and will continue to labor with all diligence for the success of the journal, which should find a place in every farmer's home, not only in our own great county, but throughout this and adjacent States. Let our farmers risk a dollar in this home journal of agriculture, and they will be convinced that they have made a good investment. Address John A. Hiestand, Lancaster, Pa.—*New Holland Clarion.*

We have marked with local pride the evidences of progress made by the rural press of Lancaster county; and none with more interest than that of the *Clarion*, whose own excellence affords an unwarped medium, through which it is able to recognize what is praiseworthy in others.

Many similar notices, from far and near, come under our observation, but our space is too limited to admit them all. We cannot, however, on this occasion, refrain from adding the analytic notice of AGRICOLA, in a recent number of the *Daily Examiner and Express*, as one that is more than ordinarily appropriate:

What a thrill the very name is calculated to send through the breasts of the cultivators of the soil, dotted over the various States and Territories of the Union. There is a charm in that name that would welcome the bearer of it to any domicile in the East, the West, the North or the South, owned by any former farmers of Lancaster county, or their posterity. This may be germane to the subject, but it is not exactly the subject itself to which the above caption refers.

I have just received the January, 1879, number of our local agricultural journal, that bears that name; a journal which, in my humble opinion, ought to be in the house of every progressive farmer in the county of Lancaster, if not in the entire State of Pennsylvania. I have received and welcomed it as a cherished household companion, and I have also analyzed its contents. I find that it contains seventy-five separate articles, and forty five subdivisions of some of these articles, as well as an index of the contents of this number. Twenty-eight of these articles (exclusive of the proceedings of societies,) are original; all, except two, having been written by local contributors, who include some of the most practical farmers and fruitgrowers.

The material, the typographical execution, and the general make-up of the journal will compare favorably with the best in the country. Quarto in form, and furnished at one dollar a year in advance, postage paid.

The farmers of Lancaster county should, by all means, give their preference to their own local journal—work for it—write for it—and be in harmonious sympathy with it. No man who entirely ignores his friends, his family or his kin, will find as much sympathy from strangers in the hour of adversity as he will from the home circle; therefore, home and the things of home should be sustained. This does not mean that he should be selfishly locked up against foreign things, when he desires, or it is his interests to go beyond; but he should still hold to the home anchor.—*Agricola, Lancaster, Jan.* 15, 1879.

MORE ABOUT EELS.

MILLWAY, January 18th, 1879.

MR. S. S. RATHVON—*Dear Sir:* Allow me to offer a few remarks on the subject of eels. I saw in THE LANCASTER FARMER for January, 1879, that you desire to have the experiences of local observers in regard to the migrations, &c., of these peculiar animals. The migrations of eels I have never witnessed, but I am able to say something about their ages, or spawn. I have a fish-pond, about one and a half miles north of Litiz, on my father's farm. Last summer—I cannot now tell the exact date—one of the laboring men of the farm was fishing, with a hook and line, in the pond aforesaid. Among other fishes he drew out a large female eel, weighing about three pounds. When this eel was opened she was found to be full of eggs, about the size of shad eggs. The oldest of our fishermen say that it is very seldom that eels are caught with eggs in them. My son Franklin now occupies my farm. I have retired and now reside at Millway station, C. R. R.—*Yours truly, Levi B. Brubaker.*

Mr. E. K. Hershey, of Cresswell, in this county, made a verbal response to the question in our January number, about the migration of eels. Mr. H., together with his father and other members of the family, saw young eels migrating up the Susquehanna, near the Lancaster shore, about the year 1849 or 1850, in the month of May, as near as he is able to recall the period; and to continue their migrations upward during a whole day and until after nightfall, but cannot tell how long they continued running, as not one was observed the next morning thereafter. The locality where they made this observation was about one mile below the borough of Washington. On this occasion they scooped up dozens of them with a common cullender. It is commonly supposed among fishermen that these migrations continue about three days, and furthermore, they favor the idea that many young eels now pass up through the canals instead of the river, but for various reasons this seems improbable, even if it were possible. The observations of these two men seem to be in harmony with what we stated in our May number of THE FARMER, page 66. It is very strange that so few have observed this eel migration, and yet more strange, that still fewer have made records of the phenomenon. Catching eels in the month of May with eggs in them. Unless there are different species of eels, creek species, pond species and river species, that differ or have changed in their habits, it is difficult to reconcile their migrations in the month of May, and the existence of eggs in them in the same month. But the facts are on record, and we have the objects in our possession, and therefore we are compelled to conclude that there are local or pond species, and migrating or river species. So far as we understand Prof. Packard's late discovery, he does not seem to have had such a distinct demonstration of eggs as we have recorded in the foregoing, and after all he may only have seen spermatazoids.

The following on the same subject we have received from an intelligent correspondent from Conestoga township:

About the year 1855 I once had the satisfaction of seeing young eels going up the Susquehanna. They followed close along the shore in a continual stream; I suppose I might say millions of them, little fellows, from 3 to 6 inches long. Have not been much about the river since, and had almost forgotten the circumstance, until I saw your queries about them.—*C. H.*

FLOWERS.

"Loveliest of God's creations
Are the flowers that gem the earth,
In life's various relations
Mid its scenes of woe and mirth,
They are ever to us valued,
E'en as things of priceless worth."

"From the cradle to the grave, through all the vicissitudes of life, flowers are entwined with and form pleasant links in the chain of our existence. When the sky of the future seems clear, and no breakers appear ahead, we look upon them with the most tender devotion as contributing to our happiness. In the dark and trying hours of misfortune, when affliction and disappointment combine to make our hearts heavy, involuntarily we turn to these our pets, and recognize in them an instrument in the hands of Providence, of love, of beauty, teaching us submission to his will, and to look for brighter, happier hours."—*J. A. W. in F. and F. Magazine.*

On a perhaps lower and more practical plane, flowers fill a social and domestic *vacuum* that relieves us from that *ennui* which is sometimes so inseparably from isolation and loneliness. They speak to us in a language that we soon learn to interpret, and recall many pleasant memories of by-gone days; ever suggesting something that ought to be done in order to perpetuate the sympathy existing between us and them. Yea, more; they are the silent and gentle teachers of a refinement that is imparted by the *curriculum* of no other school. We admire the gaudy for their high-toned coloration and their dashing beauty, but our feeling towards the modest and humble culminates in a sentiment that is akin to love. We hold them as the representative outbirths of principles that have their origin in the invisible realms, permitted, if not provided by the Creator for an ennobling and useful end; and nothing staggers us more than the sentiment which obtains among some of the rigidly righteous, that

their cultivation and encouragement is profane. Their soothing outgoing perfumes dissipate the noxious odors that surely would render this world uninhabitable, both to man and the higher animals, if it were not for God's lovely flowers. They are here, and were here on earth before man was, and it seems the most pharisaical species of presumption to ignore them.

PEACH BARK LOUSE.

(*Lecanium persicum.*)

The following, from a correspondent, is important and speaks for itself to all who may heed it:

READING, January 20th, 1879.

S. S. RATHVON—*Dear Sir:* For further information I write you that I have experimented for a remedy on the peach bark louse and found one. My remedy is not permanent for individual good, but profitable. If all fruit-growers were to unite and adopt my remedy the pest might be exterminated. My remedy, which proved effectual last season, was this: In the early part of spring, before the buds sprouted, I began the operation. No rain happening to fall to suit my purpose I took the means, by using a water-sprinkler, of making the trees' branches completely wet, after which I took fine air-slaked lime and saturated the tree all over with it, which adhered nicely to the bark. I left the trees unnoticed until the peach fruit were about half grown, when I made observations, and found the insect gone and the bark clean again. These trees were thrify and hardy all through the summer and had fine fruit, to perfection. But when autumn came I again noticed the insect beginning to make its appearance, though in a small quantity, which satisfied me that if all fruit-growers do not enlist in waging war against destructive insects, we, as individuals, must be constantly at labor against odds to keep down the multiplication of evil against the good and beautiful fruit. Have any of the Lancaster people found any remedy? If so what are they? Hoping to hear some remarks I remain yours, respectfully, *William Young, Reading, Pa.*

No, not that we heard of. They are, probably, waiting to profit by some other person's discovery. We approve your remedy, but we believe that grease would have the same effect.

FARM LIFE vs. PROFESSIONAL LIFE.

The following interesting extract, from a letter to "ye local" to the Lancaster *Intelligencer*, will be read with attention by a good many in this locality, where the writer is well known and held a distinguished position in society, having been one of the former editors of that paper and the member from Lancaster city in the Constitutional Convention that formed the present Constitution of Pennsylvania. H. G. Smith, Esq., of Hawkins county, Tennessee, gives a very graphic description of his whereabouts, what he has been doing and what he intends to do for the future. His experiences in life have been various, and therefore he is enabled to speak to a practical point; and we especially advise all those farmers who are yearning after town life, town speculations and town aspirations to give it an attentive perusal. It is true he may be still too young in agricultural experience to be regarded as a standard authority, but his example is very appropriate at this time, when there are so many thousands in the towns dragging out a life of listless idleness, and so many also of limited means who don't know how to invest them, whilst so many acres of good land in our vast country are literally hungering after industrious and enterprising tillers of of the soil to come and "occupy." The tide of human events must turn in that direction if ever we wish to see better times, and anything that can afford the least encouragement to those who contemplate a change of state, and an enrollment among the yeomanry of our county, ought to be scattered abroad. After enumerating many things of a purely personal and private character Mr. S. proceeds in a seemingly happy and contented strain:

"I have settled down to farming with the determination to make a lifetime business of it. The political bugle may blow, but it can not rouse me when I return from my fields to take my siesta beneath the wide-spreading beeches which surround my house. I commenced in the woods, almost as much so as any producer; built me a saw mill, and then continued to build; am not done yet; built an ice-house and filled it during the coldest snap we had. Built the thing myself with the assistance of a common farm hand. Made a first-class job of it, I think. Provided for turning the drainage into a dairy. When the thermometer goes to the other extreme next summer I can give you punch made from milk of my Jerseys, with as fine ice in it as ever froze on the Conestoga. I got it off my mill dam, eight inches thick and as clear as crystal, I havn't got my barn finished yet. With that and one or two other little jobs I will end building and begin to put things in order about me. I have a large orchard set and vines planted. Have had apples, peaches and grapes of my own planting. Had a number of peach trees with fine fruit, which ripened before the 1st of last July. Some as early as June 20th. How is that for progress? If I were to come back to Lancaster I might aspire to membership in the Agricultural and Horticultural Society; might I not? I am content with my present life. There is an independence and freedom about it that suits my temper. My chief ambition is to become a self-sustaining farmer—to produce everything I need, so far as it can be done on a farm. I have the sheep, and I intend to wear nothing but gray clothes made from my own flocks hereafter. There is a mill in the county which makes very nice goods.

I want some first-class Lancaster county tobacco seed; some best fitted for making cigars. I raised some Cuba tobacco from seed furnished by the patent office two years ago, and it had the genuine Havana flavor. It was not properly cared for. This year I intend to do the thing right—on a small scale, of course—only for my own use at present. I believe that on virgin soil, such as I have, I can raise tobacco which will make first-rate cigars. The Cuba grows too small for good wrappers. Send me some choice seed from Lancaster, and send as soon as you can get it, as it is nearly time to sow it, though a month late will do here."

CHRISTMAS ROSE.

First, we would admonish our readers not to be misled by the term "rose" employed in the above name, for the flowering plant to which we refer is really not a rose at all. It only evinces the arbitrary use that is often made, locally, of the common names of things. We allude to what is regarded by botanists as the "Black Helebore,"* or a variety of it, otherwise called the "Christmas Rose." We have this plant growing in our own garden, and it is one of the most hardy flowering plants we know of. It is rather a slow grower, but it is always fresh and green throughout the entire summer and winter, and blooms from December to April—sometimes earlier and later. The first flowers opened the present season in December, and those flowers are as fine and fresh to-day as when they first opened, notwithstanding, in the meantime, the temperature where the plant was growing was seven degrees below zero. There are now about twenty-five half opened flowers and buds visible, and upon which the frost seems to have no more effect than it has upon iron. For a figure and description of the Black Helebore we refer our readers to page 41, Vol. X. of THE LANCASTER FARMER, where its history and medicinal qualities are portrayed. It is true, when the ground is covered with snow its cheerful aspect is hidden by the lurid mantle of winter. But when the season is an open one, or as soon as the snow disappears, it welcomes you to its frosty bed, and is the first, and perhaps the only floral sojourner that hails the advent of the modest "snowdrop," the early harbinger of the new-born spring, and sharer in its blooming glory. Under careful cultivation and special attention no doubt it would be susceptible of improvement.

**Helleborus niger.* Order, RANUNCULACEÆ.

CORRECTION.

In the 22d and 53d lines of the first column, and the 7th line of the second column of J. G.'s article on pages 6 and 7 of our January number for "corncob meal" read *chopped corn.* Corncob meal may do as a "make-shift," but Mr. G. would by no means recommend it in speaking of good, nutritious food, and its occurrence in his article is our mistake.

ESSAYS.

OUR ORCHARDS.*

Friends and neighbors, look to your orchards. Perhaps you ought to plant a new one. Now is the time to think over it, and to make the calculations. The planting of orchards is too much neglected. Persons who have orchards wait too long before they start a new one. When I was a boy I heard some people say that when an orchard is in its best bearing condition, then is the proper time to start a new one. I took special notice of that remark, and I have found by experience that it is so. It takes from twelve to fifteen years for a young orchard to come into bearing fruit to any extent. Take an orchard that is in its very best condition, and then fifteen to twenty years after that you will see that it is not much—that it is already going to decay, except in a few very special cases. But many farmers don't think of planting an orchard as long as they have fruit enough in the old one, and then they run entirely out before the new one comes up to fill the gap. About twenty years ago I had a talk with an old man that I was well acquainted with. I told him he ought to plant a new orchard. He answered, "I'll plant none, for it won't do *me* any good." He lived to be quite an old man, and only died five years ago. He had two farms and a small homestead, all in a row along a public road, and left them all without an orchard to those who came after him. Last year I had a talk with a farmer who has an excellent orchard in full prime or a little over. I told him now would be the time for him to plant a new orchard, but he only shook his head and replied, "I will plant none yet awhile." That's the way it goes; most people think only of the present and self, without troubling themselves much about the future and others.

What would have been the case if our fathers had not planted? Would we have had any fruit at all? If we only plant fruit when we begin housekeeping we shall have no fruit until we get old. This will do for new beginners on new farm lands, but we ought to plant for our children or successors on the old homesteads. Think of it; there are many farms where orchards should be started, but their owners think it would be so much lost. But that is a mistake; it is not lost.

I started an orchard about ten years ago and had potatoes in it every year, for eight years in succession. The trees don't take up much space when young, only we must be careful that by plowing and cultivating we do not injure the trees. I muzzled the horses so that they could not bite or crop off the branches, and I tied an old bag around the "trainsor" and the ends of the singletrees, so that they could not skin the young trees if they should happen to touch them. After that I had wheat in one year, sowed with clover, and have it in clover ever since and get a good crop of it every year; and now the trees have commenced to bear and in a short time will pay for themselves. To plant an orchard will not cost much. In November last I planted an orchard of seventy-five trees. I plowed the ground and followed with a sub-soil plow, which took twice as much time as ordinary plowing. I then purchased trees at 12½ cents each, and myself and two others planted them all in less than a day. Then the work was done. I would advise all those who have no young orchards to plant at once. Trees are cheap and labor is cheap. Don't buy trees

*Read before the Warwick Farmers' Club, January 20, 1879, by John Grossman.

from those agents who travel through the country. Get them in the neighboring nurseries, and the sooner you plant them after they are out of the nursery the better. Make up your order now and send it to the nursery where you want to get your trees. If you delay them until you think you just want them you may, perhaps, not get what you want. The best may be picked out and you will have to supply yourself out of those that are left. Select a place for your orchard that has a nothern slope if you possibly can make it suit. It is the best place, for the hot sun is not so hard on the trees, and it will not dry out as soon as a southern slope, and the trees will not start so early in the spring, nor are they so apt to be caught by late frosts. Let the most of your planting be late winter apples; we plant too many summer and fall apples. Subsoiling before planting I consider very beneficial. The work is not lost. You need nothing but a shovel to dig the holes. Then loosen the soil about eighteen inches deep.

TOBACCO—ITS CULTURE—ITS USE AND ITS EFFECTS AS A NARCOTIC.*

Of all the vegetable substances trafficed in as a business, and indulged in as a narcotic—such, for instance, as opium, hemp, hops, betel, lettuce, fungus, holly, ledanum,† thorn apple, and clay and arsenic eating—there is more used or dealt in to the same extent as tobacco. "Johnson on Narcotics," in summing up his estimates of these substances, used for the year 1860, sets them down as follows: Tobacco, 800,000,000; opium, 400,000,000; hemp, 300,000,000; betel, 100,000,000; coca,‡ 10,000,000; and thousands use lettuce, clay, arsenic, fungus, ledanum, thorne apple, &c. These are used in different ways—smoked, chewed or snuffed—by a great number of people. Tobacco is believed to be a native of Tropical America; at all events, it was cultivated and used there by the inhabitants of some parts of that continent before its discovery by the Europeans in 1492. Columbus found the chiefs on the Island of Cuba smoking cigars, and Cortes met with it afterwards. It grows best within the thirty-fifth degrees of latitude on either side of the equator. The finest qualities are raised between the fourteenth and fifteenth degrees of north latitude—the Philipine Islands—and between the thirty-fourth and thirty-fifth degrees—in Latakia, Syria. In America tobacco is met with almost everywhere, and the consumption is simply enormous. Doctor Johnson rather deprecatingly remarks that the custom of using tobacco is "loathsome to the eye, hateful to the nose, hurtful to the brain, dangerous to the lungs, and in the black, stinking fumes thereof, nearest resembles the horrible stygian smoke, of the pit that is bottomless." When it was first introduced among the English, in vain did King James oppose it by his counterblasts against tobacco. In Europe, from the plains of Surgey Castle to the frozen Archangel, and from the Ural to the Icelands, the pipe, the cigar and the snuff-box are a common solace among all ranks and conditions of the people. Also, in vain did the Sultans and priests of Turkey and Persia declare smoking a sin against their holy religion.

The Turks, nevertheless, became the greatest smokers in the world. This nation, including the Siamese, the Burmese, and the Indias in general, are all inveterate smokers, including both sexes of all ranks, even down to the children. In China the practice is so universal that every female, from the age of eight or nine years, has an appendage to her dress to hold a pipe. Lobacco was introduced from America into Spain by the Spaniards, in 1560, and into France by Nicote. In 1586 it was introduced into England by Sir Francis Drake, under the auspices of Sir Walter Raleigh; and into Turkey about 1601. Since then the cultivation and use of tobacco has been spread over a large portion of the habitable world. The different parts of America in which tobacco is grown include Canada, New Brunswick, Mexico, the United States, the Western Coast as far as 40 degrees south latitude, Brazil, Cuba, Trinidad, and the West India Islands. It is also cultivated on the coast of the Red Sea, and on the Mediterranean; in Egyp, Algiers, the canons along the western coast of Africa and the Cape of Good Hope. In Europe it has been cultivated with success in almost every country, and it forms at present an important agricultural product in Hungary, Germany, Flanders and France. In Asia it has spread over Turkey, Persia, India, Thibet, China, Japan, and a number of smaller States.

Dr. Johnson says it is the most susceptible of cultivation, the most hardy, the most tolerant of change altitude and general climate of any plant of its class, and may be raised, without difficulty, from the Equator to the fifty-fourth degree of north or south latitude. And here I desire to add a few words on general narcotic indulgence. Siberia has its narcotic fungus; Turkey, India and China their opium; Persia, India and parts Turkey, with all Africa, from Morocco to the Cape of Good Hope, have their narcotic hemp, including even the Indians of Brazil. Other parts of India, China and Eastern Archipelago have their betel-nut and betel-pepper. The Polynesian Islands their daily ava; Peru and Bolivia their long used coca; New Granada and the Himalayes red and common thornapples; Asia and America and all the world, we may say, their tobacco. Northern Europe and America have their ledanum and sweet gale; the Germans and English their hops, and the Frenchman his lettuce. No nation so ancient but has had its narcotic soother, even from the earliest periods of its history. The craving for such indulgences, and the habit of gratifying them, are but little less than the desire for food and the habit of eating; these material substances coming even in competition with common food, the very staff of life.

Much could be said touching the use of tobacco—such as smoking, chewing and snuffing—and also touching its abuse, its effects as a tranquilizer, and that solace, for which, Johnson says, thousands flee to it. It seems sufficient to say that it is cultivated, trafficed in and widely used; and Providence appears to smile upon those who encourage as well as those who discourage it. There is one thing that seems certain—its long continued, widely extended and rapidly increasing cultivation, traffic and use, evince that for some wise purpose it has been *permitted*, and inferentially for the *prevention* of some other possible abuses, that would be greater evils.

On Tobacco Culture.

The climate, the mode of culture, the kind of manure applied, the period at which the crop should be gathered and cured, &c., are important factors in connection with the commerce in tobacco. It will grow on almost any soil, and in any climate that will produce corn, but a warm climate seems preferable. On our 600,000 acres of land devoted to the cultivation of tobacco in the United States, 400,000,000 pounds are produced, valued at $30,000,000. Kentucky raises 130,000,000; Virginia, 50,000,000; Missouri, 43,000,000; Pennsylvania, about 11,000,000; and Connecticut, about 8,000,000 pounds. Mr. Dickerman says tobacco is a paying crop, but it exhausts the soil more rapidly than any other crop, and when land is once exhausted by its cultivation, hardly any process will pay to renovate it again. To prove this we need only refer to the exhausted lands of Virginia and Maryland southward, and many places in the Eastern and Western States; but this result cannot be considered unavoidable.

Preparing the Ground.

Plow under well rotted barnyard manure and lime, or any good compost or phosphate, at any time that your land is in such a condition as to make the soil loose and mellow. Or use bonedust, or any kind of fine fertilizer as a top-dressing. Use understandingly, and with experimental knowledge, a certain quantity of bone-dust or harmless fertilizer to each plant. Bear in mind that to bring your land in a proper condition to grow tobacco, you cannot easily get it too rich and mellow. The application of ashes, muck or compost of almost any material that would produce good corn will also produce good tobacco. Have your land ready to plant about the first day of June. Score it off about three feet and a half apart in ridges crossing each other at right angles.

Varieties.

There are, perhaps, ten different varieties of tobacco, of which every grower must judge for himself, such as the broad-leaved Connecticut, the Huber, the chestnut leaf, &c., depending somewhat on the richness of your soil and your location, as well as the state of the season.

Plants.

One of the first requisites is the preparation of a good and rich seed bed, which should be attended to as early as the ground will allow its culture. For this purpose select the sunny side of a southern slope. Learn to sow your seed by experience, and I consider it useless at this late day to give any extended instructions to any grower, in regard to the cover they require, and their treatment generally.

Planting.

Plant about the end of May or the beginning of June, as circumstances and the season will permit. Set the plants about twenty-four inches apart in the rows, and as I have before stated, learn to plant by experience; you will soon learn that in dry weather you will have to adapt yourself to deeper planting, and to use water if too dry, and that judiciously; and in wet weather that you cannot be too careful so you will not cause a clod or a bake around the plant after the coming of a cry spell. Like in any other occupation, you will succeed best after you have gained experience.

Cut Worms.

Soon after the plant is set the "cut-worm" makes its appearance, which requires watching. Then, after several weeks another and greater enemy appears in the "horn-worm." A large, green worm with a conspicuous horn on the back near the hind end, which if left to itself would destroy the whole crop. Many ways have been recommended to destroy these worms, or the parents of them, by keeping bright fires burning around the field as a trap; by striking them down in the evening with a paddle; or by introducing poison into the flowers of the "Jimson weed," on the honey of which they feed; but the most effective way to keep them from ruining the tobacco plants is to go over the field often enough to pick off all the worms and destroy them.

Cultivation.

The only advice on this point is, as soon as the plants have started to grow, go in with the *cultivator* and hoe. Repeat it often enough so as to keep the soil loose, and all the grass and weeds down until it becomes too large to work with cultivator and hoe.

Topping and Suckering.

Topping should be done as soon as the reeds appear, leaving from eight to twelve leaves remaining, according to the fertility of the soil or lateness of the season; and break off all the suckers as you go along the rows.

Cutting.

This operation must also be learned by experience. When your leaves become dotted with yellow spots, become glossy and crack by doubling them together, you would better begin to harvest immediately, as you will always run a risk of hail storms or frost. Let it wilt on the ground before you handle it. After this there are almost as many different

*Read before the Tobacco Growers' Association, by Peter Reist.

†LEDANUM or LADANUM, a resinous inspissated juice from a shrub called LEDA or LADA, (*Cistus ladaniferus*) and other plants of the same genus, growing on the Mediterranean coast and elsewhere. Chiefly used as a stimulant. The tincture of OPIUM is also called *Ladanum* or *Laudanum*.

‡COCA, the dried leaf of the *Erythroxylon coca*, a highly stimulating narcotic, found growing wild in Peru.

ways of handling it as there are farmers who cultivate it. Most of the tobacco housed is strung on four foot laths, and conveyed on wagons constructed for the special purpose of hauling it to the tabcco house. But some store it on scaffolds, from one to four days, before they put it on poles or in the house or shed. The experiences of one year, especially the first year, will indicate the course to pursue the next year.

Stripping and Sorting.

This is the last operation and puts the finishing touch to the manipulations of the crop, (as Scripture says, "The crown is not in the beginning, nor in the middle, but in the end,") which ought to be done with the greatest care, in order to secure a ready sale. Sort it into four classes, marked AA, A, and B, and "fillers." After which the price it will command, separate from the market, will be according to its quality.

Conclusion.

Let quality be the aim of your ambition, rather than quantity. High quality always commands a ready sale and fair prices; is easier handled, and involves less labor than a large quantity of inferior garbage. A large quantity of inferior tobacco, lik other inferior things, may not produce as much marketable bulk as a smaller quantity of superior stock; and, moreover, it is the poorest kind of material out of which to build a solid reputation as a reliable tobacco farmer.—*P. S. Reist, Litiz, January*, 1879.

FENCE-MAKING ON THE FARM.*

Fence-making is very expensive in our days. When I was a boy, perhaps half-grown, my father told me that in Germany they have no fences, and it will become so, eventually, here in this country, too. I thought that could hardly be so, for I could not see how we could do without fences. But now I think the time is fast approaching when we will be almost compelled to do without fences, but we cannot do without them at the present time. We must have good fences around our farms to keep our neighbors' hogs and cattle out, and to keep our own stock in, but the interior fences we can dispense with and save so much, even at the present time. There are only about half the fences on farms that there were when I was a boy, and we can still save some yet. We have our fences with five rails, and near to the ground that no hogs can creep under or get through. I have come to the conclusion to make my fences hereafter with four rails, or perhaps three at some places, and make them just as high as they are now—posts seven feet long, but leave the lower rail out, and make the second, which is to be the lowest, three inches lower than now. The upper one the same as it is in a five-rail fence, and then divide evenly the intermediate space. Such a fence will answer just as well for cattle and sheep, and will endure longer before the posts rot off, because the lower hole is not so near the ground. But then I will have a tight fence around my orchard, as before, so that I can let my hogs in to eat the fruit which falls from the trees, and which is not fit for use. The remainder of the time I will keep them in the pen. Their feed will not cost as much as an extra tight fence over the farm. Ordinarily, hog raising is not profitable in our part of the country, especially while pork is as cheap as it is at the present time. In the west they can always raise hogs and ship them here cheaper than we can raise them. We can make more out of our corn if we feed it to some other stock. But every farmer ought to raise enough of pork for his own family. That he can do without much cost with proper management.

Every farmer ought to see what he wants in fencing material now, before the spring opens, and have it ready by that time, so that he will not have to go after it when the roads are bad, or other work is pressing.

*Read before the "Warwick Farmers' Club," January 20, 1879, by John Grosaman.

ONE YEAR'S EXPERIMENT WITH FOWLS.*

I present an account which I held with my fowls during the year 1878. The experiment was made to test the value of fowls when kept in an enclosure where they could destroy little of value. They were kept in an enclosed orchard (1¼ acres). True, they did pick some of the fallen fruit, but this had very little market value, and I estimate that, upon the whole, the fowls were of more benefit than hurt to the orchard. I have heard claims of large profits where fowls had the range of the farm; but it is doubtful whether the proper deduction was made for the acre, more or less, of wheat destroyed; or for the corn or garden things pulled up; or for the clover trampled under foot. Others claim big profits from breeding fancy stock and selling at fancy prices. $10.00 for a pair of fowls and $2.00 a dozen for eggs sounds profitable, but it is doubtful if many realize it. You will perceive by the figures that my profits were moderate.

During July cholera made its appearance and carried off eight or ten hens, and a number besides were used in the family at different times. From this it is evident that the average number of laying hens during the year cannot positively be got at, but I should estimate it from 40 to 45. This would make the number of eggs for each fowl from 120 to 130. It has been said that a fowl under good treatment should produce over 150 eggs. This shortcoming in eggs cannot be attributed to want of feed, as the fowls were plump and fat at all times. The stock consists principally of Light Brahmas, with a few White Cochins, Dominiques and White Leghorns.

DR.

Jan. 1st, 1878, 63 fowls on hand, at 30 cents,	$18 90
Corn used during year, 43 bus., at 60 cents,	25 80
Screenings " " 26 bus., at 50 cents,	13 00
Wheat bran, " " 26 bus., at 25 cents,	6 58
Bone during the year,	3 25
Total cost,	$67 45

CR.

January 1st, 1879, 71 fowls on hand,	$21 30
65 fowls used during year,	19 50
450 dozen eggs, at 13 cents,	58 50
Total,	$99 30
	67 45
Balance in favor of fowls,	$31 85

*Read before the Lancaster County Agricultural and Horticultural Society by Casper Hidley.

DISEASES OF THE PEAR.†

Mr. Edwin Satterthwaite, of Jenkintown, Montgomery county, addressed the State Fruit-Growers' Society on Thursday, January 16, upon the subject of the "Diseases of the Pear." He spoke extemporaneously and well, and his remarks were received with every mark of attention and elicited one of the most interesting discussions of the session. Mr. Satterthwaite said the pear is comparatively exempt from the ravages of insets. Some varieties are attacked by the curculio and codlin moth, particularly the "Early Catharine." "Cracking," one of the diseases, he attributed to excessive moisture. The "White Doyenne" is greatly subject to "cracking," which some persons ascribe to "running out." Of late the speaker's White Doyennes have not been much affected by the disease. Another disease caused by atmospheric influence is a kind of mildew, among which he instanced the Beurre Clairgeau, Buerre Capiamont and Napoleon. In a dry season these varieties are exempt from the disease. Some few varieties, for instance the Easter Buerre, are affected by wrinkling of the skin. The chief troubles of the pear are the diseases which affect the tree. Pear trees are exempt from the borer, except such as are grafted on the quince.

The pear slug is the most destructive insect affecting the pear trees. They are worse in dry seasons. It is a small slug, about half an inch in length, and is generally found on the trees in the month of June. The speaker has no doubt that with proper care the slug can be destroyed. Almost anything thrown on them appears to destroy them. Dry slaked lime, Paris green, and whale oil soap are all efficacious. He asked why whale oil soap is always recommended in the books for diseases of this kind, and thought common soap should be equally as good. The speaker next referred to the leaf blight as the worst thing that the pear tree has to contend with. The trees change all at once, when the fruit is about beginning to ripen, the leaves will all turn yellow, and the next day the leaves drop off, or the half of them, and the crop of fruit is ruined. He thought dry weather was the cause of the leaf and the fire blight, and believed that our climate was too dry for the pear. The Tyson is utterly worthless on account of the leaf blight; the Flemish Beauty, Canandaigua and Washington are also much affected by the same disease. The fire blight is generally considered the most dangerous disease of the pear, but he thought the leaf blight is the worst. The trees that are most subject to the leaf blight are not affected by the fire blight at all. Downing attributes the fire blight to the freezing of the sap in the fall.

†An extemporaneous address by Mr. Edw. Satterthwaite before the State Fruit-Growers' Society.

This theory has never appeared satisfactory to the speaker. He had lost two or three thousand pear trees by the fire blight out of 5,000. A pear tree does not blight much until after it gets to bearing, so that he lost one-half of his best trees. He ascribed the cause to dry weather. The only remedy for the fire blight, whatever the cause may be, is in the selection of varieties. After a great deal of care and observation, the speaker has made a selection after cultivating nearly 600 varieties of pears, all in fact that are generally known in the books. The varieties that blight the most, in his experience, are the following, among others: Osborne's Summer, Madeleine, Onondaga, Belle Lucrative, Vicar of Winkfield, Ananas d'Ete, Maria Louise, Buffam, Glout Marceau, Otts' Seedling, and Golden Beurre of Bilboa. The kinds that have escaped the blight with the speaker are the following: Bartlett, Seckel, Duchesse d'Angouleme, Beurre Gifford, Doyenne Bosc, Meriam, Jefferson, Julienne, Early Catharine, Bell, Bezide la Motte, Beurre Clairgeau, Tyson, and Kingsessing. Among varieties somewhat subject to blight, but which the speaker would not be without on account of their otherwise valuable qualities, are: Lawrence, Beurre d'Anjou, and Rutter. Another list that blight some, but are desirable to have in a large collection, are the following: Doyenne d'Ete, Beurre de Montgeron, Clapp's Favorite, St. Michael Archangel, Howell, Manning's Elizabeth, Doyenne Boussock, Des Nounis, Kirtland, Beurre Bosc, Cushing. The Sheldon has not blighted much. The speaker then answered some questions as to the appearance of the blight among the trees and the manner in which the trees are affected. There are so many subtle, invisible, intangible atmospheric influences that we know so little about that it would be presumption in any one to ascribe definitely the cause of some of the diseases which the speaker has mentioned. The science is in its infancy, and we have almost everything to learn as yet about fruit culture.

MODERN FRUIT HOUSES.*

Many of the finest fruits, says Judge Stitzel, naturally undergo speedy decay, and those most highly esteemed are often only to be enjoyed by those who produce them, and cannot be put into market except for immediate consumption. This decay has been found to take place most rapidly when the fruit is exposed to considerable or frequent changes in temperature. We know that certain kinds of grapes, packed in sawdust, were imported to this country from warmer climates; we found that unripe berries could be preserved in their natural state a long time in bottles or jars, filled in with dry sand or sawdust, and

*Read before the Pennsylvania Fruit Growers' Society, by Hon. Geo. D. Stitzel.

the jars corked or sealed and placed in the ground a considerable depth, to preserve an equable temperature. This method could be employed with many fruits, as well as vegetables. Pears, the finest kinds of which are apt to rot immediately after maturity, were found capable of preservation for months by being closely covered in stone jars and kept in a cool place. Similar experiments revealed the fact that an evenly cold temperature was a reliable preventive of decay in fruit, and have led to the construction of the modern fruit house.

The value and convenience of this quite recent improvement will be apparent when we consider the great advantage in keeping fruit until the next ripening season, thus enabling us to get the very highest prices for what we have to sell, after the market has become bare of such fruit as has been kept in cellars, or shipped from other localities, besides the advantage of having it for family use all year round. I may say without fear of contradiction that fully thirty-three per centum of all fruits stored in the ordinary way annually go to waste; this would of itself more than pay the interest upon the cost of a modern fruit house. This is true of the apple crop of itself, and the same may be said of pears. I am satisfied that if pears are properly handled and put into the fruit house until the market becomes bare of those varieties sold out of the orchards, twice the amount of money can be made out of them. They should be carefully picked when matured, but before too ripe, and they will improve in flavor when allowed to ripen fully in the fruit house.

In this way such varieties as the Buerre Easter, Columbia and Vicar of Winkfield will keep until the following April. That many kinds of vegetables, berries and stone fruit can be preserved a greater length of time than in the ordinary way, has been demonstrated by the use of the fruit house. Cider will also keep sweet much longer than when kept in cellars, where the temperature is constantly varying. The temperature in a well constructed fruit house can easily be kept within a variation of eight degrees, say between 32° and 40°, and proper care should always be taken in regard to ventilation, as it is to this that we can attribute the main success in preserving the fruit. A refrigerator or fruit house can be constructed at a very little cost, say from $250 to $500, that would admit of storing one thousand bushels of fruit; this would accommodate a half dozen neighbors, who might club together and erect one at their joint expense, or one of their number might build one, and by a charge for storage, of ten or twelve cents per bushel, receive more than the interest upon his investment, beside the cost of stocking it with ice.

I will now describe a fruit house built on a larger scale, having a capacity of 4,000 bushels, which has been in very successful use for twelve years. It is fifty feet square and built of stone and is twenty-eight feet high. The fruit room is on the first floor and is eight feet high with an enclosed space four feet in width, on the four sides filled with ice from above. The ice house proper is on the second story and is eleven feet high which, with the spaces referred to, is filled with ice. There should always be at least one foot of sawdust or some other non-conductor of heat between the ice and the outer walls. The floor must be watertight with pipes or some other means of conveying the accumulating water to the ground beneath the building. The third story floor is about three feet below the square; this room is intended to secure ventilation, and should be covered with some non-conductive material to prevent any heated air from entering the building from above. There is a room or space about three feet deep below the floor of the fruit room, which is filled from the surplus of unmelted ice that remains in the second story, and this must be done before stocking with fruit in the fall. Ventilation is secured through four box ventilators twelve inches square, leading from the fruit room through the ice room and extending into the vacant space above the third floor. These box ventilators are provided with valves or stops by means of which the temperature in the fruit room may be easily regulated. The fruit is stored in common boxes containing two bushels each, the bottom of one box forming a cover of another, and these boxes are piled in tiers or sections with spaces between to admit of passage and free circulation. Access to the fruit room is secured through a kind of vestibule with outside and inside doors, both lined with non-conductive material—hatters' waste wool has proven an excellent non-conductor for this purpose. The two doors, an inner and an outer door, are necessary to prevent the admission of air when persons pass in and out.

The cost of this building when erected was about $2,000, and it requires about one thousand tons of ice to fill it properly, about two-thirds of which is annually consumed by the heat. Ever since the completion of this building it has been used for the storage of various kinds of fruits, and has proven an entire success, and the owner has realized a handsome profit upon his investment.

There is another large refrigerator or fruit house in Reading, that is constructed upon a somewhat similar plan which has been used for preserving tropical fruits and storing eggs, etc., for which purpose it has proven very successful.

There is still another large refrigerator or fruit house in this city, quite recently completed and stocked with ice, which will be ready for the storage of fruits, etc., the coming season, and which will prove a great convenience to fruit growers as well as consumers of this place.

CULTURE AND TRAINING OF THE VINE.*

So much has been written upon this subject as to almost confuse the novice and contemplative planter into inactivity, for fear of doing more injury than benefit in attempting to follow the teachings of books which treat on vine culture. Between the close pruner and non-pruner lies so wide a field, with innumerable methods of training, that it is not surprising that there is so much confusion relative to the growing of this important fruit.

Important, I say, because there is no fruit in the North Temperate Zone that can be made more a certainty, or will yield more weight from the same area, and upon almost any soil. The special advantage it possesses over all other fruits, however, is that it can be planted close to any building or wall, and trained up against it to any reasonable height, and where no other fruit can be grown. It can be trained over arbors, where it will answer for shade also. Grapes grown in such situations, when properly trained, are generally more certain than vineyard culture.

The grape is a great feeder and will repay proper fertilizing very well. Young vines can be grown from single eyes, or with two to half a dozen eyes; also by layering, but those from single are preferable, as they contain but little old wood, and have the roots started from one point. For a vineyard the ground should be well prepared as for any other planting. The vines may be planted from six to twelve feet apart, according to variety and vigor of vine. Depth of planting should not be more than six inches, and with a little mulch added is better than a foot deep of soil. Cultivation should be as for all other plantings; the ground kept mellow and clean of weeds for three or four years at least, after which it is a mooted question whether to cultivate it or run it into grass. I am, however, on the side of continued cultivation, but shallow only. Good, well-prepared soil will require no manuring until a crop or two has been taken off; after which don't expect to take more out of the soil than there is in it. I shall not discuss manuring now, as every planter should know what his soil and his crops require.

At planting cut the vine to a few eyes, and after it starts to grow, pinch or rub all off but the strongest, which train to a stake 4 to 6 feet high, but do no cutting or pinching the first season. For the second season cut the vine to 15 or 18 inches above ground, set two stakes, 6 to 8 feet high, one on each side of the vine; set obliquely, leaning apart, and train two of the highest and best shoots, one to each, and keep off all other shoots from the main vine. Vines growing obliquely will form shorter joints and develop the eyes more uniform than when growing upright. They will, however, force stronger laterals, which must be pinched off beyond the first eye, and if growing too strong thereafter pinch off again, but do not break off the lateral altogether, as it often causes the eyes to push which are intended for next year's fruiting.

Trellises should be made for the third season. Posts driven in along the rows, about five feet high, after being set, with a horizontal rail over the tops, and one about 18 inches above ground to nail on slats or wire vertically, is the best form of trellis of which I know. These uprights should be 7 or 8 inches apart. I know of nothing equal to galvanized wire (about No. 16), which is not only exempt from corrosion, but the vines can be trained to it without tying. The trellis being ready for the third season, prune off all laterals from the vines to a length that will reach half way to the next vine, and cut it off and tie to lower rail; bring the nearest cane from the next vine and treat the same way, and thus continue to the end of the trellis. You have now a basis upon which to grow your first crop.

Training will now be in order as soon as the young shoots attain the height of 15 to 18 inches. Secure the nearest to each wire and break off all the rest. As soon as all the flower clusters are fairly out pinch the shoot off, leaving one joint beyond the last cluster. This will check the strongest shoots and give the weaker a chance to get even. The stronger should be pinched in during the season whenever they show too rampant growth.

I am well aware that this early pinching is contrary to the teaching of books, but experience has taught me that it is preferable to letting them grow until the grapes are as large as peas, and then pinch to three joints beyond the last bunch, as the books say. Early pinching checks the rapid upward growth, and causes the development of larger foliage, heavier vines, and fuller eyes near the base, which is an important point gained, as we shall see by and by. It must not be forgotten that the bearing eyes are on last season's growth only. For this reason it is important that with all the methods of training, the object should be to have the eyes intended for next season's fruiting as well developed as possible. Each eye will, as a rule, produce a cane bearing three bunches of fruit, consequently the upright vines are now bearing a crop and at the same time forming eyes for next (4th) season's crop. The laterals should be treated as directed in second year's growth. Toward the close of the season the vines may be left to grow as they will. If we have now a well developed cane to each upright the vineyard is fully established.

For the fourth season we cut back all the upright canes to two eyes. At this point the books teach us to cut to one eye, but let us compare. Any practical vintner knows that the lower eye on a vine is always least developed, consequently by cutting to two eyes we have some choice. The shoots growing from the lower eyes are trained to the wires and treated the same as those of the previous year were treated. Those from the upper eyes are also pinched to one joint above the latter cluster, as early as it can be done conveniently. These are trained to incline downward, by twisting the young cane and bending it downward, which, with the gradual increase of the clusters thereon, will prevent their upright tendency; these are also kept closely pinched in and laterals kept down,

*Read by Henry M. Engle, of Marietta, Pa., before the Pennsylvania Fruit Growers' Convention, at Reading.

and after fruiting are cut away altogether. By this method we retain the best eyes for fruiting, and at the same time secure well developed canes from the lower eyes by their being trained upright. These are left to bear some fruit, but as the bunches are usually inferior to those from sound eyes, the thinning out is done on these. By this course of training the fruiting wood can be kept low, the same as by cutting to single eyes.

It is well known that the tendency of growth of vines is upward, and if not controlled by pruning and pinching, where they have a place to run up, the finest fruit will be near the top. This has led, or rather misled many to trim their vines high, but we must not forget that by this method they will be father from the base of the vine each year, and eventually be out of reach. The only method by which vines can be kept to grow their crops uniform, is to have their bearing eyes on a level, as by the horizontal arm system, whether arms are one or twenty feet from the ground. By the following method the old arms can be replaced by new ones without losing a crop.

Select early in the season two strong shoots near the centre of the vine, and train them on stakes as directed for second year, and keep all the rest of the vine pinched back during the summer, and, unless the vine is vigorous, allow it to bear only a moderate or short crop, which will cause the two canes at the centre to make the stronger growth, so that after fruiting the old arms can be cut away, and the new canes tied to their place, and managed as directed for third season. Thus the vines can be renewed whenever necessary, and with proper care may continue in bearing indefinitely.

I do not claim anything original in the above method of trellising, which has been so fully described by A. S. Fuller and others, but what I do claim that is not found in the books, is the cutting to two eyes for fruiting, or if the second is not well developed, leave the third and cut out the second, instead of the first. This method invariably secures better bearing wood and consequently finer fruit. There are other methods by which grapes may be successfully grown, as on trellises of three or four horizontal wires; upon these vines are commonly trained on the long cane system, by which the best bearing eyes are always secured, but, as above referred to, the canes on the upper wire produce the best fruit at the expense of those on the lower wire. The renewal is also more difficult than upon the horizontal arm system. In extensive vineyard culture stakes are generally resorted to, being least expensive. Various methods of training to stakes are also described, but this paper will not admit of details.

One other method, however, is extensively practiced, and backed up strongly by the arguments, that nature does no pruning, and therefore it is best not to prune at all, or very little at most. This sounds very plausible, but neither does nature plant her vines by cuttings, and as we depart from nature at the outset, there is no sound reason to go back and ask her to finish the job which we have begun in opposition to her system.

We will admit that very fine grapes are oftimes found on vines growing upon trees, etc., left to their own way. I have seen such and thought at one time it was the true method for growing grapes; but a few years of observation dissipated all my faith in that direction. I have settled down to the belief in close pruning and systematic training for all vines (except the most rampant growers) as the most reliable. As Mr. Fuller has well said, the finest grapes, after all, are produced upon closely pruned and properly trained vines.

LIQUID MANURE.—The liquid yieldings of animals are worth more—good authorities say one-sixth more—pound for pound, than the solid excrements, and are saved with greater care by the best European farmers and gardeners. All the leaks in the stable are not in the roof; those often in the floor are quite as objectionable, and are cause of a great deal of waste.

CONTRIBUTIONS.

FOR THE LANCASTER FARMER.

CATTLE OF LANCASTER COUNTY, OR EASTERN PENNSYLVANIA.

It is presumable that it is not known *positively* from what country cattle were first shipped to America. Undoubtedly the first settlers in New England brought their cattle from Old England. It is also presumable that their stock then was not as thoroughbred in the same country as it is now; and if it had been they might have hesitated to ship the best to a heathen land. Undoubtedly the Dutch brought the first cattle to New York, and the Quakers and Swedes the first to Pennsylvania. The first effort made to improve stock in this country was in the vicinity of Albany and New York cities, and perhaps also in the vicinity of Philadelphia. During the last century the wholesale merchants of those cities, who possessed country residences, began to improve their lands and farm stock, as well as their farm dwellings. In the first place, I believe in good stock, and that the highest state of improvement has only been reached at great expense by some of the best herdsmen of Europe, and this, too, many years ago. While Lancaster county may be said to stand at the head of agriculture, it must be confessed that she is far behind other countries in stock raising. It is but fair to infer that, with a little care and expense, we might become as famous in cattle raising as we have been in Conestoga horses. I believe there is a great difference in the various breeds of cattle to which we now have access, but the best breeds have always been secured by careful breeding from the best selections, both of males and females. I have a good recollection of our Lancaster county breeds of cattle for the last fifty years. They were always better than the Maryland cattle, or those from Western Pennsylvania. Fifty years ago I used to visit a neighbor who had a large haymow filled with soft meadow hay. Well do I remember rollicking in the soft, sweet-scented meadow hay; and also his beautiful herd of black cattle, with their belts of snowy white, their fine forms and large size, some of which could have been made to weigh almost equal to the Durhams at the present time. Might they not have been sired from the Swiss or the Holstein? I feel sure, with proper care in selection, always chosing the best blood, that the county of Lancaster might produce some of the best stock in the Union—fully as good as any of our Alderneys, Devons, or Durhams. A cattle fancier one time indulging in extravagant praises of the Holstein cattle, and what he could make of them, was reminded that when a shepherd in Holstein loses his crook in the meadow in the evening he would find it in the morning grown over with grass. This was to illustrate that you might easily enough secure a good breed of cattle, but good pasture could not be transferred with them. That matter must be provided by the purchaser.

The reason our farmers pay so little attention to good stock is because they say "it won't pay" to raise good stock, and anything will do for a milk cow; and any kind of calf will do for the butchers' shambles. Nevertheless, a heavy cow would bring more money in market, and would give as much or more milk than a small or light one. In 1843 a farmer, in Upper Leacock township, had a home-raised steer, from ordinary stock, that would have made one of the heaviest steers ever raised in Lancaster county, but it fell on the ice, when it weighed nearly 3,000 pounds, and had to be slaughtered prematurely. The Durham roans were first introduced into this county by Mr. Jackson, who lived on Webb's farm, near "Witmer's Bridge," forty-five or fifty yearsago. Frederick Hambright, who lived north of Lancaster, procured some of Jackson's stock and raised a beautiful herd of roan cows, but he was also a man that gave good attention to his stock—everything relating to them was done in the best manner, and he had always ready sale for them and got the best prices—higher than his neighbors. From that period forward there was more interest taken in the improvement in the Lancaster than there had ever been before. I beg leave to repeat again, that although there is a difference—and a great difference, too—in the breeds of cattle, yet there is a great difference in our caring for them. The old saying still holds good: "Well attended is half fed."—*L. S. R., Oregon, February*, 1879.

[Those people who allege that it will not *pay* to raise good cattle may say the truth, looking at the matter from their own individual standpoint. It may not pay at the outset, for the reason that it costs too high a figure for the first subjects. It is, perhaps, like a new kind of potatoes, wheat, corn, pigs or poultry. But as the feed and labor costs about the same, it would seem that a good breed could be raised as easy as a bad one, with better prospects of the future *pay*.]—ED.

FOR THE LANCASTER FARMER.

TEXAS CATTLE.

Letter of General Samuel Houston, Describing Texas Cattle.

GALVESTON, Texas, Dec. 1, 1845.

"Doubtless no country on earth possesses equal advantages with Texas as a stock raising community. Stock here require no feeding, either in summer or winter, and cost no trouble nor expense, saving in marking and branding. Stabling and salting are not necessary, as the saline licks are in every part of the country, so that in fact, fattening cattle does not cost a farmer anything. Our prairies are clothed with the most nutritious grasses, sufficient for countless herds. The presence of blooded stock is especially welcome to me at this time, and I expect to cross it with our Texas stock with good results. The introduction of blooded stock, such as Durhams, and better horses, I am satisfied, would not result in more than one failure in twenty experiments. The present stock of cattle in Texas is a mixture of Mexican and cattle from the United States. They each show a distinctness of character. The Mexican, or Spanish, are not so heavy nor so compact in build as those from the States, but they are taller and more active, nor do they weigh as well in proportion to appearance when slaughtered as the American cattle. They are more active than our cattle, with remarkably long and slim horns. The cows are not such good milkers as ours. A cross of the breed would be an improvement. When the first colonists, under Stephen F. Austin, arrived in Texas, they found herds of wild cattle on the Brazos and its tributary streams. There was no tradition of their origin, nor has anything satisfactory on the subject yet been ascertained. They have receded as the settlements advanced, and are now above the falls of the Brazos and Little river. They are of the brindle or reddish color, and are more wild and dangerous when wounded than the buffalo. The males have occasionally attached themselves to herds of tame cattle, and have become very gentle. Calves have been caught and reared by settlers. The cross is said to be an improvement upon our common stock. The males are sometimes as heavy as our Durham half-breeds, and make excellent working oxen. For years I have had a desire to mix the pure Durham with the pure Texas. Should I be fortunate in my efforts, I shall be happy to assure you of the results.—*Samuel Houston.*

It is thirty-four years since the above letter was written, and Texas is still looked upon as the great source from which the bulk of commerce in cattle is derived. This especially is the case in reference to the immense number of those that are slaughtered is concerned. An almost constant stream of cattle for several months in the year, are driven up from Texas to the cattle depots in Kansas, Nebraska, Colorado, Missouri, Iowa and other Western States; from whence they are sold and distributed farther eastward, and when fattened

are rolled along on the railroads in cattle pens to the large cities of our country, or to Europe, where they are slaughtered and served up to the beef-eaters among the human family, and are completely annihilated.—*Bos, Meadville, February*, 1879.

For The Lancaster Farmer.

POLLED CATTLE.

A good word must be put in for the "Muley," (pronounced *mooley*). They are very agreeable to have about the barnyard; they could easily be kept side by side with colts, in one stable, without injury. How often do vicious horned cattle disembowel horses in the barnyard, in the roadside, or in the field? How often have horned cattle, especially those of the male gender, killed men in the open fields with their horns? And how often have those of the female gender attacked women and children, especially when the cows have calves only a day or two old? At that particular period a cow, especially if a stranger, is apt to attack anything that comes near her offspring, whether a dog or a human being. There were formerly objections made to the muley, when cattle were at liberty to brows along the roadsides and woods. They would reach in between the fence rails to help themselves to as much of the inside crop as leaned toward the fence or came within their reach. Since cattle are running very little at large in the Eastern and Middle States that objection is almost removed. The muley oxen are easy to handle, and could even be kept loose in a stable; would make more and better manure by tramping down the straw closely together all over the stable, which would then ferment much sooner than otherwise. The cows would be very docile and agreeable to milk; and they are just as good milkers as any other kind of cows. They could be very much improved by crossing them with the short-horned Durham stock. The normal tendencies of the short-horns might undoubtedly be turned towards polled, at least to shorter horns. Polled cattle perhaps will never become a specialty among cattle breeders in this country. I have known but one farmer—and that years ago, in West Earl township, this county—who had an entire herd of polled cattle; a very fine herd it was too. The cows were well built—unlike the large Durhams—good milkers; and the steers weighed very heavy. I will not undertake to give a full history of the polled cattle, any more than what an able writer has given years ago. He says: "In Great Britain there are now three breeds of polled cattle, which were no doubt derived from the wild cattle, of which only one herd remained pure. These were in Yorkshire, fifty years ago, although in the last century several parks in England were stocked with them. Both in the north of England and in the south of Scotland improved polled cattle were a common or frequent occurrence.

The Galway cattle, from the southwest of Scotland, ranked first for smallness of bone and good feeders. They were bred of different colors, from red to black. Next to these came the Angusshires, from the northeast of Scotland, which were similar to the Galways, but were of a heavier build and were brought to the highest state of perfection. They were specially raised for the London market, and the red cattle always commanded the highest prices from the butchers in the market, on account of not having been gored by horned oxen. For dairy cows the English had a variety called the "Duns." They originated from one of the Scotch breeds crossing them with their own breeds, which were "Roans." They made them heavier than the original stock, and they became excellent dairy cows, but all ultimately became roans. By care and proper selection they had three colors—dun, roan and black. The wild cattle from which these three varieties of cattle sprung are white, with black ears and muzzle. I have penned these lines thinking some of the readers of The Farmer might still have some interest in the "gentle muley" of their boyhood.—*R. L. S., Warwick, February*, 1879.

For The Lancaster Farmer.

BITTER-SWEET.

(The Solanum Dulcamara, L.)

We have here a species that belongs to a genus of plants remarkable for the great variety and almost opposite character which takes place among the species. Some are coarse weeds; others ornamental green-house plants; some, again, are nutritious, like the potato; others poisonous, like the henbane.

Names are usually significant. Dr. Gray says the derivation of this is uncertain. I find that one author says the Latin meaning was "Night Shade," which is a family name of this genus; another that it comes from the word "Solor," which means "to comfort," referring to some of the narcotic power—like that of an opiate, perhaps—but the Irish potato, so-called, is a comfort to a starving family. Be this as it may, the specific name "Dulcamara," signifies sweet and bitter, or "Bitter-Sweet." This name is derived from the fact that in chewing the root, the taste is first bitter, then a sweetness follows. It is believed to have been introduced from Europe many years ago. It is found to thrive best in moist, shady places and around houses. We often meet with it in country gardens, the

leaves and flexible twigs forming a climbing shrub about six feet high, is pretty; the purplish, small flowers and yellow anthers neat, but not showy, while the ovoid, crimson red berries are quite ornamental. I may, by way of caution, say here, that there is another plant called "climbing bitter-sweet," quite a different genus—the *Celastrus scandens*—found along streams and thickets; these have golden yellow pods, which split open and reveal a crimson red seed. The genus Solanum has numerous hardy, shrubby and herbaceous species, many green-house and stove evergreens, over seventy kinds are described.

This plant has at one time had a great reputation among medical men of high standing. Dr. Bigelow, in his *American Botany*, devotes seven full pages to the properties of this plant, quoting his authorities, such as Doctors Willan, Bateman and Crichton; this latter physician to Westminster hospital, says that out of twenty-three cases of *Lepra Graecorum*, (this is the leprosy of scripture, a constitutional affection, also known as *Elephantiasis graecorum*, supposed incurable,) he declares that only two resisted the remedy, which consisted in boiling an ounce of the flexible, fresh twigs (others used the leaves also,) in a pint and a half of water down to a pint, giving the patient of this decoction two ounces to begin with morning, noon and night, and also used as an external lotion. Others think the dose too large, and say it is better to begin with an ounce and increase. To say the least, it does form a most excellent lotion for various diseases of the skin to my personal knowledge, although fallen into neglect. Professor Murray speaks in strong terms as a successful application in cutaneous diseases of an inveterate character.

Dr. Griffith, in his *Medical Botany*, says (page 481): "The properties of Bitter-Sweet are those of a narcotic, diuretic and diaphoretic, but its powers are not very great, though in large doses it certainly will induce the effects of the acro-narcotics; cases of poisoning have been recorded from the berries, as well as from the decoction of the twigs. The decoction has attained some note as a remedy in chronic rheumatism, asthma, chronic catarrhs, and in those morbid conditions of the system in which sarsaparilla has been found beneficial. Its main reputation, however, has arisen from the benefit obtained from it in skin diseases of an obstinate character, as lepra and pityriasis; in these there is strong evidence that it has proved eminently successful, both administered internally and used as a wash to the affected parts." I quote the foregoing from the edition of 1847. It is well not simply to know a plant as a botanist, but its uses and reputation as well. Farmers may find occasion to desire a remedy for a scabby animal, and seeing this plant on or about their premises, may test its properties and benefit themselves and the suffering animal. It does not follow that they turn quack and join the ranks of that class, and yet domestic remedies at hand are often available to those that have a knowledge of the subject; so that it is not intended for medical men, who have the books and are supposed to know all about it, but for the farmer, horticulturist and general reader, who has not the books to refer to; it is "*pro bono publico*." I write not to show how easy it is to copy and give the experience of other people as your fund of information. That is simple vanity and building upon a small capital, but my pursuit as a druggist for twenty-five years, and a botanist for nearly fifty, and a medical student for six years prior to entering the drug business, will exonerate me of vain pretensions. I hope in furnishing these articles, for the benefit of those interested, illustrated by wood cuts, made by myself when in the drug business, with a view of publishing a work on the subject, I never did, except in such fragmentary productions. I should not have referred to myself, only some certain medical aspirant sneered at what he deemed a silly display of medical knowledge on my part—this will suffice.—*J. Stauffer.*

THE BALANCE OF TRADE.

To the Editor of the Lancaster Farmer: I was highly interested in reading the address of P. S. Reist, before the Agricultural and Horticultural Society, in the January number of The Farmer, and especially your note appended to it, in which you intimate a doubt whether the so-called "Balance of Trade" in favor of this country is anything but a *seeming* advantage, and whether, except "on paper," it is an evidence or sign of prosperity.

I incline to think that a fuller examination of the subject will convince you that your doubts are not without good grounds, and that neither experience nor sound reasoning lends any support to the popular opinion that whenever the exports of a country exceed its imports, this is an evidence of its prosperity. On the contrary, not only our experience for several years past, but the statistics of the last half century or longer, I believe will show unmistakably that the reverse is the fact, and in years, or terms of years, of acknowledged prosperity, our imports have uniformly exceeded our exports in value, while in years or terms of ruinous depression in business like those we have just been passing through, the exports are mostly greater than the imports. And this rule holds true not only of our own country but of Great Britain, and doubtless

of all other nations having an extensive foreign commerce. The reason for this is so plain that it seems strange that it does not strike every one who reflects but for a moment on the subject. If a country in dealing with others sends away property greater in value than it receives back, is it not manifestly worsted by the trade by the amount of the difference? But the advocates of the Balance of Trade theory, as understood by Mr. Reist, with perhaps a majority of our people, seems to hold that the more we send abroad and the less we get in return for it, the greater is our gain!

Allow me to illustrate by a familiar example: A Lancaster county miller, having an idea that he can do better with his flour than by selling it in Philadelphia, by way of experiment sends a consignment of ten barrels of it to Liverpool. It is worth in Philadelphia $5.00 per barrel—$50 for the whole. At Liverpool the consignee sells it for $60, and according to his instructions, lays out the money in fine salt, which costs $2.00 per sack. He thus purchases thirty sacks of salt for the $60, and dispatches it by the next steamer to Philadelphia, where on arrival it is sold at $2.50 per sack, amounting to $75. In this transaction, therefore, $50 were exported and $75 imported. The miller has gained $25, (less a small sum for freight, &c.,) and manifestly the country is that much richer; while according to the Balance of Trade theorists the miller and the country have both been doing a losing business!

But this is not all. Suppose that before reaching Philadelphia the vessel is partially wrecked and all but six sacks, worth $15, of the salt is lost. The Custom House books will then show in this venture, an export of the value of $50, and an importation of only $15. The miller would undoubtedly think he had been doing an unfortunate and losing business, but the believers in the Balance of Trade theory would stand ready to assure him that however it might be with him, the country was richer and in a more prosperous condition than if he had landed his salt safely and made $25 instead of losing $35 by his experiment in foreign commerce.

I admit that if the excess of exports over imports goes to pay our debts previously contracted abroad, that disposition of the surplus may be quite as advantageous to the country, and more so in the long run, than if its value was brought home in the shape of foreign merchandise; for it is undoubtedly an advantage to nations to pay their debts; still this is the same as paying for a dead horse, and as it adds nothing to our present resources, cannot conduce to present prosperity.—*J. P., Lancaster, Feb.* 1, 1879.

For The Lancaster Farmer.

MORE ABOUT CATTLE.

The farmers of Lancaster county possess all the advantages necessary for the improvement of their stock of cattle, or to raise, at least, thoroughbred short-horns or Durhams, through ordinary or cheap means. Thirty or forty years ago it was very expensive to start a herd of English Durhams, but things have somewhat changed since then. Jacob Wiest, of West Cocalico township, was probably the best short-horn stock raiser in the county. He obtained his first stock from a firm of Durham importers, in New York State, and paid high prices for his stock to begin with. He got a herd-book along with the stock, and kept a regular systematic record of his operations in all their details, and became so famous as a thoroughbred stock raiser that in turn he became a disposer of stock. He sold three fine heifers to a noted Kentucky stock raiser for $1,000 each, on delivery. Wm. L. Peiper, near Lancaster city, has a well-stocked farm of the best of Alderneys, and of the purest blood in Pennsylvania. It is claimed for them that they are the best milkers, both for quantity and quality, with less petting than the Durhams require, which are much heavier, and, therefore, more valuable for beef than the former. Several farmers in the county, for instance, Mr. Getz, of East Hempfield, and Mr. Steinmetz, of West Cocalico, had the pure Devonshires, with a pure record from the herd-book. For beauty they are an ornament to any farm; red in color with neat horns; well set in their bodies, and yielding much weight for their size. The Jerseys and Ayrshires have never been bred extensively in this county to my knowledge. There are a great many different breeds of cattle in Ohio, at least in name and color. They had a breed some years ago, named the "Hall Cattle," probably originated by a man of that name. The steers were rather high in the legs, round in the body, straight in the back, and had greater length of body than any other steer I have ever seen, and could be made to weigh as heavy as any other breed in existence. It is not my object to unduly exalt any one particular breed, or to disparage another breed, but to encourage stock raising in general—to urge stock raisers to improve their present stock, because I see so much room for improvement. The most valuable improved breeds come originally from Europe, and sometimes at great expense. In the West it was common to form combinations to purchase and import some of the best foreign stock, pay thousands of dollars for a single animal. Sometimes agricultural societies would purchase first-class stock, which would be held by the members, jointly, for the purpose of propagation, and through these means they have now all over Ohio and Kentucky the very best of stock; and especially short-horns and Durhams, are now held and sold at ordinary prices. Whole car loads of bulls are now brought to our eastern markets, and sold at from 2½ to 3½ cents per pound as stakers. Some could be picked out as breeders, almost as good as those that cost $1,000 a piece thirty years ago. I confess that improvement is not necessarily within the reach of *every* farmer, but it is within the reach of many, and with very little additional expense; but, notwithstanding all this, we still persist in raising and keeping a race of "mackerel-backed" bulls and cows.—*L. S. R., Oregon, February*, 1879.

[In our early boyhood we knew of some town cows that had the reputation of creeping under fences and browsing on garden truck, and also quenching their thirst at the slop barrel, and then retiring in the same way, but as a general thing our stock is better now, although there is doubtless abundant room for improvement.—Ed.]

For The Lancaster Farmer.

FIFTY YEARS AGO vs. THE PRESENT DAY.

My father was a farmer, using wooden teeth in the harrow, and sometimes the wheat was plowed in; but a shovel-harrow, as it was called, was mostly used, then sowed by hand and oftimes harrowed it in with a lot of brush wood with the leaves on, dragging it over the field until the grain was covered. The yield per acre was as large under the crude system as at the present day, notwithstanding the use of the grain drills and other improvements. I am of the opinion that grain sown by hand requires less per acre to produce an abundant yield at harvest time, as it gives each stalk more room to mature. Railroads were then unknown, and commerce was carried on between the seaboard cities and the inland towns with horses and wagons. I have seen as many as twenty consecutive teams on the pike loaded with merchandise for Pittsburg, hence from Philadelphia. At night time the horses were tied to a trough fastened to the tongue of the wagon, which was very often frozen to the ground by morning; and the horses so cold and stiff and nearly frozen by being exposed without shelter or blankets that they could stand on a tin plate, to use an expression common to those days. From such treatment and overloading the teams would oftimes stall and be unable to get along, or to ascend the first hill they came to, each team being a fit case for the Society for the Prevention of Cruelty to Animals. These teams would take loads of dry goods, molasses, &c., to Pittsburg, and bring on their return trip salt, &c.

Shippensburg was in those days an important town for wagonmaking, as was also London, beyond Chambersburg, which latter was a place of exchange, as many goods were taken thus far and then reshipped to Pittsburg by other parties. The cost of transportation from Philadelphia to Pittsburg was from three to four dollars per cwt., against twenty-five to fifty cents per cwt. at the present day. Wheat sold at one dollar per bushel; oats twenty-five cents and corn fifty cents per bushel. Land sold at twenty to forty dollars per acre, against two hundred dollars and more for the same land now. The tax valuation of land was then about twenty-five dollars per acre, and the tax thereon at the rate of twenty-five cents for every one hundred dollars valuation. At the present time the tax valuation for the same land is from one hundred to two hundred dollars per acre, and the rate of taxation twenty-five cents on every one hundred dollars valuation. Then a cow cost from ten to twenty dollars, and a horse from fifty to one hundred dollars. Education was dispensed to the country folk, during the winter, at a cost for each pupil of two cents per diem; those that were unable to pay this amount the county paid for. When the pupil was able to do the sums in Pike's arithmetic, without a key, he was a graduate. Geography was used to teach reading then. Now, owing to the many advantages we enjoy we are able to pay fifteen cents on every hundred dollars valuation school tax, and pay a superintendent fifteen hundred to twenty-five hundred dollars annually for looking after the several school districts in the county; and a child of ten or twelve years knows more than a man of seventy, and can tell you what rivers flow into the Gulf of Mexico; and can tell you if a man had one hundred sheep and lost three-fifths of them, and found one-fifth, and sold two-fifths, and bought four-fifths as many, how many he then had. Common laborers received forty to fifty cents per day; haymakers and harvesters sixty-two to seventy-five cents per day; a hired man on a farm $8.00 per month; a hired girl from $2.50 to $3.00 per month. Now a well-educated man can make a living by being idle nine days out of ten; and if he can get your name on a note or check, or persuade you to endorse him, or take his note, if well-written, you oftimes are a sadder and a wiser man. I have a case in point of a beautifully written note that was never paid; the payee often remarking it was so very well written, I had no idea that it would not be paid. In those days nothing was known of a minister of the gospel receiving $25,000 annually; or of a bankrupt law which allowed debtors to pay one-half their liabilities, or less, and ever afterward be released from the balance, thus making them richer than ever before; or of a man's wife owning everything after said man had obtained all the credit possible and the creditors wanted their money. Ten to twelve per cent. interest per annum was then unknown, three and four to five per cent. per annum being the current rates.

Nothing was then known of a man's son having a horse that cost from $200 to $300, and a buggy that cost from $300 to $400, harness $50, and sleigh $125, and driving around the country while his father was home driving the work, and paying the bills contracted by his son as they come in. The daughter away at school, learning music, pap must get a piano or organ for sis; don't let sis go in the kitchen, her fingers will get too thick if she works, and she cannot play well. She must have a silk dress at $50 or $100. Nothing was known of feeding cattle for market; the grain was all sold from the farm. Nor of the raising tobacco, excepting that was raised for the farmer's own use. Others had half an acre to sell to segarmakers. No lime was used as a fertilizer on land. In those days if a man would have told the people that fifty years hence millions of dollars' worth of tobacco would be sold in Lancaster county, and

a man would travel from Philadelphia to Pittsburg in twelve hours, and would be able to communicate with kings and queens in all parts of the civilized globe in a few hours' time, he would have been voted a lunatic and treated accordingly; or predicted the extensive use of ice, or the springing up an hundred tobacco warehouses in Lancaster county to handle the large crop that is annually raised in said county, reaching 30,000 to 40,000 cases; and segar manufactories that use from 50 to 100 cases per annum, each, and in the aggregate consume 8,000 to 10,000 cases in the county per annum, making it no incredible theory that in a few years Lancaster county will manufacture all the tobacco it at present raises, and send the same to all parts of the world. How are we progressing?—*Henry Kurtz.*

For The Lancaster Farmer.

FERTILIZERS AND FORMULAS.

The season is coming again when the ground needs to be prepard for the summer crops, and the farmer faces the question: Have I enough manure, and if not, can I use fertilizers to advantage?

In December number of The Farmer a number of formulas were given for the different kinds of crops, which we will proceed to examine in such cases as would likely to be of interest to the readers of this journal. We will have, however, to go over some old ground first and see what the requirements of plants are, so we may know what our manure or fertilizer should contain in order to be of benefit in raising crops.

That plants may arrive to perfection it is necessary that the soil contains certain substances as materials for plant food, but we are interested only in those that may, from cropping or other causes, become exhausted or reduced below the amount necessary for healthy and profitable plant growth. We have, therefore, only to consider nitrogen, potash, phosphoric acid, lime and sulphuric acid.

The quantity of lime taken up by a crop, as plant food, is very small, indeed. A crop of 20 bushels of wheat, and the straw, contains less than nine pounds; a ton of clover hay about forty pounds; a ton of timothy hay about nine pounds; and a ton of tobacco leaves, cured, about one hundred and twenty-five pounds—less than two bushels. The large quantities of lime usually applied are not needed by the plant as plant-food, but is intended to prepare or make more available other plant-foods that may be in the soil, just the same as when sulphuric acid is added to bones. As lime only hastens what would, in time occur naturally, we might say lime is time, and as "time is money," so lime must be money. Sulphuric acid is taken up by the plant in still smaller quantities than lime, and is most cheaply supplied in the form of gypsum, (sulphate of lime,) one hundred to two hundred pounds of the ground article being usually sufficient, and containing more of the acid than would be needed by the crops grown for some years.

Both of the above substances, lime and sulphuric acid, are very easily washed out of the soil, and it is more for this than any other reason that the application should be made at short intervals, and in somewhat greater quantities than the wants of the plant would seem to call for.

Potash and phosphoric acid generally remain in the soil until removed by the crops taken off, and it is for this reason that their effect is to be seen for so much longer a time than that of other applications. In all good chemical fertilizers phosphoric acid is very soluble, being readily dissolved by water; contact with lime destroys this solubility and renders it inert as plant-food until, by some chemical action in the soil the lime enters into some other combination, leaving the phosphoric acid soluble as before. It is for this purpose that "dissolved bones," "phosphates," &c., should not be applied to land recently limed, nor should lime be applied until a few years after the application of such fertilizer.

Nitrogen is useful to plants only in the form of nitrates, such as nitrate of soda, potash, &c.; or as salts of ammonia, the ammonia itself being a compound of nitrogen and hydrogen. The only salts of ammonia used to any extent is the sulphate of ammonia. Nitrogen should never be applied in greater quantity than for the needs of the crop to which it is applied, as it is very liable to escape from the soil into the air as free nitrogen.

Prof. Ville, of France, says that for wheat only one-half as much nitrogen need be applied as the crop contains, that the proportion needed by different crops varies, being in clover, peas and beans (leguminous plants generally,) only about one-sixteenth of the amount found in the matured crop; but that potash and phosphoric acid should be applied in somewhat greater quantities than the crop contains. That the plants take up nitrogen from the air, as advocated by Prof. Ville, is doubted and denied by many of equally high authority; and it is not our province to enter into the merits of the case, but it is of interest for us to know that they all state that nitrogen has very little effect on clover, &c., and that the effects on the different crops does not correspond with the amount of nitrogen contained in such crops.

Knowing the needs of the plant, with regard to kind and amount, we should be able in some measure to form an intelligent idea of the fitness of a certain formula for the crop intended. For this purpose we give two tables below.

In table No. 1, is given the crop for which the formula was made; the increased yield, it is assumed, the application will make; cost of ingredients in formula; number of pounds of nitrogen, potash and phosphoric acid the materials contain; the last column gives the increased yield in tons of straw, fodder or offal—the value of which each must calculate for himself, and deduct from the cost of the application to find what will be the cost of the wheat, &c. Extra labor from handling extra crops must, of course, be considered.

In table No. 2 is given the number of pounds of nitrogen, potash and phosphoric acid contained in the crops of table No. 1, and the amount of nitrogen assumed by Prof. Ville as needed for the growing crop. The calculation is, of course, made for everything, *i. e.*, grain, straw, &c.

Table No. 1.

CROPS.	Increased Yield....	Cost of Materials....	Nitrogen....	Potash....	Phosphoric Acid....	Increase of Straw, &c.
Wheat.....	20 bus.	$13 61	42	25	23	1½ tons.
Corn.....	30 "	13 95	38	63	23	1½ "
Oats.....	30 "	10 04	31	25	12	1 "
Rye.....	20 "	9 76	29	25	14	1 "
Buckwheat.....	25 "	14 86	39	50	23	1½ "
Tobacco.....	1000 lbs.	22 22	64	98	23	2½ "
Potatoes.....	200 bus	15 76	42	77	23	
Turnips.....	10 tons	19 67	57	74	23	
Grass Hay.....	2 "	20 58	63	75	23	
Clover Hay.....	2 "	18 58	52	58	23	
Fodder—corn.	10 "	14 48	37	88	23	
Fodder—Rye....	3 "	11 53	34	45	17	

Table No. 2.

CROPS.	Nitrogen assumed.	Nitrogen contained.	Potash....	Phosphoric acid....	REMARKS.
Wheat.....	20	35	21	17	
Corn.....	11	41	55	21	
Oats.....	15	27	24	9	
Rye.....	11	25	21	13	
Buckwheat.....	10	37	20	14	
Tobacco.....	33	72	94	18	Stalks included.
Potatoes.....	20	39	67	22	(Tops not in-
Turnips.....		36	62	22	cluded.
Grass Hay.....		73	82	29	
Clover Hay.....	9	83	78	22	Nine by inference
Fodder—corn.....		64	86	24	(In the green
Fodder—Rye.....		26	38	14	state.

By comparing the columns of "potash" and "phosphoric acid" of the tables, it will be seen that these amounts are, in most cases, somewhat greater than in the formulas than in the crops, and this is as it should be.

By comparing the column, "nitrogen," table No. 1, with that of "nitrogen assumed" in table No. 2, it will be seen that the amount of nitrogen furnished by the formulas is greatly in excess of what Prof. Ville claims as needful. If convinced of the truth of these claims, we could very materially reduce the cost of these formulas by taking smaller quantities of the ingredients containing nitrogen.

If the teachings of agricultural chemists be true that soda and magnesia are present in comparatively inexhaustible quantities, the sulphates of these might be omitted in the formulas; and also as the oil of vitriol (sulphuric acid) used in reducing the bones, and the sulphuric acid contained in the sulphate of ammonia furnishes this acid in larger quantity than the crop needs, the land plaster (gypsum) might also be omitted, there being very few soils that would be benefited any by the small quantity of lime contained in the plaster. Omitting the above would make a further saving of 65 cents to $1.00 per acre.

By laying aside differences of opinion as to what is needed and what is not needed, and taking the formulas as they are, purchasing the materials from reliable parties, I believe that they are decidedly better than the majority of "phosphates," "superphosphates" and fertilizers with high-sounding and fancy titles.

Farmers may wish to apply only one of the elements of plant-food, but we are at a loss as to what materials will furnish it at the lowest price. For this purpose we give the prices of the materials furnishing such elements:

Sulphate of ammonia, 25 per cent.,	4½c. per lb.
Nitrate of soda,	4½c. "
Dried blood,	2c. "
Nitrate of potash, 80 per cent.,	2c. "
Sulphate of potash, 25 per cent.,	$12 00 per ton.
Dissolved bones,	32 00 "
Ground bones,	32 50 "

In the above the nitrogen will cost 28 cts. per pound in nitrate of soda; 23 cents in sulphate of ammonia; and 18½ cents in dried blood.

The potash will cost 4½ cents per pound in sulphate of potash, and 4 cents in the muriate.

The phosphoric will vary in price according as we value the nitrogen contained in the bones. In ground bones, if we value the nitrogen at 23 cents per pound, then the phosphoric acid will cost only 3½ cents per pound; nitrogen at 18½ cents would make the phosphoric acid 4 cents. In dissolved bones, valuing nitrogen as before, we would have the phosphoric acid 6½ and 7½ cents respectively.

In dissolved bones the phosphoric acid comes somewhat higher, but it is in better shape than when the bones are only ground, being much more available to the wants of the plant.—*A. B. K.*

STATE SOCIETIES.

STATE FRUIT GROWERS' SOCIETY.

The twentieth annual meeting of the Pennsylvania Fruit Growers' Society was called to order at two o'clock on Wednesday afternoon, January 18th, 1879, in Adler Hall, corner of Sixth and Court streets, Reading, by Hon. Henry M. Engle, of Marietta, Lancaster county, Vice President of the Association. Vice President Engle, in taking the chair, expressed his regret that the President of the society, Josiah Hoopes, of West Chester, Pa., was unavoidably absent in consequence of ill health. He stated that as he was the only Vice President present he would not shrink from the duty devolving upon him.

Col. J. L. Stichter, in behalf of the Berks County Agricultural and Horticultural Society, then delivered an address of welcome, as follows:

Mr. President and Gentlemen of the Pennsylvania Fruit Growers' Society:

In behalf of the Berks County Agricultural and Horticultural Society, I have the pleasure to welcome you to the city of Reading, and to assure you that this county has not been unmindful of the importance of fruit culture. In the eighteenth century the

"Seckel" fear was planted on her soil; one of these veteran trees stands on my grounds and bids fair to fruit for many days. The parent tree of this world-renowned fruit stands on what was once the farm of Lawrence Seckel, below Philadelphia, and is still in a healthy condition. The "Reading" pear, of such wide reputation, is a "seedling." The following twenty-seven are acknowledged native varieties of apples of approved excellence of which we may well be proud: Hiester, Keim, Boas, Hain, Housum's Red, Phillippi, Miller, Stehle, Krauser, Helper, Bear, Marks, Yost, Hughes, Kelsey, Gewiss Goot, Neversink, Orange, Meister, Champagne, Ritter's Sweet, Evening Party Lesher, Ohlinger, Red Apple, Sandt, Zieber. Under the fostering care of the Berks County Agricultural and Horticultural Society over fifty thousand fruit trees—the majority peach—have been planted during the last two years. How gratifying a reflection that soon our fruit productions in Pennsylvania will in a measure make up the loss occasioned by the depression in mineral and other interests. Anticipating much pleasure and profit in attending this convention, I again bid you a cordial welcome to this city and county.

Vice President Engle replied briefly to the address of welcome. He said that the heartiness of the welcome required an equally hearty response for which he did not have the words to reply. He heartily accepted the welcome and fully appreciated it. He said that the society since its existence has been rather an itinerant one, and has held its sessions in different sections of the State, not so much for the instruction of others as to learn. They expect also to make new members in the different places in which they meet, and hoped to receive a considerable accession of new members in Reading.

We are indebted to the *Berks and Schuylkill Journal* for a copy of these proceedings, but regret that our space is too limited to admit the whole in our columns, and therefore the following extracts must suffice for the present. We will try, however, to make room for the essays of Messrs. Stitzel and Satterthwaite. The meeting itself was well attended and interesting, and the discussions brought out many useful things.

Charles H. Miller, Chairman of the Committee on Nominations, reported the following officers: President, Josiah Hoopes, West Chester; Vice Presidents, Henry M. Engle, Marietta; George D. Stitzel, Reading; John I. Carter, West Grove; Recording Secretary, E. B. Engle, Marietta; Corresponding Secretary, W. P. Brinton, Christiana; Treasurer, George B. Thomas, West Chester; Professor of Botany, Thomas Meehan, Germantown; Professor of Entomology, S. S. Rathvon, Lancaster; Professor of Horticultural Chemistry, S. B. Heiges, of York.

The President was authorized to cast the ballot for the officers nominated by the committee, and they were elected by acclamation.

The society then, at 9:40 P. M., adjourned to meet on the third Wednesday in January, 1880, in Bethlehem, Pa.

STATE MILLERS' ASSOCIATION.

The third semi-annual meeting of the Pennsylvania State Millers' Association convened in the large parlors of the Stevens House, on Wednesday afternoon, January 14. The President, Charles A. Nmor, of Wilkes Barre, called the meeting to order in a neat speech, in which he welcomed the old members and expressed his pleasure at seeing so many strange faces present. He said Pennsylvania represented more milling capital than any State in the Union, and it was to the interest of all millers to stand firmly together for mutual protection.

The Secretary, A. Z. Schoch, then read the minutes of the last meeting held in the Keystone House in Reading, at which there were 70 members present, representing nearly every county east of the Alleghenies, and at which meeting 26 new members were added to the membership.

The following old members answered to their names at call of roll: John McFarland, Watsontown; N. C. Freck & Co., Millersburg; J. M. Thomas & Co., Wilkes Barre; Hancock, Grier & Co., Wilkes Barre; Schoch Bros., Selins Grove; C. Bruckhart, Chambersburg; J. H. Geary, Cattawissa; P. A. & S. Small, York; T. Wright, Kingston; Jacob F. Newman, Bedford; J. B. Fisher, Penn Hall; Geo. F. Seitz, Glen Rock; F. W. Gantz, Manietta; Krieder, Campbell & Co., Philadelphia; Strickler & Keller, Lancaster; Reuben Garber & Son, Salunga; Jacob Walter, Easton; D. L. Hamaker, East Hempfield; A. N. Wolf, Allentown; Samuel Young, Markekirle (?); Benj. Wissler, Lincoln; P. B. Bucher, Clay; E. L. Rogers & Co., Philadelphia; D. & A. Luckenland, Bethlehem; Aaron Yocum, Reading.

After the calling of the roll the Secretary read his report; also the report of the Treasurer, which was adopted.

The new members were then added to the roll—E. K. Bollinger, Glen Rock; Charles H. Platt, Avondale; Gotlieb Mayer, Middletown; Eph. Bollinger, Sell's Station; J. M. Brandt, Mt. Joy; Nath. Sellers, Philadelphia; Wm. W. Snyder, Landisburg, Perry county; Wm. Pyle & Sons, Bryn Mawr; S. M. Miller, Refton; Wade Wilson, New Brighton; Sam'l M. Brua, Harrisburg; Peters & Allen, Philadelphia; C. G. Wenger, West Earl; John S. Gingrich, Petersburg; John P. Sager, Lemon Place; Forney, Wist & Co., Hanover; John Hoffer, Harrisburg; Noble & Son, Williamsport; Arnold Miller, Reading; Levan & Sons, Lancaster; Isaac Ranck, Lancaster; John W. Eshleman, Lancaster; —— Stauffer, Stevens; John Musselman, Wheatland Mills; Steacy & Co., Columbia.

Mr. Small moved a vote of thanks be extended to President Miner and Secretary Schoch, and that they be re-elected to the positions they had filled with so much credit and ability.

Both the President and Secretary earnestly requested that others be elected to fill their places, and the former reciprocated the compliment paid him by Mr. Small, by nominating him for President, but the latter positively declined, and the entire sentiment of the meeting seemed to be so strongly in favor of retaining these gentlemen in these positions, that they were unanimously re-elected, though under protest of vote by both of them, Mr. Small putting the motion to the meeting.

Mr. Miner briefly returned thanks for the honor done him, but Secretary Schoch's speech was very brief. He said, "Gentlemen, I cannot say that I thank you."

The Next Place of Meeting.

Bellefonte, Harrisburg, Lewisburg, Bedford and Chambersburg were placed in nomination, and there was considerable discussion on the subject. Finally, all the towns named but Bedford were withdrawn, and Altoona was added, and the contest thus narrowed to the two places, was, on a vote being taken, decided in favor of the latter.

The President announced the standing committees for the ensuing year as follows:

Patents.—W. Latimer Small, York; Jacob Walter, Easton; Nathan Sellers, Tamaqua; L. Hamaker, East Hempfield; Geo. M. Cresswell, Petersburg.

Insurance.—Wm. P. Duncan, Philipsburg; John W. Eshleman, Lancaster; B. F. Isenburg, Huntingdon; E. F. Noble, Williamsport; J. Z. Eby, Manheim.

Transportation.—E. A. Hancock, Wilkes-Barre; A. C. Freck, Millersburg; M. M. Stein, Pottsville; E. G. Steacy, Columbia.

Mill Machinery and Processes.—Thomas Wright, Kingston; C. Burkhart, Chambersburg; Frank Hays, Lock Haven; D. O. Luckenbauch, Bethlehem; J. B. Fisher, Penn Hall.

Grain for Milling.—S. L. Levan, Lancaster; I. M. Thomas, Wilkes-Barre; A. M. Garber, Salunga; J. F. Newman, Bedford; A. B. Sprenkel, Wrightsville.

Grading and Inspection.—John Hoffer, Harrisburg; S. Z. Harbecker, Williamson; John P. Sager, Lenape; L. W. Pyle, Bryn Mawr; C. Heebner, Norristown.

SELECTIONS.

THE GRAIN AND FRUIT CROPS OF 1878.

The report of the Department of Agriculture for December, just issued, shows the following condition of crops:

The Corn Crop.

The corn season closed with a marked improvement in the condition of the crop. The average, as found by the June returns, shows no material change, being in round numbers 51,000,000 acres in 1878, and 50,300,000 acres in 1877. Compared with 1877, the South Atlantic States show a falling off in production; the Gulf States increased slightly. The States of Kentucky, Illinois, Missouri and Kansas—four of the largest producing States—decline considerably, while all the other States north of the Ohio river, and in the northwest, make a decided increase, thus making the aggregate crop for 1878 larger than that of 1877 some 30,000,000 bushels. This result is the more remarkable as it is the fourth of an unbroken series of large crops.

The Oats Crop

is somewhat in excess of the very large crop of 1877, constituting it the largest crop ever raised in this country. The Atlantic slope, north of the Chesapeake, showed a decline, especially in the large oats-producing region of the Middle States. The Southern coast States, from North Carolina to Texas, uniformly increase their product, but the Southern inland States, as a whole, fell off. The West, Northwest and Pacific States showed a marked increase. The Territories also indicate an enlarged product. The minimum quality appears in the neighborhood of Chesapeake Bay, though portions of the Northwest also note a marked deficiency of weight and other merchantable qualities.

There is no material change in

The Barley Crop

for 1878 compared with 1877, except the great product of California, which will be double that of its predecessor. The total product for the year 1878 will be, in round numbers, 48,000,000, while in 1877 the crop was 34,500,000 bushels.

The Rye Crop

turns out about one-sixth larger than in 1877. The total yield amounted to nearly 60,000,000 bushels. The quality of the crop is below the average in New England, except Connecticut, and above the average in all the Middle States except Delaware. The crop of the South, on the whole, is inferior, while in all the States of the West, Northwest and Pacific slope the quality is superior, except in Illinois and Nebraska.

There is a large decline in the

Potato Crop

this year as compared with 1877. The leading complaint was the extreme heat, which especially affected the late plantings. In some places it was combined with drought, and in others with excessive moisture, causing rot. The average yield of the whole country will be 69 bushels per acre, against 94 bushels in 1877, thus making a total product, in round numbers, of 124,000,000 bushels for 1878, against 170,000,000 in 1877.

The Hay Crop

is 20 per cent. greater than last year.

Sorghum

is receiving increased attention, especially in the trans-Mississippi States and Territories, where the results of the year's culture are noted by different correspondents as very satisfactory. In the West the Minnesota amber cane has produced the most satisfactory results. In Stearns county, Minn., this variety is reported as yielding as high as 300 gallons of syrup per acre. Delaware county, Iowa, manufactured 100,000 gallons of sorghum syrup during the year and found a steady home demand for the whole.

The Tobacco Crop

of 1878 has been secured under exceptionally auspicious conditions of weather, the bright days of September favoring the growth, while the unusual delay of severe frost enabled the plant to mature thoroughly before the knife is applied. Of the large producing States, Virginia, Maryland, Connecticut and Massachusetts report an improvement in quality. Twelve States, representing the bulk of the total production of the country, report the production compared with last year as follows: Kentucky, 60; Virginia, 73; Missouri, 56; Tennessee, 53; Ohio, 90; Maryland, 84; Indiana, 83; North Carolina, 89; Pennsylvania, 86; Illinois, 50; Connecticut, 86; Massachusetts, 95. The conditions of

Fruit Growth

during 1878 were quite unfavorable. The grape product of the Atlantic slope and Mississippi Valley was very much reduced. California, however, reports a greatly increased yield. The apple crop shows an increased yield in all of the New England States, New York, Texas and the Pacific States. In all other States it shows a falling off, Missouri reporting less than half of last year's crop.

AMMONIA IN THE AIR.

Dr. R. Angus Smith, who has done so much for the chemistry of the air, lately read before the Manchester Literary and Philosophical Society a paper on the distribution of ammonia, in which he describes the simplest method yet proposed for determining the amount of ammonia in the air. And, since such ammonia may be taken as an index of the amount of decayed matter in any locality, the hygienic importance of an easy test for it is not small. The availability of the proposed test arises from the circumstance that ammonia is deposited from the air on every object exposed thereto. "If you pick up a stone in a city, and wash off the matter on its surface, you will find the matter to contain ammonia. If you wash a chair or a table or anything in a room, you will find ammonia in the washing. If you wash your hands you will find the same, and your paper, your pen, your tablecloth, and clothes all show ammonia, and even the glass cover to an ornament has retained some on its surface." In short, ammonia sticks to everything, and can be readily washed off with pure water. Hence Dr. Smith inferred that he might save himself much of the trouble he had been taking in laborious washings of air to determine the presence of ammonia, and gain the desired end by testing the superficial deposits of ammonia which gathers on clean substances during ordinary exposure. Accordingly he suspended small glass flasks in various parts of his laboratory and examined them daily, washing the outer surfaces with pure water, and testing at once for ammonia with the Nessler solution. Subsequently a great many observations were made by means of glasses exposed to air in door and out, where the air was foul. By using glasses of definite size it was easy to determine whether ammonia in the air was or was not in excess. In his laboratory experiments in ammonia was observed when the glasses had been exposed an hour and a half.

Of the practical working of the test Dr. Smith remarks that it must not be forgotten that the ammonia may be connected with organic matter; and consequently this mode of inquiry is better suited as a negative test to show that ammonia is absent than to show what is present. When ammonia is absent we may be sure that the air is not polluted by decaying matter; when it is present there is need of caution. Dr. Smith adds that he hopes to make this a ready popular test for air, a test for sewer gasses, for overcrowding, for cleanliness of habitations, and even of furniture, as well as for smoke and all the sources of ammonia. Of course it must be used with consideration and the conclusions must not be drawn by an ignorant person.

OUR LOCAL ORGANIZATIONS.

AGRICULTURAL AND HORTICULTURAL SOCIETY.

The Lancaster County Agricultural and Horticultural Society met on Monday afternoon, February 3d, in its room in the City Hall, and was called to order by President Cooper. The following members were present: Calvin Cooper, President, Bird-in-Hand; Jos. F. Witmer, Secretary, Paradise; Levi W. Groff, Treasurer, West Earl; Dr. S. S. Rathvon, city; Henry M. Engle, Marietta; M. D. Kendig, Manor; Levi S. Reist, Manheim; Peter S. Reist, Litiz; C. L. Hunsecker, Manheim; W. H. Brosius, Drumore; D. Smeych, city; C. M. Hostetter, Eden; Henry Kurtz, Mount Joy; W. J. Kaffroth, West Earl; I. L. Landis, Manheim; Clare Carpenter, city; J. M. Johnston, city; Casper Hiller, Conestoga; Jacob Bollinger, Manheim; Henry Herr, West Hempfield; Geo. McIlvaine, Salisbury; Eph. H. Hoover, Manheim; F. R. Diffenderffer, city; Johnson Miller, Warwick; S. R. Eshleman, Leaman Place.

Rev. J. Calder's Lecture on Agriculture.

As announced by Henry M. Engle, at the last meeting, Rev. James Calder, of the Pennsylvania State College, situated at State College, Centre county, was present and ready to deliver an address. The rules were suspended and he was invited to begin his lecture, of which the following is a brief sketch:

He used the word agriculture in a comprehensive sense, embracing the farm, market garden, fruit growing, horticulture and stock growing. Agriculture is a foundation industry and was man's first labor. In every new country it is the first employment for man. Manufacturing nations depend on agricultural ones, as England on America, India, etc. Agriculture is the best employment in which to lay the foundation of a substantial fortune, and in enlarging on this point, the lecturer called special attention to the advantages of earning money instead of inheriting it. When a boy earns a dollar by his own labor he knows its cost and its worth. Give another ten thousand dollars and unacquainted with the labor of earning it he spends it rapidly because he knows not what it costs. Agriculture is peculiarly free from risks. In many places our richest men have all been overwhelmed. In the lumber trade, the oil trade, everything is at a stand-still. It is different with the farmer. He too has risks, but compared with other professions his risks are almost nothing.

His business is comparatively free from the temptations that assail nearly all others. All professions have their chastisements; they are for our own good, but the trade of the farmer is comparatively exempt. In Germany farmers live on small patches, and are therefore brought together oftener than our farmers are. Here our farmers own their lands, live on them and are to some extent isolated, being thus not subjected to so many temptations as other men. Farming brings men nearer their Maker. They see him in the nature around them every hour, and are thus brought into nearer communion with him.

Intensive Farming.

Lancaster county farmers are peculiar. Their farms are large but are well cultivated. In many parts of the State men own large estates, hundreds of acres, but cultivate only a small portion. They skim and skim over it and do not pretend cultivation in its higher sense. Farmers ought to take no more land than they can manage, but cultivate a little and do it right. Countries that are densely populated like China, have farms that are like our gardens. Here a man may own 200 or 300 acres but he can manage on by a small part of it.

In China, it is warmer than here, the climate being about equal to that of Mobile. There they put wheat in the ground in November and take it off in March. Then the rainy season comes, and they plant rice which they cut in August. After the rice crop they plant garden vegetables which are fully grown in November, and are gathered in time to allow the wheat to be planted. Thus they raise three crops in one year. Of course the climate is warmer, and this gives them an advantage, but a greater advantage is their method of fertilization. They utilize every scrap of manure procurable. Every animal that dies, ashes and even then the night soil, which is nearly all wasted in this country, is used, and the result is that the crops almost jump, they grow so rapidly. Their fertilization is of the most intensive kind imaginable. There a man with a small piece of ground can make money and plenty of it.

Now, in this country we are too prodigal, too careless of the manure pile. In Minnesota he met a man who thought manure was a nuisance, and was glad a stream ran by his farm into which he could throw it. He will learn his mistake soon enough and be glad to utilize all the valuable manure he now wastes. The intensive farmer is the man who cares for every bit of fertilizer and uses it to advantage.

Another advantage of intensive farming is that farms become divided up into small sections and thus more men are enabled to become freeholders and independent. What tends more to drive independence out of a man than to feel that his neighbor is rich and will remain so, while he will never become independent? On the other hand, how is he inspired if he feels that in ten years he can own a piece of ground. Now, the intensive system does this, and is therefore the best. In the South some men owned whole counties, so to speak, while the great majority of the rest were mere mudsills. We should endeavor to divide the ground up so that every man could own property.

The Location of Farms—A Home Market.

Experience has shown that it is better for agriculture to be near other interests: that it is better for the farmer to be near the manufacturer and the common carrier near to railroads and canals. We all know that the divine injunction that it is not good for man to be alone, referred to his choosing a mate for life, but it applies equally in the affairs of business life. It is better for him to have other business men near him. It is possible for a man to have a good farm, with everything on it necessary for the use of the former and yet to be unhappy. Why? Because he is so far from his fellows that he cannot have his products carried to them at a profit to him. Years ago it was cheaper to burn corn in the West than to transport the coal needed to make fires. Just so with the farmer who is so unwise as to think that he can farm with profit while the consumer is 3,000 miles off in Europe. The heaviest portion of the freight charges are sure to fall upon the producer. The nearer you bring the consumer and the producer, the better for the latter.

One advantage of this can easily be pointed out; a greater variety of crops can be raised. Wheat and corn and potatoes can be kept for such a length of time that they can be shipped for long distances. But farmers make large profits from the growing of strawberries, which are largely consumed. Now, if a man lives a great distance from the market the culture of strawberries is not profitable. They are ruined before he can get them to the market, and he is shut out from these kinds of products.

Another advantage from these products is the variety of interest to the farmer's family. Suppose one of his sons is peculiarly adapted to the care of stock, and cares for no other branch of the farm. If his father decides that no stock but what is necessary for farm use shall be raised his occupation is gone. Another is adapted to the work of raising fruit, but they are so far away from the market that it is of no use to raise it. That boy has no work. Don't put all your eggs in one basket. Don't raise only one crop.

Then, in growing for a home market, the farmer better understands what is wanted than for a foreign market. Suppose we try to raise here what is wanted in Europe. We only know how to shape our actions by the reports of newspapers, which are often false. But at home we know exactly what is wanted and can raise it without danger or loss. Then, how easy it is to reach this market. We send our hands off in a wagon, and in a few hours the sales are made and the receipts secure.

Another important feature in producing for the home market is, that it secures a greater variety of fertilizers. If we send wheat to England what return do we get? If we sell it at home we get a fertilizer in return.

Educated Farmers.

Intelligence is necessary in farming. A great many think that if there is any place for an uneducated man it is on the farm. If any son is peculiarly stupid, the father resolves to make him a farmer. This is a mistake; a slander. If any man intends to be a farmer he should be intelligent. He is the best farmer who is best educated. Yet at the same time we must recognize the unwelcome truth that the majority of farmers are not well educated. This is easily explained in the fact that farmers live out from among their fellows, and consequently do not have advantages of schooling. The most of the country schools upon which the children of farmers must depend for their education are poor ones. Sometimes there are forty or fifty scholars and almost as many classes with one teacher. Though that teacher do the best she can, she cannot possibly advance her pupils perceptibly in the short term allowed. And after four or five years of such schooling, the children are taken away. The farmer is not to blame, it is rather a matter of sorrow.

Now the farmer who has received an education, and knows something about the rotation of crops, the using of manure, etc., works with more confidence. How much more certain is he in his movements! Take the lime question, and the lecturer told how an old farmer argued for two days that lime is a manure, but could not be made to understand that it only prepared the plant food for the plants. At length he was convinced by a simple illustration. He was shown a stove, and food. If he was hungry he could eat the food after it had been cooked, but he could not eat the stove or the raw food.

Instruction can be gained by the perusal of agricultural papers, by close attention to discussions at meetings like this, and the farmer will be able to

keep abreast with the times. Therefore the farmer who refuses to allow his sons to be educated is acting unwisely if not unkindly.

In conclusion, he advised the farmer to stick to his farming and to love it. To be enterprising and strive to improve his methods.

On motion of Henry M. Engle, a vote of thanks was tendered to the lecturer.

Mr. Kendig asked if the lecturer would advise the application of lime and manure at the same time, and received a negative answer.

Mr. Linville d ffered with the lecturer in regard to the education of farmers. Education does not cease when the school is abandoned. No class has a better chance than the farmer for self-education. The long winters are profitably spent by some, and he don't see why it could not be done by all.

The Fair Question.

The report of the committee appointed to consider the question of holding a fair was called for, but Mr. Smeyeh stated that none had been prepared, as the comittee had not met at the appointed time. For his part, he had come to the conclusion that nothing but an indoor fair could be held. The Northern Market would be a good place, and it should last three days.

Mr. Kendig stated, that as Berks county has always had successful fairs, he had written to the secretary of the Berks County Agricultural Society, Cyrus D. Fox, in relation thereto, and had received a letter from that gentleman, which he read. The letter warmly advocated fairs as being to the interest of farmers, and said their fairs had advanced the agricultural interests in Berks county.

Mr. Engle, in his travels, had made inquiries in relation to fairs, and found that the Berks and York fairs were both successful. There was probably a little loss, but they were called successes. But before talking further about fairs he wished to know how the society was to get grounds to hold a fair. All know that they have no grounds, and hence must rent. It is not at all certain that the Park grounds can be procured—in fact it is rather doubtful. If they are not procurable the fair is out of the question. Not that the farmers of Lancaster county are not rich enough to buy grounds, but they won't do it. A fair could be held in the Northern Market House, but it would be a small affair for the garden county of the State in comparison to those held by York and Berks.

Johnson Miller had sent in a communication, which was read. He thought it was a shame that no large fair had been held since 1858, excepting the State fair, and that might have been better. This fair should be a grand one. He advocated the use of the Market House.

Mr. Calder thought that to hear of a little experience a party of men in Centre county had would instruct the society. They wanted to execute a work that would cost $1,000 and thought they had better be incorporated. They made application for a charter, asking permission to issue $1,000 worth of stock and their expenses were not more than $20. They put the stock at five dollars per share, and in a very short time it was all taken. The merchants here, no doubt, would subscribe the money needed if they understood that the farmers wanted to have a fair.

Mr. Witmer told of the experience of the Berks Agricultural Society as related by a member. In the first place they secured grounds for the nominal sum of $1 a year for 99 years. Then they sold life tickets for $10 each and raised money to erect buildings, etc. It had occured to the speaker that a vacant place near the city could be secured the same way. But it is not necessary that the fair be held in Lancaster; if some of the boroughs offer better inducements, they ought to be accepted.

Mr. Kurtz knew of a number of hotel keepers who would give $50 to $100 if a fair were held in this city, as they could make five times that amount from it.

Mr. Witmer thought it would not do to sell too much stock in the city. If merchants got a majority of the stock they would run the fair to suit themselves and leave the farmers out in the cold.

Mr. Engle moved that the society hold a fair next fall, and his motion was unanimously carried.

Charter Wanted.

President Cooper suggested that, in order to carry out Mr. Engle's motion, the society should procure a charter and permission to sell stock, and by that means raise money.

A motion was made that the society apply for a charter, which was carried.

The Amount of Stock.

The next question was the amount of stock they desired to issue, and on motion of Mr. Engle $3,000 was fixed upon.

Mr. Kurtz moved that the shares be fixed at $5. Agreed to.

Profit of Raising Fowls.

The secretary read a report on a year's experiment with fowls, prepared by Casper Hiller. (See page 20.)

Mr. Calder said he liked the report very much. He believed chickens should have a place into which they could be turned, and it would be an advantage to turn them into an orchard. His plan, as his accommodations are limited, is to keep the chickens in the yard from the first of May until the latter part of October, when he let them run through the orchard, strawberry patch, vineyard, etc. That was a very encouraging report. Though not large there was yet a net income.

Mr. Witmer reported, as directed, that the Poultry Association asked the co-operation of the Agricultural Society.

The Curculio.

Mr. Reist introduced the subject of insects, and stated, as his opinion, that the borer and others increased in numbers as the forests decreased.

Mr. Engle stated that he had recently discovered that the forest is the home of the curculio. He and a friend had planned an apple and peach orchard on the river hills, on ground surrounded by trees, and was surprised at the numbers of this insect which attacked the trees. But afterwards he learned, from Dr. Rathvon, that the forest was the home of the curculio, and be had taken trees right to them.

Grapes.

Mr. Smeych exhibited some bunches of Almiera grapes, and related his experience in growing foreign grapes of all kinds, which agents said would grow here as well as in their native countries. This is not true, as he could prove, and the proper place for such men was in jail.

Bills.

A bill for coal, $2.25, another for carrying it up stairs, 50 cents, and a third of $10 for Mr. Calder's expenses were presented and ordered to be paid.

Prize Essays.

Mr. Engle thought more prize essays should be written, and volunteered to write one. Messrs. Kurtz and Brosius also offered to do so, the essays to be ready by next month.

Mr. Calder was proposed and unanimously elected an honorary member, and thanked the society for the honor conferred. Adjourned.

TOBACCO GROWERS' ASSOCIATION.

Monday afternoon, January 20th, was the regular time for holding the meeting of the Tobacco Growers' Association. It was understood at the last meeting that the present one would determine whether the society should be continued or be finally disbanded. Under these circumstances it was hoped and believed that there would be a good attendance, but the same disappointment that has so long been the portion of the few who have regularly met and attempted to keep alive some interest in the meetings of the organization was again theirs.

Only eight members and visitors were present, namely: M. D. Kendig, President, Manor; Peter S. Reist, Litiz; Sylvester Kennedy, Salisbury; A. H. Yeager, East Lampeter; Linnæus Reist, Manheim; Clare Carpenter, Lancaster; Frank R. Diffenderffer, Lancaster; Jacob Kendig, Silver Spring.

In consequence of the slim attendance it was not thought necessary to go through the formality of calling the society to order, but Peter S. Reist, who had prepared an essay on the culture of tobacco, proceeded to read it. See page 19.

After the reading of the essay those present indulged in trade gossip awhile longer, and also canvassed the propriety of continuing the meetings. The conclusion reached was that during the past so little interest has been shown by tobacco growers in these monthly gatherings that it seemed useless for the few who still clung to the organization to endeavor to keep it up any longer. The association was not finally disbanded, but it was understood that probably one more meeting held, at the the President's call, would end so much of the Tobacco Growers' Association as still held together.

This, therefore, may be regarded as the winding up of an organization which has been of vast benefit to the tobacco growing interests of this county. Among its members were the most successful growers of the weed among us. The amount of information disseminated among our farmers on tobacco culture can be seen in the advanced condition tobacco growing now holds in Lancaster county. The discussions were always interesting and profitable, and the tobacco growers have done themselves little credit in permitting it to go down.

During the brief period of twenty-five years tobacco growing has assumed enormous proportions in this county. The amount of money it brings to our farmers exceeds that they receive for their wheat crop, reaching in favorable seasons the enormous sum of two millions of dollars or more. It has been said, and truthfully, that the culture of tobacco has done more to put the farmers of this county in their present strong financial condition than any other crop they have grown. Hundreds of men have paid off heavy incumbrances, and others have gained comfortable homes for themselves through this crop. It has, in short, enriched the county to an extent few are aware of, and yet yesterday's proceedings show that there is not enough interest among tobacco farmers to keep the society especially devoted to the advancement of this great and growing crop from disbanding. We are not proud of the record our Lancaster county farmers have made for themselves in this matter.

POULTRY ASSOCIATION.

The Poultry Association met on Monday morning, February 3rd, at the usual time, in the old Athenæum rooms, in the City Hall. President Tobias called the meeting to order, with the following members and visitors present: Rev. D. C. Tobias, Litiz; Frank B. Buch, Litiz; W. J. Kafroth, West Earl; John A. Reed, city; Joseph F. Witmer, Paradise; J. A. Buch, Litiz; H. H. Tshudy, Litiz; Chas. E. Long, city; J. C. Linville, Salisbury; J. M. Johnston, city; F. R. Diffenderffer, city; Clare Carpenter, city; J. B. Lichty, city; Charles Lippold, city; Colin Cameron, Brickerville, A. H. Shreiner, Manheim; Harry Hirsh, city; John C. Burrowes, city; D. M. Brosey, Manheim; T. D. Martin, New Haven; John B. Eshleman, Ephrata; N. M. Hahn, Manheim; Eli J. Barr, Litiz; Hon. Amos H. Mylin, West Lampeter; John S. Rohrer, city; Simon P. Eby, city; Charles White, city; William Dean, city; Samuel Hess, city; Christian Rine, city; Jacob M. Mayer, Manheim; Silas M. Warfel, Strasburg; Christian Lintner, Manor; Henry Nissley, Columbia; John S. Hostetter, Oregon; Hon. John B. Livingston, city; William Bishop, Strasburg, and S. Matt. Fridy, Mountville, were unanimously elected members of the society.

Charles E. Long moved that postal cards be sent to each of these men just elected notifying them of their election, and that all moneys be paid to J. B. Lichty, at his office in Centre Square, or at the next meeting. Carried.

On motion, a committee of three, Charles E. Long, F. R. Diffenderffer and John A. Reed, was appointed to ascertain the probable cost of having the Constitution and By-Laws of the society published.

The rules were suspended to allow the election of John C. Linville, Gap, as a member.

H. H. Tshudy moved that a committee of three members, who are also members of the Agricultural and Horticultural Society, be appointed to bring this association to the attention of that society, asking them to encourage it by becoming members, etc. The motion was carried, and John C. Linville, W. J. Kaffroth and J. F. Witmer were appointed.

H. H. Tshudy, chairman of the Executive Committee, presented two bills, one from the *New Era* office for printing postal cards, 75 cents, and the other from J. B. Lichty for postage, $1.20. Both were referred to be paid.

Colin Cameron proposed the following questions for discussion at the next meeting:

"What is a rapid cure for chicken cholera?" Referred to Charles E. Long.

"Will chickens do well on board floors, without sunlight?" Referred to John A. Reed.

"What is the farmer's best barnyard fowl?" Referred to H. H. Tshudy.

"What must hens that are confined absolutely have in order that they may produce eggs?" Referred to Rev. D. C. Tobias.

Jos. F. Witmer suggested that it would be well if at each meeting questions were chosen for discussion at the next mee ing, and moved that a committee be appointed to whom this duty shall be assigned. The motion was carried, and the committee will be announced at the next meeting.

Adjourned.

WARWICK FARMERS' CLUB.

A meeting of citizens of Warwick township was held at the house of John Grossman, of said township, for the purpose of organizing a *Local Farmers' Club.* Members present, Urias Carpenter, Jacob Bollinger, John Huber, Henry Huber, Isaac George, Michael Behmer, Peter Volleitzer, John Grossman, Aaron Grossman, Moses Grossman, Mrs. Carpenter and Mrs. Grossman. The meeting was organized by electing Urias Carpenter President, and Jacob Bollinger Secretary.

On taking the chair Mr. Carpenter stated the object of the meeting, and added that farmers have less protection than any other class of men; that we proposed to meet for the purpose of exchanging ideas on matters relating to our interests and making agricultural experiments. He spoke at some length upon the importance of such associations as we desired to organize, and the benefits derived from them.

Mr. Huber, of Litiz, spoke of the good effects of farmers' clubs in other localities, and that we were behind our sister counties in that respect.

Mr. Grossman said that millers, tobacco speculators and other business men have their society meetings, and why should not also the farmers have their local club meetings?

Mr. Grossman read a lengthy essay on orchards, and also one on fence-making on the farm. (See pages 18 and 20.) A vote of thanks was passed to Mr. G. for his interesting and instructive essays.

Mr. Huber and others made remarks on the essays.

After the close of the discussion it was proposed to meet at the house of John Grossman, of Warwick township, at 1 o'clock p. m., on Saturday, February 1st, 1879. All farmers and those interested in agriculture are respectfully invited to attend.

After some social, neighborly intercourse the club adjourned.

FULTON FARMERS' CLUB.

The January meeting of the Fulton Farmers' Club was held at the residence of Montillion Brown, on the 4th inst. Visitors present by invitation, Haines Brown and wife, and Edwin Stubbs and wife.

Charles S. Gatchel exhibited a sample of Nevada rye; also a piece of ice taken from off a bucket of water that had frozen in his kitchen. It had a triangular column about five inches high and each about an inch long, rising perpendicularly from the surface. As this was formed by water in the bucket it was considered quite a curiosity.

E. H. Haines gave the result of an experiment in setting milk. He weighed some milk and put it in tight cans and set it out of doors, so that the cold would raise the cream. At the same time he set the same number of pounds in the ordinary manner. Each mode of setting produced one pound of butter to twenty pounds of milk. The butter made from the milk set in the cold was pronounced to be better than that made in the ordinary way by the salesman in Philadelphia. This agreed with his own opinion. The result of his experiment had convinced him that the new methods of Cooley and Hardin would produce as much butter as the methods now in use, and it would be a superior article.

Wm. King asked whether it would be advisable to haul out and spread manure when the ground is frozen?

It was the opinion of all present that it was not advisable, because the water that would leach through it in time of rain would be likely to run off, instead of being absorbed by the ground. A visitor, however, stated that he tried it with good results.

Montillion Brown had a lightning rod that was broken; would it be safe to splice with an old rod and wrap with copper wire? Most of the members thought it would be, if spliced with copper and smoothly wrapped.

S. L. Gregg: How do fertilizers pay when applied to oats?

E. H. Haines: They will pay as well as any other crop, but there is a danger of applying too much. Oats will not stand high manuring.

Montillion Brown had tried it two years and thought it paid. He had good oats both years, though they were poor seasons. Other members had no experience.

Haines Brown: Would it not pay as well to leave corn stock ground lie idle as to put it in oats?

S. L. Gregg had tried the plan and was not pleased with it. He plowed the ground before harvest to keep down the weeds, but they came up notwithstanding and gave him much trouble. His neighbor, George Miller, left his last summer and did not plow until after harvest, when the weeds had to be mowed. They were four feet high. His wheat is now looking well.

E. H. Haines would cultivate and sow in clover rather than let the ground lie idle.

Ed Stubbs would put in oats. Had seen clover sowed in stock ground. It made such a rank growth that it was a big job to put in wheat in the fall.

Lindley King would keep the ground clean by putting it in oats.

Montillion Brown: When is the best time to pack butter for winter use?

R. B. Gatchel packed thirty pounds in a week in June, churned every day, salted with seven ounces of salt to ten pounds of butter. Put half inch of salt between each churning and a layer of salt over top of all.

Esther K. Haines has eaten some this winter that had kept well. It had been put up in nearly the same way, only that holes had been made down through it with a stick, and brine, with salpetre in it, poured over it and a cloth put down tightly over the top.

Montillion Brown: When is the proper time to sow early cabbage and tomato seed?

From the last of February to the middle of March was the time recommended by some; but most of the members purchased their plants for early use.

Montillion Brown: How old should a clover sod be to produce the best crop when plowed down.

Lindley King: About two years; that is about as long as clover sod will last.

Chas. S. Gatchel referred to some clover roots that he had exhibited to the club some time ago. Those of one year old had the most small fibres attached to them. Judging from this fact he supposed that the best time to plow down clover was at one year old.

S. L. Gregg and Montillion Brown thought that at two years old would be the proper time to plow down. At that time the roots are as long and as strong as ever they would be; after that time it begun to die out and other grass takes its place.

Edward Stubbs asked if the committee appointed to experiment in raising corn thought it paid to raise a hundred bushels per acre.

Montillion Brown replied that the single crop did not, but that the soil is left better. For his part he considered the experiment a failure, and its result a disgrace to the club. He was not satisfied with it and was going to try it again, and he hoped that the others would do so also.

The thermometer was not far enough above zero for the club to spend much time in making the usual inspection of farm and live stock. However, the greater part of them ventured out and took a hasty look at the stock in the barnyard and hog-pen. The criticisms given after again convening in the house were as follows: Hogs of extra quality and in fine condition. Cattle not as good as they were a year ago. The President remarked that the cattle on the farm a year ago were an extra lot, and that it would be hard to keep up a stock equal to it.

literary exercises being next in order, E. H. Haines read an article on pruning grape vines.

Esther K. Haines read "Brain Work," an article contending that a man has no more right to have an idle brain than an idle body. That when the brain gets to work nicely you feel the effects all over. Those who do not command respect have themselves to blame for it.

Carrie Blackburn recited the "Power of Truth," very nicely. Howard Brown recited "That Mule," a parody on "The boy stood on the burning deck."

Ella Brown recited "The Highway Cow," a humorous piece not much too highly painted, describing the rough life of that animal, her hide bruised with stones and her tail torn off by dogs. She often leads the deacon into temptation by leaping into his enclosures and at last "goes to pieces all at once, struck by a railway train." Such a cow has but little pleasure in life and cannot be profitable to her owner.

Isaac Brown recited "Dried Apple Pies;" Montillion Brown read an essay in opposition to the culture of tobacco; Sadie Brown, C. S. Gatchel and Hetty Jackson were appointed to furnish the literary matter for the next meeting.

Adjourned to meet at the residence of Solomon L. Gregg, Drumore township, 1st of February next.

LINNÆAN SOCIETY.

The Linnæan Society held its stated meeting on Saturday, the 25th of January, the President, Rev. J. S. Stahr, in the chair.

To the Ornithological department was added two fine and desirable specimens, mounted in good taste by Mr. Flick; one a beautifully full-feathered "Sparrow Hawk," a true Falcon (the *Falco Sparverius*). This bird was after our city sparrows, no doubt, and lived sumptuously; but being captured without injury to the bird, three weeks ago, on North Queen street, Dr. Rathvon took him home and confined him in a cage, and desiring to study the bird and its habits, interviewed him with bits of fresh veal and beef; but no temptation would induce him to eat, and so for four days he kept sullen, and, no doubt, as Mr. S. said, "he made way for liberty and died." The other donation, from Mr. Lippold, the bird fancier, of East Orange street, is one of those short-billed white pigeons, called the "White Owl Pigeon." It has not the cravat of the African owl pigeon, figured and described by Darwin.

A large water-washed pebble, with a bunch of the nodular coarse sea-weed clinging to it, from the coast of Ireland, was donated by Andrew Walters, tinsmith of North Queen street. It differs very little, if any, from the common nodular *Fucus*, found along the coast of Jersey or Delaware bay. A box of thirteen cocoons of our native silk-worm moth—*Attacus cecropia*—and a few of the polyphemus, were donated by Mr. ———, of York, Pa. Dr. Rathvon deposited a small silver carp. Enjoying a tank, it made a frisky leap, and like a fish out of water, "came to grief." Mr. Wm. Reine donated a pair of duck's wings—of a species of small Divers.

A singular deviation in the normal growth of a tobacco leaf pressed and preserved in form, by S. S. Rathvon. This had an interruption to its cell, forming tissues around the mid-rib, retarding some and accellerating other cells, so as to result in a hollow stipe or foot, the stalk arising from that point a few inches, then dilating into a cup-shaped leaf, forming a regular pocket of the ordinary leaf texture, the mid-rib of this extra leaf, finally elongating into a point, giving the one side of the cup a projecting or extended portion, forming the ordinary apex of the leaf.

Historical Division.

Eight envelopes, containing 104 scraps of history, biography, etc., per S. S. Rathvon. C. M. Stubbs, M. D., of Wakefield P. O., Chester county, sent several sets of photographic prints (taken in a masterly manner) of the "Bald Friars" sculptured rocks in the Susquehanna river, 1½ miles south of the Maryland line. A vote of thanks was given for these interesting views.

Papers Read.

No. 511, S. S. Rathvon on the Falcon or Sparrow Hawk.

Additions to the Library.

Quarterly report of the Pennsylvania Board of Agriculture, September, October and November, 1878; annual report of the comptroller of the currency, Forty-fifth Congress U. S.; LANCASTER FARMER for the month of January, 1879; a circular and letter from "The Kentucky Historical Society," Lexington, Ky., desiring the friendly interchange of publications, etc., with the Linnæan. The society acknowledged the friendly offer and will cordially do all to establish such relations with kindred societies. Publications on the curious customs of the aborigines, by W. J. Hoffman; the *Librarian*, of Philadelphia, for January 7, 1879; Sunday book circulars and heleotype printing. A letter to the corresponding secretary, Rev. D H. Geissinger, was read. J. Stauffer made some remarks on a new aphid that has lately made its appearance on a species of exotic *Asclepia*. These are of a bright yellow color. The abdominal horns are short and black, so is the tip of the ovipositor and sucking apparatus, as also the tarsi, only one winged specimen seen. The nervures were like those that infest vats occasionally; also rather light in color, but need closer investigation. A bill of the taxidermist for $2.50 for mounting the birds reported was ordered to be paid. The treasurer reported that John I. Hartman and John H. Baumgardner had each taken a certificate of stock and paid $5 per share. Adjourned.

AGRICULTURE.

The Greatest of all Grains.

Not over one person in a million could correctly answer the query, "Which of all the grains is the most largely produced?" The response invariably would be, "Wheat." But this is not so. Rice carries off the palm. The annual product of the rice crop in the United States is grown in the Carolinas and Louisiana mainly, and is said to average eighty millions of pounds. The vast populations of China, the East Indies and the islands adjacent, according to the latest estimates, exceed eight hundred millions of souls. With more than half of this number rice constitutes the only article of diet. The total product of the East last year was a little over two hundred and fifty billions (250,000,000,000) of pounds, which is over *three thousand times the quantity grown in the United States*. This amount is nearly all consumed within their own territories. The portion shipped to Europe and South America, though large, is, as compared to the huge product, but a small item, being less than one per cent.

The Late Summer Seeding of Grass.

Some of the best farmers in this country have followed the practice, for some years, of turning over pieces of their mowing fields that are somewhat run out; spreading on a top-dressing of well rotten manure, and the last of August or first of September—as the season may be—seeding heavily with grass seed. In all instances of this kind of which we have heard, heavy crops of hay have been harvested the following year, and the plan has uniformly met with success. If farmers desire to do so, and are willing to try the experiment, they may sow on some winter wheat with the grass seed, and see how it does. They may harvest a fair crop, but in some instances of which we have learned, the grass has overshadowed the wheat, which latter had given but a light yield. But for the purpose of securing advantage of the main point—the renovation of our grass lands—the plan is worthy of more general practice.—*Prairie Farmer*.

The Ruta Baga.

The Purple Top Yellow Ruta Baga or "Swede," is perhaps the most important root cultivated for stock food; its rapid maturity, large bulk to a given area, nutritious quality, and sanitary properties commend it as eminently worthy of culture.

It has become a practice in the sale of Ruta Baga seed to create varieties; and in an English catalogue before us there are not less than twenty-one sorts enumerated: the distinctions in a majority of cases are ideal. Last year we tested, side by side, twenty-two sorts, so called, imported for the purpose. Many were of irregular form. In some of them the purple tint of the crown was more marked than in others; some were green topped, some of deeper yellow flesh, but the general aspect was similar, as they stood in the ground.—*Landreth's Rur. Reg.*

Corn in Drills.

A New Jersey paper says that ninety years ago it was regarded as a settled point that corn in drills gave a larger product than in hills, but that now, after much discussion, it remains unsettled. This remark would not be made by any one who has informed himself on the subject. We have thoroughly tested this question by measuring the results and find almost uniformly an increase of 25 to 30 per cent. with drill corn over hills—provided the proper distance is given for the plants. It would be easy to obtain a diminished amount from the drills if too thinly planted; or ears of an inferior quality, if much too thick. John Johnson informs us that after long experience he arrives at results precisely similar to those we have mentioned.—*Country Gentleman.*

WEEDS need constantly to be looked after and taken by the foretop. Remember that every weed that is allowed to go to seed this year will be replaced by hundreds and thousands next year. "One year's seeding" of weeds is said to produce "fifteen years of weeding," and it is not far from the truth.

HORTICULTURE.

Buy Your Trees at Home.

As the season for planting trees is almost here we desire to call the attention of our readers to one fact in regard to it; that is, the buying of the trees. We have in Lancaster county several nurseries. The proprietors of them are all personally known to us. They are honest, reliable men, who have been in the business for years and have a thorough knowledge of everything pertaining to nurseries. They know that a man who purchases trees from them once is very likely to do so again. It is to their interests to sell him young, vigorous trees, and trees that will give satisfaction when they arrive at a bearing condition. They also take particular pains to represent them just as they are when an order is given to them by mail, or when the purchaser is not at the nursery. Every tree they sell is an advertisement. If it is all that a man expects it is a good advertisement; if, on the other hand, it does not turn out as was represented, is smaller, a mistake in the kind, an unhealthy tree, it is a bad advertisement and not a desirable one. If these misrepresentations were made by any ef our home nurserymen, for the purpose of making a sale, they would gradually lose their trade.

Nearly every season our county is visited by several tree agents, representing some far off nursery, and they generally succeed in selling thousands of dollars worth of trees to our farmers. It is not often they sell two lots of trees to the same party, as in the majority of the cases, when the deliveries of the trees are made a great deal of dissatisfaction is expressed by the purchasers. We do not mean, in our article, to cast reflections on the honesty of all nurserymen outside of Lancaster county. There are good men engaged in the business all over our country, and no risk would be run in dealing *direct with them*, but we think it is much safer for our farmers to deal with home dealers than with agents. If any of them have not the stock on hand you desire they would gladly order for you from any one who would have it. It would not cost the buyer more, and be more satisfactory. Again, if the money is given to the home trade it stays in the county instead of leaving it. So, in conclusion, we would again repeat, that if you intend planting trees this coming spring buy from our home nurserymen, men whom you know and who will do all they are able to do to give you complete satisfaction.

The Albemarle Apples.

The Savannah *News* says: Mr. D. G. Purse has received from a friend, at Culpepper Court House, Virginia, a barrel of the celebrated Albemarle apples, noted for their delicious flavor and for the historical reputation they enjoy.

When Hon. Andrew Stephenson was Minister to England, under the administration of President Martin Van Buren, he presented Her Majesty, Queen Victoria, with a barrel of these apples, which are grown only in Albemarle county, Virginia. Her Majesty was so much pleased with the fruit, and so much enjoyed their peculiarly delicious flavor, that she had an act of Parliament passed admitting the Albemarle apples into Great Britain forever thereafter free of duty.

We learn that since then large quantities of them are shipped to England every year from the county of Albemarle, and are highly prized and command ready sale, being the only apples shipped from this country to England upon which no duty is paid. Those of Mr. Purse's friends who have sampled some of the lot he received express no surprise that England's Queen should have been so well pleased with them, as their flavor is certainly delicious. They are of medium size and firm.

Pruning Fruit and Ornamental Trees.

We read a great deal about the proper time of pruning trees, and especially the apple tree. Some prefer fall, some mid-winter, some early spring; but scarcely one recommends the very best time in our humble opinion—mid-summer. Doubtless some old fogies will open their eyes and hold up their hands at such an innovation and denounce it as an absurdity; but we think we will be sustained by a majority of the "live" men of the day.

If we desire to improve the form of a fruit tree and get rid of some of the superfluous wood, we should prune in winter; but if we desire fruit and a perfectly healed stump, we should prune from the fifteenth of June to the twentieth of July. We have done this often with the happiest results. The fruit buds form after this, and the operation in suddenly cutting off its growth, produces buds; while the winter or early spring pruning will produce only wood.

In pruning ornamental trees in mid-summer the bark, instead of receding from the stump, grows over it, and in a few years will completely cover it and make a perfect amputation. We have noticed this upon our own premises, as well as upon those of others, many times. This pruning is done when the tree is taking its midsummer "siesta," and then wakes up, refreshed for another start, and the bark gradually steals over the stump as if ashamed of the shabby looking exposure.

When the tree is in full leaf, and presents its full form to us, we can see exactly where the pruning should be done in order that while the overgrowth may be removed, the symmetry of the tree may be preferred. Especially is midsummer pruning to be preferred, first, to produce buds on fruit-bearing trees as before stated; and second, when large limbs are to be removed.—*Germantown Telegraph.*

Winter Peaches.

It sounds strange in Northern ears to hear of peaches ripening the first of November. The editor of the *Gardeners' Monthly*, in the November number of that excellent periodical, speaks of specimens of Harris' Winter, Lady Parham, and Baldwin's Late peaches (all free stone), just received from a North Carolina correspondent. The Harris is described as a new peach that last year ripened November 1st. (This year it will last until December.) It is frost-proof, never fails to bear, has large flowers, is very productive, and a good keeper, having sometimes been kept until Christmas. Why can not Southern orchardists make fortunes at growing these late peaches for the Northern markets? It seems to us Southern peach orchards in this way may become as profitable as Florida orange groves. The peach has greatly the advantage in that it comes into bearing much earlier than the orange.

FLORICULTURE.

Growing Ivy in Rooms.

Ivy will succeed better in our warm, dry rooms than any other plant, and all that is needed to make it attractive is the exercise of a little ingenuity in the appliances for its home. A vase, not necessarily costly by any means, will answer a good purpose; and this reminds us of an excellent idea that we lately noticed in a foreign periodical for growing this very plant. Long shoots of the ivy were procured, with the young and tender aerial roots very abundant. The lower ends were wrapped in moss, and then some five or six of these were tightly tied together at the bottom and placed in the vase. Fill the vase within a few inches of the top, and suspend the ball of moss within. The roots will soon commence to grow, and afterward the moss should not quite reach the water, as the roots will extend down into it, and prove all sufficient. So many different varieties of ivy are now in cultivation, that by selecting kinds that will form a decided contrast in shape and color, the effect will be sensibly heightened. The centre of the vase may be filled with cut flowers or grasses, or nothing would look better than ferns. The ivy may be allowed to hang down over the sides of the vase in graceful festoons, or else be trained and placed over and around the window. It will not grow quite as well in strong light as when partly shaded, as the ivy loves shade and an even, cool atmosphere. It can be planted in tubs and trained up a stairway, thus forming a mass of green foliage from the hall below to the floor above. A covenient way to grow a small ivy is to fill a small fish globe with clean rain water, putting in the bottom some tiny shells and gay-colored stones for ornament; place in this a slip of parlor ivy, and suspend the globe by three small brass chains, which may be bought at any hardware store. This may hang from the window cornice or from the centre of the chandelier, or in any other place where the light is not too strong. By filling up with fresh water as fast as it evaporates, you may sustain the life of an ivy through the whole winter. In replenishing the water add three drops of ammonia to it.—*G. A. T. in Ohio Farmer.*

Flower Pots.

Save the tin fruit cans and convert them into tasteful flower pots in the following manner: With a can-opener cut off any rough or projecting portions of the cover, leaving a narrow rim to project inward. With a pair of pliers, or a small hammer, bend this rim down. This gives firmness to the top of the can. Punch three or four small holes through the bottom of the can. Then paint it with varnish made of gum shellac dissolved in alcohol, and colored with lamp-black and a little yellow ochre, to give a dark brown color. The cans may be ornamented by pasting on them little medallion figures or pictures. They are handsomer than the ordinary flower pots, require less watering, and keep the plants free from all insects, owing to the presence of iron rust in the can. One of the prettiest arrangements for plants we have seen, was a window with two narrow shelves placed one above the other, on which were these homemade flower pots containing heliotropes, geraniums, pinks, begonias, petunias, fuschias and other plants, all as thrifty as if grown in a green-house. They should be showered once a fortnight with lukewarm water, using a whisk broom for the purpose, and watered sparingly every second day. On very cold nights newspapers may be placed between the window and the plants, to protect them from frost.

Flowers for the Table.

Set flowers on your table—a whole nosegay if you can get it, or but two or three, or a single flower—a rose, a pink, a daisy, and you have something on your table that reminds you of God's creation, and gives you a link with the poets that done it most honor.

Flowers on the morning table are especially suited to them. They look like the happy wakening of the creation; they bring the perfume of the breath of nature into your room; they seem the very representative and embodiment of the very smile of your home, the graces of good morrow; proofs that some intellectual beauties are in ourselves or those about us, some Aurora (if we are so lucky as to have such a companion), helping to strew our life with sweetness, or in ourselves some masculine wilderness not unworthy to possess such a companion or unlikely to gain her.—*Leigh Hunt.*

Smilax.

Smilax is an exceedingly graceful vine, with glossy, green leaves, and is now more extensively used than any other plant for decorating parlors, the hair, and for trimming dresses.

With a little care it can be grown successfully as a house plant. The vine does not require the full sun, but will grow well in a partially shaded situation. It can be trained on a small thread across the window or around the pictures. It is grown from both seeds and bulbs. Pot the bulbs as soon as received, watering but little until you see signs of growth. They grow very rapidly, and should always have strings to twine on. Give plenty of fresh air, but be careful and not let a direct draught of cold air blow upon the vine, as they are very tender when young. Give them a warm place and they will amply repay all care.

Growing Fuschias in Baskets.

May is a good time to put young fuschias into baskets, to obtain a good display late in summer and throughout the autumn. Varieties of slender habit are best adapted for the purpose, and if the shoots be kept persistently stopped the plants will form dense bushes, which will cover the sides and bottom of the basket, and when suspended from the roof of the green-house or conservatory, be rich with bloom, they will form striking objects. The flowers, indeed, are shown off to better advantage in this way than when the plants are grown in pots and trained in a pyramidal section. Good, rich loam, plenty of water and timely attention to stopping the shoots, so as to obtain a dense, pendulous habit at first, are all the plants require to bring them to a high state of perfection.

Ampelopsis Vietchii.

The common Virginia Creeper is one of the most beautiful and best known of ornamental vines, and its habit of clinging of its own accord to walls and trees renders it particularly useful in ornamental gardening. But it is questionable whether the Japan species A. Vietchii is not a rival to it. It will not, of course, replace it, for each will have lovers of its own for some purpose or other, but still without any special comparison, it is intrinsically beautiful. We are moved to these remarks by a photograph of the dwelling house of Mayor Conover, of Geneva, the walls of which are covered by this vine. It must be a beautiful sight when really seen, for the stereoscopic view alone is particularly attractive.—*The Gardeners' Monthly.*

Window Plants.

Were we required to furnish a list of ten plants for window culture during winter our choice would be as follows: Rose geranium, zonale geranium, variegated geranium, (Mrs. Pollock,) fuchsia, heliotrope, calla lily, carnation pink, ivy geraniums, tradescantia, or wandering Jew, and begonia rex. We can hardly see where we can diminish this list, which offers many varieties and plants of a hardy nature, a thrifty growth and pleasing appearance, yet we would desire to add many, as the double geraniums, the oleander, panicum variegatum, cyclamen and a tea rose, etc. Towards spring the collection should be reinforced by hyacinth bulbs, and tuberoses.—*Scientific Farmer.*

For the winter all flower borders should have a good covering of stable manure. In the spring the long stuff should be raked off, and the rest forked in. It will not only protect the roots against all injury during the winter, but the plants will appear in the spring greatly improved, and the flowers will be much more abundant and prove of much higher and greater beauty.

DOMESTIC ECONOMY.

Evening's Milk Richest.

This subject has now been put to the test of chemical analysis, and the result is that the evening's milk is found to be the richer. Prof. Boedeker analyzed the milk of a healthy cow at different periods of the day. The professor found that the solids of the evening's milk (thirteen per cent.); exceeding of the morning (ten per cent.), while the water contained in the fluid was diminished from eighty-nine per cent. to eighty-six per cent. The fatty matter gradually increases as the day progresses. In the morning it amounts to two and one-quarter per cent., at noon three and one-half per cent., and in the evening five and three quarters per cent. The practical importance of this discovery is at once apparent; it develops the fact that while sixteen ounces of morning's milk will yield but one-half ounce of butter, about double the quantity can be obtained from the evening's milk. The casein is also increased in the evening's milk from two and one-quarter to two and three-quarters per cent., but the albumen is diminished from 44-100ths per cent. to 31-100ths per cent. Sugar is least abundant at midnight (four and one-quarter per cent.) and most plentiful at noon (four and three-quarters per cent). The percentage of the salt undergoes almost no change at any time of the day.

What Is Castile Soap?

A subscriber wishes to know how this differs from other soap. The hard soaps made in this country are almost exclusively from animal fats; in the south of Europe, where the olive grows abundantly, the poorer kinds of olive oil are used for soap-making. Common soaps are soda and animal fat; *Castile* soap is soda and vegetable oil. In making Castile soap, great care is taken to avoid an excess of alkali (the soda) only just enough being used to neutralize the oil. On this account the soap is much milder, and may be used on wounds and other surfaces where common soap would irritate and give pain. The mottled appearance of Castile soap is due to a small quantity of solution of copperas (sulphate of iron) which is stirred into it before it hardens; this leaves a bluish oxide of iron in the soap which, when exposed to the air, becomes changed to red-oxide. White Castile soap is also sold, which is the same as the other, without the coloring. Though called Castile, it is by no means exclusively made in Spain, the largest share coming from the south of France, and indeed it is generally known in Europe as Marseilles soap.—*American Agriculturist for February* 1.

Water-Proof Boots.

It is not always desirable that boots should be absolutely water-proof, as whatever keeps water out will keep it in, and whoever has worn India-rubber boots for any length of time, knows that retaining the perspiration or the feet soon puts them in a very unpleasant, half pickled condition that is not desirable. Still, water-proof boots are useful in an emergency, to be worn for a short time—as in doing the chores in bad weather. A pair of good rubber boots will answer this purpose, or a pair of common cowhide boots may be made water-proof after the method of the Newfoundland fishermen. These people, exposed to all weathers, have for a century used the following compound: Tallow, 4 oz.; rosin and beeswax, 1 oz. each; melt together, then stir in neatsfoot oil, equal in bulk to the melted articles. The boots are warmed before a fire and this composition is rubbed into the leather, soles and uppers, by means of a rag. Two applications will make the leather quite water-proof.—*American Agriculturist for February* 1.

Ammonia in the Household.

The pantry shelves are getting grimy, or finger-marks around the door-latches and knobs are looking dark and unsightly. For lack of time they are left day after day, for it is hard work to scour all the time, and it wears off the paint, too. Now, suppose the wife has her bottle of spirits of ammonia to use; she takes a basin of water and a clean cloth, just puts on a few drops of the fluid and wipes off all the dirt; it is worth more than a half day's labor, and does not hurt the paint either. She could put a few drops in her dishwater, and see how easily the dishes could be cleaned; a few drops on a sponge would clean all the windows in the sitting room, making them shine like crystal. It would take the stains off the teaspoons, and a teaspoonful in the mop-pail would do more in washing up the kitchen floor than ten pounds of elbow grease applied to the mop-handle. A housewife has just as much right to make her work easy and expeditious as her husband has. If she does not do it the fault is her own in a great measure.

To Preserve Potatoes from the Rot.

Dust over the floor of the bin with lime, then put in a few layers of potatoes, and dust the whole once more with lime, adopting the same plan over again. Use one bushel of lime to fifty of potatoes. The lime kills the fungi which causes the rot.

HOUSEHOLD RECIPES.

EARACHE.—Cotton wool, wet with camphor, or paregoric and sweet oil, hot, and the ear bandaged, will give relief.

TO BAKE EGGS.—Butter a dish, break the eggs, pour in pepper, salt and butter; bake in a slow oven until well set. Serve hot.

FROSTED FEET.—Frosted feet may be cured as follows: White oak bark, taken fresh and boiled in water to a strong liquor. Bathe the feet in the liquor. It is pronounced the best of all remedies.

A STICK of black sealing wax and one of red dissolved in two ounces of spirits of wine make an excellent color for wicker baskets or other small articles of the kind. Lay it on with a small brush.

CRANBERRIES.—To keep these berries whole while stewing, prick each one with a pin; lay them in sugar over night, and cook very slowly. They cook much nicer in this way than when stewed all to pieces.

GINGER COOKIES.—One cup of molasses, one cup of sugar, one cup of butter or lard, three eggs, two teaspoonsful of saleratus, dissolved in a little hot water, five cups of flour, one tablespoonful of ginger mixed with molasses.

SWEET OMELET.—Beat four eggs very lightly, add little salt and one spoonful brown sugar; pour all into a hot buttered fry pan; when well set lay in two spoonfuls raspberry jam, cook one minute, roll up and dish it, sprinkling well with powdered sugar. This is a very delicate and rich dessert.

TAPIOCA CREAM.—Soak three large tablespoonfuls of tapioca over night in one pint of water, the next morning add one quart of milk and boil; a little salt, five eggs, one cup of sugar; flavor with lemon or vanilla; beat white of eggs to a stiff froth, and brown in shape of eggs; put on the top of pudding when it is cold.

TO LESSEN FRICTION FOR FURNITURE.—Black lead is excellent to lessen friction between two pieces of wood. The sides and rests of desks or bureau drawers may be made to move easily by spreading common stove-blacking evenly with a cloth or the finger over their surfaces. Time and patience may thus be saved.

THE SLEEP FOR CHILDREN.—The *Herald of Health* cautions parents not to allow their children to be waked up in the morning. Let nature wake them; she will not do it prematurely. Take care that they go to bed at an early hour—let it be earlier and earlier until it is found they wake up themselves in full time to dress for breakfast.

CHOCOLATE CAKE.—One cup butter, two of sugar, one cup milk, five eggs, leaving out the whites of three; four cups of sifted flour, three teaspoons baking powder. Bake in three layers in jelly tins. For icing, take whites of three eggs, beaten stiff, one and a half cups of powdered sugar, six teaspoons of grated chocolate, two teaspoons vanilla.

WAFERS.—Melt a quarter of a pound of butter and mix it with half a pint of milk, a teaspoonful of salt, a wineglass of wine, three beaten eggs and sufficient sifted flour to enable you to roll them out easily. They should be rolled very thin, cut into small circular cakes, and baked in an oven of moderate heat. Frost the whole and sprinkle sugar sand or comfits over it as soon as frosted.

ORANGE CAKE.—Mix two cups of sugar with the yolks of two eggs, then add the whites, beaten to a stiff froth, next add a large tablespoonful of butter, then one cup of milk and flour to make as stiff as cup cake; flavor to taste; bake in jelly pans; filling, one lemon, two oranges, grate rinds and add the juice, one cup of sugar, one tablespoonful of corn starch, one cup of water; boil until smooth; cool before putting between cakes.

SOUR MILK CHEESE.—Some time since I saw a request for this article. Take milk just changed from sweet to sour and place over the fire; when scalded so that the curd is very stringy, it is nearly done; heat a few minutes longer, then strain through a colander. As soon as cool enough remove to a plate; press all the whey out, and work in two tablespoonfuls of butter and a little salt. Add considerable patience, as it will be needed before the sticky, stringy mass can be worked fine with the hand. Press into round balls, and when cold, slice with a sharp knife.

MINCE PIES.—Boil a fresh tongue; chop it very fine, after removing the skin and roots; when cold, add one pound of chopped suet, two pounds stone raisins, two pounds currants, two pounds citron cut in fine pieces, six cloves powdered, two teaspoonfuls cinnamon, half teaspoonful mace, one pint brandy, one pint wine or cider, two pounds sugar; put this all in a stone jar and cover well; in making pies, chop some apples very fine, and to one bowl of the prepared meat take two of apples; and more sugar, according to taste, and sweet cider enough to make the pies juicy, but not thin; mix and warm the ingredients before putting into your pie-plates; always bake with an upper and under crust, made with one cup of lard, one of butter, one of water and four of flour.

LIVE STOCK.

Winter Management of Sheep.

There are two extremes practiced in the wintering of sheep. Some people provide no shelter at all, and feed their hay on the ground, whether rain or shine, snow or mud. And if grain is fed it is not until toward spring, after the system has become debilitated and nature is not prepared to receive the nourishment it should, and instead of giving strength it only weakens the animal, and the shiftless farmer enters his protest against "feeding grain to sheep." Others overdo the thing in crowding them into close unventilated stables. This, if any difference, is worse than letting them shift for themselves. Of all other animals kept on the farm, sheep will bear the least crowding, and require the most thorough ventilation. And it is very important that they have access to water regularly, for although they will get along in a sort of way when there is snow on the ground, they will not if it is dry and frosty. No animal will go more regularly to water in the winter if it is at all convenient.

I prefer having sheep kept in such a way that they can go out and in at pleasure, and I have under my barn an arrangement for stabling four lots—in all from 150 to 200 head. At each end of the stable are two large doors, opening two-thirds the width of the barn; the two at the south end are only closed during very stormy weather. Every flock has access to from two to five acres, in which there is water, and they go in and out at their pleasure.

Hay is fed from racks in the stables twice a day, and some cornfodder is fed on the ground when it is frozen or covered with snow. No leavings are allowed to remain in the racks, but are thrown out previous to feeding each time. The refuse is given to calves or other cattle, or horses, and are mostly all eaten. I generally keep a flock in one of the fields, and feed them hay from a stack, and have a shelter of rails covered with straw for them to go under at night, or during stormy weather. Spring lambs are gained a little most of the winter. Weak ones are kept in a place by themselves and get extra care. Old ewes are got in good condition and sold before they lose their teeth. Manure is not allowed to ferment in the stables. Long hoofs are trimmed with toe nippers.—*Germantown Telegraph.*

Weaning Calves.

The *Rural New Yorker* says: Having weaned many hundreds of calves, and having fifty years ago fed them morning and night myself, I can say with entire confidence that after the first week, skim milk warmed a little more than new milk is when drawn from the cow, will keep them in good growing condition. There is no *if* or *doubt* about this fact, for many thousands are raised in this way every year, and have been for years out of mind, before my day in the country. I was born in, and also in the States for the last twenty years; while in Canada, they are treated just the same by hundreds of people. About four quarts of sweet skim milk for the first few times is enough, as giving more will relax them too much sometimes; six quarts afterwards, and, if it can be spared, more as the calf grows larger. In winter or early in spring, the calves require feeding with hay, a very little at first, and, of course, it should be nice, soft green hay and a little bran and oats, or bran and meal—two-thirds bran will make them thrive very fast.

What Stock Needs.

A writer in the *Farm and Fireside* remarks: "The requirements of success in stock-breeding for profit are well-bred stock, clean, warm quarters, pure water, sufficient salt, a stall for each, having rope and chain fastening instead of stanchions, gentle exercise daily, when the weather is not stormy, sufficient sweet clover hay, cured in the cock, to supply their wants, and a uniform supply of finely ground cornmeal. Whatever method of feeding may be adopted, the question in which the progressive, practical farmer is the most interested is, "how can I produce the most tender, juicy beef in the shortest time, at the least possible expense."

Imported Cattle.

General Langhorn Wister, of Duncannon, Perry county, has just imported from the island of Guernsey, two superb heifers at a cost of about $400 for the pair. "These," says the *Record*, "with his fine Guernsey bull, 'Susquehanna,' No. 153 Herd book—makes the nucleus of a herd of pedigree Guernsey cattle, and the only ones, we believe, in Perry county. Guernsey is one of the islands in the English channel, and the purity of its cattle is insured from the fact that the laws there prohibit the importation of cattle."

"A FARMER of some experience" writes to the *Massachusetts Ploughman*: Heifers that are kept fat with meal will not breed, while those kept in good growing order on grass, hay and roots, breed readily.

POULTRY.

The Poultry Association.

We are glad to see that so much interest is being taken in "The Lancaster County Poultry Association," which was organized in December last. Already the new society has nearly sixty members, and the last meeting was a very interesting one. It is an encouraging sign to see the interest that is manifested, and we feel sure that the poultry of our county will be improved by their efforts. Good stock of any kind is desirable, and an association, the members of which will meet and exchange their views, giving each other the benefit of their experience, will certainly do good. THE FARMER will always contain full reports of the proceedings of the association, and we cheerfully offer its members the use of its columns to express their views, and will be very glad to have them accept the offer. Not only will the members of the association be benefitted, but the results they obtain will be given to all our readers, and will, no doubt, be of use to them. We would be glad to add to our list of subscribers any members of the society who are not already subscribers, as THE FARMER, printed in the form it is, is easily preserved, and at the end of the year can be bound, and the members can then have the proceedings in a convenient book and refer to them at any time.

Langshans.

A writer in the *London Agricultural Gazette* describes the Langshan fowls which are now occupying considerable attention in English poultry circles. He says he is convinced from examination that whatever affinity they may have to the Cochin race, they possess sufficient distinct characteristics to entitle them to the possession of a claim as a separate class from Cochins. It appears to him also that they are well adapted for farmers' poultry, and that few breeds are more suitable for farm yards. These fowls are remarkable as winter layers, at a time other hens are idle. Beginning in the autumn, they will lay from 90 to 100 of fair and rather over the average size of eggs. They are careful mothers. The male birds weigh from 8 to 12 pounds, the hens from 7 to 10 pounds. They make weight rapidly on ordinary fare, averaging something like a pound a month for the first six months. The writer had not tested them as table birds, but is informed that they rank only second to game for the flavor of the flesh. Thus, they are hardy, fertile and possess plenty of weight for table—three most essential qualities for the farmyard. There were some beautifully feathered birds among the flock examined, so level and smooth are they, and the neck and wing feathers a beautiful beetle green, shine and scintillate in the sun in a variety of hues. They also possess a pink skin between the toes, which is not found in the Cochins, and the tails and other contour of the Langshan are dissimilar from Cochins.

The gentleman who is raising them extensively in England says that so long as they are supplied with green food occasionally in the form of a sod grass, they thrive and lay almost equally well as those which have the range of the farm. The hen chickens begin to lay at five months old.

Tar in the Chicken House.

It seems that the value of tar is not sufficiently appreciated by poultry breeders, for we seldom either see it used or its use advocated by writers on poultry matters. It can be used with the most excellent results, in fumigating the poultry house, when through neglect or inattention it becomes necessary to put it through "quarantine," by burning some of it in a suitable vessel, and then closing the doors and windows of the house to confine the fumes and smoke as much as possible. It is sure to purify the house. Tar is very offensive to insects which worry the poultry houses. Whitewash does not seem to keep them away, especially the "mites," which are so troublesome, and recourse must be had to some other substance. Just here tar is very valuable. Take an old kettle which is of no use for other purposes, put in some good tar, and heat it until it is thin and hot, then, with a whitewash brush, brush into all the cracks and crevices where the insects "most do congregate," and they will start off, instanter, for the seashore or some other congenial abode. Treat the perches and roosting benches to a dose of the same. When poultry cholera makes its appearance, if you thoroughly cleanse the house and treat as above, with tar, it will generally prevent the spread of the disease.—*Poultry Journal.*

Selecting Breeding Turkeys.

While all breeders like to have and breed "heavy weights," and customers buying turkey all call for large birds, it is a fact that for market purposes, moderate sized and even small turkeys, command a more ready sale than do large ones. We have watched the market for a few days past, and know this to be a fact. However, we do not wish to discourage breeders from running up the weights, even if they attain the much devoted weight of a fifty pound gobbler at three or four years old, for as long as there is a lively demand among breeders for heavy birds, let there be birds to supply that demand. To secure the best results in that direction, select an early hatched, strong and vigorous gobbler of this year's hatch, and which is of fine proportion, long in the body and properly marked, and mate him to as many two-year-old hens as you intend to keep—from two to five hens, if properly handled, will produce a fine crop of young birds each season, and you cannot help but be absolutely satisfied with the results.—*Poultry Journal.*

Treatment for Cholera.

Fat bacon, chopped fine and sprinkled plentifully with black pepper, is a convenient and reliable remedy for cholera in chickens. Last summer a number of hens were cured by its use. When found, they had dropped from the roost; they were so far gone that they could not get up, and were only able to raise their heads occasionally. They were given a comfortable shelter by themselves; a teaspoonful of the mixture was forced down the throat of each bird, morning and evening. No other attention was paid to them. At the end of the third day they were set at liberty and went about as usual, giving no further trouble. Water may be placed where they can help themselves, but no food is required. Smaller doses may be given in cases less severe.—*American Poultry Journal.*

LITERARY AND PERSONAL.

RICKETTS' NEW SEEDLING GRAPES, "Lady Washington" and "The Welcome," a circular of 4 pages. Address James H. Ricketts, Newburg, New York State.

REPORT OF THE CONDITION OF THE CROPS, December 1, 1878, an octavo pamphlet of 28 pages, a synopsis of which see elsewhere in our columns, department agriculture.

THE attention of the reader is called to the proposal, in our advertising columns, to publish the editor's essays on practical entomology in book form, as soon as sufficient encouragement is manifested to cover the cost. Further details will be given hereafter.

THE BEE-KEEPERS' GUIDE, a demifolio of 4 pages, published on the first day of each month, by the "Winter Bee-Hive Manufactory," at Kendallville, Indiana, at 50 cents per year. Mainly an advertising medium, but contains some good, practical bee literature besides.

THE AMERICAN STOCKMAN, a daily, semi-weekly and weekly 4-page semi-folio, published in Chicago, Ill.; E. W. Perry, editor; B. F. Paine, Secretary and Treasurer, at $5.00, $3.00 and $2.00 a year; is a first-class paper in its specialty, in quality, in literary matter, and in typographical execution, and ought to succeed.

ANNUAL REPORT OF THE COMMISSIONER OF AGRICULTURE TO THE PRESIDENT, November, 1878. We have received a complimentary copy of this valuable document from the *Commissioner*, an 8vo. pamphlet of 95 pages, containing a large amount of excellent matter, more or less, relating—both directly or indirectly—to the agriculture of the country, giving fifty-two analyses, examinations and experiments, in various substances of domestic use, including grasses and other vegetable productions, soils, seeds, oils, liquors, minerals, eggs, sugars, &c., &c., with many statistical tables on imports, exports, and other articles of trade and commerce. Washington, D. C.

READING, Pa., Jan. 30th, 1879.

At the annual meeting of the Berks County Agricultural and Horticultural Society, held in the City of Reading, the following officers were elected for the ensuing year: President—Jacob G. Zerr. Vice Presidents—Josiah Lewis, Benjamin S. Ritter, Henry Brobst, William G. Moore, John L. Hightmyer. Secretary—Cyrus T. Fox. Corresponding Secretary—Edwin Shalter. Treasurer—William S. Ritter. Auditors—Daniel S. Francis, Jacob Kauffman. The office of the society has been removed to No. 111½ North Sixth street, Reading, Pa. All business communications should be addressed to the secretary.—*Yours, very respectfully, Cyrus T. Fox, Secretary.*

THE NORMAL MONTHLY REVIEW.—This is about the spiciest little journal that reaches our table. A 20 page 8vo., published at Shippensburg, Pa. Edited by DELIA T. SMITH, and assisted in the various departments by members of the Faculty of the "State Normal School," at Shippensburg; under the business management of E. A. ANGELL, vice Principal. Its *curriculum* consists of natural science, classics, mathematics, English and German language, drawing, teaching and music. This neat little magazine must be a welcome monthly visitor, in a very special sense, to the Alumni of the institution under whose auspices it is published. "May its shadow never grow less." Only 50 cents a year, in advance; single numbers, 5 cents.

REPORT of the "Pennsylvania Fruit Growers' Society," prepared by its officers. This is the proceedings of the nineteenth annual meeting of this society, held at Williamsport, in January, 1878, together with its constitution, by-laws, list of officers for 1878, standing committees, life members, honorary members and annual members; including an index of contents. A royal octavo of 89 pages, with four superb full page illustrations of choice new fruits. These consist of a beautifully colored illustration of the "Sharpless Seedling Strawberry," and uncolored ones of "Smeych's Lancaster Cherry," Sener's Seedling Peach," and the "Dickinson Apple." In addition to these are two full page illustrations of "landscape adornments," and two of *Picus pungens* in its various stages of development, including nine different figures. And, lastly, an illustration of the "apple moth," *Carpocapsa pomonella*, with seven figures. The quality of the material, the typography and the pictures are much finer than any that have embellished any of the previous reports of this society or any other society in the State. And, if any evidence were necessary to prove that the society is progressing, it might be found in this report and the literary quality of its contents. This society was organized in this city twenty years ago last January.

THE PHRENOLOGICAL JOURNAL for February is an excellent number of this sterling and popular magazine. It opens with a life-like portrait and phrenological and biographical sketch of Senator John P. Jones, of Nevada. It contains also portraits and sketches of the late Bayard Taylor, American Minister to Germany, and also of the Marquis of Lorne and Princess Louise.

The chapter on Brain and Mind, discourses on Organic Quality, its nature and influence, illustrated with nearly a dozen engravings. Strange Plants are also illustrated. The Unfolding of Mind through Conflict and Sin is an interesting paper.

The Health Department is well sustained by the admirable articles on Dietetic Delusions; Experiments in Magnetism, and the Proper Position in which to Sleep, while our social relations, as men and women are discussed in Single-Blessedness; Can the Sex of the Human Cranium be Determined? A new Scientific Expedition around the world, etc. There is also a great amount of valuable information in the Editorial department, Answers to Correspondents, etc. The publishers of this *Journal* have kept abreast of the times by making a reduction in price, but maintaining the high standard of their magazine in its literature and usefulness. It is now published at $2.00 per year, with liberal premium offers to subscribers. Send 20 cents in postage stamps for this number to S. R. Wells & Co., publishers, 737 Broadway, New York.

SEVENTH REPORT of the State Entomologist of Illinois, (Walsh 1. Lebaron 4. Thomas 2.) on the noxious and beneficial insects of said State. Second annual report, by Cyrus Thomas, Ph. D., State Entomologist, 373 pages octavo, with 56 illustrations; a general index; an index of the plants and other substances injured by insects, referred to in the report; a list of the illustrations, and a table of contents; also, analytical tables of the families and genera of LEPIOTOPTERA, represented in said report. Our readers may judge of the general scope of the work when we inform them that 23 species of insects are described as being injurious to the apple; 10 to clover; 40 to the corn; 9 to the elm trees; 48 to forest trees; 25 to garden vegetation; 17 to grapevines; 12 to grass; 7 to maples; 9 to the oak; 8 to the rose; 5 to the turnip; 4 to the walnut, and 10 to the wheat. He only includes two species injurious to the tobacco crop, but we have already 4 species of tobacco enemies on our list for the county of Lancaster alone. An economic paper on the butterflies and moths of Illinois, constituting PART II., is contributed by Prof. G. H. French; and Miss Emma A. Smith, of Peoria, contributes a report on the noxious insects of Northern Illinois. The quality of the illustrations and typography are *good*. We are under obligations to Prof. Thomas, of Carbondale, Illinois, for a complimentary copy of this work. We believe the great Commonwealth of Pennsylvania might make a worse use of her funds—and has often made a worse use of them—than by appropriating a reasonable sum to bring out a report on the noxious and beneficial insects of the State. We believe the farmers, the gardeners and the fruit growers would as cheerfully pay their taxes for such an expenditure as for any other that has been incurred in its special or general legislation, and that before many years it may become manifest to the most ordinary and unappreciative of State officials that they have made and have persisted in a most consummate blunder. We believe that if any of the aspirants to political positions—and who have attained to those positions—had the ability, the material, and the industry to bring out such a report, we should have had one long ago, and they would have been well paid for it.

SEEDS.—We are in receipt of "The Annual Circular and Catalogue" of James J. H. Gregory, Marblehead, Mass. It contains 56 pp. profusely illustrated, and is sent free of postage to all who send for it.

NEW MUSIC.—We are indebted to George D. Newall & Co., Music dealers, Cincinnati, Ohio, for three new pieces of music: "Old Fashioned Fireplace," "Come unto Me," "May all go with the Tide."

THOROUGHBRED SHORT-HORNS.—Mr. A. M. Ranck, Bird-in-Hand, this county, advertises in this number of THE FARMER, a lot of thoroughbred short-horn bulls and bull calves for sales, at low prices.

FINE STOCK.—We are in receipt of three catalogues from Smith & Powell, proprietors of Lakeside Stock Farm and Syracuse Nurseries, Syracuse, N. Y. The catalogues are devoted to giving a description and pedigree of the horses (Hambletonians and Clydesdale) and Cattle (Holsteins) that they have for sale at their stock farm. They will be found very interesting to any one wishing to purchase fine stock.

MR. ISAIAH T. CLYMER, a practical Pennsylvania farmer, claims to have made a discovery by which from 25 to 50 per cent. may be gained in the yield o marketable potatoes. His offer in advertising columnf is therefore worthy of consideration, showing, as is does, his entire confidence both in the value of his system and in the integrity of his fellow farmers, which we are sure they can not but appreciate.

ELWANGER & BARRY'S NEW FRUIT CATALOGUE.—This recently issued catalogue, of seventy compact pages, gives much information on the newer fruits, and furnishes select descriptive lists of the older varieties. The extensive specimen and fruiting grounds connected with the nursery give many interesting results in testing varieties, and readers who procure this catalogue may obtain from it much useful knowledge on the subject not to be had elsewhere.—*Country Gentleman, September* 12, 1878.

WEATHER ALMANAC.—Prof. Tice, the distinguished meteorologist and weather prophet of St. Louis, has issued his *Annual National Weather Almanac* for 1879, in which, besides foretelling the weather for every day in the year and clearly explaining the theory on which his predictions are based, he gives a history, causes and effects of tornadoes—a chapter on lightning rods, exposes their general worthlessness, and explains how they may be made effective, &c. The whole is of great interest and practical value to every one, and especially indispensible to farmers. For sample copy and terms of sale to the trade and to agents, send 20 cents to Thompson, Tice & Co., Publishers, St. Louis, Mo.

VICK'S FLORAL GUIDE.—A beautiful work of 100 pages, one colored flower plate, and 300 illustrations, with descriptions of the best Flowers and Vegetables, and how to grow them. All for a five cent stamp. In English or German.

THE FLOWER AND VEGETABLE GARDEN, 175 pages, six colored plates, and many hundred engravings. For 50 cents in paper covers; $1.00 in elegant cloth. In German or English.

VICK'S ILLUSTRATED MONTHLY MAGAZINE—32 pages, a colored plate in every number and many fine engravings. Price $1.25 a year; five copies for $5.00. Specimen numbers sent for 10 cents.

VICK'S SEEDS are the best in the world. Send five cent stamp for a FLORAL GUIDE, containing list and prices, and plenty of information. Address, JAMES VICK, Rochester, N. Y. [79-1-2

A HOME ORGAN FOR FARMERS!

THE LANCASTER FARMER,

A MONTHLY JOURNAL,

Devoted to Agriculture, Horticulture, Domestic Economy and Miscellany.

FOUNDED UNDER THE AUSPICES OF THE LANCASTER COUNTY AGRICULTURAL AND HORTICULTURAL SOCIETY.

EDITED BY DR. S. S. RATHVON.

TERMS OF SUBSCRIPTION:

ONE DOLLAR PER ANNUM,

POSTAGE PREPAID BY THE PROPRIETOR.

All subscriptions will commence with the January number, unless otherwise ordered.

This number of "The Lancaster Farmer," issued in January, 1879, is the first number of Volume XI. The publication of the "Farmer" has been transferred by Mr. L. Rathvon to the undersigned, who will continue it in the same form as it has been published in the past, trying at all times to spare neither money or labor to make it a first-class Journal for the Farm, Garden and House. It will always contain the same amount of reading matter, as the advertisements will never be allowed to encroach on that department. We have in view several slight changes that will make it more desirable to the readers, and improve the appearance of it, but these changes they will notice as they are made, and we refrain from saying more about them.

Dr. S. S. Rathvon, who has so ably managed the editorial department in the past, will continue in the position of editor. His contributions on subjects connected with the science of farming, and particularly that specialty of which he is so thoroughly a master—entomological science—some knowledge of which has become a necessity to the successful farmer, are alone worth much more than the price of this publication. He is determined to make "The Farmer" a necessity to all households.

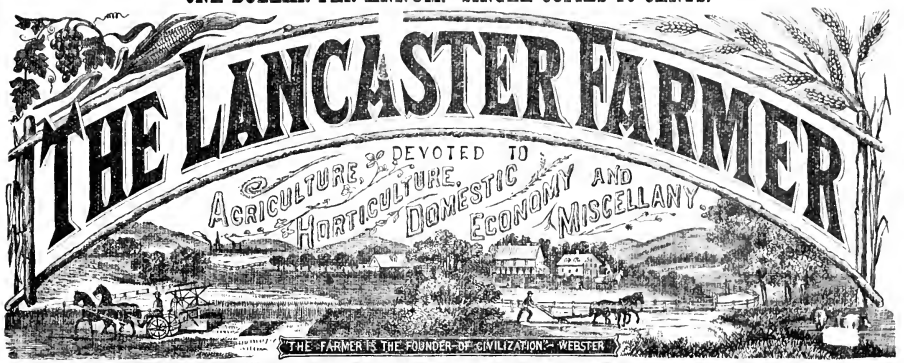
A county that has so wide a reputation as Lancaster county for its agricultural products should certainly be able to support an agricultural paper of its own, for the exchange of the opinions of farmers interested in this matter. We ask the co-operation of all farmers interested in this matter. Work among your friends. The "Farmer" is only one dollar per year. Show them your copy. Try and induce them to subscribe. It is not much for each subscriber to do but it will greatly assist us.

All communications in regard to the editorial management should be addressed to Dr. S. S. Rathvon, Lancaster, Pa., and all business letters in regard to subscriptions and advertising should be addressed to the publisher. Rates of advertising can be had on application at the office.

JOHN A. HIESTAND,

No. 9 North Queen Street, Lancaster, Pa.

ONE DOLLAR PER ANNUM.—SINGLE COPIES 10 CENTS.



Dr. S. S. RATHVON, Editor. LANCASTER, PA., MARCH, 1879. JOHN A. HIESTAND, Publisher.

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The Lancaster Farmer.

Dr. S. S. RATHVON, Editor. LANCASTER, PA., MARCH, 1879. Vol. III. No. 3.

EDITORIAL.

THE LANCASTER FARMER AS AN ADVERTISING MEDIUM.

Farmers and housekeepers are constantly in need of hardware, dry goods, groceries, implements, fertilizers, seeds, drugs, and many other articles of almost daily use upon the farm and in the household; and, therefore, there is no place where they would be more likely to see where and by whom these things are kept for sale than in the columns of an agricultural journal. They may have been reading in their papers the essays or discussions, the experiments and results of some improved implement, some new seeds, or some new compost or manure, and they would naturally want to know where these things can be had, and at what cost; and to obtain that information they, as naturally would, turn to the advertising columns of their own journals. Again, they may have some choice farm stock, poultry, fruit or grain for sale themselves, or they may want to purchase a supply of these articles, and here again they will look for information in their agricultural journals. Simply because, if their paper is in the form of a quarto or an octavo, it will always be kept at a convenient place, from the beginning to the end of the year, and is always easy to refer to. (This is not the case with a daily or weekly journal, which, if saved at all, requires to be folded up and laid away out of the road, and soon becomes buried in the accumulating mass; but in many cases when a day old it is considered as having done its duty and is destroyed.) Moreover, at the end of the year, a title page, the number of the volume and a copious index is furnished, so that any article published within that year can be referred to again with very little trouble. Now, all this evinces that all those who have anything for sale within the sphere of a farmer's wants can adopt no better medium to make their business known to the farming public than the columns of an agricultural journal, because that reaches the houses and hearths of the very people they most desire as customers. THE FARMER does not only circulate in Lancaster county, but throughout the State, and from the Pacific to the Atlantic; and in many instances in localities that are not reached by any other paper published in the State or county. The public in other States seem to be aware of these facts, and hence our agricultural exchanges come to us freighted with advertisements; and we have known instances where persons have absolutely sent out of the State for an article which they could have obtained cheaper nearer home, but it was not advertised in their paper. Of course any advertising medium is good in its specialty, and in proportion to the number and expanse of its circulation, but an agricultural journal to an agriculturist possesses special advatages, if the advertising public can appreciate it as a medium through which to make known their wares for sale. The advantages to the two classes are mutual, and that is the only advantage that should characterize the intercourse between man and man in a free country.

SOCIETY PROCEEDINGS.

About semi-occasionally some, doubtless well-meaning patron, ventures to suggest that inasmuch as the proceedings of societies are published in all the daily and weekly papers, they might be omitted in THE FARMER. Perhaps these friends do not duly consider the *fact* that many of the readers of our journal never see a Lancaster daily paper, and some of them not even a weekly one. Those proceedings, together with the essays and discussions, are a reflex of what the Lancaster county farmers are saying and doing on the subject of agriculture and kindred topics, and they are not only of infinite interest to readers abroad, but they also contain an epitome of the agricultural progress of the county, and are valuable for home and local reference. On one occasion, at least, the very individual who suggested this objection, in two days thereafter, was compelled to look into the columns of the proceedings, which, although published in a "daily," yet that very daily had been torn up or was lost, and, therefore, inaccessible. The proceedings always contain lists of the members in attendance at the meetings, and also of the officers, as well as the topics to be discussed at a future meeting. When bound THE FARMER is invaluable as a medium of ready reference.

TO CORRESPONDENTS.

There is no one who more willingly and cheerfully than we replies to the various inquiries of correspondents, especially upon such subjects as those of which we have some knowledge—indeed we feel it our duty to do so; and we can also assure them that it is a pleasant duty. But there are a few conditions which they ought reasonably to comply with, in order to secure an answer to their queries. In the *first* place, they should give plainly their postoffice address, including the county and State, and in view of so many new postoffices and new townships being decreed every year, in some cases even the township should be given. *Secondly*, if they desire an immediate written answer they should inclose a postal card or a three-cent postage stamp; but if they only desire an answer through the columns of THE FARMER this requisition can be waived. *Thirdly*, their inquiries should be written with ink, and only on one side of the paper. We prefer to answer correspondents in the columns of our journal, because such questions and answers often involve the interests of the general public, and in answering our correspondent we answer many who are equally interested, but who may feel too diffident to make the inquiry; and when so answered it saves us the trouble of making separate answers. We know that our correspondents will see the reasonableness of these requisitions. A single postal card or a single three-cent stamp is a mere trifle, but put all these little trifles of a whole year together and it will be found that they aggregate too large a sum for our editorial pocket, especially as we get nothing for our labor of answering and expect nothing.

COUNTY FAIRS.

It will be perceived from the proceedings of the February meetings of both the Horticultural and the Bee-Keepers' Societies, that it is proposed to hold an exhibition in Lancaster city next autumn. In the latter society the matter has only been *proposed*, but in the former it seems to be a foregone conclusion. This would be very desirable, and if the proper energy is exercised there cannot be a doubt of its success. Nothing has yet been developed as to when and where, or how the prospective exhibition is to be conducted, and as the Bee-Keepers' Society does not meet until the month of May next we shall probably hear nothing from it officially until then. In the meantime we would respectfully suggest, that the *Horticultural Fair* and the *Beauty Fair* be held jointly, at the same time and place. This would stimulate additional interest to both, and concentrate those local energies which so often fail by being too much scattered; and what might still be better would be a *Poultry Exhibition*, by our local society, under the same auspices. If there is any "show" at all for fruit and flowers the coming season these three societies might get up a joint exhibition that would be a credit to Lancaster county, if not the whole State. Those who compose the membership of these societies have only to say—that (under Providence,) it *shall* be so and it *will* be so.

PRACTICAL ESSAYS ON ENTOMOLOGY; OR, ESSAYS ON PRACTICAL ENTOMOLOGY.

Under one or the other of these titles we propose to publish, in book form, amply illustrated, all our entomological writings, that will be useful to the farmer, the gardener, and the fruit-grower; embracing the history and habits of our most common NOXIOUS AND INNOXIOUS INSECTS; including remedies for their expulsion or extermination: and the work will be put to press as soon as a sufficient number of responsible subscribers shall be obtained to cover the cost. Our writings are scattered over the country in various publications, many of which have not been preserved; others are inaccessible to the community at large, and they cover a series of twenty-five years. We have recently had occasion to "look them up," (for, fortunately, we have preserved copies of all of them,) and we find that they number about two hundred and fifty separate papers, which include over four hundred different species or varieties of insects. Whatever errors may have inadvertantly crept into our earlier writings will be carefully eliminated, and recent discoveries will be added. Although very perceptible progress has been made in practical entomology within the last twenty-five years, yet we find there is ample occasion for more knowledge on the subject and a wider diffusion of it. Moreover, what was really *true* a quarter of a century ago is equally true now, and in many things we find that little advance has been made, and therefore there is little to undo. A period is approaching in our domestic history when it will be absolutely necessary for all men to give heed to the facts of natural science in a greater measure than has been their habit in the past. Scientific farming cannot much longer be "tabooed"—practically it never has been and never can be—and the rising generations *will* acknowledge its empire. We have not yet determined the price of the work, nor whether it will be most expedient to comprise it in one or more volumes. We indulge in some expectations, which are too vague yet to give a form of expression, through which we may be able to offer it to the public at a very low price.

This introductory is mainly to admonish our friends and patrons of our ultimate intentions, and that our work will be facilitated or retarded, according to the interest they may see fit to manifest in behalf of our enterprise—an enterprise that has mainly been suggested by a number of liberal and sympathizing spirits among them.

INCORPORATION.

It will be perceived by the proceedings of the February meeting of the Agricultural and Horticultural Society, that steps have been taken to procure a charter for the same. Although a late move, it is none the less a good move; for this is something which, in our view, ought to have been accomplished long ago, and why it was not would be difficult to explain. If men are sincere in sustaining an organization of the kind, they cannot possibly be opposed to becoming a "body politic in law," and in having a legally recognized existence. By such a course the society becomes a *fact;* otherwise it can at best only be a contingency.

The very fact that the society has maintained an active existence for more than a dozen years without a charter, evinces that its necessity is recognized, and that being the case, its incorporation is as legitimate a sequence as a legal marriage between two who propose to live together as man and wife. An organization unincorporated is always more or less "a rope of sand," and carries with it an idea of irresponsibility, and a tenure that is temporary and uncertain. It is something akin to the "Articles of Confederation" before the adoption of our National Constitution. Its powers are indefinite and capricious. It has not a single officer who can perform a single act in its name, or who can be held responsible in any matter where its interests are involved. It could not legally accept or hold a gift or endowment of any kind as an organic body; and if it received such an endowment it could not in its own name designate a custodian of it; or, if it should designate such a trustee, he would be legally responsible to no one for a faithful discharge of duty or a surrender of said trust.

If the society reasonably perseveres under an act of incorporation, it will ultimately become the sole representative of the agricultural interests of Lancaster county, and it ought to be fostered by the farming public. No matter how many "farmers' clubs" there may be—every township should have one—there still ought to be a strong, compact and well-appointed central organization as the representative head of the county. Surely the head cannot say to the hands or the feet, "I have no need of thee," nor *vice versa*, but all should co-operate in a harmonious union.

BUY YOUR TREES AT HOME.

Every season complaints are made that certain foreign (foreign to the State or county) tree agents have been canvassing the county of Lancaster, and that in most instances those who have patronized them have discovered, too late, that the stock they have purchased has proven inferior or worthless. Even if the stock is genuine, it has been out of the nursery so long, has suffered from transportation so much, and comes to hand so late that very little of it can be gotten to grow, or thrive when it does grow. We by no means desire to create prejudice against foreign nursery stock, or unduly contract the enterprise or energies of the farmer, but under all circumstances, if he can get what he wants, and at a fair price at home, he should by all means encourage home nurseries. He should buy his trees, vines, plants and other nursery stock from his own neighbors, and especially from those nearest his own locality. This seems reasonable, for the stock is more fresh and vigorous, and may be better adapted to his own soil. Some of these agents carry with them books, illustrated with fruits, vegetables and flowers, and their victims by trusting s ilely to the recommendations of a beautiful picture (just as if it was not as easy to make a pretty picture as an ugly one) are often deceived. Others carry with them handsome specimens of the fruit itself. Of course they would not exhibit anything but that which is handsome. It is very certain that they can buy this fruit almost at any time, but it is by no means certain that the stock they sell will produce the kind of fruit they exhibit in connection with it. We regret that we are compelled to write in this strain, but so many of our honest, hard-working farmers have made complaints to us that we can no longer forbear. There are foreign nurserymen whose stock we have frequently had occasion to commend in the columns of this journal, whose "goods" are reliable, and who would by no means attempt to palm off on their customers any article in their line for anything else than what it *really is;* but if the farmers of Lancaster county are unable to discriminate between these and the "sharpers" of the trade—as a contemporary remarks—may it not be because they do not subscribe for and read THE LANCASTER FARMER, or some other reliable agricultural paper? The following article is from a contemporary, published a few days ago:

A Grape Swindler.

A swindler has lately been coming it over some of the good citizens of the northern part of the county by selling them grape vines at big prices, which they described as perfectly hardy and reliable, but which knowing ones pronounced hot-house or California grown varieties, and which of course are entirely worthless in open air culture. They are very indignant at the swindler, and are very anxious to have the rascal exposed. But it is not certain that exposure of such frauds would do much good. If they had been readers of THE LANCASTER FARMER they would long since have learned to give no encouragement to tree agents—to kick them off the premises if they cannot get rid of them in any other way.

It is not pleasant to say it, but it is true, that the people of Lancaster county are too gullable. Only a few years ago a set of sharpers from Ohio sold over $12,000 worth of trees and plants in this county, and it is questionable whether the whole stock to-day is worth 1,200 cents.

Right on the heels of them came a Dr. B., in kid gloves, having a dashing team, driving day after day in style through the streets of Lancaster, selling novelties (?) to our lawyers, bankers, doctors, merchants, business men (?). What guarantee have these men that the stuff delivered to them is worth anything? Would not Lancaster county be a good field for some sharper to sell yellow verbenas and blue roses?

THE AGRICULTURAL SOCIETY AS A SCHOOL.

There seems to be no lack of speakers on the subjects that come up for discussion every month in the meetings of our local Agricultural and Horticultural Society, and we are quite glad to see it. It shows that the members have something to talk about, and when this is the case men will soon learn to talk. Talking is a habit formed like any other habit, and to acquire that habit it is necessary to frequently indulge in talking. Of course, it does not follow that a man who does not talk, or cannot talk, therefore knows nothing. The gift of free, eloquent and elegant talking is not possessed by all, and even among those who can talk, it is not possessed in the same degree. Many of our most distinguished statesmen and heroes were indifferent talkers. But many possess that peculiar talent in whom it remains latent until an opportunity is presented to bring it out. The organization of our local society has done much to bring out our farmers, not only as talkers but also as writers. We venture to say that it has been a school which has done more to bring them forward intellectually, and to encourage their literary tastes and abilities than any other school to which they ever have had access. When our society was first organized, some twelve years ago or more, there were but few in it who possessed the gift of fluent talking, and those few were not all practical talkers, but there has been a very perceptible change since then. They are not only able and willing to talk, but they talk practically and to the point, and are not afraid to advance views and opinions based on their own experiences before the higher and more learned dignitaries of the land. And why not? If they *know* a thing from visible and tangible experience, why should they be deterred from proclaiming it because some theory only partially demonstrated, or perhaps entirely impracticable is in conflict with it? Truth is truth, no matter from what source it emanates. Does anybody suppose that the spirit of Christianity is less potent because it was first apprehended and enunciated by the humble fishermen of Galilee? Does anybody suppose that their teachings were less truthful and less efficacious because not exercised according to the philology of the Sanhedrim? Man does not make truth. He is only the medium through which truth is manifested, and the less perverted and impractical the medium is the purer and more potent the truth.

MONTHLY REMINDERS.

In the Middle States spring has arrived according to the calendar, but the experienced gardener is not to be caught by arbitrary terms; and though March and the almanac may indicate spring, frost and storm, and biting winds caution him to care and patience. He will wait the progress of the month and bide his time. If the temperature prove mild let him proceed as indicated below; otherwise, delay until more favorable weather.

Artichokes dress; plant. Asparagus sow; plant the Colossal roots. Beets—Extra Early, Philadelphia Turnip and Early Blood Turnip—sow. Cabbage sow in a sheltered place, if not already in a hot-bed. Test our new varieties—the Wakefield, Early Market and Bloomsdale Brunswick. Carrots, Early Horn, sow. Cauliflowers—attend to those under glass. Celery sow. Cress sow. Composts prepare. Dung prepare for later hot-beds. Horse Radish plant. Hot-beds make; also force. Lettuce sow; prick out. Mushroom-beds attend to. Mustard sow. Onions put out as sets—those known as "Philadelphia Buttons" much the best. Parsnips sow—the Sugar is the best. Peas—Landreths' Extra Early and Early Frame—sow. Also, McLean's Advancer and McLean's Little Gem, which we commend with confidence. Potatoes, Early, plant. The Early Goodrich continues to secure admirers, but the Early Rose will distance it; it is admirable in every respect. Radish—the Long Scarlet and Red and White Turnip—sow. The "Strap-Leaved Long Scarlet," an improvement on the old Long Scarlet we recommend. Rhubarb sow; plant roots. Sage sow; plant. Tomato sow in hot-bed. Turnips, Strap-Leaved Early Dutch, sow; but generally be it observed, so far north as Philadelphia, these directions will apply better to April than March.—*Landreth's Rural Reg.*

GROUNDHOG METEOROLOGY.

Better be a living groundhog than a dead hero. We noticed in the local press but a single allusion to the recurrence of the ever-glorious 8th of January, and that was briefly "The Battle of New Orleans." But the 2d of February, or Candlemas, outside of the church, is almost certain to be annually ventilated, in its relations to the groundhog and his weather prognostications. We are only apprehensive that he will eventually eclipse the 22d, the anniversary of the natal day of "Columbia's greatest glory."

How can we attach any significance to the actions of the groundhog on the 2d day of February, so long as we are in ignorance of what he really does on that day? The old saw on this subject is to this effect: "If the groundhog comes out of his hole on the morning of the 2d day of February, and sees his shadow, he will go back and continue his winter sleep for six weeks longer," during which time we will have severe winter weather. But if he does not see his shadow, he will remain out of his hole, and we shall have an early and warm spring. This whole prophetic superstructure seems to be based upon the little ambiguous conjunction *if*, and that *if* is founded upon an error in regard to the habits of the groundhog. The groundhog or "Marmot" (*Arctomys monax*) is a hibernating rodent, and goes into a semi-hibernating sleep as early as October, and does not come out of it until April, during which time he eats nothing—or, if he ats at all, it is that which he himself had provided the previous season, and therefore there is no necessity for him to come out of his winter burrow.

On such a day as the 2d of February, 1879, was, no hibernating animal would have power to come forth, even if he had the will to do so, and hence they might as well be left out of the question in weather prognostications; leaving those to be built upon other more plausible data. We might just as truthfully say, "If the humming-bird comes up from the South on the 2d of February and finds the morning-glory in bloom, it will go back and not return again for six months." A swallow would be just as likely to meet a ground-

hog abroad on the 2d of February, as a groundhog would be to meet a swallow or see his shadow on that day, especially such a day as we had on the 2d ult. So true is the groundhog to the hibernating instincts of its nature, that it is on record that it has assumed that torpid condition when it was semi-domesticated and kept in a house—rolling itself up in a corner of its kennel and refusing to eat anything; and when it was placed near the fire it gradually revived, but immediately crept back to its kennel and relapsed into a state of torpidity. The termination "hog" attached to the name of this animal is a palpable misnomer; there is nothing of the instincts or habits of the hog about it. It is an exceeding cleanly animal; as particular about its person as a cat. Its lair is a pattern of order and cleanliness.

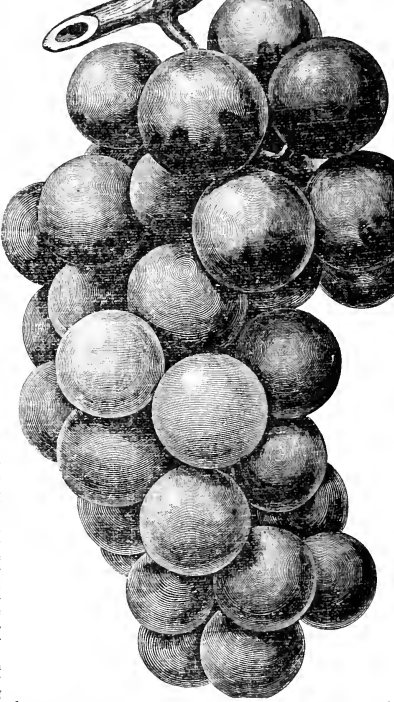
It is a *marmot*, and has its representative in the European marmot (*Arctomys marmota*). The term "arctomys" means a *bear-rat*, having a body resembling a bear. Linnæus originally included it in the genus *Mus*, the same to which our common rat belongs. *Marmot* has nearly the same significance—it means a mountain rat, or a mountain mouse. This animal has been dignified by many common names in various localities. Perhaps, outside of Eastern Pennsylvania, the most popular names is the "wood-chuck." The French Canadians call it "Siffleur;" southward "marmot" is generally used. Up in the North it is the "thickwood-badger." Up in Alaska the "tarbagan," etc., etc. It is more nearly allied to the squirrel or the rat than it is to the hog. It is very prolific, producing from six to eight at a litter, and, being very partial to young clover, it is sometimes a very serious annoyance to farmers on whose lands it is domiciliated. It cuts off, gathers up and carries off to its den large quantities of this grass, but if it can not obtain this, it also appropriates other species of vegetation, and will not reject insects. As autumn approaches it constructs a special burrow, with an aperture that communicates with the sleeping apartment, and this it fills with food and then closes up the aperture that communicates with the outer world. This food is intended for a supply before it becomes torpid in the fall, and after it comes out of that state in the spring; therefore, there is no necessity for its going abroad on Candlemas day. Anything to the contrary is only exceptional, influenced by extraordinary circumstances. So firmly do some people believe in this groundhog weather prophecy that we have heard of a case where people were admonished to turn out and exterminate the whole race, rather than submit to a cold and late spring as a probable contingency of his presence.

We do not pretend to say that an early spring has not followed a cloudy Candlemas, or that a late spring has not followed a clear one; nor do we by any means say that no groundhog has ever been seen abroad later than October, or earlier than April, any more than we would say that no tree, in this latitude, has ever bloomed in February, nor that vegetation has never been frozen in the month of June. But these are meteorological contingencies that are entirely independent of the habits of the groundhog, and, for the most part, have their causes in climatic diversities beyond the knowledge or investigation of mortal man, and particularly beyond the influence of his remedial agencies.

Nor do we desire to wantonly dissipate the faith of those who cherish such peculiar notions, any more than we would the pleasant fancies of children about "Good Santa Claus," "Mother Goose" or "Jack the Giant Killer." It is singular, however, that as their minds expand children soon grow out of this philosophy of the nursery; but very often the elders carry their groundhog fancies to a protracted age, or to their graves. Of course it is not very harmful; the worst, perhaps, that can grow out of it is a little disappointment, and this will be proportioned to the subject's faith, and the magnitude of the enterprise based upon that faith.

NEW $60.00 PRIZE GRAPES—MOORE'S EARLY.

Combining the following desirable qualities, viz.: Hardiness, size, beauty, quality, productiveness and earliness, maturing ten days earlier than the Hartford Prolific, and twenty



days earlier than the Concord. This new grape is one out of a lot of 2,500 seedlings, and produced its first fruit in the year 1872; it was then exhibited, and has been shown at the exhibitions of the Massachusetts Horticultural Society, by the fruit committee, every year since, and prizes have been awarded to it at eighteen different exhibitions, last of which was $60.00 for the best seedling, after a satisfactory trial. These prizes were all awarded for one or more of the above enumerated special points.

Description of fruit: Bunches large, berry round, large, (as large as the Wilder or Rogers, No. 4,) color black, with a heavy blue bloom; quality better than the Concord; vine exceedingly hardy; has never been covered in winter, and has been exposed to a temperature of more than twenty degrees below zero, without injury, and it has been entirely exempt from mildew or disease. Its earliness makes it desirable for an early crop, and more particularly adapts it to New England and the northern portion of the United States.

Price: One year old vines, $1.00; two year's old, $2.00; extra vines, delivered by express, $3.00. Liberal deductions made when ordered by the dozen or in large quantities. For particulars address Mr. John B. Moore, Concord, Massachusetts.

Our illustration is "an exact copy from a photograph of a bunch." If the high endorsements which this new grape has received from competent committees in the Eastern States are to be recognized as unqualified evidences of quality and character, then our readers will have no difficulty in determining what they ought to do in the premises. Early fruit, and especially early grapes, are always desirable, and that quality alone ought to recommend this fruit to the citizens of Lancaster county.

ST. MATTHEW'S DAY.

"Matthias bricht eis
Find er kein, so macht er ein."

This may be literally translated:

St. Matthew breaks the ice;
Finds he none, he makes one.

This means that if there is *no* ice on St. Matthew's Day—24th of February—it will become cold enough to make ice after that date, before the spring is fairly opened; but if there *is* ice, then we shall have no more cold weather and an early spring. How now? Through the obtrusiveness of the impatient groundhog on Candlemas, the cold weather has been continued, and winter still fiercely broods over the snowclad hills and icebound streams; and according to the groundhogological prognostications we are to have yet three weeks of frigid winter; but, here comes the St. Matthew prog, in direct conflict with that of gouty old "Arctomys;" and it may well be asked, "What are we going to do about it?" Will the disciples of the Arctomian system please take hold and try to harmonize this case? Verily the weather seems to be in danger of being "governed too much," and who can tell now whether we are going to have any spring and summer at all? For our part, we shall be content with being an humble "looker-on," and if out of the "muss" anything consistent with reason and common sense is developed, we hope we may be able to apprehend it.

There is one thing, however, that these unauthorized weather prophecies may demonstrate, and that is the folly of associating "set days" with meteorological phenomena, with which they have no connection whatever, and over which they cannot possibly exercise the remotest influence. Of course, very few people *really* believe in these weather-signs now, and even the few who profess to believe them, hold them under the mental reservation involved in—"mebbey it mout, and mebbey it mouth't." However true it may be that these weather phenomena are the effects of some antecedent cause—meteorological or astronomical—yet, so far as human ken extends, we are profoundly ignorant of that cause; and probably we shall remain so for a long time to come. As mere myths, however, we may permit people to entertain them and talk about them. They are prolific themes of conversation, and to deprive people of them would be to annihilate an important factor in social intercourse, for often, very often, if there were no weather to stimulate conversation, there would be little else to talk about; and no wonder, for the weather con-

trols more than we are willing to give it credit for.—*February* 24, 1879.

A CHAPTER ON MACARONI.

Personally we are very fond of macaroni, and can make a meal on it alone; (barring perhaps an additional cup of coffee,) and practically it is both bread and meat to us; moreover, it is about as cheap as any; article of wholesome food that can be bought. It has no bones in it; it never stales or taints; it is simple in its culinary preparation; it is nutricious and always handy to have about the house. Towards spring, when vegetables become scarce, or when they begin to sprout, become insipid and wilted or leathery, macaroni is a grand reserve to fall back upon. As we have said before, we have always liked it—liked it these fifty years or more—have relished it whenever it was set before us, and never could understand why that was so seldom.

But now, since we are compelled to become economical through the pressure of the times, and Miss Corson, through the instrumentality of her cheap *Cook Book*, is likely to make macaroni eating popular or fashionable, the least we can do for our readers is to admonish them, in this respect, to become *fashionable*, if they desire to "march along" abreast with the times; and in order to assist them in doing so we commend the following from the book aforesaid. If our well-fed and well-supplied farmers do not need this advice there are many others who may need it.

Macaroni and Its Uses.

In a notice of Miss Corson's little work on "25-cent Dinners," it was stated, as one good feature of the book, that it recommended macaroni, and told how to cook it. This cheap and very nutritious food may be cooked in a variety of acceptable styles, and is a most excellent substitute for vegetables. Potatoes are apt to be poor late in the season, and if macaroni be used instead it will be found vastly more nutritious. Macaroni comes in boxes of about 25 lbs., and is sold by the box at an average price of 15 cents per lb. It is in long pipes, or tubes, sometimes several feet in length, being bent over and over; it is a little larger round than a common lead pencil, and has a dull appearance, somewhat like that of a horn. It is imported from Italy, and though it has been made in this country, and perhaps is still made, it is, for reasons to be explained presently, vastly inferior to the imported. Macaroni is really dried flour paste, but there is, as every housekeeper knows, a great difference in flour, and the kind best for bread is the poorest for macaroni, and vice versa. Flour consists largely of starch. If we mix up some flour with water, to form dough, and tie a lump of this dough—say an egg—in a piece of muslin, and then hold it under a stream of water, and work it as the water flows, the starch will soon be washed out through the meshes of the muslin, when the water runs clear, showing that the starch has been washed out, if we open the cloth there will be found a small quantity of a pasty, stringy mass—this is gluten. It differs from starch in containing nitrogen, and it will soon spoil. Starch is a *heat*-producing food, gluten is a *flesh*-forming food, really the most nutritious portion of the flour. Our best wheats make flour with 7 or 8 parts in the 100 gluten. Other wheats contain about twice as much. It is only wheats rich in gluten that make good macaroni, and while the flour of our wheats make the best and lightest bread, it is only the wheats of the south of Europe, especially some kinds raised in certain localities in Italy, that make the best macaroni. This is why it cannot be made successfully in this country—our flour is in one sense too good. The proper kind of flour is made into a stiff paste with water, well worked by means of a wooden bar, and then put into a mould, in which it is subjected to great pressure. The mould has holes in it, of the proper shape, and the paste is forced out through these as fine as threads, when it is called vermicelli, or as pipes or tubes, when it is macaroni. It is dried by a heat sufficiently to slightly bake it, when it is ready to be packed in boxes. The same paste rolled thin, and formed by proper cutters into squares, stars, hearts, etc., is known as Italian paste. Vermicelli and Italian paste are rarely used except in soups. It will be seen that macaroni is the most nutritious of all farinaceous foods, and one that should be more generally known and used than it now is. We may add here that it is a most excellent thing for explorers and other travellers—as we know from experience. Those who go on hunting and other excursions, which take them where vegetables are not procurable, will not miss these if there is a supply of macaroni. Old macaroni is sometimes infested by an insect which feeds within the cavity; upon holding the stick up to the light this may be seen as a dark spot. In our first experience with macaroni, it seemed so hard and horn-like that it was put to soak before cooking; as a consequence it was spoiled. It should be put at once into boiling water. The following directions for cooking it are from "25-cent Dinners," and abridged so far as they give matters already stated above. Miss Corson gives the following general directions under:

Macaroni.—Wipe it carefully, break it in whatever lengths you want it, and put it into boiling water, to every quart of which half a tablespoonful of salt is added; you can boil an onion with it if you like the flavor. As soon as it is tender enough to yield easily when pressed between the fingers, drain it in a colander, saving its liquor for the next day's broth, and lay it in cold water until you want to use it. When more macaroni has been boiled than is used it can be kept perfectly good by laying it in fresh water, which must be changed every day. After boiling the macaroni, you can use it according to any of the following directions. Half a pound of uncooked macaroni will make a large dishful:

Macaroni, Farmers' Style.—Boil half a pound of macaroni as above, and while are draining it from the cold water stir together over the fire one ounce each of butter and flour, and as soon as they bubble, gradually pour into the sauce they make, a pint of boiling water, beating it with a fork or egg whip until it is smooth; season it with a level teaspoonful of salt and a level saltspoonful of pepper, and put the sauce and in it to heat; then cut an onion into small shreds, and brown it over the fire in a very little fat; when both are done, dish the macaroni, and pour the onion out of the frying pan upon it. It is excellent; and ten cents will cover the cost of all of it.

Macaroni with Broth.—Put half a pound of macaroni, boiled as above and washed in cold water, over the fire with any kind of broth, or one pint of cold gravy and water; season it to taste with pepper and salt, and let it heat slowly for an hour, or less if you are in a hurry; then lay it on a flat dish, and over it a few bread crumbs, which you will almost always have on hand if you save all the bits I speak of in the article on BREAD; then set the dish in the oven, or in front of the fire to brown. It will cost less than ten cents, and be delicious.

Macaroni with White Sauce.—Warm half a pound of macaroni, boiled and washed in cold water, as above, in the following sauce, and use it as soon as it is hot. Stir together over the fire one ounce each of butter and flour, pouring in one pint of boiling water and milk, as soon as the butter and flour are mixed; season it with salt and pepper to taste, and put the macaroni into it. This dish is less than ten cents, and is very good and wholesome.

Macaroni with Cheese.—Boil half a pound of macaroni, as above, put into a pudding dish in layers with quarter of a pound of cheese, (cost four cents), grated and mixed between the layers; season with pepper and salt to taste, put a very little butter and some bread crumbs over it, and brown it in the oven. It will make as hearty and strengthening a meal as meat, and cost about twelve cents.

CHEMICAL FARMING.

The question of "Fertilizers," or "Artificial Manures," has become a subject of more earnest discussion in this county at the present time than, perhaps, at any former period in the agricultural history of the county. As the desire to realize larger crops, and the artificial fertilizing compounds increase, so also increases the anxiety of the farmers in regard to their real value, their component parts, their prices, and when, where and how to apply them; and also their intrinsic qualities in comparison with good barnyard manure; and, lastly, how to guard against imposition. We extract the following from an able article on that subject, which we find in the January number of the *Scientific Farmer*, published in Boston, Mass. We particularly call the attention of our readers to the words *italicised*, from which it will be perceived that the *fact* as to whether the fertilizing material reaches the plant in such a condition as to be absorbed by it, and whether the soil just needs the elements it contains, are important factors in the use of chemical or any other kinds of manures.

Plant-Food.

It is now but little more than a generation since chemistry came to the farmer's aid, and offered her services to those who would employ them. Not with a halting step, but with the vigor of a god-like birth, agricultural chemistry was born, and soon the English speaking world was aglow with the interest which came from the new discovery. Plants fed, so Liebig stated, not on dirt, but on certain chemical substances, which were part of the earth. Earth contained but a limited amount of these substances; and hence the continuous growth and removal of crops soon left the land unfit for further plant growth. Analysis showed the elements which plants removed. *Ergo* supply these elements, and prevent your land from getting exhausted. This was the discovery which it took ages to develop into expression; this discovery is at the basis of modern farming.

The chief aim of the husbandman is to supply plant-food. For this purpose he applies his manure, he exercises his skill in culture, he adopts his fallows or rotations. Plant-food, how to obtain it for his plants, and how to compel the plant to get the most of it, this is true farming. We propose to offer a few ideas on the subject of plant-food, premising that our statements all seem to have been experimentally proven, and to have been practically adopted, here and there, by the most intelligent of cultivators.

The elements of plant-food which are most apt to be deficient in our soils are nitrogen, phosphoric acid and potash. To obtain a full crop these have to be present, *diffused* throughout our land, and must be in that chemical condition which will allow of their being appropriated by the roots of our plant, wherever they are to pass into the plant circulation, become incorporated into its life, and through the most wonderful metamorphoses of growth become part and parcel of the plant structure.

Now, one pound of soluble phosphoric acid, or one pound of a given condition of nitrogen, or one pound of a potash salt, properly *diffused* through our land, is as efficient as another pound of a like substance, without regard to its source of supply. Thus it makes no difference in the amount of the crop whether the pound be supplied in one hundred pounds of dung or ten pounds of a manufactured article. All the plant requires is the presence and accessibility of its food.

Let us not be understood as saying that one hundred pounds of dung, containing one pound of soluble phosphoric acid, is not better than ten pounds of superphosphate containing one pound of soluble phosphoric acid. Nor must we be understood as saying even that the same quantity of chemical substances contained in one hundred pounds of manure is necessarily equal to the raw manure in value for application. We are not treating of manures comparatively, but of plant-food and hence, ignoring the difference caused by the method of application, and the physical action or chemical action of either after their disposition in the land, we repeat that one pound of plant food absorbed by the plant is just one pound, and is of equal value, without reference to its source of supply.

These are facts; now for the application: Plant-food must be furnished by the farmer in order that he may be able continuously to crop his land. It makes no difference in what form he applies them, provided the plant secures them. Equal quantities of plant-food from one source of supply are equal in effect to the equal quantities of a similar substance in another source of supply, *if only the plant gets them*. We repeat the idea, in order to be understood. Consequently the farmer must study values, and provide for his crops the plant-food from the source whence it can be obtained for the least money.

Dung and Chemicals.

Is dung better than chemicals? Not necessarily. Are chemicals better than dung? It does not follow. If dung and chemicals will raise the same quantity of crop year after year, then whichever the farmer wants to supply is the cheaper of the two. It seems ridiculous to claim that if five dollars worth of chemicals will give as good results as eight dollars' worth of dung that dung is better; or that if five dollars' worth of dung will produce equal results with eight dollars' worth of chemicals that chemicals are better. A chance for difference of opinion can only come in those cases where the decision lies between a dollar's worth of dung and a dollar's worth of chemicals respectively.

We have here the whole question of purchased manures in a nutshell, provided our supposition is tenable. Let us show that it is, by the quoting of an actual experiment, which must tend to convince even the most skeptical.

We will quote results from Mr. Lawes' experiments, at Rothamstead, England:

HAY.

Unmanured plot,	-	1.32 tons.
Applied chemicals,	-	1.80 tons, 10 year's average.
Dung (14 tons),	-	2.30 " " 8 " "

BARLEY.

Unmanured plot,	-	20¾ bushels.
Chemicals,	-	48½ bush., 24 year's average.
Dung,	-	48¾ " " " "

WHEAT.

Unmanured,	-	13¾ bush., 24 year's average.
Chemicals,	-	37½ " " " "
Dung,	-	35½ " " " "

We thus see that chemicals can produce the same results as are produced by dung. In the experiments quoted we have the average of many years' trials, so that the effect cannot be ascribed to a favorable season, or otherwise. We must consider it proven that chemicals can take the place of dung. It only remains to show whether we can afford to use one in preference to the other. Unfortunately we have not in these experiments quoted the necessary data for

the solving of the question of values. It is evident that under such large doses of dung as were used—fourteen tons yearly—the land must have, in course of time, attained a maximum of fertility; and the crops yielded indicate this. The amount of chemicals used was also in excess of the requirement of the plant in most instances.

Reason tells us that chemical farming must be successful, provided we apply to the land yearly what the crop removes, provided the elements which are applied are kept during the season of growth in condition fit for appropriation by the plant, and provided they are thoroughly diffused throughout the land. Reason also tells us that manure farming is successful under like conditions of application.

Experience tells us that with abundant manure we can raise on the average maximum crops for our land. Experience also tells us that with an abundant supply of chemicals we can do likewise. Thus reason and experience coincide.

Practically, however, we have other questions to consider, and the question is not as simple as at first sight appears. Practically, *it is* found, it *has been* found, that we need apply barnyard manure containing chemical elements far in excess of the chemical elements removed by the crop to produce the crop. Practically, it has been found that in many cases where chemicals were applied, the amount of the crop was proportionate to the amount of the chemicals applied. Practically, the application of a fertilizer may fail to produce the anticipated crop. Practically, a large manuring will not always produce the anticipated crop.

The condition of the soil and the facts of cultivation have also to be considered while we are considering plant-food, for in all farm questions like this we have two sides to our subject. *The plant-food must be present; the plant must also be able to appropriate it*, and this latter fact is an important one.

Consider why we can raise larger crops on sterile New England soil, by the aid of manure, than they do on the prairies of the Southwest, just fat with fertility. Consider the large yield on the acreage of England, and the small yield on the acreage of that golden State which fronts on the Pacific!

PEARL MILLET.

"Pearl Millet has been cultivated for some years as a forage plant in some of the Southern States, as 'African Cane,' 'Egyptian Millet,' 'Japan Millet,' and in some places as 'Horse Millet,' but little was known of it at the North before last year, and then only in such small quantities as to hardly allow of a fair trial. From what we saw of it in 1877, we determined to give it a thorough trial this season. A piece of good strong loamy ground was prepared as if for a beet or turnip crop, by manuring with stable-manure, at the rate of ten tons to the acre, plowing 10 inches deep, and thoroughly harrowing. The Millet was then sown in drills 18 inches apart, at the rate of 8 quarts to the acre. We sowed on the 15th of May, about the date we plant corn; in 12 days the plants were up so that a cultivator could be run between the rows, after which no further culture was necessary, for the ground became so rapid and luxuriant as to crowd down all that attempted to get a foothold. The first cutting was made July 1st—45 days after sowing; it was then 7 feet high, covering the whole ground, and the crop, cut 3 inches above the ground, weighed, *green*, at the rate of 30 tons per acre; this, when *dried*, gave 6½ tons per acre as hay. After cutting, a second growth started, and was cut August 15th—45 days from the time of the first cutting. Its height was 9 feet; it weighed this time at the rate of 55 tons to the acre, *green*, and 8 tons dried. The *third* crop started as rapidly as the second, but the cool September nights lessened its tropical luxuriance, so that this crop, which was cut on October 1st, only weighed 10 tons green, and 1½ tons dried. The growth was simply enormous, thus: 1st crop in 45 days, gave 30 tons green, or 6½ tons dry; 2nd crop in 45 days, gave 55 tons green, or 8 tons dry; 3rd crop in 45 days, gave 10 tons green, or 1½ tons dry. The aggregate weight being 95 tons of green fodder in 135 days from date of sowing, and 16 tons when dried to hay. This exceeds the clover meadows of Mid-Lothian, which, when irrigated by the sewerage from the City of Edinburgh, and cut every four weeks, gave an aggregate of 75 tons of green clover per acre. There is little doubt that Pearl Millet is equally nutritious as corn-fodder, which it resembles even more than it does any of the other Millets. We found that all our horses and cattle ate it greedily whether green or dry. If sowing in drills is not practicable, it may be sown broadcast, using double the quantity of seed—say 16 quarts per acre. The ground should be smoothed by the harrow, and again lightly harrowed after sowing; if rolled after harrowing all the better. I know of no farm crop that will better repay high manuring, but so great is its luxuriance that it will produce a better crop without manure than any other plant I know of. In those parts of the Southern States where hay cannot be raised this is a substitute of the easiest culture, and, being of tropical origin, it will luxuriate in their long hot summers. Even though our Northern seasons may be too short to mature our seeds, our experiments in New Jersey this summer show what abundant crops may be expected if the similar conditions are secured. Pearl Millet as a fodder-plant presents a new feature in our agriculture, and I feel sure that within ten years we shall wonder how we got on without it. Besides our own testimony given above, we have received the most satisfactory letters from experienced men in different parts of the country to whom we sent seed of Pearl Millet for trial, and all are unanimous as to its enormous productiveness and great value. From all we have seen and can learn, we are fully convinced that Pearl Millet is to be one of the great fodder plants of the future."

The foregoing, from the *American Agriculturist*, for November, 1878, contains the experiments of Peter Henderson, Esq., of the firm of Peter Henderson & Co., No. 35 Courtland street, New York, a man whose reputation as a nurseryman, seedsman and florist stands very high in this country. Of course Millet can only be grown with success and profit (as far north as Pennsylvania and New York,) as a foraging plant. And, now, since the subject of keeping cattle housed during summer, and feeding them on green fodder, instead of turning them out into the fields to pasture, is looming up, this plant may assume an importance it never did before. We, therefore, deem it advisable at this time to place the matter before our readers, in order that they may avail themselves of whatever advantage there may be in its culture.

Farther south it may also be of advantage to the farmers to raise the seed. Although Millet seeds have been ground into meal, from which bread has been made, yet it is not specially esteemed for that purpose; but cooked, as rice, it is used more or less in some countries, and it is said that no grain food is better for poultry; and if care is taken in harvesting the yield is usually large.

The following we extract from the *Farmers' Cyclopædia*, mainly relating to its cultivation in Europe, which may be of some value in connection with the above:

"The soil for Millet should be warm, sandy, rich and well pulverized to a good depth. The seed is usually sowed about the end of April or beginning of May, regard being had to latitude and the meteorological condition of the season. It should not be sown thickly, and not deeply covered. In the course of its growth (according to Prof. Thaler,) no plant is more improved by stirring the soil, after which it grows astonishingly fast and smothers the weeds.

In harvesting Millet great care is required not to shed the seed; and, as it ripens rather unequally, it would be an advantage to cut off the spikes as they ripen. No grain is easier to thresh, or to free from its husk by the mill. It is used instead of rice, and bears about the same price on the continent of Europe, where it is more cultivated than perhaps any other part of the world, especially in Germany. It produces a great bulk of straw, which is much esteemed by some as fodder."

There are various kinds of Millet, one kind of which was introduced into Pennsylvania, many years ago, (called "Bengal Grass,") as an object of culture, and at one time created considerable interest among farmers; it was, however, found unsatisfactory in results, and was subsequently neglected or abandoned.

According to our recollection this was very "long ago"—in our boyhood—but we have no recollection as to what the "expectations" of the farmers were in regard to it, or whether cultivated for fodder or for the seeds. Moreover, they at that time knew nothing of "green feeding"—other than pasturing—if even they entertained a thought of it.

The term *Millet* comes from the French word *Mille*—a thousand—alluding to the great number of seeds produced by a single *spike*, or "ear." The generic name *Panicum* comes from *panis*—bread.

THE FISH QUESTION.

The following address, by Peter Fraily, Esq., of Columbia, Pa., to the Fish Committee of the Legislature, whether dictated merely by local interest or by principles of public economy, seems to reflect so much that is in harmony with the general experience in the matter of State improvements, ameliorating enterprises, domestic progress and the habits of the shad, that we give it an insertion in our journal as a matter of convenient future references to those among our readers who may be interested in questions involved.

We can distinctly recall the halcyon days of shad-fishing along the middle Susquehana, when the great hauls of 1,500 to 3,000 were made, but these were few and far between, and even then—sixty years ago—there were also made many doleful complaints against the gill-nets, south of Mason and Dixon's line. We concur in the opinion that shad will never be in the abundance they once were, even if all obstructions were removed.

GENTLEMEN: The reason urged for the removal of the Columbia dam is that it is an insurmountable bar to the ascent of shad and other fishes to their natural spawning grounds, the head waters of the river, and because of this bar or obstruction shad are becoming more and more scarce, and if the dam was removed the abundance of former years would be soon restored. It is claimed by those engineering the appropriation bill, "that a dam will not be needed, and that a mere wing-dam only will be required, thus allowing a large space of the natural channel of the river as a free ascent to fish."

Upon this point I will quote Mr. J. C. Sharpless (an eminent and well-known civil engineer, who was employed by the "joint special committee on the operations of the fish department," to make a survey of the route and estimate the cost of said removal.) Mr. Sharpless, after a careful instrumental survey, reports to the committee as follows:

"The rocks in the river bed are so numeous that the construction of a channel, through which boats could cross the river in safety, may be regarded as almost, if not quite, impracticable. It would involve heavy cost, and there would be great danger of accidents to boats, unless great care were exercised. I am unable to see how boats could make the passage across in safety in any other way than by the construction of a dam, reaching the entire distance across. A wing-dam has been suggested; but, in my judgment, when the river is low and the current slow, it would not be effectual. When the river is high, and the current rapid, it might check its passage and raise the surface of the water to some extent, but at such time it would not be needed. I have, consequently, made an estimate for a dam, four feet above low water."

You will perceive at once that the real question at issue is not the removal of the dam from Colnmbia *as an obstruction to the ascent of shad*, but the relocation of the same construction at Chiques, a point about two and one-half miles above; not to increase the supply of fish, but in reality to increase the business of an enterpri-e about nearing completion, having its principal base of operations at Chiques, and, possibly, to enrich a few speculators in land.

It is true that Mr. Sharpless reports that the dam at Chiques need be but four feet higher than low water mark. The Columbia dam is about five and one-half feet higher than low water mark, but all our fishermen will tell you that a dam four feet above low water mark is just as effectual a barrier to the ascent of shad as if it was five and one-half feet high. So that the only advantage then in increasing the shad supply would be the distance from the Columbia dam to that of the Chiques for spawning grounds. The bill, under which you are hearing this committee, asks an appropriation of $300,000 only, when we have reason to believe that to complete all the work necessary it will cost at least a solid million for the removal of this one dam alone. Mr. Sharpless, the engineer herebefore named, estimated the cost as follows:

For constructing canal and guard lock........	$205,124 37
For dam with schute and feeder................	58.727 54
For outlet and outlet lock......................	22,238 81
Contingeucies....	28,609 07
	$314,699 79

It must not be forgotten that Mr. Sharpless was employed by a *Committee* whose object was to show as small a cost as possible, and that he had instructions to that effect is apparent from the last paragraph of his "report" to the committee, as follows:

"The cost of this work will probably exceed the expectations of your committee. A careful examination, in detail, has shown it to be more than I anticipated. I have taken care not to exceed reasonable limits in the prices of material and work, and I do not think it could be done for less than is here shown."

We have no means of testing the accuracy of Mr. Sharpless' estimate for canal, five feet lock and guard lock, but from the known nature of the excavations necessary, being largely of rock in the river, and his failure to include land damages for right of way, we consider it as much too low as any other item. Again, take the estimate for dam, chute and feeder, $58,727.54; all that is necessary to prove the fallacy of this estimate is the statement made to this delegation by the Superintendent of the Reading and Columbia Railroad, that "the last time the Columbia dam was repaired it cost the sum of nearly $150,000." Remember this was for *repairs merely*. If it cost that much for repairs only, you can form some idea of the vastly greater sum it would cost to build an entirely new dam at a point in the river where the current has twice the rapidity of that at Columbia. Again, take the estimate for outlet lock and outlet, the sum of $22,328.81. Fortunately we have the means at hand to show the difference between the estimated and real cost of this item, the Pennsylvania Canal Company having lately completed an outlet and outlet lock in Columbia. This lock being located almost immediately at their canal did not require one-half the excavations which will be required at Chiques because of the increased distance of the outlet lock from the canal and the more extensive rock excavation necessary, and yet the outlet at Columbia with its necessary equipments cost (since the panic and during low prices of material and labor) the sum of eighty thousand dollars. The proposed outlet and outlet lock at Chiques are to take the place of these at Columbia, and must be in all particulars, their equals, and for reasons stated will probably cost more money, say four times as much as Mr. Sharpless' estimate, or $88,954.24. If we test all of his estimates by the same rule, which we claim as fair and reasonable, and multiply by four we have the grand total of cost reaching the enormous sum of $1,258,799.16, without counting the cost of the Reading and Columbia coal schutes say $125,000 more. No doubt, gentlemen, you have had some experience of estimates made for legislative purposes by disinterested and public-spirited lobbyists, and need not be told that between the estimated cost and the actual cost there is a great gulf to be filled. Here you have an instance in point now before this Legislatnre, in the case of the "Norristown Hospital for the Insane:"

"Originally it was estimated that the whole cost of the structure would not exceed $600,000. That amount has been appropriated and expended, and the Legislature is now asked for a further appropriation of $170,000, in order to make ready for the occupation of patients a portion of the incomplete structure, which is not yet half completed."

The object in asking for $300,000 only is merely to get the public purse opened—when once opened then—God help the people.

I will now leave this branch of the subject and proceed to say something in regard to fish-ways. We venture to suggest that proper efforts have not yet been made to secure sufficient fish-ways in the Columbia dam. While the Legislature and Fish Commissioners deserve credit for their efforts so far, the failure to succeed satisfactorily is no reason why the effort should be abandoned. It is well understood by those at Columbia who have given the subject any study, why the fish-ways already built are not as successful as could be wished. In the last and only important fish-way built, the bottom of the "way" at its debouchment is about four feet above the bottom of the river, which by our experienced fishermen is regarded as fatal to its success, besides which, the bottom of the way being very smooth, having been sheathed with sawed timber and the grade being very steep, nearly 3 feet (2 91-100) to the 100 feet, the water rushes through with rapidly accelerating momentum, and enters the river below with an irresistible plunge. That shad gather at the edge of this fish-way and try to ascend but fail is evident from the fact that as many as fifty have been taken in a common dip net (say eight feet square) in a single night, and during the season this one net is supposed to have taken not less than two thousand of these persevering, but baffled shad. Shad in ascending very swift water, shallow like all of it is immediately below the dam, swim as near the bottom as possible, nature having taught them that the nearer the bottom the less the resistance. It is a singular fact that when passing up rapids, such as we find in our rafting schute, where it has been seen in hundreds of instances, shad throw themselves on their sides and drive through with great velocity in that position, as near the bottom as possible. The fact that a shad will not leave the bottom more than a few inches to commence the ascent of shallow rapids is one of the best authenticated facts connected with its history, hence the failure of the last fish-way. If this delegation was before the Fish Committee, plans could be given them of successful fish-ways based upon natural principles and well tested by long and successful experiments at Columbia. It is a misfortune to the cause of fish culture that the people of Columbia, where the subject is so much at heart, have been almost totally ignored by the Fish Commissioners, seeming to regard us as enemies rather than friends of the cause.

But, gentlemen, we can never hope, even if all the dams which now obstruct our rivers were removed, to restore anything like the former abundance of shad. Bear in mind that the Columbia dam was built nearly forty years ago, and consider the wonderful advance of population and the improved and multiplied appliances now used to catch shad. To supply that population consider the wonderfully increased means of rapid transportation by which fresh shad are not only carried into the interior, but even to San Francisco in their fresh condition, and the fresh salmon of the Pacific sent us in return. The vast demand, stimulated by these causes and the introduction of so much machinery into nearly all the occupations of man, has forced very many additional thousands into finding a precarious subsistance by fishing, so that from the time shad enter the Alhemarle Sound, on the coast of the Carolinas, until they reach their spawning grounds in our rivers, all the devices man can invent are employed for their capture, so that few indeed can ever be expected to reach very far above tide water; on this subject hear what the Fish Commissioners say in their report for the year 1878:

"But what have we below our dam? There is the estuary of the Susquehanna, from Port Deposit to Havre de Grace, only four miles long. This is swept by gill-nets for the whole distance, and it is a wonder any fish at all can pass them. Then we have, say, forty miles of shore seined at every mile, perhaps at every quarter of a mile, by men whose only living is what can be wrested from the river."

Every year millions of shad are hatched in the river below the dam, as well as above it, and find their way to the sea, and yet how few ever return. It may surprise you to hear that during last spring's fishing between our dam and Turkey Hill, a distance of three miles, the highest estimate of the number caught does not reach 30,000, and last spring's catch was a fair average.

If it is our river dams only which are destroying the supply of shad how are we to account for the rapid decrease of all Anadromous fishes. There is the herring, which never reached up as far as our dam, and does its spawning in or near fresh tidewater; with all its wonderful fecundity they are rapidly decreasing in number. So also with rockfish, perch, mullets, carp, catfish and eels. These all cast their spawn in or near tidewater and yet anglers and professional fishermen will tell you their decrease is steady and rapid. Without intending to exhaust the subject I now close to give place to other members of our delegation.

QUERIES AND ANSWERS.

THE HAND-MAID MOTH.

(*Datana Ministra.*)

CLARK'S GREEN, Pa., 1st mo. 30th, 1879.

FRIEND RATHVON: In my young orchard, of fifty acres, there appeared in 1873 a worm or caterpillar, about July 25th—a voracious feeder upon apple and cherry leaves, (sweet cherries only,) feeding singly, but at evening gathering in a cluster to repose on a twig, and when alarmed each one erecting both extremities of the body—growing very rapidly, and finally reaching a length of two and a half inches, when they become slightly furred, cease to congregate, and disappear after a very few days of individual rambling about the tree. They moult in clusters, and resemble the worms infesting the pig-nut hickory, except not so downy. A second brood appears about the 1st of September, equally voracious. They spread slowly from the first locality. Is it the Canker Worm? A word from you on this subject will be a favor.—*S. Stevenson.*

We will answer your last queery first, by assuring you that it is not a "canker worm." The canker worm is a "Looper," a "Geometer," or, as some say, a "Measurer," and could not possibly erect the extremities of the body, having its feet at the extremeties and none in the middle by which it could hold fast to any object.

The caterpillars you describe (called by way of distinction the "yellow-necked apple tree caterpillar") are the larvæ of the "hand-maid moth," a variety of the *Datana ministra*, of Walker. There are many species of the genus *Datana*, and at least three varieties of the species *Ministra*. One infests the sumac, one the apple, and one the black walnut, and very probably the last named is also the one that infests the pig-nut hickory, at least we have found the same caterpillar on both the black walnut and the cultivated English walnut in this city in large numbers. After they have completed their larval development they come down from the trees and pupate under the soil; the first brood not very deeply, sometimes among the rubbish at the base of the trees, but the second brood much deeper, for these will remain there in the pupa state until the following spring in time for the first

summer foliage. No man that sees the first brood ought ever to permit a second brood, for we know of no caterpillars more easily captured than these. Their well-known habit of congregating in masses on the trunks of the trees, affords an opportunity of capturing and destroying the whole colony, by burning or scalding, at a single operation. Before their last moult they are different shades of brown, distinctly marked with lines of white or pale yellow, but after the last moult they are black, with long, white flossy hairs and otherwise marked, according to the variety. The body of the moth is about one inch in length, and the wings expand about one inch and a half, from tip to tip. Specimens occasionally occur that expand two inches. The forewings are of a reddish-brown, with transverse lines of a deeper color, but the hind wings are shorter, proportionally broader, of a lighter color, and without special markings. The head and the upper part of the thorax are a deep, velvety brown, and the rest of the body nearly corresponds in color with the forewings. These colors are lighter or darker in the different varieties. On the 7th of August, 1878, Mr. Leman, of Lancaster city, brought us 1,200 of these caterpillars, which he found massed together near the base of an English walnut tree. They had come down to undergo their last moult, and as these were all destroyed he will not be likely to have any next season. He saw that his tree was becoming denuded of its foliage, but he never noticed the cause until that cause became consolidated. See THE LANCASTER FARMER for January, 1879, page 3. And here we would respectfully suggest that the farmers and fruit-growers should by all means subscribe for THE FARMER, and send to the editor any insects they may find depredating upon their property, and he will tell them what they are, their history and habits, and how to destroy them.

H. M. E., Marietta, Pa.—The small bottle of earth you gave me at the February meeting of the Agricultural and Horticultural Society, 1879, contained about half a dozen specimens of a species of "Galley-worms," and one of the larvæ of a species of "Cranefly," (TIPULIADÆ). Not any of them were in the mature state, and therefore their species cannot be determined. The galley-worms are MYRIOPODS, and are doubtless the young of some species of *Julus;* but they do not belong to the same family as those noticed in THE FARMER for November, 1878, pp. 161 and 162, which were given us by Mr. Scheaffer, of Cocalico, and which he discovered destroying his young tobacco plants for the past two seasons. (See also October number, page 149, same year.) These animals belong to the Millipede division of the Myriopods, all of which are vegetable feeders, some of them confining themselves to various species of *Fungus.* They are very generally confounded with the "Wire-worms," and people very generally give them that name, but the true wire-worm belongs to a very different order of articulated animals, they are six-footed, whilst these have many feet, sometimes going into the hundreds. They are known among gardeners to be destructive to young raddishes, turnips, tomatoes, redbeats, cabbages, lettuce, beans and other species of young vegetation, and perhaps also young tobacco plants. For a remedy see the articles I have referred to above. Those who have it not will discover they have made a mistake in not subscribing for THE FARMER.

FROM Manatee, Florida, we have received, by mail, an animal belonging to the family ARACHNIDÆ PULMONARIA, or "Pulmonary Spiders." This individual belongs to the genus *Phyrus,* and is by family allied to the Scorpions and Whiptails, specimens of both of which are in the Museum of the Linnæan Society. This specimen completes all the types of the family found within the United States, and we are very thankful for it, but to whom? Echo answers whom? Friend, you did well, try again.

ESSAYS.

THE CARE OF FRUIT TREES.*

In undertaking the task of writing an article on the above subject, and not having had a large experience, I shall endeavor to give you a few thoughts in as plain language as my rhetoric can command.

The care of fruit trees is ofttimes too much neglected. To begin right is of the first importance. The prevailing habit with some persons has been to cram the trees into the smallest possible hole, in an out-of-the-way plot or fence corner, not, in their estimation fit for anything else, and expect the trees to live and flourish under such treatment. Many of these usually fail the first year, or at least languish a few years and die for the want of a little care and attention; when the planter heaps his condemnation upon the nurseryman or tree vendor, for having sold him diseased or worthless stock.

Location *should* be the first consideration; rolling ground is always preferable, though not always accessible; would prefer a northeasterly slope as the *most* desirable, with the altitude as great as circumstances will allow. In adopting such a site you will have perfect drainage, a much lighter and less humid atmosphere, also have some protection from the afternoon sun on mild winter days, that in this climate sometimes follows excessive cold. The sun striking the trunk in the after midday, warming one side while the other remains frozen, is often the cause of the bark bursting, and not unfrequently is followed by the destruction of the tree. This, however, can in part be avoided by growing the trees with low tops, to which I shall allude hereafter. This injury generally occurs about the time the trees begin to bear, and also when there is no shade except from the denuded branches of the tree itself. You can readily perceive that a slope of from ten to fifteen degrees would elevate the tops of the upper trees sufficiently to afford some shade to each succeeding row. To assist in this protection and to occupy the ground while the trees are small (more particularly the apple and standard pear), I would advise the planting of a peach between each apple; and, indeed, a row between each apple row would, by their quick growth, materially assist in this winter protection, to say nothing of the fruit they would produce before the apple commenced to bear or occupy the whole ground.

Cultivation is by no means of secondary consideration, but I believe of vital importance, and thorough tillage of the soil is necessary for the first few years to induce a good healthy growth. It is, however, necessary to use some discretion to preserve the surface soil on hilly ground. Should it be of a clayey or tenacious character, which is not often found on high hilly ground, there will be less danger of wash or waste from the cultivation. On the other hand, if the soil be a light, porous shale, some care must be taken to avert the loss of the very material it is most important to preserve. Summer crops will not be injurious to the trees, provided the fertility of the soil is kept up by the application of the proper manures. Corn, potatoes, and, indeed, all vegetables and most of the small fruits, for the first few years may be grown with advantage and fully compensate for the labor in the tillage and leave a handsome profit besides. Care should always be taken not to impoverish the soil by this system of double taxation. An annual dressing of manure or some other good fertilizer will keep it in good heart while this treatment is pursued.

The question of cultivation or non-cultivation after the trees have attained a bearing age is a question on which many of our most successful horticulturists disagree—each advocating his theory as the basis to be relied upon. Doubtless both have their advantages on some points that are difficult to overthrow. I am, however, very decidedly in favor of no cultivation after the trees are ten or twelve years planted, or, say half-grown. It has been my practice to top-dress with stable manure every two or three years, with an occasional dressing of lime or unleached wood ashes, about one bushel to each tree, which in my opinion will materially assist in keeping them in health and productiveness. We generally cut the first crop of grass and feed as a green crop. All aftergrowth of grass or weeds is either cut for a mulch or trampled down and allowed to remain. But no grass or other vegetable matter should be permitted to grow within three or four feet of the trees. This we try to prevent by the annual application of the finer parts of coal ashes, and also think it assists in preventing the ravages of that little pest of the orchardist, the "borer."

Care should be taken to avoid too rank a growth. I have often heard planters exultingly speak of the great vigor of their trees, their rapid growth, &c. This is often caused by an excess of stimulants, and not unfrequently is followed by an incurable injury, if not the entire destruction, of the trees. I am fully convinced by my own observation and experience that those of moderate growth, especially the apple and pear, will be longer lived and more productive than those grown too rapidly. The former will have better ripened and more healthy wood, as well as more fully developed fruit buds.

The peach, however, requires somewhat different treatment. Not that they require less cultivation, but it should be continued while fruit is the object. The critical period is the first few years after planting—to escape the depredations of the borer, as one grub will do more injury to a one or two-year old tree than a dozen could to one full-grown. Their tendency to overbear (where the peach does well) should be guarded against by a judicious thinning or shortening of the branches, as well as to preserve the tree in shape and good condition. They are best but short-lived.

The origin of the yellows seems as yet shrouded in mystery, but its contagious nature is too well known to a majority of peach growers. That there are conditions which invite the malady I do not doubt, but I am unable to give any better preventive than that practiced for years—the cutting away of the trees as soon as they are affected with the disease. Some, however, assert that a severe heading in of the whole top and the feeding of strong stimulants to the roots will induce a new healthy growth free of the malady. In visiting a fine orchard last fall I observed a number of trees treated in this way, with what success I am as yet unable to say. There is little doubt that good cultivation and an annual wash, prepared as you would for whitewashing, with the addition of one bushel of unleached wood ashes to every half bushel of lime, will assist in preventing the attacks of insect enemies and give tone and vigor to the bark.

The treatment of the pear should be similar to that of the apple, while, perhaps, the cultivation might be kept up longer and to a greater depth. As the roots penetrate the soil deeper there is little danger of injury to surface roots. Instances are not unfrequent where old pear orchards, being long seeded to grass, and trees apparently exhausted, have been restored to productiveness by a thorough tearing up of the sod, the application of some good fertilizer and good cultivation. Summer crops may be grown without detriment, even though the trees are quite large, but the all-important fertilizer must not be neglected. I would avoid the use of fresh stable manure, as having a tendency to increase the blight, to prevent which I know nothing better than to dismember the branches on the first appearance below the parts affected, and split the bark of the remaining branches with a round-ended knife, similar to a common case knife, from the surface of the ground to the ends of the branches. This I find immediately relieves the pressure of the hard, contracted bark,

*Essay read before the Pennsylvania Board of Agriculture by Calvin Cooper, President of the Lancaster County Agricultural Society.

which seems to have checked the flow of sap. I have frequently noticed in the opening, soon after, a new bark, a pretty sure indication of a check of the disease, and perhaps the saving of the tree.

How to prune is of the utmost importance. The future tree should be modeled while in its infancy. Generally speaking, too much of it is done. The careful orchardist will, with his thumb and finger, or at most with a common pocket pruning knife, prune from the tree while the tops can be reached from the ground. A little careful observation and thought will soon dictate to any prudent mind where the limbs should be started to make a well-proportioned top. Low branches are decidedly preferrable, say three or four feet from the ground. These will assist in providing the shade above refered to. Too much care cannot be used to properly shape the tree while quite young. Should the growth be long and slender, with few or no branches, cut back to where it is desired to have the limbs start. If of a drooping tendency, head back to where there is a good and well-developed bud on the top of the branch; and if upright, leave the upper bud on the outside, which will in the one case have a tendency to make the tree incline upwards, while the other makes it spread. Judicious treatment can form the tree to any shape desired. The common practice of removing the small spurs that usually form at nearly all the buds is destroying the object for which the tree is grown. These have an important mission to perform. They materially assist in strengthening the limbs by increasing their thickness, and are among the first to develop fruit buds, while if taken off they necessitate their formation near the ends of the branches. Hence the greater strain and liability of the tree breaking when loaded with fruit. Too large a proportion of those professing to know how to prune make a grave error in this way. Frequently persons making a profession of the business travel from orchard to orchard making sad havoc upon the very branches which should be preserved. This, however, is one of the fine arts in tree-pruning, and can be much better shown by ocular demonstration than by describing.

One of the great follies with many orchardists is the attempt to double-work their orchards by half manuring, and until they learn that it is impossible to take more out of the soil than there is in it fruit-growing will be uncertain, whether the seasons be favorable or not. What kinds and quantity of fertilizer should be applied must be determined according to the constituents of the various soils. A neighbor has been quite successful by applying liquid manure from his barnyard on the sod under his trees, and I believe the sewerage from the house could be used with equally good results.

Things being favorable to the production of regular crops, it is of vital importance for the grower to understand to a certain extent the nature and habits of insect enemies and apply methods to counteract their depredations, else they will rob him of the benefits of a large part of his previous labors and expenses on his orchard. In planting be sure there are no borers in before the tree is set, and annually thereafter (until the trees have attained a diameter of three or four inches) wrap the trunk with paper from the surface to the ground to the height of about one foot. A small mound will assist in keeping the tree in place and prevent it coming off. Tie the tops with woolen yarn to allow for expansion. This may be removed in October, and should any borers have obtained a lodgment they can easily be seen and removed with a sharp-pointed knife or piece of steel wire. The trees having arrived to a fruiting age we have other enemies—the codling moth and curculio—to contend with. I know of no new method for their destruction. The wash spoken of in a former paragraph of this article, may assist by keeping the bark smooth and clean; prevent the former from obtaining a hiding place while passing from a chrysalis to a perfect insect. Have frequently thought these little pests might be attracted and caught by small fires set ablaze soon after dusk to entrap them on the wing. A batch of straw tied to a pole with wire, and thoroughly saturated with tar, or some other inflammable matter, would be of but little expense and easily carried through the orchard after dark. Gathering and removing the fallen fruit that has been punctured is perhaps the only means to lessen their depredations.

Having sketched the ground from the planting of the tree to its maturity, it would be most desirable to produce regular and moderate crops instead of alternate failures and excesses. This is the question now occupying the attention of many orchardists, and before long it is hoped we may know how to produce a crop the off-year. The evidence is strongly in favor of thinning the excess while the fruit is small, so as to give the tree a chance to develop and mature fruit buds for the coming year.

ESSAY.*

On the question—"Which would be best, to keep the cattle stabled all summer and feed them on green fodder, or turn them into pasture?"

I think keeping cattle in the stable, or in a shady pen or shed would be best; if we were accustomed to keep them so, it would be cheapest in the end. If we turn them into the field they tramp down a good deal more than they eat. It is, of course, a benefit to the soil if the grass is tramped down, but if we cut the grass and feed it in the stable, and haul out the manure, it will benefit the soil more, and we can feed more cattle; moreover, we would need little or no fencing. But people in our day would be apt to say, that costs too much labor. But we will see which is the most laborious, to haul home the green fodder or to keep the farm in fences. If a farmer has no help of his own he can hire a boy strong enough to do the work for about $10.00 per month, and six months is all the time he can pasture; that will be $60. Can we keep the farm in fences for less than $60 a year? That would, of course, depend upon the size of the farm; but we will say a farm of 80 acres, and, besides, we can raise a few rows of corn and potatoes in places where every fence stood. The way we have our farms fenced the fences take up at least three-quarters of an acre of land. On that we might raise enough of potatoes or corn to pay a hired boy, and he can find time enough to cultivate it besides feeding stock. We might as well adopt this system at once, and take our old fences for fuel while coal is so high in price; then, also, the fox hunters need not cut or break our fences down. But under our present laws we must have fences along our public roads to keep out our neighbors hogs and cattle.

The stable must be well ventilated during the hot weather. It would, perhaps, be best to have a pen or shed and keep our cattle in the pen, night and morning, during the hot weather. The stable should be kept open during the night that it may become cool, and closed in the morning to keep it cool, and then towards noon put the cattle in and keep it closed to prevent the flies from annoying them.

Now, as to feed: Corn and clover are the best food. Feed clover first, and sow corn in drills from the 1st of May to the middle of July—every two weeks—but sow the most in May. When a drouth comes after harvest the late sowing may be very short. In such a case we can feed the early sown at the time of the late if it fails, and if not needed it can be cured for winter use. It is in its best state when the lower leaves begin to get yellow for green feeding, and when half dead it is better than second crop clover as a cured crop for winter feeding. As corn is hard to cure it should be a little old before cut for that purpose. Sow the corn one kerned to the inch and cultivate it. Some writers prefer sowing rye for the earliest green feeding, but there is no gain in it. It takes too much seed, and when once up in bulk it will soon turn to a strawy state. Better feed dry fodder eight or ten days longer, until we can get clover. Cut clover when only six inches high; mix a little among the dry fodder; increase as the grass grows, and when it is in bloom stop dry feed.

The most difficult time is when the clover gets too old. Corn must be fit by that time, but the earliest cut clover can be cut again. If too young the old and the young can be mixed together; but when the corn is once fit we need nothing else. Green feed should be cut in the morning after the dew is off, and taken in before it gets warm. If cut and taken in when it is warm it begins to get "heated" immediately, but when taken in cool and set up along a wall it will remain so for several days. It is best to run it through a fodder cutter. According to my experience cattle will eat more of it when fed in this way. I once commenced feeding it whole, but the cattle soon left some of the stalks which they would not eat. Then I commenced cutting it in the same quantity, and then they ate it all and I increased the quantity. It does not require much additional work if we have everything handy. Have the cutter in a convenient place all the time; it cuts easy when the knives are kept sharp.

Two horses are all that are necessary. This work can be done when the team comes home at noon, and before it goes out after dinner; it requires only about fifteen minutes of time; it should be cut every day. It may be cut for two days by spreading it out thin on the barn floor, and having the doors opened at night and closed during the day to keep it cool. If it lays too thick it will heat and get sour.

We ought to have a low one-horse wagon, with wheels only 20 inches high, and a platform on it, 10 feet long and 5 feet wide; also a sickle to cut the corn. Then drive alongside of the row; cut three rows at a time; lay it on the wagon as you cut it, butts all on one side. When you get enough drive into the barn alongside of the cutting machine, and when you come to cut you will need no person to hand fodder to you.

Such a wagon is also handy to haul in the grass, if we add sideboards to it. When everything is convenient it requires only half the labor to do the work in hand.

*Read before the Warwick Farmers' Club, Feb. 15, 1879, by John Grossman.

CONTRIBUTIONS.

For THE LANCASTER FARMER.

MORE LIGHT WANTED.

EDITOR FARMER: Under the head of "Moonlight," a writer (J. G.) in the January number of THE FARMER informs us that potatoes want loose soil; therefore, he says, "plow in the rising of the moon if the soil is clayey or heavy;" but "should the soil be too light or loose I plow in the setting of the moon." Again, he says: "On stiff soil it would be well if we could work the soil always in the rising of the moon." As I am interested in potato raising, and am quite ignorant in regard to the influence of the different phases of the moon on plowing, planting and cultivating, I will be greatly obliged to J. G. if he will inform me and others who are likewise interested:

1st. What is to be understood by the expressions—"rising" and "setting" of the moon? Does "rising," as used by him, mean the time that orb is ascending in the heavens, from the time it appears in the eastern horizon until it reaches the meridian, from five to seven hours afterward, each day, and the "setting" mean its decline toward the west; or do these terms refer to the increase and decrease of the light portion of the moon, as seen from the earth? I would like to have precise information about this, lest in attempting to follow J. G.'s directions I make a fatal mistake.

2d. Will J. G. oblige those who are seeking light on the subject by stating the ground of his belief that it is better to plow and culti-

vate particular kinds of soil in one phase or stage of the moon's progress, rather than in another.

Many persons that I meet with, some of them intelligent and learned men and successful farmers, maintain that the changing phases of the moon have no sensible effect whatever on the weather, the soil or the crops. If they are mistaken in this opinion, J. G. may render valuable service to the cause of agricultural progress by giving the public the grounds upon which he rests the contrary belief. Farmers who regulate their plowing and sowing and other operations of the farm by the moon have heretofore almost invariably been very backward about giving their experience and the grounds of their faith in the newspapers or agricultural journals. It is to be hoped that this culpable reticence will no longer be the rule, or at least that there will be some exceptions to it.—*Amateur Farmer.*

N. B.—J. G. will confer a favor by answering in the April number of THE FARMER, so that the information will be available in time for potato planting.

For The Lancaster Farmer.

A WORD IN REPLY.

In the February number of THE FARMER Mr. "J. P." publishes a paper on "The Balance of Trade," in which he essays to refute the arguments of P. S. Reist, in a previous article, and the argument of Balance of Trade generally. It is to be lamented that in his vain endeavor Mr. J. P. should make use of such utterly weak arguments as he has employed in this article. He makes some very bold statements in the beginning relative to our country's prosperity, and concludes by saying that the rule obtains "in Great Britain, and doubtless all other nations having an extensive foreign commerce." Now, a paper that claims to be conclusive should not indulge in any statements of doubtful veracity, and impose its author's whims upon the credibility of unwary readers. No evidence is so conclusive as the irresistible logic of facts. But we look in vain for these in this paper.

The author uses what he seems to consider more important than facts, namely, illustrations, which are supposed to impress facts. But these illustrations are so hopelessly illogical that they teach the opposite of what they were intended for.

We cannot help giving an extract of his "familiar illustration."

"A Lancaster county miller makes a consignment of ten barrels of flour to Liverpool. In Philadelphia it is worth $5.00 per barrel—total $50. At Liverpool it is sold for $60, and the money laid out in fine salt at $2.00 per sack. The salt is dispatched to America and sold for $2.50 per sack—total $75. In this transaction, therefore, $50 were exported and $75 imported. The miller has gained $25, and manifestly the country is that much richer."

This is supposed to prove that it is no real advantage to have the balance of trade in our favor.

But what does it prove? Why, it proves nothing but that the one who uses it is using unsound logic.

He sneers at the idea that "the advocates of the Balance of Trade theory seem to hold that the more we send abroad, and the less we get in return for it, the greator is our gain." And yet, is not this the case? The more we send abroad, the more value we have produced, which we get in return, either in money or goods. And the less goods we import, the more nearly we are able to provide for our own necessities, and therefore, the better off. For all the merchandise we import we must pay an equivalent. And it is clear that it is the wealth we *produce* and not the wealth we *buy* that conduces to our prosperity. Of two farmers dealing with each other, the one who has the more money to get at the end of the year has the advantage, for he has produced more in excess of his needs than the other. So, if a country dealing with another has the balance of trade in its favor at the end of the year, it means that it has produced and exported more wealth than it imported; and remember it is wealth produced and not bought that is net gain.

In the above we do not deny that the miller has gained $25, but we do say that it is not a fair argument. It is not a parallel case, and is entirely misapplied.—*J. S. T.*

For The Lancaster Farmer

INDIAN TOBACCO.

Lobelia inflata.

This humble, weed-like plant belongs to a genus that embraces upwards of eighty-four described species and varieties. Many are exotic, green-house herbs and evergreens. Dr. Gray describes twelve species, met with in the Northern United States, among which the "Cardinal flower," "*Lobelia cardinalis*," is perhaps the most showy, with its bright, crimson flowers; the "*L. syphylitica*," also, has fine, large, *light-blue* flowers, and is quite common in low grounds.

The corolla has a straight tube, which is split down on the upper side, leaving two erect lobes, the lower lips spreading and three-cleft, calyx tube short, five-cleft, and the ovoid pod in the species figured and becomes

inflated; it is quite common in dry, open soil in July and September. This celebrated quack medicine, known as "Indian Tobacco," needs some attention for several reasons. It evidently has an acrid principle, emits a milky juice, and when chewed produces a burning, acrimonious sensation, not unlike the taste of "green tobacco," hence called "Indian tobacco." The leaves and capsules, when chewed, have this combined acrid and narcotic property, producing giddiness and pain in the head, and at length nausea and vomiting, like boys' experience when first attempting to chew or smoke tobacco. A certain Samuel Thomson, a quack at Beverly, was tried for the murder of Ezra Lovett, some years ago, to whom it was administered as a physic, in powder, causing great distress, followed up by another dose and another, until the the patient expired. But as no malice could be proved, and he had some reputation, the arrest for murder could not be sustained, and, as might be found in many other cases, the homicide considered legitimate. In the hands of a few judicious physicians it has proved beneficial in asthma, such cases termed "an asthma from pulmonic irritatation of effused serum," whatever that means. I quote Dr. Bree, in his "Practical inquiries on disordered respiration." Dr. Randall gave it with success, in small doses, in catarrh, as an expectorant. But I shall not encourage the use of it by quoting from other sources in its favor, in dyspepsia and cases of rheumatic nature, in which benefit was felt. Two ounces of the dried plant digested in a pint of diluted alcohol, given in teaspoonfull doses to an adult, will generally produce nausea and sometimes vomiting.

As this plant is common in pasture fields, in the latter part of summer, it has been suspected to be one of the sources which produces slobbering of horses. Dr. Darlington was inclined to doubt this, "because the horse is a dainty animal in the selection of food." It is true that horses and cattle crop around noxious weeds, yet there is no question that such an active plant, mixed with the grass eaten by the animal, might produce the evil suspected.

The generic name, "Lobelia," was given to some species, in honor of Matthias de Lobel, a botanist of some note, born 1538, and died in 1616, of whom quite an interesting account is published. He was the author of critical examinations on older botanical writers, and added many new plants to the list known in his time.—*J. Stauffer.*

For The Lancaster Farmer.

PRUNING—ITS USES AND ABUSES.

When is the best time to prune trees and vines? I would say in February and June, when pruning has been neglected for some time. *When* to commence, or at what age of the trees the pruning should begin may be approximately illustrated by the following anecdote. On a certain occasion a mother asked a celebrated instructor when she should begin to teach her children—or rather her child. He inquired the age of the child, to which she replied, *three years*. Then, replied the instructor, you have already lost two years. So with pruning trees. I recommend the following. When I commence to plant them I do my first pruning. It should then be continued every year, more or less, which would require very little time. And that with a pruning knife, unless you fancy the growth of a tree like a tow-rack of an olden-time spinning wheel, or unless you plant apple trees along a fence, from apple seeds, for a hedge. You may train your apple to your own fancy. Some prefer low heads, others prefer them high. From three to six stool is enough. For branches in spreading trees the limbs should be started from six to eight feet from the ground. Upright growers from four to six feet above the ground.

Of all trees the apple is most benefited by pruning; likewise the quince. The pear tree can be improved and beautified by pruning. The peach tree when planted should have the shape of a walking-stick. Its head should be kept low in the orchard and its branches nicely thinned out, so that most of the peaches can be hand-picked. The Richmond cherry and sour cherry can be much improved by pruning. Of all fruit trees the sweet cherry needs the least pruning. Generally the best kind have just enough of branches to bear well. All kind of trees should be and *can* be improved by judicious pruning. It is becoming evident that our homes, if ever so humble or small, as well as our larger farms, should be planted with a variety of fruit and ornamental trees, both for ornament or for profit, and all these trees should be cared for and properly pruned, so shaping them that they may excite the admiration of the community. It will add an additional charm to the beauties of nature, as nursed and planted, under Providence, by the skillful hand of man. The wood eliminated, when dried, will answer for fuel for the summer months. Trees along a middle or line fence should be trimmed well up for the improvement of the butts of the trees, for mechanical purposes, or for posts, scantling, boards, &c. Young forest trees can be vastly improved. If the side branches are taken off, so that the butt of the tree will have the growth centering there, the tree and

its offal would keep many a family in fire wood; many persons would be willing to keep their trees in "condition" for the use of the offal wood.

Abuse of Pruning.—When an orchard of fruit trees has been neglected for some years and has too many limbs, and is sometimes almost decapitated of its branches in the winter, or at any other time during April or May, it is the most ruinous time because the sap will flow freely down the trees, as if a coat of lamplblack had been rubbed over the butts of them. I have seen whole orchards destroyed in that way. An orchard should never be so long neglected; if you want a long-lived orchard, therefore commence to prune in time while the trees are small. All kinds of trees are injured by cutting large limbs off. It will not heal in time to overgrow the wounds of the tree, and will commence prematurely to decay, and sometimes become hollow and useless for mechanical purposes.

The peach tree is also very liable to injury when large limbs are removed.

The grape should be pruned in February. Whole vines have been destroyed after April; when pruning has not been attended to until that month, I would recommend that the pruning be deferred until June for all kinds of fruit trees and shrubbery about the place. When small limbs are taken off, the wounds will almost close up the same summer.—*L. S. H., Oregon, March*, 1879.

MORE ABOUT EELS.

DR. S. S. RATHVON—*Dear Sir:* Please allow me to correct you. In the February number of THE LANCASTER FARMER you say that "I saw the eels migrating about the years 1849 or '50;" this is incorrect, as near as I can remember it was in 1865. I have taken pains to ascertain all about the migration of eels, and am now in possession of evidence which convinces me they ascend the Susquehanna every spring. In February the young eels are hatched in deep bay water, in the mud, and arrive at this point the latter end of May or beginning of June. They have then grown to a length of four to six inches, and paddle along the shore at a lively rate. I think one of the reasons they are not oftener observed is because they pass at a time when comparatively few persons are fishing along shore, the river being as a general thing too low for this purpose.

Mr. Levi Neff, of Highville, was raised on an island in the Susquehanna, and had splendid opportunities to observe the habits of the fish common in its waters, and he informs me that he saw the small eels migrating more than a dozen times, and is certain that they go up every year. Mr. Harry Hershey has also seen them migrate four times in a period of fifteen years.

I will endeavor, this spring, to create an enthusiasm among the dwellers of the river shore with regard to this question, and try to induce them to watch, and if they are seen passing I will let you know.

I think from what I could glean from fishermen that you are correct as to different species being found in our waters. The Octoraro creek has a dam ten feet high at Rolandsville, Md. Yet many hundreds of eels are annually caught in the creek above the dam, and it is reasonable to suppose they never leave the creek, breeding in the mud of the mill dam.—*Yours, &c., E. K. Hershey, Cresswell, Pa., Feb.* 25, 1879.

[There is no better way of eliciting authentic information on any subject than by calling the attention of those to it who have experimental knowledge on it, by inquiry, agitation or discussion. The migration of eels, annually, seems "settled." Now let us know all about their eggs, when they are spawned, and how they appear as compared with the eggs of other fishes.—Ed.]

For The Lancaster Farmer.

OATS AS FEED FOR HORSES.

I once expressed my surprise, to an old farmer, that so much oats was farmed when corn yielded larger and more certain crops. The reply I received was, "there is nothing like oats to feed to horses at work, but I nearly always feed oats and corn mixed."

The old gentleman being in a hurry to go home at the time, I was not able to ascertain from him the reasons for his thinking oats superior to other feed. The matter was not allowed to drop, and I found out in time that this practical farmer, who has hardly a fair common school education, but is a man of good sense and habits of observation, had by experience hit upon one of the best feeds for horses probably in existence.

All persons who have been around horses, more or less, have noticed that many horses considered "thin in flesh" have been able to work hard and not show much signs of distress, such as sweating and blowing, while large, fat horses have given out or been unable to do the same amount of work. It is to our interest to find the cause of this, and science stands ready to point out the reasons of the facts. All vegetable (and animal) substances are composed of *water*, *ashes* and *organic matter*. When burned the water and organic substances disappear, leaving only the ashes. With the water and ashes we are not at present concerned, but turn our attention solely to the organic matter. The organic matter is the only part that "feeds up" the animal, and this matter is pretty sharply divided into *albuminoids* and *carbo-hydrates*.

The principal carbo-hydrates are starch, sugar and fats of all kinds. These in feeding produce heat (or warmth) and fats.

The albuminoids are numerous, but all dependent as such on the nitrogen they contain, and in feeding they build up the *lean meat* and *muscle*.

All vegetable materials contain albuminoids and carbo-hydrates, but in very variable proportions, and it has been discovered by practical tests and trials what the proportion should be; from these tests it has been determined that for working animals the ratio of albuminoids should be to carbo-hydrates as 1 to 4 40.

In the table given below, adapted from Johnson's "How Crops Grow," is given the composition of some of the principal materials fed to horses:

SUBSTANCES.	Albuminoids.....	Carbo-hydrates.....	Fat.....	Ratio of albuminoids to carbo-hydrates.....	
Meadow Hay.....	8.2	41.3	2.0	1 to 5.03	Medium.
Red Clover.....	18.4	29.9	3.2	1 to 2.23	Cut in
Timothy.....	9.7	48.8	3.0	1 to 5.03	bloom.
Oats.....	12.0	60.9	6.0	1 to 5.87	
Corn.....	10.0	68.0	7.0	1 to 6.80	
Rye.....	11.0	69.2	2.0	1 to 6.29	
Barley.....	9.0	65.9	2.5	1 to 7.32	
Wheat Bran.....	14.0	50.0	3.8	1 to 3.57	
Rye Bran.....	14.5	53.3	3.3	1 to 3.68	

The headings explain the contents of the columns. The figures are per cents., thus: In 100 pounds of oats there would be 12 pounds of albuminoids, 60.9 pounds of carbo-hydrates, &c. The column of fat (oils,) is included in the carbo-hydrates, and this column is merely given to show why some feeds "lay on fat" so much faster than others.

The "ratio" column interests us most now, and by examining it we find that oats, timothy hay and meadow hay approach nearest to the ratio of 1 to 4.4. If we paid attention only to the formation of muscle for work the hay would seem to be as good or better than oats, but there are two objections against it. Hay is too bulky to allow the horse to eat enough for his needs and contains only from one-third to one-half the fat contained in oats.

The majority of farmers feed a mixed clover and timothy hay, the average ratio of which is as 1 to 3.41. If to the hay, oats in equal quantity (by weight) was fed we would have a ratio of 1 to 4.26; if corn and oats mixed would be taken, then we would have a ratio of 1 to 4.63, as near as we can conveniently approach and not varying from 4.40. This is just what our friend thought best, and shows plainly that genuine experience and science agree when rightly interpreted.

Another practice in feeding has also come in vogue, the mixing of oats and wheat bran, and the practice is sound, particularly when only timothy hay is fed. What we have to strive after is to give the horse a feed, the ratio of which is as close 1 to 4.40 as possible, and as his stomach is small compared with his size, we must use grain and other feed to some extent.

When corn is the only grain on hand, we might make some approach to oats by mixing equal quantities, by weight, of chopped corn and bran. This fed along with mixed timothy and clover hay would most probably keep the horses in as good a condition as if oats was fed. In such feeding the ratio of albuminoids to carbo-hydrates would be about 1 to 4.58.

I know of one man who keeps his team in good order on chopped corn and rye. While the rye in some degree reduces the fattening tendency of the corn, it is not equal to oats in forming muscle, but the mixture is better than pure corn would be.

But to come back to our "oats." I have heard an objection against it, in that it would give horses a rough coat. This roughness is often seen in horses, and usually is more often the case in winter than in summer. As soon as a horse gets a nibble at grass the roughness disappears; we are not able to get grass in the winter and so we must look for a substitute; this, fortunately, is found right at hand in bran; the latter is a laxative, and when not fed in too large quantities, puts the bowels in good condition and gives that glossy coat so much admired in well-kept and well-governed horses.

On the whole, as oats, in the order of creation, is older than the horse, it must be supposed that the horse was made to eat the oats, and oats he should by all means have.—*A. B. K.*

OUR LOCAL ORGANIZATIONS.

AGRICULTURAL AND HORTICULTURAL SOCIETY.

The Lancaster County Agricultural and Horticultural Society met in their rooms, on Monday afternoon, March 3rd, at two o'clock, and was called to order by President Cooper. The following members were present: Calvin Cooper, President, Birds-in-Hand; Joseph F. Witmer, Secretary, Paradise; Peter S. Reist, Litiz; Henry M. Engle, Marietta; John C. Linville, Salisbury; Henry S. Kurtz, Mount Joy; W. P. Brinton, Christiana; Frank Sutton, Manheim; Casper Hiller, Conestoga; F. R. Diffenderffer, city; J. M. Johnston, Keshy; M. D. Kendig, city; Colin Cameron, Elizabeth; Albert McIlvaine, Paradise; Henry Herr, East Hempfield; Simon P. Eby, city; I. L. Landis, Manheim; Ephraim H. Hoover, Manheim; C. L. Hunsecker, Manheim; Dr. S. S. Rathvon, city; J. Hartman Hershey, Rohrerstown; A. F. Hostetter, Oregon; Judge George D. Stitzel, Reading; D. Hartman, city; Henry Wissler, Columbia; E. B. Engle, Marietta; Simon A. Hershey, West Hempfield; C. A. Park, Geneva, New York.

The minutes of the previous meeting were not read.

Henry Wissler, Columbia; Colin Cameron, Elizabeth; W. P. Brinton, city; James Black, city; Elam Eshleman and Albert McIlvaine, Paradise, were elected members of the society.

Crop reports being called for Henry Kurtz, Mount Joy, said that in his neighborhood the wheat from which the snow has melted looks rather poor, though some of it which looked well in the fall still looks well. It is yet too early to estimate what the crops may be. Of tobacco a good deal has been sold and there remains a good deal to sell. The holders are not willing to take the prices offered, and will probably pack their own crops.

Mr. Engle said the wheat did not look promising, but good crops have been grown from worse looking wheat. The fruit buds have not been hurt by the cold. The rainfall for January was 1¼ inches, and for February 1¾ inches.

An essay, drawing a comparison between old times and new, was read by Henry Kurtz.

On motion of Mr. Engle the rules were suspended to allow Judge Stitzel, of Reading, to make some remarks.

Remarks from Judge Stitzel.

Judge Stitzel said he was not in the habit of apologizing on such occasions, but the society must not expect to hear much from him, as he was not prepared. He came from Reading this morning, completed his business, and was invited here. The article just read said we are not progressing. He thought this was because we do not make our homes attractive. Farmers should procure books for their sons. Books on agriculture should be bought freely,

and the boys reading these would become interested in their father's work and follow in their steps. Farming, in his opinion, is far ahead of any other business, and it should be made attractive. Here, in Lancaster county, the garden spot, there should be a well-organized agricultural society, but from what he had heard he believed the society's affairs were not in good condition. There was no reason for this.

Speaking of mirs, he said a fair without a horse race was like a circus without a clown. Over in Berks county they award high premiums to horses, and raise the money by charging admission fee when the horses are entered; also, a fee for the spectators.

He touched on the growing of tobacco and the success of Lancaster farmers in this branch of agriculture. Berks county farmers have not learned how to raise it yet. He thought truck farming would be profitable in this county. He gave as a reason for the failure of stock-raising in this part of State, that the Western men could raise it so much cheaper, and then send their poor stock here, selling it at the lowest rates. Farmers here, therefore, must raise crops that the Western people cannot send so long a distance, truck, fruit, etc. Our fruit, of course, cannot compare with that of California, but we need have no fear of competition from that quarter. We should raise truck, tobacco or fruit; the latter is not only a great luxury, but it is very profitable.

Mr. Engle said he was much pleased with the gentleman's remarks, which, though rambling, were interesting. He rightly said that we must raise a greater variety of products, and not depend on the cereals alone.

Judge Stitzel then spoke of the offer of the Berks County Agricultural Society of a premium to the planter of the largest number of trees. The money was yours, he said, and he was on the committee to award the premiums and form the rules. This premium caused at least 50,000 trees to be planted in the county. He thought the money was well expended. They also offered a premium for the best cultivated orchard. Before the offer the orchards were, in a majority of cases, in a bad condition, but the premium made them stir around and the improvement was wonderful. He thought if Lancaster county farmers would offer a premium the county would be benefited, as was Berks county.

A. B. Hostetter, of Oregon, stated that at the meeting of the Berks County Society Judge Stitzel had read an essay on "Houses for Preserving Fruit," and he wished that the gentleman would repeat the principal items of it.

In response to this request Judge Stitzel related, shortly, their method of preserving fruit. They constructed refrigerators or fruit-houses, which men raising fruit should club together and erect. They are built two stories high, of frame, with ice over the top and in the sides. The story above should be six or eight feet high with a little story above that for ventilation. The fruit is run through from the first to the second story, and the temperature should be regulated by a valve. The fruit is stored in boxes, should be gathered early and put in the ice house at once. He has Rambo apples now, which are as fresh as when picked. Cider, oranges, lemons and eggs can be kept much in these houses the same as fruit. There are varieties of apples that will keep in the cellar that will not keep in the fruit house, but the majority of winter apples will keep well.

Mr. Engle said that if Lancaster county did not look out it would lose its right to the name of the garden county, and simply from want of enterprise. He had long since proposed the building of fruit houses, but none were ever put up.

A vote of thanks was extended to Judge Stitzel for his instructive remarks.

The Society's Charter.

Mr. Eby presented a draft of a charter for the society, which he proposed to submit to the Court. Its provisions were in accordance with the resolutions of the society at its last meeting.

Several of the members seemed to think that there was danger in the stock plan. There idea was that outsiders might purchase so much of the stock as would give them a majority, and then divert the society from its original purpose, leaving the farmers out in the cold.

On motion, the charter was taken up, but several sections caused dissatisfaction among the members, and it was resolved that when the society adjourn it adjourn to meet two weeks hence, when a full attendance of the members is earnestly requested, as the business transacted will be of the utmost importance.

On motion, it was resolved to have the last four volumes of THE LANCASTER FARMER bound.

Business for Next Meeting.

"How can farm life be made more attractive and pleasant?" was adopted for general discussion at the next meeting. Adjourned.

BEE-KEEPERS' ASSOCIATION.

The Bee-Keepers' Association met on Monday afternoon, February 17, in the parlor of the Black Horse Hotel. Vice President J. F. Hershey called the meeting to order, with the following members and visitors present: Peter Reist, President, Litiz; I. G. Martin, Earl; J. F. Hershey, Mount Joy; John Huber, Pequea; Elias Hershey, Paradise; Claire Carpenter, city; J. M. Johnston, city; F. R. Diffenderffer, city; Jonas H. Shank, East Lampeter; S. H. Musselman, New Holland; J. Hurst, Bainbridge; J. H. Mellinger, Strasburg; E. H. Mellinger, Strasburg; Amos A. Ressler, Strasburg.

Reports.

The President stated that he wintered about seventy swarms in the house he prepared for that purpose. Has lost very few bees so far.

I. G. Martin so far has lost very few bees, not half a pint to a swarm, but the most severe time is yet to come and it is hard to tell how things will turn out.

S. H. Musselman reported that his experience had been about the same; no swarms yet lost.

J. Hurst said he has five swarms; has lost none during the winter.

John Huber reported that his swarms so far are alive and doing well.

Jonas H. Shank had seven hives which he wintered on summer stands.

Elias Hershey started in the fall with twenty-six hives which are all alive and doing well. Some of them were wintered on summer stands.

Feeding Glucose to Bees.

"Should glucose be fed to Bees?" was proposed by the chairman for debate. None of the members had tried it, and therefore could not give any opinion on the subject. J. F. Hershey stated that some claim it to be as good as honey, while others speak strongly against it. He would advise bee-keepers not to use it.

I. G. Martin said he had never tried it nor did he think he would like it. He also spoke against the use of grape sugar in large quantities.

Elias Hershey said that the *American Bee Journal* gave an instance where several hundred bees were killed by the feeding of glucose, while the editor of another declared that no proof of such a thing having happened could be produced, and said that he had fed hundreds of bees on it with good effect.

Dollar Queens.

Would it be advisable to invest in dollar queens? was the next question proposed.

I. G. Martin said he had purchased some at different seasons. Of these a few proved to be as good as tested queens costing $3, while others were worth nothing. He would advise that they be purchased to be used for starting new hives, so that if they are lost not so much money is sunk.

Elias Hershey's experience had been about the same; out of five that he bought two were good and three were worthless.

J. F. Hershey wanted to have nothing to do with cheap queens, as too much risk has to be run in dealing in them. If you get dollar queens and breed from them for three or four years, the result will be very poor stock.

Comb Foundations.

J. H. Mellinger asked the opinion of the society on the use of comb foundations.

I. G. Martin had used those made without wires, and advised the members to get foundations made of pure wax, for that made of a mixture will stretch, and is not fit for use. If the foundation is used in the lower part of the hive, the frame should not be over nine inches wide, or it will stretch. He fastens the foundation to the frame by pressing it to the top bar, and then nailing sticks on top of it.

J. F. Hershey had not used it yet, but intended to do so, and would use that with wire as it don't sack or stretch.

Springing Bees.

J. F. Hershey asked as to the best mode of springing bees. It is almost as hard to keep them through the spring as through the winter.

J. H. Mellinger said he fed his bees in the latter part of February and kept it up till apple blossom time, and even after that, if the weather is not favorable, till other blossoms appear. This kept them in good condition, and he got early swarms.

J. G. Martin read a paper on this subject, which was as follows:

It is of great importance that we should have our bees strong in spring before the honey harvest is at hand. But how shall we get them strong and the hive filled with brood so early? My plan is, as soon as spring opens and the bees begin to gather pollen, to examine every colony by lifting the frames out, and if the stock is weak, I shut the bees to one side of the hive with a close-fitting division board, on as many combs as they can cover, so as to keep up the heat necessary for brood-rearing.

If the stock is very weak, I take all the combs out but two, and if it is so weak that the bees can't cover two combs, then I unite it with another colony. As soon as the queen has filled these combs with eggs, I spread them apart and insert an empty comb between them with brood. In two or three days this comb will be filled also with eggs, and so I keep on inserting empty combs as fast as the queen fills them with eggs, and always in the middle of the brood-nest till it is full. Thus it will be seen that the queen will be laying in the centre of the brood-nest all the time, instead of on the outside of the cluster, which she seldom will in the cold weather of spring, but when it is warm and the bees are plenty, then she will lay anywhere in the hive.

As soon as the strongest stocks are full, I take a frame of hatching brood out and put it in a weaker one, and then put an empty comb in the stronger one for the queen to fill again, and so I keep on till all are full.

Then is the time to put on the honey boxes, so if they gather honey then they must put it in the boxes, for the hive below is all taken up with brood. Each box should have a small piece of comb attached to the top for a starter, or, if you have no nice white comb, put in a narrow strip of comb foundation.

J. F. Hershey had lost some weak colonies that he fed, and others that he did not feed at all he came strong and were among his best swarms. I. G. Martin said he did not like early feeding for breeding or rearing in the spring. If the bees are to be fed at all it should be done after apple blossom time, and before red clover blossoms appeared.

J. F. Hershey said that since he kept kept bees his best queen did not begin to lay until March, and that swarm gave 130 pounds of honey, while the others which began earlier did not give nearly so much.

Marketing Honey.

The chairman proposed the discussion of the question of the best way of preparing honey for market. He has sold a considerable quantity, and found that the more attractive the way it is put up the better it sells. He formerly put it up in large boxes, but now smaller boxes holding one or two pounds are used, and he thought it sold more rapidly.

I. G. Martin exhibited a box which he called the "Prize" box, and he thought it would soon be universally used. It holds two pounds, and grocers have told him that the two-pound boxes would sell better than those holding only one pound, as men who can afford to buy one pound of honey can as well buy two pounds. However, it is best to put honey up in quantities that will sell best in the nearest market. In putting up extracted honey, one or two pound jars should be used. If honey is taken from the hive in winter, it should be kept in a warm room. If comb honey is put in a cool place it will run out.

J. F. Hershey thought honey should be kept in a warm place; if the moth comes it should be expelled by the use of sulphur. In taking honey to market, he can sell pound or half-pound boxes easily, and he could a two-pound box, as the poor man can better afford to buy them. The advantage of using one-pound boxes is that two, three, four or five pounds can be conveniently put up, while in using two-pound boxes three pounds cannot be sold.

Honey Exhibition.

J. F. Hershey suggested that an exhibition of honey be held in August. He moved that a fee of fifty cents a year be charged, and when the show is held a premium of a tested queen be given to the member bringing the honey put in the best marketable shape.

Elias Hershey suggested that it would be well if the exhibition were held in connection with the fair to be held by the Agricultural Society. August would be too early to hold a fair.

F. R. Diffenderffer moved that a committee of three be appointed to confer with the Agricultural Society as to the advisability of holding the exhibition in connection with their fair.

The motion was carried, and Messrs. Elias Hershey, I. G. Martin and Peter S. Reist were appointed as the committee.

Essays for Next Meeting.

J. H. Mellinger moved that the chair ret questions to different members of the society, who could write essays in answer to them, and their ideas could be discussed by the society.

The motion was carried, and Messrs. J. F. Hershey, J. H. Mellinger, I. G. Martin and H. H. Myers were appointed to prepare essays on any subject they think proper to write upon.

Rye Flour for Bees.

J. H. Mellinger asked if it is advisable to feed rye flour to bees in the spring.

J. F. Hershey said he has fed it, but would not advise that it be fed too strong; as the bees will fill up the boxes with it, feed it slowly. By feeding a little every day to five or ten swarms they are stimulated.

Elias Hershey said that if there are any maple trees about, rye flour should not be fed, as they can gather pollen from the trees.

Peter S. Reist appeared during the meeting and asked to be excused from attendance, pleading business engagements. His request was granted.

Adjourned to meet three months hence.

POULTRY ASSOCIATION.

The Lancaster County Poultry Association met in their room in the City Hall, on Monday, March 3rd, and was called to order by President D. C. Tobias. The following members and visitors were present: Rev. D. C. Tobias, President, Litiz; J. B. Lichty, Secretary, city; Frank B. Buch, Litiz: T. F. Evans,

Litiz; Charles E. Long, city; William A. Schoenberger, city; John F. Reed, city; F. R. Diffenderffer, city; Charles Lippold, city; Joseph F. Witmer, Paradise; John C. Linville, Gap; Amos Ringwalt, city; John C. Burrowes, city; Tobias D. Martin, New Haven; Colin Cameron, Brickerville; Mrs. Colin Cameron, Brickerville; S. P. Eby, city; H. H. Tshudy, Litiz.

The minutes of the previous meeting were read and adopted.

Charles E. Long, of the committee appointed to inquire into the cost of printing the Constitution and By-Laws reported that they had rather exceeded their instructions in having had printed 500 copies of the constitution. They had hit upon a plan by which the printing could be done without cost, and a profit be made for the treasury of the society.

It appeared from the remarks of other members, that Mr. J. B. Lichty, the secretary, had suggested the plan of securing advertisements to be embodied in the pamphlet, and by energetic work succeeded in securing enough to pay for the work and put $5 in the treasury.

On motion, it was ordered that each member receive five copies of the constitution.

Joseph F. Witmer, of the committee appointed to bring the matter of joining the Poultry Association before the Agricultural and Horticultural Society, reported that they had done so, but no action was taken on the proposition.

Chicken Cholera.

Charles E. Long rose to answer the question, "What is the most rapid cure for chicken cholera?" He thought the question was a most difficult one, as a council of physicians would differ very considerably on the subject. Chicken cholera is a great scourge and the hopes of many have been blighted by it. There are many different remedies. Soft soap, hard soap, horse and cattle powders, sulphate of iron and sulphate of copper are given, but he knew of nothing that was sure. He believed that crowding together of the fowls was a prime cause of the disease, and he believed that one of the best remedies was to give them more room, and use disinfectants liberally.

H. H. Tshudy said he had suffered about as much from this disease as any breeder. Had tried almost every remedy, but observed that since he kept the chicken houses clean, he had less of it. Had observed that the disease was most fatal in its effects among the Asiatic breeds, and when it got among them the best and only thing to do was to cut off their heads.

S. N. Warfel said that he used carbolic acid so liberally that he never had a case of cholera in his coops. Had discovered that calomel and castor oil were sure cures for the disease. He used considerable quantities of chalk and powdered bone about his coops.

What must Hens have to Produce Eggs.

"What must hens that are confined absolutely have in order that they may produce eggs?" was the next question, and was answered by D. C. Tobias. He counseled great care in the preparation of the houses in which the hens are confined. Unless they are warm and dry, it will matter little what is fed to them. In respect to what should be fed to hens, he said the main food is corn and oats. There is also a want for green food which should be supplied. The best soft food is bran well prepared. If any food besides these are calculated to increase the production of eggs, they are the Eureka Poultry Food, and the Eureka Egg Food. But the question cannot be answered to the satisfaction of all. What will satisfy one fancier would not be well received by another, and the best plan is for each fancier to experiment for himself, and when he finds what food is most suitable for his stock, to use it.

S. N. Warfel said he had found by experiments that chalk pounded into small pieces was eaten with relish by the hens, which will eat it when they will not eat lime, and he thought it had the desired effect. His fowls laid all winter.

H. H. Tshudy spoke in favor of oyster shells, cracklings, and counseled a variety of food. The hens should not be kept on one diet. He thought it was of great importance that the hen-house should be kept warm.

A. Z. Ringwalt fed his chickens burnt corn, and put red pepper in their drink, and thought he had the liveliest lot of fowls to be found. He kept them clean and warm, and got plenty of eggs.

The Best Barnyard Fowl.

"What is the farmer's best farmyard fowl?" was answered by H. H. Tshudy. If the first requisite in the farmyard is the production of eggs he had no hesitation in recommending the Leghorn variety; that is, if the farmer takes care of his chickens. But on the other hand, the production of eggs is not everything. The farmer wants a chicken that is worth something in the market. He thought the best chicken was the Plymouth Rock; good layers, good hatchers, etc. If only one breed can be raised he would choose it.

John C. Linville had just introduced a trio of Plymouth Rocks, and believed they would come to maturity sooner than the Brahma, which he raised before. In regard to the Leghorn he did not like them. They are not suitable for the farmer, as they destroy his garden and their eggs are too small.

Chas. E. Long thought the question was: "Will a farmer make more by keeping hens and selling their eggs, or killing them for market?" He thought the former plan was the most profitable, and the Leghorns were the best in that respect. The Brahmas are the best winter layers.

J. B. Lichty had received more eggs from four Brahmas during the winter than from seven Brown Leghorns.

Chickens and Sunlight.

"Will chickens do well on board floors without sunlight?" was answered by John F. Reed. His experience was that chickens would not do well any place without sunlight. His first coop was insufficiently lighted and his chickens got sick, but his second coop was well lighted and the result was highly satisfactory.

S. N. Warfel said that his fowls had plenty of light, but a gentleman in Boston raises his fowls in the cellar and takes off the first prizes at shows. He contends that raising them in the cellar improves their color, and he has the prettiest chickens in the show-room.

A. Z. Ringwalt thought chickens should have plenty of sunlight; in fact he knew of nothing that could do without sunlight except a new carpet.

Chas. E. Long thought there was only one side to the question. No poultry will do well without sunlight, and board floors are the worst things upon which chickens could be put.

A. Z. Ringwalt said that a board floor was too damp for chickens, and would never use it. He thought that hens must have plenty of dust.

S. N. Warfel had a cement floor on his hen house which was scrubbed out. He did not believe in the dust theory.

Simon P. Eby said that if Mr. Warfel's plan of cleanliness was adopted dust was not necessary, but if not Mr. Ringwalt's plan must be followed.

A good plan to keep off vermin is to use insect powder just before the brood is hatched. He raised his young chickens on a board floor.

Miscellaneous.

President Tobias appointed as a committee to prepare questions for debate in the society F. R. Diffenderffer, J. B. Lichty and J. F. Reed. The committee asked that the members of the society assist them by suggesting questions.

John L. Martin, city; Henry Wissler, Columbia; W. H. Gates, city; Charles E. Stewart, city; J. B. Long, city, and Wash. L. Hershey, Chickies, were elected members of the society.

A. Z. Ringwalt wanted to see the members propose the election of their wives and daughters as members of the society.

Mr. Diffenderffer moved that ladies be invited to become members of the society. Carried.

A bill of $3.50 for furnishing and printing 200 postal cards was presented by the *Examiner and Express* and ordered to be paid.

The following questions are proposed for answers at the next meeting: "How long will eggs retain their fertility?" A. Z. Ringwalt. "What is the proper mode to pack eggs for transportation?" F. B. Buch.

On motion, it was resolved to pay the rent of the room quarterly.

Adjourned.

WARWICK FARMERS' CLUB.

[We regret that the following only came into our possession after our February number had been already made up, but as it contains matter that has not yet spoiled we insert it here.—Ed.]

The second meeting to organize a farmers' club was held on February 1, 1879, on the farm of John Grossman, New Haven, Warwick township, Uriah Carpenter in the chair.

In the absence of the former Secretary, John Grossman was appointed in his stead. The following persons were present: Uriah Carpenter, John Grossman, John Huber, Peter Robertson, Henry Long, Isaac Grube, Abraham Bear, Nathaniel Brubaker, Frank Swally, John Behmer, Aaron Grossman, Moses Grossman, Mrs. Carpenter, Mrs. Grossman and others.

The proceedings of the former meeting not being accessible, their reading had to be dispensed with. The chairman stated the object of the meeting.

John Grossman stated that he did not agree with certain chemists, that only 20 bushels of lime should be put on an acre of ground. He never had made the experiment of so small a quantity himself. He applied more liberally—100 bushels to an acre. Some of his neighboring farmers apply it more sparingly, and by that he can see the difference. Liberal liming will pay. He stated that if 50 bushels were applied to an acre, with only half as long an interval as when 100 bushels are applied, it would be better. Twenty bushels might do if it was applied every year.

Mr. Huber stated that lime always was beneficial to the soil whenever he applied it. When lime is incorporated with the soil in the form of a fine dust, or pulverized, it is a great deal better than when wet and merely crumbling. The application of a small quantity of lime dust may have as much effect upon the soil and be more beneficial to the crops than a larger quantity of crumbling lime in first year. He also said he experienced good effects from lime when applied to grass lands. He top-dressed in March, and it doubled his hay crop the same season.

Mr. Carpenter said he could not agree with such a chemist under any circumstances, and he would like to see where Lancaster county would be if it would not be for lime. Chemists may make of it what they please, he was too well convinced of the use of lime.

Mr. Huber asked if any one present had any experience with phosphates. He said he tried it on wheat. He harvested each separate, and when weighed he found the difference so small that it did not pay to use phosphates.

Mr. Grossman said he applied phosphate to potatoes and corn, several years ago, and found no difference.

Mr. Carpenter asked: How can we get our farms to produce double crops?

Mr. Huber said, one good step in that direction is to sell very little grain. Feed it to stock on the farm; save all you can and make it into manure.

Mr. Grossman also recommended the saving of manure; scrape it together everywhere in the yard; where the cattle go to water; every animal while out to water loses daily enough to make a hill of corn grow by the droppings, and what they carry out of the stable attached to their hoofs, and that amounts to a great deal during the course of a year where 25 or 30 head of cattle are kept.

Mr. Carpenter said 25 head of cattle lose a wheelbarrow load every day, and that would make 365 barrow loads in a year.

Mr. Huber said much can be done by keeping the manure well heaped together. It will not wash away so much as when it is more scattered.

Mr. Carpenter asked: Which is best, to leave the cattle stand on the manure pile or not? He stated that he keeps the cattle on the manure pile during the day, when not in the stable, and very seldom any water runs out, and he gets more manure than he would if he kept the cattle off, and of a better quality, as it assists the rotting together.

Mr. Grossman said much manure might be made by saving the contents of our cesspools; on the most of farms the night soil is entirely wasted. We see it behind barns and sheds, and corners where nothing is raised but tremendous stalks of all kinds of noxious weeds. The water-closet should be built at a convenient place over a tight box, or better still, over a well-walled and plastered or cemented cesspool. It should be sufficiently large to store in it a reasonable quantity of dry earth, and every time it is used a sufficient quantity of this earth should be discharged, which acts as a deodorizer, and the contents is converted into the well-known fertilizer that is sold under the name of "*poudret*;" it is worth all the trouble, and the manure will soon pay for the building—perhaps in a year or two. The earth should be gathered in August when it is pulverized and dry. It may be swept up in many places in the form of dust. The daily excretions of a family of only half a dozen members would produce sufficient night soil in a year to make about 2,200 hills of corn grow—about half an acre—at the lowest estimate 25 or 30 bushels of corn; and the removal and manipulating of this manure is not any more unpleasant than cleaning a pig-pen.

Mr. Huber remarked that he has had that system in operation for the past six years.

As the time had expired, questions were proposed for next meeting, and are the following:

1. When is the best time to sow cloverseed?

2. Which is the best, to turn cattle out to pasture during summer, or to keep them stabled and feed green fodder?

3. What kind of fodder is best?

Adjourned to meet at this place at 1 o'clock p. m. February 15, 1879.

Meeting of February 15th, 1879.

The club met at the house of John Grossman, Uriah Carpenter in the chair. The secretary read the proceedings of the previous meeting, which were adopted.

The meeting was small, owing to an entertainment at a neighboring school, and a public sale at another place.

Some discussion was had on the question, "How can we raise double crops?"

An opinion was expressed, that if we were to manure very heavily, and not sow so many acres, we might in that way accomplish the end.

Mr. Grossman said that he did not agree to that. If he were to haul all the manure on one acre that he now puts on two he would sometimes get a less crop. It would grow too rank in straw, and lodge too readily.

It was also said that 40 and 50 bushels of wheat to the acre are raised in some parts of the county, and that such wheat farms must have some substance in the soil which we have not.

The question was postponed for further discussion.

The clover sowing question was then taken up—"When is the best time to sow clover?"

Mr. Carpenter said, according to his experience, early in the spring is the surest time.

Mr. Volleitzer said that if sowed late it would lay too much on the surface; if early sowed it would sink more into the soil.

Mr. Grossman said, according to his experience, one year with another, the best time is from the middle to the last of March. By alternate freezing and thawing the seed will become better covered by the soil than if sowed late; because the soil is then beaten down usually by the spring rains, and the seed will lie on the surface, throw out small roots, and stand too much on the surface. Then, when very dry weather follows harvest, it is liable to wither and die. If sown early this will not be the case, for by that time it will have become more deeply rooted in the soil. He further said, that he could not recollect a season when late sowing done well, or when early sowing failed; but he remembered when the contrary was the case. It is true, that in some very favorable seasons all have done well, and in unfavorable ones all have failed; but the average is in favor of early sowing.

All that were present concurred in these views.

The question was then taken up: "Which is the best, keeping cattle in the stable all summer and feeding them on green fodder, or turning them into pasture, and what kind of fodder is best?" An essay was then read by Mr. Grossman on the subject. See page 40.

Mr. Carpenter remarked that there was little else to be said on the subject.

Mr. Vollitzer said that would help to double the crop.

Mrs. Carpenter, and also make good butter.

Messrs. C. and V. said too much manure is lost. The droppings of cattle on pasture is of but little amount. Much more manure could be made than is made, and it would employ a greater number of laborers. It would pay for the extra labor, and both the farmer and the laboring man would be benefited.

Mr. V—— said he did not know whether we could obtain the seed in this country, but in Germany they sow vetches and oats together to feed their stock, and cut it twice in a season. All that were present agreed with the sentiments of the essay.

The soiling question was continued for further discussion.

Questions proposed for next meeting:

1. How shall we make our farms pay best?
2. Is it beneficial to educate our sons, and let them go from home, or keep them on the farm?
3. When best to sow oats—how much to the acre—how to prepare the soil.

Adjourned to meet on the farm of Uriah Carpenter, Saturday, March 8th, at 1 o'clock p. m., in Warwick township.

P. S.—We have seen that other clubs do not publish the names of all present. We will follow their practice.

FULTON FARMERS' CLUB.

The February meeting was held at the residence of Solomon L. Gregg, Drumore township. The day was cold and disagreeable, and half of the members were absent. Visitors present by invitation—Evans A. Gregg, James McSparran and I. Clinton Arnold.

Mary Ann Tollinger exhibited some apples for a name. They were fair sized, tolerably good and would keep for a year. No one present was able to name them.

Asking and Answering Questions.

Wm. King: Would a farm be likely to increase in fertility if it was kept in grass, and cows or other animals enough kept on it to consume all the hay and pasture, if grain enough was purchased to keep them in fair condition?

Evans A. Gregg, James McSparran and I. C. Arnold thought it would, as all would be put back that was taken off, and more.

Josiah Brown was of the same opinion, if the land was good enough to produce the natural grasses when the clover and timothy worked out. Unless this was the case the grass would soon work out, leaving nothing in its place. We plow here too often for green grass to grow.

E. H. Haines thought that the system would succeed where the land is natural to grass. Ours is not. Under such treatment the grass would soon run out and green grass would not take its place as it does in some parts of Chester county.

Josiah A. Brown had taken notice that green grass does come in fence corners and other places that are not plowed if the land is good.

Solomon L. Gregg: Under the present condition of our land we could not get started.

Evans A. Gregg: Giving grass a good coat of manure will have a tendency to keep in the grass. Top-dressing is a great thing for it.

Montillion Brown: The Millers' Association threaten to put down the price of Fultz wheat so that farmers will not raise it. Are the farmers going to be guided by their determination?

Solomon L. Gregg did not feel like submitting. He had inquired of dealers in wheat and was told that it was in demand. It is going to England; they like it there.

E. H. Haines thought the farmers had as little cause for alarm at this threat, as the clergy had to be scared at the preaching of Robert Ingersoll. It *does* make good flour, and farmers will raise it unless the price is put down very low, as it is more productive than other wheats. This appeared to be the opinion of all present.

Josiah Brown: Can wheat be raised for a dollar per bushel? Answer: Not while labor, land and fertilizers remain at present prices.

E. H. Haines: Is there any advantage in having straw rotted in the barnyard, instead of spreading on the fields to rot there?

Josiah Brown had found great advantage in spreading straw on sod ground. It sometimes makes one-third more grass.

S. L. Gregg and Montillion Brown had also good results from spreading straw on grass land. It acts both as a mulch and a manure.

I. C. Arnold: There is a chemical action which takes place in the yard while the straw is rotting. The ammonia is retained by the moisture. When straw is spread on the fields it acts principally as a mulch, and much of the manurial value is lost.

S. L. Gregg had noticed in the Oxford *Press* an article on the value of Norway oats straw as food for milch cows, giving the opinion of our neighbor Jesse Yocum that it was equal to hay. Jesse feeds it quite liberally to his cows, and the favorable report of his dairy (200 pounds of butter per cow in the year) gives weight to his opinions in the matter. He (Gregg) wanted to know it there was any difference between the straw of Norway oats and that of common oats, and what the club thought of its value as food for cows.

Josiah Brown did not think oats straw good for cows or any other cattle. Wheat straw is better.

Evans A. Gregg: Norway oats straw is heavier than the straw of common white oats, and may be better, but Jesse gives his cows as much grain as they can eat, and it don't make much difference what else they pick up.

Wm. King: Will cows that are fed on straw give better milk?

Jos. R. Blackburn: They will.

E. H. Haines: There may be some foundation for this prejudice against oats straw, but it is little more than prejudice. It is generally fed in winter when cows are mostly strippers. When this is the case the milk will be bitter and the butter poor, no matter what the cows eat. The butter dealers in town say that dairymen who ship to them make the poorest quality of butter when the quantity is least.

Afternoon Session.

A warm stove had too many attractions on such a cold day for the club to make a very long inspection of the stock and farm, after dinner; so the proprietor escaped with but few criticisms. The host next read an essay advising young men to go west and obtain homes.

E. H. Haines thought the subject well worthy of consideration. The west offered great inducements, with good health and willing hands.

Joseph R. Blackburn: There are great inducements, but on the other hand there are great disadvantages. People of one religion, or one nationality, naturally desire to keep together. But the western man may look one side and see a Norwegian, on another an Irishman, and a Dutchman on another, and so on. Besides, there is so much of a sameness in the farms, that he considers them all alike. He seems to have no home feeling.

Sadie Brown read "The American Forest Girl," by Mrs. Hemans. Allie Gregg recited "Forty Years Ago." I. C. Arnold recited "The Boys," by O. W. Holmes.

"The Old Woman" had heard that the club expected to discuss the tobacco question, so she sent one of her pithy communications containing some resolutions, which had been passed by herself, her granddaughter Dolly and another woman in convention assembled, as follows:

Resolved, That it is time for the women to assert their rights in this matter.

Resolved, That they who chew tobacco shall swallow it instead of spitting around among more cleanly people.

Resolved, That emptying spittoons is no part of woman's business.

Resolved, That young ladies should shun the tobacco chewer as she would any other filthy or unclean animal.

The old man had never used tobacco but once. He never liked it after that. She read him a list of resolutions that cured him at once.

The question, "Should this club encourage the raising of tobacco?" was next discussed by E. H. Haines, Josiah Brown, S. L. Gregg, James McSparran and I. C. Arnold. Joseph R. Blackburn read an essay on the negative side of the subject.

The question, "Have farmers, by their experiments, arrived at any uniform results that can be depended upon for future operations?" was adopted for consideration at next meeting.

Adjourned to meet at the residence of William P. Aaines, 1st of March.

LINNÆAN SOCIETY.

A stated meeting of the society was held on Saturday, February 22d. The following donations to the museum were examined: A fine specimen of a large spiral, conic shell, from California, per William L. Gill; a dry gourd, originally five feet long, called "Club of Hercules"—this is considered a variety of the long-necked squash, or dipper calabash, "Lagenaria Vulgaris," in Latin *lagena*, a bottle, or "bottle gourd;" also, shale from the coal regions, one specimen with pretty fern leaves, the other, the mould of the bark of Siggillaria, a fossil tree-fern, per Mr. J. M. Westhaeffer. He also made a special deposit of the bow, thirty arrows, quiver and whip, formerly belonging to a Commanche Chief. The preserved head, pectoral, ventral fin, gills and ova of the "red fish," recently from the table of Mr. Fox on market. Mrs. Gibbons had quite an assortment of plants that she culled in France, during her late visit. Two of them she called especial attention to, as being largely cultivated in France for fodder, the one named "Sainfoin;" the other "Heibernage or Hivernage."

Rev. J. H. Dubbs had on exhibition for inspection an Indian relic from Germantown, Ohio. This was a Talcose, flat, oval-shaped stone, about four by five inches in the two diameters, a three-sided hole, with an arched top cut through it—no doubt for being suspended around the neck. It was neatly sculptured on both faces.

To the historical collection Dr. Rathvon added four envelopes, containing fifty-seven historical and biographical, local and foreign scraps.

Additions to the Library.

Proceedings of the American Philosophical Society of Philadelph a, volume xviii, July and December, 1878; a treatise on the horse, by Kendel, per Mr. Lyte; the seventh annual report of Noxious and Beneficial Insects, by the Illinois State Entomologist, Cyrus Thomas, Ph. D.; the Naturalists' Directory, alphabetically arranged. From the Department of Agriculture: Report on the conditions of crops, 1878, and one on live stock, January 7, 1879; *Patent Office Gazette* for December, 1878, and January 7, 1879. Book circulars: The Lancaster Farmer for February, 1879.

Papers Read.

J. Stauffer read an illustrated paper on the "Red Fish," above referred to, the "*Sebastes Norvegius.*" Only found in deep water, and rare this far south. He also read a letter from Prof. S. F. Baird, of the Fish Commission, Smithsonian Institute, who manifests quite an interest in the fact that so rare a fish should come to the Lancaster market, and desired Mr. S. to give him one of the characteristic sketches, by which the spec.es could be determined, as there are several on our coast.

Letters Read.

One from Mr. Laux, proposing exchanges with this society; one from Geo. P. Bunn, Philadelphia, desiring an exchange of cocoons.

Mr. Rathvon then announced that this memorable 22d of February was also the seventeenth anniversary of the society, and he had penned a few thoughts on the subject. On motion he was called upon to read the same, which he did as follows:

Dr. Rathvon's Address.

Mr. President and fellow-members of the Linnæan Society:

For all practical purposes this may be legitimately regarded as the seventeenth anniversary of the Linnæan Society, and it is with a feeling of some regret that I witness so few of its original members present to-day.

Organization of the Society.

Although one or two previous informal meetings had been held, yet it was only on the 8th of February, 1862, that its organization was completed, and its board of officers duly elected. It has always labored under one peculiar disadvantage at least, which always exercises an adverse influence upon the progress and practical utility of all associations of a similar character. It has never had a member or a sympathizing patron who was a man of leisure and of ample pecuniary means, whose liberality could be exercised in its behalf; and hence, in the common phraseology of the word, it has always been pecuniarily poor.

Progress in the Face of Difficulties.

In view of the fact, however, that it began on nothing but still undeveloped human energies—energies still without special point or direction—the evidences presented to-day unmistakably illustrate that it has made very perceptible *material* progress. If the time and the pecuniary means were at hand to enable it to analyze, classify and systematically arrange the tangible material it has accumulated, I am sure its magnitude would astonish even the best informed, or most intelligently advanced among its membership.

Not Disappointed.

I cannot say that I am at all disappointed at the progress the society has made during the past seventeen years, nor at the zeal or want of zeal manifested by its members. At its organization I was already fifty years old, and had had some experience in associations

of the kind. I knew that both the membership and community among whom they are located are prone to become "weary in well doing," in any matter in which they have not an immediate worldly interest. I knew that to make it a success its members must take up a cross and bear it, of the weight of which the world around them had little or no appreciation, and of which they themselves may not have had a very clear conception; and, therefore, whatever credit I may be entitled to as one of its organic founders, and in sustaining it thus far, I do not claim to have been an original mover in its first organization.

The Founders.

I think that credit is due to Prof. Porter, J. R. Sypher, J. M. Seitz, and perhaps one or two others, possibly Messrs. Stauffer and Kevinski. I knew it would interfere with my progress in entomology, and hence I committed myself to the Linnæan enterprise with some reluctance, for this reason and those already stated. But I cannot say that I have ever regretted my connection with it and have never abated, and never intended to abate any energy of mine that seemed necessary to continue its existence.

Disappointed in One Particular.

There is one result, however, in which I *was* disappointed—a disappointment that was shared by all the original members—and that is, that there were not to be found at least half a dozen young men of leisure and means in the city and county of Lancaster to actively identify themselves with our organization, and select some specialty in natural science for study and practical amplification. In proportion to the wealth and population of our county there should have been more than the number I have mentioned; but there should have been that number at least. There are several of our committees that have never been more than nominally occupied. When those committees were created it was expected that they would have been filled by active naturalists, but it has been otherwise.

Where True Science Leads.

Of course it cannot be expected that in a country constituted as ours, is any very great number of persons, in any community, would devote their minds and energies to the development of natural science, although there are many young men who would have done far better by submitting to its redeeming and elevating qualities than in pursuing the course they have. A young man who is disinterestedly cultivating a real love for natural science cannot become "fit for treasons, for strategems and for spoils," for if he becomes thoroughly imbued with its spirit it cannot but "lead him up through nature to nature's God." It may be otherwise where the aim is no higher than a mere pecuniary speculation, or where it is pursued from merely selfish considerations.

Who the Founders Were.

The Linnæan Society was developed from the Committee on Natural Science of the Athenæum and Historical Society. That committee, so far as I am able to recall the names of its members, consisted of Professors Haldeman, Porter and Wickersham, J. R. Sypher, J. Stauffer, Chas. A. Heinitsh, Jno. B. Kevinski, J. A. Sheaff, Wm. L. Gill, J. M. Seitz, Chas. B. Grubb and S. S. Rathvon. Some among this committee felt that it ought not to be merely a dead letter in the annals of the society, conspicuously among whom were Porter, Sypher and Seitz; but the parent society afforded them no facilities.

An Independent Organization.

At length the formation of an independent society was proposed, and in due time carried into effect. Soon a collection of rocks, fossils and shells, donated by Mr. Sypher, plants by Prof. Porter, minerals by Kevinski, insects, minerals and books by Mr. Stauffer and myself, Indian relics by Mr. Gill, and sundry other donations, culminated in the nucleus of a museum, and a few cases were provided; and, from that feeble beginning, then and there, the institution has been brought down to the present period.

What the Linnæan Possesses.

The material that the society has already accumulated would count many thousands of specimens, and would require three times the space we now occupy to separate, classify, and systematically arrange them; and until this is done, no one not acquainted with the collection can have a clear conception of what it contains, nor can it perform the uses intended by a scientific museum. But this should not work a relaxation of our efforts. Even in its present condition it is an object of attraction and use to those who may avail themselves of its advantages. Our aim should be to make it an *object library*, to which the students of our local history could always refer with profit. We have done more during the last year to effect that end than has been accomplished in any five previous years, and if time and pecuniary means can be obtained, we hope to effect an appreciable advance during the present year.

No Failures.

During those seventeen years the Linnæan has never failed, but in two instances, to hold its regular monthly meetings, and to annually elect its board of officers. It is true, its meetings were at no time largely attended, but it always had a quorum present and transacted its usual business. I recall with pleasure its early excursions and field meetings, and often regretted that they were subsequently diverted from their original aims and ends. These meetings were finally absorbed by the "*Tucquan Scientific and Piscatorial Association*," most of whose membership were bent upon rural recreation only, and had very little practical sympathy with the Linnæan. Our visits to the "Indian Rocks" in the Susquehanna, our excursions to the Colebrook and Martic Hills, to McCall's Ferry, to Smithville Swamps and elsewhere were all conducted under the inspirations of, and for the collection of material, and the development of, natural science. But, as in all similar organizations, some of its early working members died, some removed to other fields of labor, and others became indifferent or cold.

The Friends of the Linnæan.

Let me not be understood as intimating that the Linnæan Society has not had its friends and patrons, who have always felt kindly towards it, and who have generously contributed their pecuniary means towards its support, so far as they deemed it expedient, in connection with other obligations almost without number constantly resting upon them; but its friends and patrons were not among the Asa Packers, the Samuel George Mortons, the Mr. Pardees and the Doctor Wilsons of society—those whole-souled men, who have disinterestedly endowed similar institutions with thousands and tens of thousands. I believe I speak the sentiments of the society when I say it feels thankful for what has been done for it from time to time; and especially to those who have so freely assisted it during the past year. But still we must regret that our means are too scanty to place it upon that plane of use to the public which we all so much desire.

Building Better than They Knew.

In this connection allow me to suggest that we are at no time so liable to suffer from the underestimation of the public, as from our own underestimation of the work we have in hand. There is material enough in our museum, limited as it may appear, the proper investigation of which would occupy several years. The future may develop that we did not know whitherto we were working. "We do not know how great things we may be beginning in the little achievements of the present hour." The patriots of the Revolution had no conception of the mighty empire, the foundations of which were laid, when they threw off the British yoke a hundred years ago. The Rev. David Swing, in a recent discourse in reference to the formation of language, said: "When Dante was laying the foundations of Italian speech, he thought he was only singing in the memory of a sainted girl; and when Chaucer was busy with the construction of the English tongue, he thought he was only telling some good stories for the delight of the few around his feet."

Looking Hopefully into the Future.

We of the present day are, perhaps, not the best qualified to tell what will ultimately become of the Linnæan Society, nor what *ought* to become of it, if, in the order of Providence, it is best that it should be continued. Within my own lifetime the *Great Academy of Natural Sciences* occupied a little obscure room, no larger than ours, in the city of Philadelphia. But, should it peradventure come to naught, it cannot be erased from the chronicles of history, and at the very worst, it will only be catalogued with the things that *were*. Our aim should be that such a reproach may not fall upon us. Not neglecting other more pressing duties, let us, in sustaining it, do all we can; the best can do no more, and in doing all lies the power we exercise—its blessings and its compensations.

This paper was listened to with profound attention from beginning to end, and deemed too good to be lost upon the few members present, and, on motion, he was unanimously requested to have it published.

Scientific Miscellany

was indulged in: On prehistoric ages—European ignorance as to the extent of our country—the meagre account in the geographies they have in their schools. Prof. Dubbs gave some graphic specimens bearing on the question occurring in Germany; Mrs. Gibbons of some in France. Rev. J. S. Stahr, Dr. Baker, Dr. Davis and J. Stauffer, each had something of interest to say.

After a pleasant meeting in the comfortable room over the library, they parted, well pleased with the meeting and the accommodations of the Young Men's Christian Association's neat and comfortable room. Adjourned, to meet the last Saturday in March.

An Ancient House and Barn.

We were shown, by Mr. Levi S. Reist, a large and excellent photograph—by Wm. L. Gill—of Isaac Long's house and barn, in Manheim twp., near Landis Valley, both buildings being considerably over 100 years old. The barn is large, part stone and part frame, and was built in 1754. It stands to-day just as it was built, with the exception of a small additional building. The house is even older, is built of stone, and is noted as being the birthplace of the denomination known as the United Brethren in Christ—the place where the first meeting to organize that denomination was held. The buildings were remarkable for size and convenience when built, and are still in a state of excellent preservation.—*New Era.*

ENTOMOLOGICAL.

To Destroy the Currant Slug.

A number of remedies are recommended for destroying the currant slug, which of late years has become a sore pest, defoliating the bushes and causing the fruit to wither, or at least not to mature fully. A certain remedy is said to be "green cedar bushes, cut in small pieces and scattered under the currant-bushes;" and, it is added, "there is something offensive about cedars to all bugs and worms, and they do not approach it." This may be true. But we have some positive means at hand to gainsay it, and of course have no faith in it. We have had so many "remedies" of this kind for vermin of every description which have never proved their claims, that we have become a little "jubis." We know that the criptomeria and the arbor vitæ are preferred by certain insects to attach to them their propagating-houses, having with our own hands removed at least fifty from a single small tree; and have frequently seen the same nests on the American cedar upon our own premises.

The best remedy, in our judgment, for this slug pest is the application of a solution of whale-oil soap, (as we have often before suggested,) in the proportion of one pound to five gallons of water, sprinkled over the leaves from a watering-pot with a fine nose. It is certain death to all it touches. Carbolic soap will no doubt answer the same purpose, so that the most convenient can be used.—*Germantown Telegraph.*

Cloverseed Fly.

A New Insect Pest.—At the annual meeting of the New York State Agricultural Society, held at Albany in January last, J. A. Lintner, of the State Museum of Natural History, read a paper in which, among other injurious insects recently observed, he gave an account of the larva of an insect which had been discovered two years ago in several localities in Eastern and Northern New York, hidden within the seed-pods of the red clover (*Trifolium pratense*,) and destroying the seeds. The perfect insect had not yet been seen, but the examination of the larva showed it to belong to the CECIDOMYIDÆ, and in all probability very nearly allied to the "Wheat Midge," (*Cecidomyia destructor*.)* A description of the larva was given under the name *Cecidomyia trifolu*, n. sp.—*American Naturalist for March*, 1879.

Mr. Lintner says: "The range of this insect's depredations, or the extent of its ravages, are as yet unknown. In some localities in the western counties of the State of New York clover was so infested with it that it was worthless for seed. It is believed that not infrequent failures heretofore reported of the cloverseed crop throughout the country, which has been ascribed to imperfect fertilization of the blossoms and various causes, has been the result of the secret operations of this little insect."

A Premature Evolution.

To-day (Feb. 27) Mr. Geo. O. Hensel brought us a fine specimen of *Atticus (samia) cecropia*, the "great apple moth," which evolved from its pupa sleep last night some time, and the moth is still living, but very probably will die before the advent of spring. Of course, the evolution took place within doors, as no insect would have vital energy enough to assume the winged state as such a night as last night was out in the open air, except, perhaps, some species of the PERLIDÆ or "shad-flies." Nothing seems to govern the insect world in their evolutions so much as heat. It has been the habit of some to attribute extraordinary instinctive powers to insects, and although to a certain extent, and in certain directions, they are extraordinarily endowed, yet in their transformations, and especially when they pass from the *pupa* to the *image* state, they cannot tell whether the vitalizing heat around them is natural or artificial, or whether the season is winter or summer. Now this in any other being would be regarded as an act of indiscretion as well as indiscrimination. The incubation of eggs in winter often occurs, but this is not so remarkable as the evolution of a pupa, but it is equally as detrimental to the futurity of the insect.

Experiments with Moths.

A correspondent of *Nature* describes some interesting experiments upon moths to test their sense of smell and hearing. Certain moths when captured feign death. While they are thus motionless if a sharp sound be made, such as is produced by striking a piece of glass, they will be suddenly roused and will attempt to fly. On the other hand, a strong solution of ammonia, uncorked close to moths, has no effect in driving them away; they do not seem to smell it, and only move away from the fumes slowly when oppressed by them. The result of the latter experiment is contrary to the common opinion, which has been that the smelling powers of moths were unusually strong, and that camphor was the best remedy for them, on account of its strong odor.

*Is not this an error? *Cecidomyia destructor* is known in Pennsylvania as the Hessian Fly; and the "Wheat Midge," or "Wheat Fly," as the *Cecidomyia tritici*.

AGRICULTURE.

Deep and Shallow Plowing.

Few subjects attract more attention and give rise to more discussion and want of agreement, than that of the depth of plowing. Many do not consider the very important fact that deep and shallow plowing depends upon the nature of the soil. The truth is, there are many soils in which if one plow deep he may find great profit in so doing; but on the other hand, there are thousands and thousands of acres of land where it is sheer madness to plow deep. On flat clay land where water cannot drain rapidly away, and where the lack of drainage is the bane of the cultivator, it is found by experience that a shallow but rich surface soil is much better than a deeply-stirred one. And the reason is obvious. If water be an injury, and it cannot get into the soil by reason of the hardness of the subsoil, the rain will pass over the surface to the open ditches, which always have to be made in a flat country. If we loosen such soil deeply, we harbor more of our liquid enemy, and that counterbalances what otherwise might be a good thing in a deep soil. Besides these, there are other considerations. If the surface-soil be poor, and we turn this down into a still poorer subsoil, we bury what little good there might have been in the surface soil far below the reach of the roots.

A little learning is undoubtedly a dangerous thing in farming. There is no department in industry wherein circumstances alter cases more than in this. While deep plowing is an excellent thing when circumstances suit, there are innumerable cases when it is wise to go the other way.—*Germantown Tel.*

Sowing Oats Early.

In few things have the advantages of an underdrain soil shown to better effect than in oat-growing. Light soils are not favorable to the oat, and yet it is the light soils which are the early ones. On the other hand, the oat requires a moderately low temperature, of at least two months, to perfect its root-organization. It ought to be one of the earliest crops sown in the spring, but our strong soils, on which the oat does best, are often wet soils, and very unfavorable to early sowing.

Those who have strong soils, and yet tolerably dry, have the very best of oat land, and those who have not must watch every chance to get the seed in early if they would have the best results. Those who know this and yet have land for oats which they feel they will hardly be able to seed before the end of April, sometimes prepare the land in the fall, and then sow the seed on the snow in February. Snow in our regions is too precarious to found any system thereon. We may have snow or we may not. But in the Western States, where snow is a regular thing at that time of the year we notice that the practice is growing fast. Farmers who have tried it say the seed sprouts as soon as the first warm days of spring come, some two weeks at least ahead of the regular April sowings, and the crop proportionately increased. We may not find this plan everywhere feasible, but we may be encouraged always to sow at the earliest time practicable.

American Wheat in Spain.

The first cargo of American wheat was landed in Barcelona, Spain, about November 15th, and created quite a sensation among the dealers. Previously most of the wheat handled at that market has been Black Sea and Hungarian, but the American was judged to be equal to the best grades of those varieties, and this cargo has called for about 25 cargoes more. The amount of the shipment was 17,000 bushels, the price obtained $3.70 per 120 lbs., and the cost of the freight was $18,000. The only unwelcome feature of this item of news is that the grain was carried in a British steamer, and that the cargoes further bargained for are to be carried in British vessels. We have at present no direct steam communication with the ports of the Mediterranean. Not until American steamship lines are established to all prominent foreign markets can we hope for the best returns from the sale of the products of our farms, mines and factories.—*American Agriculturist for February* 1.

Salt as a Manure.

We have applied salt to our garden, say at intervals of from six to eight years, for twenty-five or thirty years. We could not discover that it had any particular effect. We believe, however, that it had a good effect, besides destroying insect life. We use it almost annually on the asparagus beds, as most persons do, and know that the plant greatly thrives upon it. In wheat fields it tends to stiffen the straw and acts thus as a protection against storms, which lay low so many fields. It also attracts moisture, and in times of drought acts favorably in this way. But that it is a manure in any sense, or that it will show itself after the first crop is removed, we do not believe. It is a question for the observing farmer to decide whether or not its application will "pay."

In England it has long been experimented with in every way, as a fertilizer, and the farmers there are as much in the dark about it to-day as they were at the beginning. The *Mark Lane Express*, regarded as good authority there, says that there is no clear evidence even as to its *mode of action*, as the results are so varying that they are "conflicting and contradictory."

American Produce Abroad.

At the dairy shows in England, American factory cheese took such a prominent position as to cause the London *Times* to say it was driving "all English Cheddar's out of the market." Be it understood that English Cheddar cheese is of a similar grade to the American factory product, and is the main reliance of the English market. A prominent American gentlemen writes from Vienna that the prospects of this country, as viewed from abroad, promise an era of great prosperity, because we are finding a market in other lands for so much of our produce: horses, cattle, dead meat, butter, cheese, grain and manufactured goods. The larger proportion of animal products we can ship abroad the better, for that means that we can sell nothing grain, and thereby saving the fertility of our farms. For, they are more exhausted by selling grain than by feeding it and selling meat, butter, cheese, etc., and by the latter course we get two prices for the grain; one in the product sold and one in the manure.—*American Agriculturist for February* 1.

HORTICULTURE.

Pruning Fruit and Ornamental Trees.

We read a great deal about the proper time of pruning trees, and especially the apple tree. Some prefer fall, some midwinter, some early spring, but scarcely one recommends the very best time in our humble opinion—*midsummer*. Doubtless some old fogies will open their eyes and hold up their hands at such an innovation, and denounce it as an absurdity; but we think we will be sustained by a majority of the "live" men of the day.

If we desire to improve the *form* of a fruit tree and get rid of some of the superfluous wood, we should prune in the winter; but if we desire *fruit* and a perfectly healed stump, we should prune from the fifteenth of June to the twentieth of July. We have done this often with the happiest results. The fruit-buds formed the same year, and the operation in suddenly cutting off its growth, produces buds; while the winter or early spring pruning will produce only *wood*.

In pruning ornamental trees in midsummer, the bark, instead of receding from the stump, grows over it, and in a few years will completely cover it and make a perfect amputation. We have noticed this upon our own premises, as well as upon those of others, many times. This pruning is done when the tree is taking its midsummer "siesta," and then wakes up, refreshed for another start, and the bark gradually steals over the stump as if ashamed of the shabby-looking exposure.

When the tree is in full leaf, and presents its full form to us, we can see exactly where the pruning should be done, in order that while the overgrowth may be removed, the symmetry of the tree may be preserved. Especially is midsummer pruning to be preferred, first, to produce buds on fruit-bearing trees as before stated; and second when *large* limbs are to be removed.

Hide-Bound Trees.

The practice of slitting the outer bark of fruit trees perpendicularly has its friends and enemies. We are of the latter. It deals with the effect instead of the cause. The cambium layer is that from which a zone of growth (in exogenous plants) is annually added both to the sap-wood and to the inner bark. The outer bark is finally exfoliated, or rent in fissures and sealed off by the action of the weather. Trees that are starved increase in growth slowly, and the outer bark becomes so indurated as to resist, to a certain extent, their growth by retarding the upward passage of the crude sap from the roots to the leaves, and of the elaborated sap from the leaves downward. But we think it may be questioned whether it is not well that the growth should be retarded. Surely if it is true that a treebecomes "hide-bound" because it is starved, increasing its size is not going to remedy the evil, since we do but furnish more mouths, so to speak, to be fed by the same amount of food.

We have seen many trees thus treated. The stems would noticeably increase in size the next year or so; but there was no corresponding evidence of vigor apparent. In most instances it has seemed to us their vigor was impaired. These perpendicular slits, moreover, afford convenient lodgments for water or moisture, as insects seek such crevices for shelter or for depositing their eggs. It seems to us that the natural remedy for hide-bound trees is to enrich the earth as far as the roots extend, and that then the cambium layer, increased in quantity and nutriment, will so form new liber and alburnum that the outer bark must expand and the stem soon become evenly and sufficiently developed.

Early Cabbages and Tomatoes.

Many people go without these nice little garden things, because they are a long distance away from where the plants are sold; or because they don't want the trouble to make a bed to raise seeds of such plants when they want but a few dozen of each kind. But where this is the case all one needs may be raised in a box of earth on the kitchen window, or any part of the house where there is light and a very little warmth.

This is often done with the tomato, but the cabbage can be raised in the same way, or even better, for the tomato must be always secure from the frost, while a little of this will not affect the young plant or seed of the cabbage. Of the early cabbage few people want more than 25 or 50, and a ten-cent paper and a box of about a foot square will produce this quantity with a very little trouble. For early cabbage they may be sown at once in this way.

There is often much trouble in raising late cabbage seed, on account of the ravages of the fly, when the attempt is made in the open ground; but where only a few are needed they might probably be raised in this way, and thus be secured against danger from this little pest. No doubt from fifty to a hundred could very well be raised in a small box of this kind, and unless where there is a tolerably large sauer-kraut barrel, ought to furnish a respectable supply for any moderate family. The late cabbage seed ought not to be sown before the middle of March, and the tomato not much before that either.

HOUSEHOLD RECIPES.

How to Neutralize Skunks' Odor.—Take the odorized clothing and bury them under ground for three or four days; then take them out and give them a good airing.

How to Pickle Artichokes.—Scrape and wash a peck of artichokes; put vinegar in an earthen pot, enough to cover them; add to each pint half a pound sugar and a teaspoonful of ground cinnamon, five or six blades of mace, or half a grated nutmeg. Boil them in this vinegar until you can run a knitting-needle through them.

How to Destroy Moths in Feathers.—Take them out of the tick and put them on your fruit-dryer, and then put them into your oven after you have taken out your bread. Put the tick into the oven also in the same way. Let them remain in for an hour or two and it will kill them all. If your furs are infested with moths wrap them in newspapers and treat them in the same manner.

How to Fricassee Chickens.—Take your chickens and divide them; boil them until they are nearly tender, in salt water; take them out of the water and drain them. Put a piece of butter in a pan; let it get hot, and then lay in your pieces of chicken and fry them into a nice brown. Take them up and put a very little flour in the pan and let it brown. Pour three tablespoonsful of water in the pan and let it boil up, and then serve.

Potatoes and "Nep" (Knepf)—*An Irish Dish.*—Boil some potatoes that you have previously sliced about half an inch thick. When they begin to get soft, put in the nep dough, which you make by taking one quart of wheat flour, one teaspoonful of soda, and salt to taste; mix these with the flour; add two eggs well beaten with milk enough in to make a stiff batter. It raises up very much, but should be eaten as soon as it is done.

How to Stew Soup Beans.—Take one pint of soup beans and pour boiling water over them until they are covered two or three inches, for they will swell; let them stand at least three hours; put them over the fire to boil in the same water. They will boil soft in about 30 or 40 minutes. Drain the water off and put in one cupful of sweet milk, a lump of butter the size of a walnut, and salt to the taste; turn them into a "boat," add pepper, and send them to the table.

How to Make Turnip Salad.—Take six turnips and slice them on a slaw-cutter; put them in a stew-pan with water enough to boil them soft. While they are boiling take another pan and put in a large tablespoonful of butter, and let it get hot, but not burn; as soon as your turnips are tender turn them into the pan containing the butter, having previously drained all the water off the turnips; put in one spoonful of sugar, pepper and salt to the taste; let them fry, but not to make them brown. Pour in a half pint of vinegar; stir it a few minutes longer, and serve either warm or cold.—*Leoline.*

Table Sauce.—There is no reason why you should not sometimes have a nice relish for cold meats when you can make a pint of it for six cents, so I will give you a receipt for it. Get a bunch of tarragon it will cost five cents in the summer, when it is green and strong, and not much more in the winter; put it in an earthen bowl and pour on it one pint of scalding-hot vinegar; cover it and let it stand until the next day; then strain it and put it into a bottle, which you must cork tight. Either put more hot vinegar on the tarragon or dry it, and save it until

you want to make more. You may make a gallon of sauce from one bunch, only every time you use it you must let it stand a day longer.—*Twenty-five Cent Dinners.*

Broiled Kidneys.—Mix together in a deep plate the following ingredients, which will cost three cents: One ounce of butter, half a level teaspoonful of pepper, one teaspoonful each of mustard, and any table sauce or vinegar, and as much cayenne as you can take upon the point of a small pen-knife blade; toast half a loaf of stale bread (cost three cents), cut in slices one inch thick; wash, split and broil one pound of pigs' or sheep's kidneys (cost ten cents or less); while the kidneys are broiling dip the toast in the first named seasonings, lay it on a hot dish, and lay the kidneys on it as soon as they are broiled; season them with salt and pepper, and serve them hot with one quart of plain boiled potatoes (cost three cents). The cost of the entire dinner will be less than twenty cents.—*Twenty-five Cent Dinners.*

Soup.—Take about four pounds of good lean meat, and boil in about four quarts of water; pare about six small onions, and the same quantity of celery, cut in pieces an inch long; one yellow turnip cut in small pieces, and the same quantity of potatoes; boil in a separate saucepan until half done, as that rids the vegetables of a part of the unpleasant smell; when the meat is tender remove it from the broth and add the vegetables—not the water they were boiled in; then beat well one egg and one tablespoonful of milk, thicken with prepared flour; drop in small quantities to soak; the soup is ready to be taken up, as it must not boil more than five minutes, or it will make it too thick; if the meat is allowed to remain in the soup after it is tender the soup will be full of fragments of it. This soup is excellent, and as good the next day.

POULTRY.

Non-Hatching Eggs.

In relation to the infertility of eggs during the season of 1877, the *American Poultry Yard* says:

"Various causes have been assigned for this non-fertility; but the impotency of the male birds is the fruitful one. Where fowls have been kept artificially—penned up in close quarters, without access to the green fields or pastures—this ill luck has been especially noticeable, when the eggs laid by hens thus confined have been used or sold for incubating purposes.

"No matter how hardy and vigorous may be the natural constitution of the breed of fowls or how sprightly and useful the cocks that are in use as breeders may appear to be, these males cannot endure absolute confinement and prove really serviceable in the breeding season, as a rule.

"They must have exercise, green food, a run daily outside the house limits, and not be forced to eat too much dry food, or go hungry. Give these breeding birds plenty of good succulent food. Let them have fresh air and plenty of exercise every day, even in winter time. And so you will find a large proportion of the eggs will be impregnated, and will hatch much more successfully in spring time."

How to Manage Setters.

Dear Sir: I think that much is to be gained by regularity in the management of incubating hens. Many folks allow the setters to remain upon the nests as long as they please, come off when so inclined, and return at their leisure. This is not the best way, as I look at it, and I have worked long and thought much on this matter.

If a hen is not taken off her nest daily she will certainly befoul it. This helps to breed lice and renders her uncomfortable. If left to herself to go on and off, as she pleases, the chances are that she will at some time allow more or less of her eggs to chill, in extreme cold weather. I therefore deem it always best to remove and replace her every morning, and so keep her steady at her work. Some hens can attend to themselves, and some don't know enough to go in when it rains, hardly. They think they must stick to their eggs as if the universe depended on it. Give me regularity and system every time.—*N. K. Drake, in American Poultry Yard.*

Questions.

Dear Sir: Will you please answer the following questions through the *Yard:*

1. How to stop my hens from dropping soft-shelled eggs from the roosts at night. I have found more than one egg of this kind in my nests during the past year, and my hens (White Leghorns) get plenty of lime, etc., to form egg shells; 2. When a person speaks of a pair of anything, does he always mean male or female, unless otherwise stated?—*J. T. G., Easton, Pa.*

[Reply.—1st. Our correspondent says his hens have "plenty of lime, etc." They should have a gravel run, a gravel floor to their house, or plenty of *gravel* in some shape (as well as lime), at all times. If they have range, when fowls can be out of doors, they will do better still. See our oft-repeated remarks about exercise; 2. A "pair" is a male and female. If you speak of two fowls of one kind, you would more properly call them "a couple," than "a pair."—*Editor Poultry Yard.*]

The Best Kind of Eggs.

Eggs for hatching should be chosen of the fair average size, usually laid by the hen they are from, any unusually large or small being rejected. Some hens lay extremely large eggs and others small ones. A fat hen will always lay small eggs, which can only produce small and weakly chickens. Absolute size in eggs is, therefore, of but little importance. Round, short eggs are usually the best to select; very long eggs, especially if much pointed at the small end, almost always breed birds with some awkwardness in style or carriage. Neither should rough-shelled eggs be chosen; they usually show some derangement of the organs, and are often sterile.—*Poultry Yard.*

What and How to Feed.

The readiness with which fowls will eat the various garden vegetables depends on habit or education, if we may use so pretentious a word. In winter chop up carrots, turnips, beets, mangolds, or cheap seedling apples, if the latter can be afforded; and to teach fowls to eat these, thoroughly mix with meal till appetite is acquired, when they may be given alone, and alternately raw and cooked. Boiled potatoes and raw cabbages will generally be eaten without previous training, and this fact indicates that they are the best vegetable food for winter.—*Poultry Yard.*

Degeneracy in Fowls.

"Subscriber," at Durham, Conn., is informed that fowls or turkeys are best bred by a change of *mates*, at least as often as every other year. It is quite as well to change the cocks every spring, to prevent degeneracy in the blood. Breeding continually from the same parentage will, in a few years, "run out" the stock, so that its best points and characteristics will almost certainly disappear; and, at the best, the progeny from the same line bred in-and-in for a few generations successively, will deteriorate very largely.—*Poultry Yard.*

Poultry should not be plucked too soon after killing. If feathers are pulled out while the blood is still fluid, the vesicle at the root of each feather becomes engorged and the skin spotted. Don't feed before killing; a fowl killed while digestion is going on will hardly keep a week.

LITERARY AND PERSONAL.

The Ferns of North America.—By Professor Daniel C. Eaton, of Yale College, beautifully illustrated with colored plates by Mr. James H. Emerton. Published by S. E. Cassino, naturalist agency, Salem, Mass. We have just received the 12th and 13th parts of this beautiful quarto (on the Ferns of North America,) containing 6 full page plates, with 43 figures, amply illustrating the different parts of this most interesting family of plants. If ever there was a work published adapted to the convenience of those in middle life or advanced in years—when the faculties of vision are beginning to fail—it is to be found in this publication, even if the ferns themselves were not one of the most interesting of botanical studies, and the subjects easy of access, conveniently manipulated, and showy in an herbarium. The quality of the paper, the type, the printing, the engraving and coloring are the best that the present period can command, and are very superior. Price, $1.00 per part, postage paid, and will be completed in not less than 20 numbers, and not more than 24, payable on delivery, at intervals of about two months. As this work, when completed, will contain about 75 full page plates, about 500 figures, and illustrate all the known ferns in North America, down to the present time, we consider it cheap—*very cheap.*

The American Poultry Yard.—A weekly illustrated journal, devoted specially to the interests of fowl breeders, fanciers, farmers, markets and dealers. A. H. Stoddard, publisher, Hartford, Conn.; $1.50 a year; single number, four cents. This is a remarkably cheap and well-executed 16 by 22 folio of 4 pages, with all the novelties in chickendom illustrated weekly, as they successively are developed. Its contributions are all brief, terse and practically to the point, and, doubtless, on that account, it is preferable to most readers to the *Poultry World*, by the same publisher. The relation these two journals occupy to each other is very similar to that of day-book and ledger. In an emergency one might dispense with the ledger and run his business with day-book alone; but as soon as his circumstances warranted it, he certainly would patronize both. Although seemingly occupying this relation to the *World*, it does not occupy the same ground practically. It contains more of the familiar weekly gossip than its contemporary, and less of its standard poultry literature. There is not a contribution, an advertisement, an anecdote, an inquiry and reply that does not in some way relate to "chicken fixens" and their feathered co-relatives. We hope it may have a large vacancy to fill.

Washington Departmental Review.—A compendium history of Governmental operations (entered according to an act of Congress). Terms, $1.00 per annum; single copies 10 cents. This is an excellently well-gotten up quarto of 16 pages. No. 1, Vol. 1, for January, a copy of which has reached our table. Published by Walter J. Brooks, in the office of the Librarian of Congress. We append the contents of the number, from which its peculiar scope may be judged. Advertisements (only one page), Agriculture Department; Congress; Department of Justice; Editorial; Executive; Interior Department; Navy, State, Postoffice; Secret Service Division; Treasury Department; War, &c. There is a very large amount of Governmental statistics in these pages, besides what is being done by Congress and the different departments. Nothing at all about Congressional and departmental discussions on doing and undoing, but what has actually been done and undone. This is an entirely new journal, and now, since it has made a beginning, we may well wonder why such an enterprise was not begun twenty-five or fifty years ago. The work is of great value to those who take an interest in the Government.

Wallace's Monthly comes to us this month brim full of good, wholesome reading. "The Sire of Justin Morgan," "The Guernsey Cow," "Origin of the Morgan Horse," "Thoughts on Breeding," "Polled Cattle," with a finely illustrated article upon an Oregon Breeding Stable, are among its most interesting papers. The leading article, "The Percheron of Paris and of the Prairies," by the editor, is full of practical common sense. In the editorial department, Mr. Wallace continues his discussion, "Do we need any more Running Blood in the Trotter?" Mr. L. S. Hardin, the editor of the cattle department, has an article entitled, "A Cow Test." Published by John H. Wallace, 212 Broadway, N. Y., at $3.00 per year.

Landreth's Rural Register and Almanac for 1879.—Published annually for gratuitous distribution; containing also David Landreth & Sons' Price List of Garden Seeds for 1879. This is the thirty-third year of the publication of this excellent little work, and the present year it is increased in size to a royal octavo in form, and otherwise much improved. It is hardly necessary to say that the Landreths are the proprietors of the celebrated Bloomingdale seed farm, and the present issue gives a full page bird's eye view of the central portion of said farm, including the buildings thereon. The work contains 64 pages of choice reading matter, including the covers, and is embellished with 69 illustrations of choice garden and field vegetables.

The Horse.—"A Treatise on the Horse and His Diseases," by Dr. B. J. Kendall, of Enosburgh Falls, Vermont, is a book that every owner of a horse should have, and no breeder of horses can afford to do without. It has thirty-five engravings, illustrating positions assumed by sick horses, and gives treatment of diseases in such plain and comprehensive language as to be readily understood by anyone of ordinary intelligence. The price is only 25 cents, but we would not exchange it for any book on the horse and his diseases that we have ever seen, and we have read some books of the kind that cost $10. It contains a large number of recipes, anyone of which is worth double the price of the work. The book may be had of the author as above.

A Reliable Firm.—In another column of The Farmer can be found the advertisement of Messrs. Ellwanger & Barry, Mt. Hope Nurseries, Rochester, N. Y. They are a reliable firm to deal with, and as we have had a knowledge of the firm for many years we have no hesitancy in recommending them to our readers, and we feel sure that any representation made by them will be found to be correct. In these days, when *tree agents* are continually boring our farmers, we take pleasure in recommending a firm whom we know to be honest and reliable dealers.

J. J. H. Gregory's Seed Catalogue.—Mr. Gregory is one of the very few seedsmen who combines the business of seed raiser and seed dealer. We presume this fact has a good deal to do with his seed warrants; for unless a man grew largely of the seed he sells and hence *knows* all about them, he will hardly venture to warrant their freshness and purity; and what is of more importance to the purchaser, stand by it in every case, as Mr. Gregory has the reputation of doing.

New Music.—The following new music has been received from Geo. D. Newhall & Co., 62 West Fourth street, Cincinnati, Ohio, and recommends itself to all lovers of good music. Blossom's Reward Polka; Farewell; Innovation. Persons wishing something unusually attractive should send for it, and surely be pleased.

A New Book.—Loring, publisher, Boston, has issued a new work entitled, "How we Saved the Old Farm, and How it Became a New Farm." It is written by "A Young Farmer," and the price of it is fifty cents. It is a very entertaining work, and is well worth a perusal.

Report upon the condition of crops and live stock, January, 1879. Department of Agriculture No. 10 of special series, 21 pp. octavo.

COMPLIMENTS of H. A. Burch & Co., 1879, general dealers in apiarian supplies, South Haven, Michigan; a neat little diamond pamphlet of forty pages. From the character of its contents we should judge it of immense value to all live bee-keepers, who are pursuing that occupation commercially.

MONTHLY REPORTS of the Kansas State Board of Agriculture for September, October, November and December, 1878. By Alfred Gray, Secretary, Topeka, Kansas, 92 pp. octavo. Full of tabulated statistics, and agricultural, economical and commercial details, indicating wonderful progress in our young sister.

STOCKBRIDGE MANURES.—We have received from Edw. J. Evans & Co., of York, a catalogue of Stockbridge's Manures and Bowker's Phosphates. It has quite a fund of useful information. Messrs. Evans & Co. are the agents for Southern Pennsylvania.

HOLSTEIN CALVES.—Since the last issue of THE FARMER Messrs. Smith & Powell, Syracuse, N. Y., have received, direct from Holland, twenty Holstein heifer calves. Their herd of Holsteins now numbers nearly sixty head of full-bloods.

A HOME ORGAN FOR FARMERS.

THE LANCASTER FARMER,

A MONTHLY JOURNAL,

Devoted to Agriculture, Horticulture, Domestic Economy and Miscellany.

Founded Under the Auspices of the Lancaster County Agricultural and Horticultural Society.

EDITED BY DR. S. S. RATHVON.

TERMS OF SUBSCRIPTION:

ONE DOLLAR PER ANNUM,

POSTAGE PREPAID BY THE PROPRIETOR.

All subscriptions will commence with the January number, unless otherwise ordered.

Dr. S. S. Rathvon, who has so ably managed the editorial department in the past, will continue in the position of editor. His contributions on subjects connected with the science of farming, and particularly that specialty of which he is so thoroughly a master—entomological science—some knowledge of which has become a necessity to the successful farmer, are alone worth much more than the price of this publication. He is determined to make "The Farmer" a necessity to all households.

As a county that has so wide a reputation as Lancaster county for its agricultural products, should certainly be able to support an agricultural paper of its own, for the exchange of the opinions of farmers interested in this matter. We ask the co-operation of all farmers interested in this matter. Work among your friends. The "Farmer" is only one dollar per year. Show them your copy. Try and induce them to subscribe. It is not much for each subscriber to do but it will greatly assist us.

All communications in regard to the editorial management should be addressed to Dr. S. S. Rathvon, Lancaster, Pa., and all business letters in regard to subscriptions and advertising should be addressed to the publisher. Rates of advertising can be had on application at the office.

JOHN A. HIESTAND,
No. 9 North Queen St., Lancaster, Pa.

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Dr. S. S. RATHVON, Editor. LANCASTER, PA., APRIL, 1879. JOHN A. HIESTAND, Publisher.

CONTENTS OF THIS NUMBER.

PENNSYLVANIA RAILROAD SCHEDULE.

Trains LEAVE the Depot in this city, as follows:

WE TWARD.	Leave Lancaster.	Arrive Harrisburg.
Pacific Express*.....	2:40 a. m.	4:05 a. m.
Way Passenger†.....	5:00 a. m.	7:50 a. m.
Niagara Express.....	9:30 a. m.	10:40 a. m.
Hanover Accommodation..	9:35 p. m.	
Mail train via Mt. Joy.....	11:15 a. m.	1:00 p. m.
No. 2 via Columbia.....	11:20 a. m.	1:30 p. m.
Sunday Mail.....	11:20 a. m.	1:30 p. m.
Fast Line*.....	2:10 p. m.	3:45 p. m.
Frederick Accommodation..	2:15 p. m.	Col. 2:45 p. m.
Harrisburg Accom.....	5:45 p. m.	7:40 p. m.
Columbia Accommodation..	7:20 p. m.	Col. 8:00 p. m.
Harrisburg Express	7:25 p. m.	8:40 p. m.
Pittsburg Express.....	9:25 p. m.	10:50 p. m.
Cincinnati Express*.....	11:30 p. m.	12:45 a. m.
EASTWARD.	Lancaster.	Philadelphia.
Atlantic Express*.....	12:30 a. m.	3:00 a. m.
Philadelphia Express†.....	4:10 a. m.	7:00 a. m.
Fast Line*.....	5:20 a. m.	7:40 a. m.
Harrisburg Express.....	7:35 a. m.	10:00 a. m.
Columbia Accommodation..	9:28 p. m.	12:30 p. m.
Pacific Express*.....	1:20 p. m.	3:40 p. m.
Sunday Mail.....	2:00 p. m.	5:00 p. m.
Johnstown Express.....	3:05 p. m.	6:00 p. m.
Day Express*.....	5:1½ p. m.	7:40 p. m.
Harrisburg Accom.....	5:50 p. m.	9:00 p. m.

The Hanover Accommodation, west, connects at Lancaster with Niagara Express, west, at 9:35 a. m., and will run through to Hanover.

The Frederick Accommodation, west, connects at Lancaster with Fast Line, west, at 2:10 p. m., and runs to Frederick.

The Pacific Express, east, on Sunday, when flagged, will stop at Middletown, Elizabethtown, Mount Joy and Landisville.

*The only trains which run daily.

†Runs daily, except Monday.

The Lancaster Farmer.

Dr. S. S. RATHVON, Editor. LANCASTER, PA., APRIL, 1879. Vol. XI. No. 4.

EDITORIAL.

SILK CULTURE.

Ostensibly, we presume, to afford encouragement to those who may incline to engage in the production of silk in the United States, Prof. C. V. Riley, Entomologist of the Department of Agriculture, makes a special report (No. 11) of 31 pp. 8vo., to the department on that subject. The pamphlet contains an introduction and a brief manual of instructions for the production of silk, including the nature of the silk-worm; different states or stages of the silk-worm; varieties or races; wintering and hatching the eggs; feeding and rearing the worm; preparation for spinning; gathering the cocoons; choking (killing) the chrysalis; egg-laying—reproduction; reeling; food-plants, and a glossary of technical terms, which is a rational resume of a subject which we are able to recall in its wildest and most inflated manifestation about the year 1837 and a few following years, exploding about 1841. The pamphlet is embellished with seven illustrations, three of which are different kinds of silk reels, of European origin. Should silk culture become a permanent industry of this country—especially in Lancaster county—before adopting a reel, we would recommend our readers to examine the reel invented by Hon. J. J. Libhart, of Marietta, in 1840. We have not seen it for more than thirty years, but from our best recollection of it, it seems to us it would "take down" any of those illustrated in this pamphlet.

We may never live to see it, but we believe that silk culture and silk manufacture must ultimately become one of the permanent—and reasonably paying—industries of our country, although it may involve something of a revolution in the minds of men as to the true aims and objects of progressive and productive labor, a revolution, the germs of which already exist in society, but are still only faintly seen and acknowledged. The silk fever, as it manifested itself forty years ago, was only spasmodic, and did not entertain at any time a single idea beyond merely selfish speculation. Hundreds of dollars were made in trafficing in *Multicaulus* trees, and thousands of dollars were lost in the same. Very few thought about the details of silk culture, the whole aim being money, *money*, MONEY, and so the market became glutted and then the bubble bursted, and disgust and doleful lamentations followed as a consequence. Men did not think of a permanent organic branch of productive labor through which the masses might secure employment and a reasonable subsistence. They only thought of realizing a fortune quickly for themselves, and then to retire and enjoy it themselves, without regard to any use or benefit that might inure to their country. The masses perhaps were also selfish, for they extorted such wages as no one in the silk business could afford to pay and compete successfully with the silk producers of other countries.

We have for five or six years been passing through a labor and financial ordeal in this country that must ultimately initiate a new order of things, if we desire a return of prosperous times—an order that will secure permanent employment to the poor, at reasonable and permanent compensations.

In Europe there are villages, the inhabitants of which employ their time in knitting substantial, seamless, woolen jackets. When the villager has knit a half dozen, a dozen, or two dozen, as the case may be, he puts them in a package, on his head or back, and travels on foot to the market town and there disposes of them. It requires little outlay to start and conduct his business, but as he makes a good article he can always find ready sale for it, because no machinery in either America or Europe can produce as good an article as he can by hand. At least those who consume his wares in Europe and America think so. The foreign Germans in this country always enquire for them and will have them, although they are much higher in price than American jackets—indeed at American wages we could not produce hand-knit goods to compete with them at all.

On a plan approximating to this, and not by large and expensive establishments—according to Prof. Riley's suggestions—the silk business may become a wide-spreading industry amongst us, and give employment to many old men, women and children.

Silkville, Kansas, is a village of this character; and there are other villages and isolated operators in California, North Carolina, New Jersey and elsewhere. Very little reeling and manufacture of silken fabrics are done in the United States, but some trade is carried on in cocoons and the raising of silk-worm eggs. France in the year 1877 paid 1,691,400 francs for eggs, exported from the United States; and although some of these, presumably, came from Japan, yet the larger portion was raised here. It appears that we have no good and permanent market in this country yet for eggs or cocoons, but all we can produce, of a good quality, can be sold to the manufactures of Europe, especially in Italy and France. The three best trees, the leaves of which are devoured by the silk-worm, are the mulberries, botanically known under the names of *Morus alba*, *M. nigra* and *M. multicaulus*; but they will also live and flourish on the "osage orange"—*Maclura aurantiaca*. As this is coming into use as a hedge-plant, and needs a good deal of pruning, the eliminated branches could be utilized to feed worms. Cocoons are worth from $2 to $2.50 a pound, even in the present depressed condition of the country, and even at that price they may yield sufficient compensation to remunerate the laborer to a reasonable extent, although he may not grow rich on it—in the sense usually attached to riches—health and content are better than riches.

A MODEL POSTMASTER.

In January, 1877, seven subscribers to THE LANCASTER FARMER were obtained by an authorized canvasser, all of whose papers were sent, in a single package, to an office within the county of Lancaster. It is of no consequence now who the model postmaster was, or where the postoffice was located—whether east, west, north, south or central, because we desire to discuss the subject from a principle of "right, justice and humanity," and not from feelings of a merely personal nature. One of these seven subscribers always took his paper from the office when he could get it, which was not always, and also paid promptly for it. Sometime after the period of subscription—we don't know exactly how long after, it may have been about three months—six of these subscribers "scattered abroad," some going west, and others removing to other districts in the county, and consequently discontinued calling for their papers, the subscription of which they had not paid and have not paid it yet, and doubtless never will. Mean as the act was, of course the postmaster was not responsible for it. Presumably he would cheerfully have delivered the papers to these *model subscribers* had they condescended to call for them. They are welcome to all the consolation such an act can afford them, either in the successes or adversities of this transient and uncertain life. But what did the model postmaster do, or rather what ought he to have done in the matter? What course does the Postoffice Department prescribe in cases of this kind? Common courtesy, we would think, should have dictated the propriety of informing the editor or publisher, and promptly returning the papers to the office from whence they were issued, marked "uncalled for;" but he did not do anything of the kind—at least such information never came to the knowledge of the editor or the publisher—but, on the contrary, he left six papers accumulate in his office, from month to month, for nearly two entire years, subjecting the publisher in the meantime to the labor and expense of printing, folding, stitching, enveloping, labeling, posting and mailing, just as if editors and publishers had no rights that a postmaster was bound to respect. Now, we do not desire to be captious or unnecessarily censorious about this matter, for it may be that the department does not require its sub-officials to return uncalled for mail matter, and, as we have said before, we may have been officially informed of the deliquency of those model subscribers at the proper time, but we are sincere when we say we have no recollection of it; and, if there had been nothing more, we do not think we should have felt compelled to pen this paragraph. But, near the end of the second year, we happened to call at the postoffice to which we allude, when the postmaster did condescend to gather up as many of the uncalled for papers as he had on hand and place them in our possession; an act of condescension he was, perhaps, not legally required to exercise. It is very certain, however, that an officer may fulfill all the requirements of the civil law and yet fail in that higher law, which every man ought to be unto himself. Subsequently when we had occasion to open the packages, we found a number of them in the same condition they were in when they left the office in Lancaster, months before, and in one or two instances more than a year previously. Some of the packages, we feel quite sure, never could have been touched any farther than was necessary to throw them into some obscure corner in the postoffice; for among those we found at least *seven* copies of our paper belonging to our honest and upright *paying* subscescriber, with his name plainly printed thereon. Now, our friend had frequently complained that he did not get his paper regularly, and sometimes not at all, and was often felt self-mortification and reminded the publisher of the embarrassing omission, and also furnished extra numbers. There is not a doubt in our mind that in many instances, where like occurrences take place, the fault is in the model postmaster, and not in the editor and publisher, although, of course, neither of them is so perfect that such things may not occur. Such omissions cannot well occur in the mailing department of a well-regulated office. They keep a special mailing book, in which the names are not grouped in alphabetical order, but according to postoffices, whether of cities, towns, villages or rural hamlets, and if they omit one name they are just as likely to omit all. Even after the papers have left the printing office they may be carried to the wrong State, county or postoffice; but all this transpires under the auspices of the postoffice officials, and not under the mailing system of the newspaper or periodical publisher.

LIME.

"The utility of lime as a manure consists in loosening the tenacious nature of some soils, rendering them more friable and receptive of vegetable fibres; it especially facilitates the dissolution and putrefaction of animal and vegetable substances, which are thus more readily received and circulated in the growing plant; and it has the power of ac-

quring and long retaining moisture, thus rendering the soil cool and nutritive to the plants that vegetate in it. The power that lime has of absorbing moisture will be better understood when we say that one hundred weight will, in five or six days, when fresh, absorb five pounds of water, and that it will retain in the shape of powder, when slackened or loosened, as is commonly said, nearly one-fourth of its weight." * * * *

We extract the foregoing from the *Journal of a Naturalist*, published in 1831. The publisher remarks in a foot-note: "The weight of lime is very variable, differing in different places; but taking our lime at the average of eighty pounds to the bushel, some idea may be conceived of the cooling nature of the substance. Lime, to be used as a manure, must be in a pulverized state; and by drawing on the land the quantity we do, we convey to every acre so dressed an equivalent to two hundred and fifty gallons of water, not to be evaporated, but retained in the soil as a refrigerent to the fibres of vegetation."

The writer then goes on to say (it is an English work that we are quoting from) "our farmers, availing themselves of this cheap article, use considerable quantities, composted with earth for their different crops, at the rate of not less than one hundred bushels to the acre. This is a favorite substance for their potato lands. The return in general is not so large as when grown in manure from the yard; but the tubers are said to be more mealy and better flavored."

"The utility of lime in various arts, agriculture, manufactories and medicine is very extensive, and in many cases indispensable; and the abundance of it spread throughout the world, seems designed as a particular Providence for the various ends of creation. Lime and silicious matter compose a very large portion of the dense substance of our earth; the shells of marine animals contain it abundantly; our bones have eighty parts in one hundred of it; the egg-shells of birds above nine parts in ten—during incubation, it is received by the embryo of the bird, indurating the cartilages and forming the bones."

"It may startle, perhaps, the belief of some, who have never considered the subject, to assert what is apparently a *fact*, that a considerable portion of those prodigious cliffs of chalk and calcareous stone that in many places control the advance of the ocean, protrude in rocks through its waters, or incrust such large portions of the globe, are of animal origin—the exuvia, of marine substances or the labors of minute zoophytes, which once inhabited the 'great deep.'"

These formations are all nearly pure lime; and the organic remains of marine animals especially, abound in chalk cliffs, in chalk pits, and in chalk beds wherever they may be found, as well as in many beds of solid limestone.

That lime rehardens after being made soft, as in mortar, is owing to the power which it has of acquiring carbonic acid gas—the fixed air from the atmosphere—according to Dr. Black. When the stone is burned this gas is driven off by heat, though it slowly reabsorbs it, and thus it supplies the plants with carbon when it is thoroughly incorporated with the soil. Lime, when mixed with sharp sand and made into mortar may, in time, become as hard as the original rock was from which it was first burnt, by its reabsorption of carbon as an acid or gas. When limestone contains 88 parts of carbonate of lime, 8 parts of magnesia, 1 part of silex and 3 parts of aluminous or combustible substances, it may be considered good for mortar, or as a fertilizing auxiliary.

It seems to us if lime does nothing more than absorb moisture and carbon, which are again absorbed by the roots and leaves of vegetation, through the lime as a medium, it ought not to be ignored or expunged from the list of fertilizers, as some of those claiming to be advanced in agricultural science seem disposed to do. It is too widely diffused throughout the globe to be regarded as useless for fertilizing purposes, although it may not always, nor in all places, be entitled to the merit that is claimed for it. Much will depend upon the time, the place and the quantity of its elementary principals that may be needed by the soil. It seems very evident that where it already exists in sufficient abundance the addition of more may not only do no good, but may do much harm, and this is the reason perhaps that there is such a diversity of opinion upon the subject of its use. Nothing but a thorough knowledge of the previous condition of the soil can determine whether it should be applied or not.

KITCHEN-GARDEN FOR APRIL.

In the Middle States now is the time to plant and sow if we would hope to reap. Those of us who do not avail ourselves of the present need not expect to profit in the future.

The exact time, however, in which certain seeds should be sown must depend not only on location in respect to latitude, but also on the nature of the soil; if it be heavy a little delay will rather promote than retard our object. It is impracticable, in advance, to always give undeviating directions—the common sense of each one must be brought into requisition.

Asparagus sow, or plant roots, if not attended to last month. This vegetable is now coming into season. Whenever practical, a bed of sufficient size should be made to permit an ample supply without cutting every feeble shoot which peeps above the surface; indeed, where space and means admit, two beds should be maintained and cut alternate seasons. The colossal appears to sustain its reputation. Beans, bush or bunch, sow. Broccoli, purple cape is the best to sow. Beets, early and long, sow. Cabbage, drumhead and flat Dutch, sow freely, that there be enough for the fly and to plant; also other sorts of a reliable character, which will afford an uninterrupted succession, so desirable in every country family. Carrots, early horn and long orange, sow. Cauliflower, late, sow. Celery, sow, if not sown last month. Cress, sow. Cucumber, early frame, sow in warm spot. Horseradish plant, if not already done. Hot-beds attend to. Leek, sow. Lettuce, sow in drills; also plant from beds of last autumn's sowing. Marjorum, sweet, sow. Mustard for salad, sow. Nasturtiums, sow. Onions, Buttons for table use plant, and sow thickly for sets. Parsley, sow. Parsnips, sugar, sow. Peas, early and late, for a succession, sow. Potatoes, plant plenty of the early rose for the main supply during summer and autumn. Radish, long scarlet and white and red turnip, sow, if not already sown; also the golden globe and white summer for succession. Salsify, sow. Sage, sow or plant. Spinach, the savory, sow at short intervals. Thyme, sow or plant. Tomatoes, sow to succeed those sown in hot-beds. Turnips, sow, if not sown last month—they may succeed. In short, this is the season for the main sowing and planting in the Middle States. A small expenditure of time will yield large results.

SUPPOSED SULPHUR SHOWER.

A part of Eastern Pennsylvania seems to be somewhat exercised—perhaps agitated—about an assumed shower of sulphur, which is said to have fallen in various places yesterday (March 17) morning, including the southern portion of Lancaster city. But was it really sulphur that fell? Did anybody in Lancaster city test it? None of it fell in the northern part of the city that we saw or heard of. What a pity that those who did see it, had not collected a portion of it, and tested it themselves or submitted it to some one whose testimony would have been received by the public. The paragraphs going the rounds of the newspapers are very unsatisfactory, if they mean anything at all, inasmuch as not one of them states *who* tested the substance, or *who* says it was sulphur.

In the spring or summer of 1843 a large quantity of a yellow substance fell over a large portion of Eastern Pennsylvania, and long articles on the subject appeared in the papers of Lancaster city, notably in the Lancaster *Intelligencer*, then published by Col. J. W. Forney. One correspondent, in an article of some length, gravely pronounced it sulphur, but a member of the Academy of Natural Sciences analyzed it, and tore the other's theory and deductions all to tatters. We also, on that occasion, collected a quantity, dried and tested it, for the surface of the water in many of the rainstands in Marietta were covered with it. It ignited and burned with difficulty, but emitted no sulphur fumes. The fumes were very similar to those of burning vegetation, faintly approximating to the fumes of "Langell's remedy for asthma and catarrh," a box of which is now before us, and which we frequently inhale as a relief to nasal catarrh. We believe the member of the Academy pronounced it pollenacious. The shower of 1843 fell at night, and the substance was noticed the following morning. The theory was that a strong south wind had passed over the floral fields or pine forests of the South—perhaps Florida, Alabama and South Carolina—and that the pollen, or fecundating dust of the flowers, over which the wind passed, was carried up into an upper current of air and carried northward until it encountered a shower of rain, when it was borne down earthward. Many similar phenomena were referred to at that time as having previously occurred. It was not denied, that "flower of sulphur" might be also thus carried by a current of air, for ashes and sulphurious dust had been before observed falling on vessels at sea supposed to have come from far distant volcanic eruptions; but the special shower to which we allude, was not sulphur by any means. What this last substance was, may never be known, for it appears that nobody with a "local habitation and a name," has gone to the trouble to properly investigate it. It may have been pollen also—for a week ago we heard that Fiorida is already blooming with flowers—or it may have been sulphur. This may have been in the case without the near approach of the world's end, or the Judgment Day; but whatever it was, we are compelled to hold our opinion in suspension until the matter is properly authenticated.

We commiserate the poor Allentown woman and recall an instructive anecdote, as a remedy. In the early history of New England a very dark day occurred—so dark indeed, that the chickens retired to roost at noon. The General Council or Legislature of one of the colonies (we think Connecticut) was in session. The members became alarmed, for they believed the Judgment Day had come, and one of them moved an adjournment. But a calm and placid elderly gentleman arose and opposed it. He said: "The Judgment Day is coming or it is not coming. If it is *not* coming, there is no necessity for alarm; but if it *is* coming, I wish to be found doing my duty. I therefore move that lights be brought in."

Three Days Later.

It seems almost unnecessary to say anything more about the assumed sulphur shower of Monday last, but at the same time, to show that some live person has investigated it, and that our surmises (not having seen the substance) were an approximation to the real truth of the matter, we offer the following from the Easton *Daily Express* of the 20th inst., the writer of which is well known here, and is an unquestionable authority in matters relating to pollenacious phenomena:

"A microscopic examination of a portion of the yellow matter, which appeared in the streets of Easton after the snowstorm of Monday morning, proves it to consist of pollen grains, united at first, but separated when dry, or when again wetted. They correspond in every respect with those of the long-leaved or yellow pines of the Southern States (*Pinus australis* Michx.), with which they have been carefully compared. This pine, though very abundant in the lowlands of North Carolina,

does not extend north into Virginia. The specimen in flower, which furnished the pollen for comparison, was gathered near Wilmington, N. C., in the month of March. Currents of air have, no doubt, brought from that distant region enough of the pollen to powder lightly a considerable district in Northeastern Pennsylvania. Thus far, it has been reported as seen in the counties of Berks, Lehigh, Carbon and Northampton. I may state also that I have found water in rainhogsheads, in Central Pennsylvania, covered with pollen of pine trees, brought by the winds from the neighboring mountains at the season of their flowering, in the month of May."—*Thomas C. Porter.*

We would have been content to have let the matter rest with our last paper on the subject, did we not know that there are some persons in this city who will insist that the substance in question was veritable "brimstone;" and that our opinion, in the absence of material data, had only been presumptive and not positive.

"STRAWBERRY PROTECTUS."

Our attention was called some days ago to a newly-invented implement to protect strawberries from the dirt and sand that sometimes accumulate on them during drenching showers of rain, or that peculiar earthy flavor they sometimes imbibe by resting upon and ripening on the ground, or on the mulchings with which the ground is covered, and which becomes often saturated with unpleasant moistures. This is simply a square or round concaved earthen disk, about twelve inches in diameter, with a round hole in the centre, through which the plant is trained. When the plant is matured and in fruit, the branches bend outwardly, and the fruit rests within the concaved disk (forming a shallow dish), the bottom or sides inclining towards the plant, thus keeping dry and clean and easily gathered. But this is not all it does. It shades the ground, and the dews and surplus moisture falling from the plant gradually trickles down towards the base of the plant and supply the roots. The fruit, in our opinion, will also be protected from certain species of millipedes that attack it from the underside when it is lying on the ground, or half buried in the mulching under the plants.

BUCKWHEAT CAKES AND SAUSAGES.

As some approximation to the consumption of animal food in Lancaster county we clip the following item from a current number of the *New Era*, as the result of two months in a single town, and that not among the largest towns in our county. This was all slaughtered, presumably, for home consumption, and we may infer, therefore, that the town is pretty well fortified against a famine, so far at least as beef and pork can "stave off" such a calamity. Surely that ancient borough must have enjoyed a reign of "buckwheat cakes and sausages," to say nothing about roast beef and "boloneys." Lancaster county can always take care of "her own," and without a doubt always will take care of them, whatever may transpire adverse to the general prosperity. This makes no account of the "chicken fixens" and other edible *etceteras* employed in "setting off" a good table. Should there unfortunately be any future starvelings they will do well to keep an eye on Adamstown.

Live Stock Slaughtered in the Borough of Adamstown.

"The following is a true and correct account of beef, pork and veal slaughtered in the borough of Adamstown by the different butchers during the months of November and December of 1878. We will first give a list of citizens who slaughtered porkers weighing over 400 pounds: Esais Billingfelt, 691, 586, 570; John Musser, 649, 632; Sebastian Miller, 591, 495; William J. Frame, 606, 491; Levi Hemich, 560, 551; Edwin Coldren, 522, 495; Henry Seigfreid, 688, 595; Edward Smith, 437, 412; Henry Regar, 516, 470; Jonathan Flickinger, 500, 417; Franklin Woods, 452, 422; William Myberger, 500; John Klapp, 523; George Bollman, 525; A. S. Randenbush, 497; Henry Trostle, 490; William Krich, 469, 466; Henry K. Bucher, 467; Morgan H. Clark, 447; John Slote, 447; William Fichthorn, 465; James B. Pratzman, 445; David Landis, 442; A. C. Snader, 417; Daniel Siegfried, 437; Henry Haller, 447; Franklin Kuemer, 400; Moses Yelk, 440; Solomon Good, 460; Conrad Hertz, 440; John Rathman, 470; John Slote, 454; Samuel Coldren, 450; Joshua Spatz, 417; Wm. Mohn, 445; Levi Schnader, 450; Abraham Lutz, 450, making a total of 50 head, weighing, 24,632 pounds, or an average of over 480 pounds; 254 head weighing 58,601 pounds, or an average of over 234 pounds per head; or a grand total of 82,633 pounds of pork, 131,000 pounds of beef, and 3,600 pounds of veal, of which Henry Echternach, butcher, slaughtered 30,567 pounds, Frederick Goodhart, 28,666 pounds, Henry Redcay, jr., 6,000 pork and 20,000 beef, Flickinger & Landis, 3,000 pork and 15,000 beef, Redcay Bros., 14,400 pork and 24,000 beef, Christian Flickinger, 18,000 beef, and William F. Regar, jr., 3,600 pounds veal and 54,000 pounds beef."

SPRING AND WINTER TREE CLEANING.

By the time our next number appears many of the pestelential insects that infest vegetation will be "lively" and hungry enough to begin their destructive careers. The foliage and bloom of fruit trees, vines and shrubbery will then be too far advanced to admit of cleaning, or the application of active remedies in many cases without more or less injury to their tender condition. If cocoons, chrysalids, web and egg masses are not now removed, it may then be too late to do this work effectually without entailing much trouble. We are often surprised to see so much apathy or positive indifference in matters of so much importance. Many people pay no attention to the subject at all until they are forced to do so by the presence of hordes of insects devouring their plants, shrubbery, &c. Now this need not necessarily be so, if only a little attention is given the subject. On one occasion a lady called our attention to a rose bush, the leaves upon which were fast becoming skeletonized and dry and crisp. When we pointed out to her something less than two hundred greenish roseslugs (*selandria rosea*) she was utterly astonished; she had not *noticed* them before, and thus it is in many instances. People seem to expect that insects will come to them and say, "here I am, kill me."

PERSONAL.

Much time, trouble and misunderstanding would be saved to the editor, the publisher and the patrons of THE FARMER if those having relations in any wise with the office, would give heed to the following: All communications relating to business, including advertising, subscriptions, remittances, exchanges, &c., should be addressed to Jno. A. Hiestand, No. 9 North Queen street—the PUBLISHER. All essays, contributions, book notices and communications intended for publication, to S. S. Rathvon, No. 101 North Queen street—the EDITOR.

IS THE LOWEST PRICE THE CHEAPEST?

This is a question that is daily asked by. In nearly every transaction of buying and selling, the purchaser finds his or her mind reverting to this question and trying to solve the problem. By a very large majority of people price is the first and principal criterion of value, and thousands upon thousands of persons make it their rule to buy that for which the smallest price is asked, believing that in thus saving a penny they are earning one. We believe it capable of proof, however, that in nine cases out of ten a penny thus "saved" is two pence thrown away. It is owing mainly to this propensity for hunting "bargains," and insisting upon low prices at the expense of quality, that goods manufactured in this country compare generally so unfavorably with similar classes of goods manufactured in foreign countries. Our readers, if there be any "bargain-hunters" among them, may object that they do not insist upon low prices at the expense of quality, but for prices combined with fine quality and the best goods. Such a combination of conditions may be insisted upon, but can by no possibility exist as a rule. There may be exceptional cases, when goods of fine quality are sold at less than their cost; an owner may be forced to make sacrifices; but it is not exceptions we are writing of but rules. Mr. A. may have a stock of goods for sale, and, on account of heavy payments he has to make, may feel it to his interest to sacrifice on his goods for a few weeks, in order to force sales and put him in possession of necessary funds; and it may be cheaper for him to raise the money needed in this way than to hold his goods and borrow money, paying interest for it. That is a natural and legitimate business transaction. But it is impossible for Mr. A. to sell, day after day and year after year, goods equal in quality to those his neighbor offers at half the price. Either he is losing money, needlessly and recklessly, or the supposed cheapness of his goods is a fallacious one. As no dealer could long stand such a drain upon his resources, even if he had the desire to scatter the benefits of his charity thus indiscriminately, we are forced at once to abandon our first hypothesis. We see him getting richer year by year—perhaps even more rapidly than his competitor, who sells better goods at higher prices. The fact is indisputable; cheap goods are invariably of poor quality. Woolen goods containing shoddy can be bought at a less price per yard than similar appearing goods made wholly of wool. In fact, the former can be bought at retail at a less price than the first cost of manufacturing the latter. But it by no means follows that those who manufacture or sell shoddy are losing money, or selling bargains; on the contrary, such goods are infinitely dearer, as can be easily demonstrated by any one who doubts it, to their own satisfaction—or, more correctly speaking, to their own sad dissatisfaction. Nevertheless, there are thousands of people who think it economy to buy such goods—paying less to-day, to be sure, but paying about three times in the time that one garment made of good all-wool cloth would have lasted. One housewife may think sugar at six cents per pound cheap, and hold up their hands in holy horror at what she terms and believes the extravagance of a neighbor who buys clean, pure sugar at twelve cents per pound. There is no modification in pure sugar any more than in the component parts of the air we breathe; and, if we mingle any adulterant substances, if we believe them cheaper, why not buy the pure articles and adulterate them ourselves. Probably no woman would buy a pound of sugar at twelve cents and mix it with an equal quantity of sand, so that she might say her sugar costs her six cents per pound; but such absurdity would be no more compounded than to buy a similar article already adulterated, as a grocer who does the adulterating would not only have to be paid for his trouble and labor, but would make a profit for himself, by charging her, perhaps, eight cents for what she could produce for six. Do not understand us to assert that all sugar sold by grocers at low prices has been mixed by them with anitcrating and cheapening substances; such is by no means the case. Thousands of grocers find their *principal* sales of sugars to be of this grade, who would no more adulterate than they would pick pockets. It is not essential to our purpose to designate how, where, or by whom adulteration is done, we only desire to show the indubitable fact that it exists in all low grade goods, and in the case of sugars it may more frequently exist, from the fact that it has never been purified or refined—that the adulterating substances contained in it at the time of its manufacture in the tropics, have never been removed; but the housekeeper can no more afford to pay for adulteration that has always been in the sugar, than she can for that that may have been surreptitiously incorporated with it yesterday. This universal desire to cheapen every article bought, the strange belief that as good an article can be bought for fifty cents as for a dollar, has forced the producers and sellers of goods, in self-protection, to lower the cost of each article, in order to meet the ideas of the buyer as to price, and reduction in cost is as invariably reduction in quality, as the fact that two from four always leaves two, and never three or four.

The foregoing we extract from a long article in the January number of the *Electric Messenger*, a demifolio, published in the city of Philadelphia, seemingly in the interest of a special occupation; but the arguments are to the point, and are applicable to all trades and occupations whatever they may be. Never, until ignorance is banished from the world, and its place is occupied by *wisdom* (not even will learning suffice, for one may be learned without being wise) will the masses of the people have an intelligent understanding of their truest interests, or be able to answer the question which forms the caption of our quotation. At the first blush, no doubt, ten to one, or perhaps fifty to one, would answer

in the affirmative; but the most competent judges, supported by their own experiences, would, without a doubt, answer negatively, and from the experiences of considerably more than half a century we can truthfully corroborate the sentiment. The question is one that should always be considered *from* general principles, and relating *to* general principles. Merchandise sacrificed under the sheriff's hammer, or sacrificed by the proprietor himself, in order to save himself from foreclosure, cannot be regarded as establishing the market value of a commodity. These are extraordinary cases—contingencies resulting from causes that are independent of commercial rule. Under such circumstances the lower price may often be the cheaper. Persons who accustom themselves to buy only under such circumstances, and then to buy much more than they need, in order to be supplied until the next financial failure in the community, will doubtless be always looking for and expecting such sales of distress; and if they de not occur frequent enough to gratify their penurious desires, they may soon accustom themselves to really *wish* for such adverse contingencies to their fellow men. A man may perhaps better himself pecuniarily, but it is questionable if he is permanently improving his morals. No, the question must be considered in its permanent, legitimate and "regular" form, on such principles of equitable compensation as will redound to the prosperity of the whole community, "year in and year out." In such a case we believe it will be demonstrable that the lowest price is not the cheapest to him who can afford a higher one. Of course, we do not mean that extortionate prices should rule the market; but there should be a fair and equitable compensation to all laboring and trading occupations, and merchandise should not be sold below the cost of original production—nor can it be without inflicting serious injury upon some one, and this generally falls upon the poor laboring men. It is frequently alleged that these low prices benefit the poor, but this is only a superficial or transient benefit at best, and even it true, it does not establish the fact that the lowest price is always the cheapest. In additiou to the fact that things very low in price are often entirely worthless and soon present a shabby appearance, it often transpires that when people flatter themselves that they have saved twenty-five cents, fifty cents or a dollar on a small purchase, that they spend what they have thus saved in the purchase of some luxury that is absolutely hurtful to them.

It is not long since a couple of rural verdants went cheapening over a whole town, and then entered a place of doubtful reputation to indulge their appetites with their savings; and indulged to such an excess that they both became blindly "fuddled," in which condition the one had his pocket picked, and the other lost his package of goods. On another occasion one thought he had saved about five dollars on a larger purchase, and then felt his need of a buggy ride and its usual accompaniments. He became jubilant, and drove like another "Jehu," was arrested by a policeman, taken before an alderman, and fined seven dollars for violating the law regulating the driving speed of the town. Things excessively low priced often tempt people to buy what they do not need, or more than they need, thus squandering their means on useless trash, and perhaps that which they really *do* need, they are subsequently compelled to buy on credit. These remarks do not include that class who have only a very small amount of cash, and are compelled to get the largest quantity for it—without regard to quality—to keep them from starving or freezing; but even with them, had they been able to pay a few dollars more, they might have secured *cheaper* goods.

WANTED at this office, the following numbers of THE LANCASTER FARMER: January and November, 1869; March and July, 1873, and February, 1874.

QUERIES AND ANSWERS.

CHARLESTON, Ark., March 4th, 1879.

DR. RATHVON—*Dear Sir:* Being a subscriber to your valuable paper, THE LANCASTER FARMER, through a relative of ours in your State, I take the liberty of asking some questions relative to an animal we recently shot near our beu house. Color a dark brown, white under the neck; neck rather thick, countenance very sharp, eye lively, teeth sharp and close together, legs short, long body, tail not so bushy as a squirrel's, had a peculiar smell, reminding you of a muskrat. Owing to the night being dark when shot could not say whether it moves slow or quick. Would you please tell me, through your paper, if the above animal is amphibious in habits; is it related to the mink, if not what family does it belong to? Wishing your excellent paper every success I remain yours truly, *George B. Pixton.*

From the dark brown color, white under a thickish neck, musky odor, &c., and especially being found prowling about a poultry house, I should judge that the animal you shot is the "common mink," (*Mustela lutreola.*—L.; *Putorius vison.*—Rich.) which, from its amphibious character, in times long past, was called the "little otter," as Linnæus' specific name implies. In describing mammals—especially those belonging to the family MUSTELIDÆ—the length of the body from the end of the nose to the root of the tail, and from the root of the tail to its end should be carefully measured, and its teeth should be counted also. Minks usually construct their burrows on the banks of or near streams of water. They feed largely on fish, frogs and mollusks, but are also destructive to rabbits, rats and mice. But they also wander a considerable distance from streams and commit depredations upon poultry. They are fully as much at home in the water as the muskrat is, and they are in the habit of emitting an odor as strong, and more disagreeable than that of the animal last named. They may be domesticated and become very familiar, but it is suggested that their bloodthirstiness might render them dangerous to children in case they were not regularly supplied with their accustomed food.

SALISBURY, Pa., March 22, 1879.

PROF. S. S. RATHVON—*Dear Sir:* Euclosed find a small object which I would like to know something about. In appearance it resembles the egg of some insect, or a pebble, but yet is not so hard as a pebble. Please state what it may be. If you do not decide what it is, I will inform you how and where I obtained it, and then, perhaps, you can tell more about it. Yours respectfully,

DAVID M. GROFF.

DEAR SIR: Your letter containing "object" duly received, and in reply, first allow me to say that you should at once have accompanied it with the information you seem to have in reserve; because, such problems, entirely isolated, are not always of easy solution, and, therefore, I can only answer you approximately.

The object in question, is neither the "egg of some insect" nor yet "a pebble," so far as I am able to determine. Under the microscope it presented the external form and appearance of a white egg of a bird, in shape approximating to that of a partridge. It was very hard, and when broken, it was internally pure white, and nearly opaque, solid all through. With nitric acid it effervesced very freely, and left a translucent salt, perhaps a nitrate of lime, which was soluble partially in alcohol and water. It is therefore a pure calcareous concretion, and may have been gotten out of the stomach of a fresh water "crayfish," or a mollusk of some kind. In the Linnæan collection are several specimens taken from the stomach of a cray-fish (*astacus bartonii*) which strongly resemble this specimen. They are commonly called "crabs' eyes," and have been used to remove small objects from the eyes of human beings and of animals. Similar concretions have been found in clams, river mussels, and other bivalve shells, in which they are the *nuculi* of a common variety of pearls. It is true, that such an object may be found in the bed of some rivulet, entirely disconnected from either a cray-fish or a shell, but they may still have originated within the body of the one or the other.

This is the most intelligent answer I can make from the meagre data furnished me, and may be a correct one or not. I am at all times willing to give such information on such subjects as I possess; but I am not supposed to know everything. And here let me distinctly state that I should be put in possession of the circumstances under which objects are found that I am expected to investigate and give information on—when, where, in what or on what, and also the time.

As the writer has only requested me, however, to "state what it may be," this must be regarded as my answer to his query.

SALISBURY, Pa., March 28, 1879.

PROF. S. S. RATHVON—*Dear Sir:* Your reply duly received. I beg pardon for not giving you the necessary information as to how and where I obtained the crab eye, as you say they are generally termed. I was curious to know what you would have to say about it without that information; you are perfectly correct, as I obtained it from the inside of an oyster, not only inside of the shell but inside of the oyster, and this is what caused my curiosity as to how it got there and what it might be. Thanking you for your valuable information, and having every reason to believe you do know a good many things pertaining to this science, I am yours respectfully,

DAVID M. GROFF.

If taken from an oyster (Mollusk), of course it must be considered a "pearl."

Mr. J. K. F., Marietta, Pa.—The mineral you dug up in your garden is a very fine specimen of *Red Oxide of Zinc*, otherwise called *Ruby Blend*. The specimen also contains an ore of iron, called *Franklinite*. Its being found in your garden was purely accidental. Very likely it is from the locality of Franklin, New Jersey.

The specimens from the Freed farm, York county, contain *Green Carbonate* and *Sulphuret of Copper*. We recognize it as the same we obtained at that locality forty years ago. It seems strange that there has been no further development of that mine during the intervening series of years. Prospecting was done on the farm more than forty years ago, but at that time the proprietor, we believe, was unwilling either to lease or sell.

The specimens supposed to be Brazilian are of the same varieties of copper as the foregoing, but judging from their greater specific gravity, we think they contain more metallic copper than the former. One of the latter and two of the former appear to be of the variety called *Gray Copper*. Possibly the specimens have become mixed. Any of them seem rich enough to be mined, and probably would pay.

CONTRIBUTIONS.

FOR THE LANCASTER FARMER.

MORE LIGHT.

In reply to an "Amateur Farmer," in the March number of THE FARMER, I beg leave to say, that by the terms, "rising" and "setting" of the moon I mean the moon's *ascension* and *decension*. If he looks at the "explanation of astronomical characters," in any common almanac, he will at once become acquainted with the various characters which designate those changes in the phases of the moon. Let him then turn to the month of April, and he will find that the moon's ascension begins on Good Friday, the 11th of that month, and continues to the 24th of the same. After that date its descension begins, and continues until the 8th of May. Now, I usually plow only part of the day, and can always see when to begin by consulting the almanac. Therefore, my time to plow stiff, clayey soil in April, is from the 11th to the 24th, not only for potatoes, but for any kind of crop, whether grain or vegetables. "Amateur" says, farmers who regulate their plowing by the moon, have been very backward in giving their reasons to the public. This is not so very wonderful. Perhaps they had never been reasoned with on the subject, and only formed their conclusions from practical

results within the spheres of their experiences. Our fathers and our grandfathers had but a limited education, and although they *knew* what they were doing, and how to do it, so far as it related to their own mental and physical energies, yet so far as the invisible operations of nature were concerned, they did not pretend to know any more than the philosophy of the present day can tell *how a seed germinates and grows*. Perhaps another reason why they have felt backward in presenting their experiences to the public is, because those who assume to be better educated than they have not only met them with absolute disbelief, but also with ridicule. Of course I was aware of this before I wrote on the subject, but I thought there were some readers of THE FARMER who were not too highly educated to be benefited. Others may smile at what they may consider my simplicity, but the deductions of a long life of experience no one can deprive me of by a mere act of disbelief, backed by ridicule. In conclusion, there are very few now—no matter how highly educated they are—who disbelive that the tides of the ocean are influenced, or caused by the moon; and who can say that that orb can not exercise some influence over the integration and disintegration of the soil. I am perfectly aware that many have no faith in these things, but I am also aware that the believers are "legion," and that it has not been to their disadvantage.—*J. G., Warwick, April*, 1879.

For THE LANCASTER FARMER.

"BALANCE OF TRADE."

MR. EDITOR: In the February number of THE FARMER a certain J. P. takes exception to a portion of my essay delivered before "the Horticultural Society at Lancaster, and published in the January number of THE FARMER." That part to which J. P. objects is what I say concerning the balance of trade being in our favor. Let us look at this subject a little closer.

It may not appear so beneficial to the United States, or a nation under any circumstances, but I am pretty well convinced that, under our present condition of affairs, it *is*, notwithstanding we are paying only for "dead horse." The horse must be paid for dead or alive, and the price only depends upon what he has earned for us. This must regulate his value. Just so with our National and State debts; we made them and realized the worth of them.

Did not a suspension of the banks always follow, heretofore, right on the heels of our having to pay the difference in silver and gold? And does it not indicate good management for a nation to sell *more* than they buy? This is the basis of success with farmers, merchants and well-regulated corporations; why, then, does the principle not apply to our government?—*P. S. Reist, Litiz, Pa., March 6th*, 1879.

MIGRATION OF EELS.

EDITOR LANCASTER FARMER: An article on the above in your journal, with a request whether others have noticed the same, interested me, and called to mind what I saw about fifty years ago. When a boy, it was my delight to go to the river for the first time. The teamster, who went to Columbia for lumber, was allowed to take me along. While they were loading the lumber I went out to the river, and just along the outside of a raft I saw a dark streak that was moving up stream. Laying down flat to see what it was, I soon discovered that they were little eels. Sometimes the train would be detached for a few moments, but nearly all the time one constant stream against a stream. They sometimes seemed to be in a mass six inches broad and as deep, and so thick that at times the water could barely be seen beneath them. It would be a mere farce to form an estimate of the numbers, for they were *legion*. In an hour's watching I might be safe in estimating them at hundreds of thousands. To make sure of their being eels, I used my straw hat as a dip-net, and succeeded in catching three of them. They were from four to six inches in length from my very best recollection, and the time was just before haymaking.

The idea that they must go to the salt water to breed is a mistake, for they have been bred in ponds until so fully stocked that they could be raked out by the dozen with a common rake. An article lately from the pen of an old acquaintance of mine in the East, who is posted on the subject, has discovered that which was formerly supposed to be the fat of this (mysteriously breeding creature) is, in reality, its eggs, and that a fair-sized female bears nine millions of eggs. If this be so, we wish some were here to lay their eggs in the Missouri river. In the twelve years here but two of them have been caught. Long, long ago we were one of a party that in one night caught in a fish-basket two hundred of respectable-sized ones in Pequea creek, six miles southeast of your city.

If you think it would interest your readers to learn something definite concerning the big catfish in this big, muddy river, I will endeavor in some future number to give them an idea of their size and habits.—*Samuel Miller, Bluffton, Mo.*

[We shall always be glad to hear from our old correspondent; not only about the "big catfish," but also on any subject connected with agriculture, horticulture and domestic economy.—ED.]

For THE LANCASTER FARMER

AROUND THE FARM—No. 13.

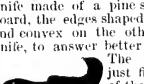
Did it ever occur to you what capital seed bags the wrappers of THE FARMER will make. Our enterprising publishers use a strong paper, and by pasting one end shut we have a bag that will hold a half a pint or more.

Gambrel Sticks.

The past winter I made several gambrel sticks over a new pattern (at least to me). I made it like ordinary sticks, but instead of the usual notches, at each end, I bored one-half inch holes, one inch apart. This I think, after using it, is a decided improvement on the old plan, as the notches, in order to make them strong enough, must necessarily be made further apart than the holes need be. In the

centre of the stick I put a staple through with a ring in it. In hanging up hogs I have two double pulleys with hooks, one of which is fastened to a pin in the beam overhead, while the other is hooked into the ring in the gambrel stick mentioned above, when one man can raise a 300 pound hog easier than two men can raise one of 100 pounds. The ring prevents slipping, which is sometimes the case with old-style sticks.

In the spring, when the ground opens horses will generally be splashed with mud when returning from the road. To remove it I find a knife made of a pine shingle or other thin board, the edges shaped concave on one side and convex on the other, sharpened like a knife, to answer better than a curry comb.



The concave side should just fit the convex surface of the horse's leg, when, by the aid of a stiff brush, dirt can be removed quickly and in a thorough manner.

Harness.

Before spring work commences, all harness should be taken apart and given a thorough washing in warm, soapy water. Don't stop washing the harness until all dirt is removed, as dirt damages the leather more than the washing, besides it prevents the oil from penetrating the leather. After it is nearly dry oil it copiously with neatsfoot or "Vacuum" oil, after which hang in the sun or a dry place for a day or two before using, and you will have soft harness all summer.—*Ruralist, Cresswell, Pa., March 15th*, 1879.

For THE LANCASTER FARMER

THE BALANCE OF TRADE, AGAIN.

In reply to my article in the January number of THE FARMER a writer, signing himself J. S. T., undertakes in last month's issue, to show that I was entirely wrong in the position I assumed. And I will confess that if bold assertion, uncorroborated by facts or arguments, and with scarcely an attempt to produce either on his part, is all that is required to sustain his position and overthrow mine, then he is triumphant; but not otherwise.

He says my statements are of "doubtful veracity," and my arguments "utterly weak" and "hopelessly illogical." Undoubtedly he wished his readers to believe they are so. Why then did he not endeavor to prove his assertions by contradicting me with facts *not* of doubtful veracity and arguments that *are* logical. His will being good, his omission to do either of these things will probably be attributed to its true cause by the readers of THE FARMER.

In my former article I stated my belief that the statistics of the country for the last half century and longer, and also those of Great Britain, would show that in times of prosperity the imports of each country would be found to exceed its exports. Up to the time of this writing I have not been able to lay my hands on a statement of the imports and exports of Great Britain for several years, which I had in possession sometime ago, and therefore I cannot produce it here; but my distinct recollection is that it showed the imports—I think it was for the five years from 1871 to 1875—exceeded the exports by more than 100,000,000 pounds sterling. I do not ask anyone to take my word (or my memory) for this, however, at present, and will now refer to the official statistics of our own country.

The "Quarterly Report of the Chief of the Bureau of Statistics," issued by the Treasury Department, at Washington, for the quarter ending March 31, 1878, contains a statement of the imports and exports of the United States for every year from the organization of the government down; and from that statement I derive the following figures (in round numbers):

1790 to 1799, excess of imports,	$101,300,000
1800 to 1809, excess of imports,	183,367,000
1810 to 1819, excess of imports,	222,410,000
18,0 to 18,9, excess of imports,	40,616,000
1830 to 1839, excess of imports,	327,304,000
1840 to 1849, excess of imports,	56,039,000
1850 to 1859, excess of imports,	2,551,000
Total,	$932,577,000

It is thus seen that in every term of ten years up to 1860, the imports were greater than the exports, the aggregate excess amounting to more than nine hundred million dollars. Can any one believe that we were doing a losing business in all this period of seventy years, and that we were growing poorer and poorer year by year in consequence of our foreign commerce? If that was so, is it not strange that some of the illustrious financiers and statesmen of that period did not discover the fact and demand the total suppression of a trade that was proving so injurious to their country?

But in the eighteen years since 1860, including the time of the war of the Rebellion, when we were unquestionably going behindhand—expending far more than we were earning, and including also the time of the late extreme depression and panic, the balance is decidedly on the other side of the book, as it decidedly ought *not* to be if the Balance of Trade theorists are correct, viz.:

1860 to 1869, excess of exports,	$443,642,000
1870 to 1877,* excess of exports,	693,919,000
Total,	$1,137,561,000

These figures speak for themselves. Will Mr. J. S. T. venture to assert that the only prosperous period this country has experienced was during the civil war and the period of the subsequent panic? If so, then he is consistent

*The official returns for 1878 are not at hand, but it is known that its excess of exports is very large.

with himself when he maintains the proposition that appears to me a self-evident absurdity, viz.: "that the more we send abroad and the less we get in return for it the greater is our gain." He appears to hold that our advantage from foreign trade depends entirely on the amount we send out of the country, and that if in exchange for this, owing to bad foreign markets, or other cause, we are enabled to purchase and bring home merchandise, &c., of only half the value of what we send away, so much the better for us. The custom house returns will then show a large balance of exports above the imports, and so we all ought to rejoice! He admits that in the case of the miller exporting a lot of flour, worth $50 at home, and importing in return for it $75 worth of salt, the miller gained $25. Well, did not the country also gain that amount, and is not this a genuine specimen of all the ventures of all our citizens engaged in foreign trade? They invariably export our produce, &c., in the hope of getting back, that is of importing, in one shape or another, greater value than they exported. If they succeed in doing this they have accomplished their purpose, and they and the country, I maintain, are so much the richer; yet the custom house returns will show a preponderance of imports over exports. But if for any cause, for instance the wreck and total loss of the outgoing or incoming vessel, the owner loses all he had risked, the custom house will furnish evidence to all believers in the theory adopted by J. S. T., that the country has been enriched to the extent of the whole appraised value of the cargo exported! Can anything more be needed to show the fallacy and absurdity of the theory that an excess of exports over imports is a sure indication of growing wealth and prosperity?

J. S. T. affirms, by way of illustration, that, "Of two farmers dealing with each other, the one who has the more money to get at the end of the year has the advantage." I say, this is not necessarily so to all. Suppose in both year's dealings A. has bought of B. a horse and a cow, worth together $200, while he has sold him a lot of sheep and hogs worth $300. Of course when they come to settle A. "has the more money to get," and B. must pay him the difference, of $100. But does that prove that A. has had the advantage in the trade? One has the most money, but the other has property to show for it that is worth money. What is the essential difference between money and money's worth? If money is always of more value than the property that it buys, why does any one part with it to buy the property? Does not the entire value of money arise from the fact that the owner of it can thereby procure other property that he needs or desires?—*J. P., Lancaster, March* 24, 1879.

For The Lancaster Farmer.

TURTLE-HEAD, SNAKE-HEAD, BALMONY.

(*Chelone*)

The *chelone* is a genus of plants so named from the Greek for *tortoise*, the flower, or corolla, resembling in shape the head of a reptile; it is also called shell-flower, balmony, &c. This is not a rare plant in low or wet places—found in flower from July to September. There are two species, the *C. glabra* and *C. obliqua*, and others, perhaps simpler varieties. Stamens four, with woolly filaments and very woolly, heart-shaped anthers; smooth perennials, with upright, branching stems; opposite serrate leaves, and large white or purple flowers, which are nearly sessile, in spikes or clusters, and closely imbricated with round, ovate bracts and bractlets. Calyx of five distinct, imbricated sepals. Corolla inflated, tubular, with the mouth a little open; the upper lip broad and arched, keeled in the middle and notched at the apex; the lower woolly, bearded in the throat; three lobed at the apex. So much is from Gray's Botany, in substance.

The *Chelone glabra*, "smooth snake-head," and the *C. obliqua*, the "purple chelone," are not considered distinct by Pursh and Dr. Gray, but there is a marked difference in the color of the corolla. I have met with them in botanical rambles of a most delicate pink blush, and through rose color to a beautiful purple, in different localities. This is truly a beautiful flower, and worthy of a place in the garden. Johnson enumerates eleven species, some from Mexico, California, &c.; all of American growth.

The generic name was given to our species by Tournefort. This hardy perennial of North America is usually found along the sides of streams. Mr Clayton collected plants of the purple flowering variety in 1752, and sent them to Mr. Miller, of England, and by him propagated in the Hortus Kewensis. Then followed the *C. lyoni*, a rival species, larger and a more resplendant flower. The scarlet *Chelone barbata*, a native of Mexico, was introduced into England by Sir Joseph Banks, in 1794. I simply mention this to show that some of our native wild flowers are highly prized and cultivated in Europe, while we at home scarcely appreciate these interesting plants.

They grow wild, and hence we want something that comes from abroad. May I hope to be indulged in a little gossip. I distinctly

recall the pleasure I derived on one occasion, twenty or more years ago, while struggling along, amid shrubbery, as I followed a mountain streamlet in search of floral novelties, when I came across a patch of chelone tor the first time. Oh, what a delight it is to the ardent botanist to discover a new and beautiful plant! I had no idea of what it was. With eager haste I culled specimens, and retired to a mossy seat to inspect this stranger. I first examined the scales, calyx and corolla, carefully sketching the parts, and then opened the corolla, examined the lobes, the stamens and pistil with the seed vessel, and all things considered, found that it was not a Labiate or of the moist family. I had met and analyzed the Pentstemon, a closely allied plant; this knowledge led me to seek for it among the Scrophulaceæ, and found it to belong to the genus *chelone*. I mention this to show the advantage of study; the knowledge of certain plants and generic characters is a guide to others, and to analyze and trace the affinities, a source of pleasure they only know who become interested.

The study of any branch of natural science is conducive to healthy recreation, as well as profitable; and it would be well if our young men, yes, and ladies, too, would make themselves familiar with the technicalities and scientific names of things. I am aware that the hard names are objected to by many of my readers. Any name for a thing new to us must be remembered if we wish to make the thing known to others in our conversation; but if each one gives it his own name, how can he explain to another what he refers to? Hence the necessity of employing names and phrases which apply exclusively to the plant or thing under consideration—names in universal use by all students. True, these are mostly derived from the Greek or Latin roots, which are only familiar to scholars, they can see why the name is applicable. But an active intellect more readily acquires appropriate *new names* or *special* names than new *meanings* of old familiar words; hence it is better to have a specific term and study up to a clear comprehension of the subject. We soon learn what part is the *calyx*, the *sepals* applying to the green portion or outer cup of the flower and its divisions; so with the *corolla* and *petals*, whether in one piece, like a Morning Glory, "*Monopetalous*," or like a rose of many separate leaves, and *polypetalous*: also, the stems of a leaf is a *petiole*, and that of the flower the *peduncle*. Considering that these vary in form, color and habit of growth, to describe them terms or names must be had, and we may as well learn those used in systematic descriptions, and then the study of botany becomes easy enough.

To conclude with regard to the medical properties of the plant above figured, Dr. Beacher says: "It is good to expel worms; make a tea and drink; after a few days give a purge."

Griffith, in his *Medical Botany*, page 519, figures and describes this plant. He says: "It is tonic, cathartic and hepatic."

On the authority of Rafinesque, who derived his knowledge of it from the Shakers, the Indians made extensive use of it; in full doses it purges and acts powerfully on the liver, they say.—*J. Stauffer.*

Selections.

SEEDS.

Frequent complaints are made that seeds do not germinate, and dealers in them are found fault with, when, very generally, the fault lies in the improper manner in which people plant them.

Many take no heed of the *condition* of the soil or of the depth at which the seed should be planted. The temperature and moisture also have a controlling influence. The temperature of germination of the following seeds is:

	Lowest.	Highest.	Most Rapid.
Wheat	41°F.	104°F.	84°F.
Barley	41	104	84
Pea	44	102	84
Corn	48	115	93
Bean	49	111	79
Squash	54	115	93

Air-dried seed will imbibe water of absorption completely in from 48 to 72 hours, in the following percentage:

Mustard,	47 Oats,	60 Pea,	107
Millet,	25 Barley,	49 Hemp, 60 Clover,	118
Corn,	44 Turnips,	51 Kid. Beans, 96 Beets,	121
Wheat,	45 Rye,	58 Horse " 104 Wh. Clover,	127

The great difference in the amount of water absorbed by mustard and clover seed is worthy of notice. The failure of clover seed to catch, frequently arises from sowing it at a time of insufficient moisture, and can be obviated by first soaking the seed, to supply the necessary humidity. Millet generally secures a good catch even in dry, hot weather, as a small amount of moisture answers for that seed. Soaking seed in plain water, however, entails certain disadvantages. If we examine the water in which the seed is soaking, we find that it soon becomes brown. It has, therefore, dissolved some substances from the seeds; has actually macerated them. If we pour off this brown water and let it stand exposed to heat, it soon gives off the smell of ammonia, proving that it has soaked ont nitrogenous matter, which nature has evidently stored in the seed for the nourishment of the young germ.

This seems to prove at least that this substance is readily soluble. Moreover, the young plant from seed that has been soaked in water will be correspondingly weaker and of a paler color than that from seed not subjected to this ordeal, and the longer the action of the water has continued the more evidently will this be the case. Another objection lies in the fact that seeds soaked in water very quickly dry, and the evaporation of the water leaves them dryer than before. Such seeds, therefore, frequently perish in dry soil, or during a continuation of warm weather. The evils that result from soaking seeds in pure water may, however, be easily avoided by soaking them in a solution of chemical salts of a fertilizing nature. In consequence of the quantity of salts the solution contains, it can dissolve but little from the seeds, while on the contrary it completely impregnates them with its fertilizing ingredients, so that the young plants from seeds so treated appear decidedly stronger and darker in color. Moreover, the seeds are not liable to dry up after having been steeped in this way, but in consequence of the hygrometric properties of the saline substances which they contain they always continue moist. Manuring the seed by means of steeping is of great importance; it not only increases the number of seeds in the growing plant, but also a most remarkable difference in the proportion of gluten they contain; that it produces a decidedly quicker and stronger growth of the young plant in the first fourteen days is certain, as it supplies it directly with the nutritive substances which are required for its vigorous development at the time it is just beginning to grow, and while its organs are yet unfit to seek nutriment over a wide range of soil. The vigorous development of the plant while young is, moreover, a sure guarantee of its full perfection and ultimate ripening. To apply manure directly to the seeds in this way preserves them from squirrels, mice, birds and worms, as they are impregnated with substances repugnent to them, and it is also a protection for rust and blight; it is a quicker, cheaper, more efficacious, and less laborious method of fertilizing them than to place compost in the hills or drills, and moreover the weed seeds then get none of the fertilizers which they share with the good seeds when composts are used. Manure for land, except coarse barnyard manure, should be spread broadcast and harrowed in, thus enriching all the soil. The roots there have a larger area on which to feed, as they will spread themselves out if properly started, and the soil all around them is in proper condition to nourish them. The Chinese are adepts in the art of agriculture, and their seeds are manured before planting them. It is hoped this brief article will call the attention of its readers to the subject of which it treats; and if it effects only this object good will grow out of it. The adoption of the plan it advocates will largely increase the crops of the country at a trifling expense for fertilizers, and the saving in seed will more than counterbalance this increased outlay; for when seeds are steeped in the manure here recommended, a bushel of wheat will be sufficient where a bushel and a half are required when not subjected to such treatment. This opinion is not a mere matter of theory, but the result of actual experiments, conducted on a large and small scale, in the field, and in the house, and confirmed by the experience of many others.—*Andrew H. Ward, Bridgewater, Mass.*

SPLENIC FEVER AND HORN AIL.

The *Country Gentleman* contains an article on the above subjects, from a veterinary surgeon of thirty years' experience, as follows:

The theories in relation to the late prevailing cattle disease are neither warranted by facts nor analogy. One professor tells us this disease is Texas fever, and is transmitted into the system of our cattle by contagion. He claims that the Texan cattle were perfectly healthy, and yet they could through contagion transmit the disease he calls Texas fever. Another claims the disease to be "splenic fever." A third claims the disease to be "tick fever," and says in his report that the kidneys are congested, caused by impregnation with virus, and this virus is furnished by the liver in the shape of bad blood. When this reaches the kidneys it is congested and furnishes venous blood, instead of water for the bladder. When this stage is reached, he says, there is no possible cure, and solemnly asserts this trouble is caused by a tick. With a wash he had invented, he was going to entirely eradicate this disease from the systems of the afflicted cattle. The above professional writers were unanimous in their opinions, that the disease was very contagious and fatal in results.

I herewith present my pathological diagnosis as to the character of the late cattle disease, and the cause producing it, and let my opinion stand upon its merit. The disease is zymotic, comprised in that class of diseases which are epidemic, endemic, communicable, inoculable, and capable of propagation from existing invisible foci or generation, induced by a specific material or poison, or by the want of, or bad quality of food. This class includes four orders—miasmatic, enthetic, dietic and parasitic diseases. Zymotic principles—certain matters which of themselves, or by their transformation, propagate zymotic diseases, one of which may be accurately termed "typhine"—belong to the malignant typhoid type, and it is with this that these cattle were attacked. A germ was transmitted into their systems, or an invisible particle or molecule which becomes detached from the existing living matter. In other words, the germs are supposed, under very favoring circumstances, to be fully capable of development into new forms, and to excited changes in the animal body, of a fermentative or putrefactive nature. The Texan cattle, to which this disease was attributed, it was said, were all healthy in every particular. In this normal condition of health it was impossible for them to transmit this disease to our native cattle by coming in direct or indirect contact with them, which would be absolutely necessary were this disease contagious. It is both possible and probable that the Texan cattle leave behind them germs or molecule, and these remain in a morbific state, while exposed to the atmosphere and other elements, but through molecular attraction they are taken into the lungs of our native cattle, through the respiratory organs, while running in the same pasture fields where the Texan cattle had previously been, and by this means the germs or molecules come in direct contact with the circulation of the blood, being taken up by the minute capillary blood-vessels, thereby inoculating the system with the virus, and producing the malignant type of typhoid fever, developed in these cattle. The transmission of this disease from one animal system to another, must be accomplished by inoculation, not by one animal coming in direct or indirect contact with another and taking the breath. Hence you will please note this disease is infectious, but not contagious.

I will also briefly touch upon what some have called hollow-horn, which, as a disease, never existed. The horns are composed of a horny cone, covering a porous or cellular bone. This porous bone is full of blood-vessels.

The functions of the secretive glands are much affected by disease; the secretions are sometimes suspended in febrile diseases. Where an active inflammation is set up in the animal system generally, the circulation of blood and the secretions are greatly disturbed. Hence it is easy to account for the horns appearing hollow. But as soon as the cause producing the disturbed circulation and secretions is removed, the organs possessing blood and serum, and the other organs possessing other fluids, are relieved, and all symptoms of disease and distress pass off, and the system is soon restored to a natural condition. There is no inflammation of any important internal organ that is not rapidly accompanied by fever; and that fever and the degree to which it had reached, are easily ascertained by the heat of the breath, the dryness of the mouth, and the great development of heat at the base of the horns; also by the redness of the eyes, the frequency and hardness of the pulse, the loss of appetite, and often the cessation of rumination. Hence the horns would appear hollow, as the porous or cellular bone would be deprived of proper nourishment. I think I have presented sufficient facts to prove hollow horn is no disease by itself, but is produced by sympathy and deprivation of proper nourishment, while the system is attacked with febrile disease.

CRANBERRY CULTURE.

A despatch from Berlin, Wisconsin, dated December 28th, says: Berlin is sneeringly dubbed the Cranberry City by the newspapers of rival towns, and at picking time the visitor is impressed with the thought that it is no misnomer. All other business interests then seem subservient to this, for the harvest is of no mean importance to a river town of 3,000 inhabitants, the annual shipments sometimes reaching the astounding figures of 35,000 bushels from the large marsh of Sackett Brothers, whose united annual expenditures are not far from $100,000.

When the picking begins, in October, the whole country round turns out en masse, for cranberry time is a succession of gala days, men, women and children pouring towards the marshes in what seems an endless stream of humanity, all eager to earn the excellent wages that are always paid. The noisy throng is largely made up of Scandinavians and Germans, by whom portions of the country are thickly settled, the men in quaint garments of sombre homespun, high boots and awkward blue caps, and smoking the ubiquitous huge-bowled porcelain pipe from the Fatherland; the women with gay-colored shawls tied over the head and falling on the shoulders, short, stiff dresses and wooden shoes. Children of all ages accompany them, looking curious enough, dressed in precisely the same sombre attire as their parents, which gives them the appearance of veritable Lilliputians. Most of the pilgrims towards the cranberry Mecca go on foot, but some ride on heavy farm wagons, canvas-covered and drawn by sleepy oxen, with whose small pace the phlegmatic farmer seems quite content. It is this willingness to make haste slowly but surely in the race for wealth that has made substantial farmers of these.

Coming to America with a few dollars, and purchasing sandy farms on which the restless Yankee has starved, and which he is glad to sell for a mere song, these emigrants lead a life of frugality and self-denial which brings them a reward in causing the desert to blossom as the rose. It is a saying hereabout that what the Norwegian farmer cannot sell he feeds to his stock, and what they will not eat he gives to his family; of course this is an exaggeration, but the writer has visited the log houses of some of the less well-to-do people and has found their diet to consist largely of black rye bread and thickened sour milk, all the rest of the farm products going to market. This frugal mode of living seems to have the double effect of benefiting the family health and of gradually filling the domestic exchequer. The women work in the fields with the men, and are models of physical robustness, never requiring a physician. A dentist has never yet been known to operate upon the molars or bicuspids of these people, whose teeth would excite the envy of a pampered child of fortune.

Here and there among the prospective pickers are a bevy of American girls who leave home comfort and plenty to "rough it" on the marshes for a week or two. Bands of Winnebago Indians occasionally file past, gayly attired in bright colored Government blankets, the lazy warriors or bucks mounted on ponies, the squaws trudging along the sandy roads carrying the "impedimenta," with the pappooses strapped into a framework borne upon the back with the other burdens. These Indians are the children and

grandchildren of the chiefs who fought under the famous Blackhawk in what is now the State of Wisconsin, nearly half a century ago. For many years they have hunted unmolested, but were recently removed to the Indian Territory, under military escort, by orders from the Government, but they were unhappy, and refused to be comforted as wards of the nation, so they made their way—several hundred strong—back to the happy hunting-grounds of Wisconsin, a distance of 1,000 miles. They are the same harmless, strolling bands that they have been for many years, but they have learned something of the rights of settlers and have pre-empted certain wild land, which they affect to occupy, and thus become entitled to the privileges of citizens, and enjoy immunity from Government interference.

It is only a mile or two from Berlin to the cranberry marsh of Sackett Brothers, the presiding genius of whose fortune is the Hon. Hobe Sackett. The berries grow on a marsh which is so wet and yielding as to preclude the driving of teams across except on a corduroy road half a mile long leading to the building in the centre. The drive is anything but pleasant, as the wagon goes jostling over the logs, and the causeway is so narrow that teams cannot pass, making it necessary for the driver to keep a sharp lookout over its entire length, to see that he has the right of way. Springing across one of the ditches on either side one can pick the acrid berries from the delicate bushes which grow not more than a foot in height. The principal building is the warehouse where the berries are stored and afterward barreled for market. It is a substantial frame structure, recently built, is 148 by 44 feet, and four stories high. From the upper windows can be had a comprehensive view of the marsh and its busy force of pickers. The eye rests upon 750 acres of marsh, not more than a quarter of which is under cultivation, over whose area in the busy time are scattered no less than 3,000 pickers.

A movable wooden railroad track runs from the warehouse to the centre of operations, and a car is loaded with the boxes of berries, each person picking into a pan which is then emptied into his box of a bushel capacity. The pickers receive a ticket for every bushel loaded on the car, and on reporting to the Superintendent at the close of the day, receive credit for the whole. The price paid is 75 cents a bushel, and the average day's work is not more than two or three bushels, although it is not uncommon to pick five bushels, and a few experts have been known to pick seven bushels in a single day. The picking being often hurried on account of threatened approach of frost, a second picking is sometimes necessary, for which about a dollar a bushel is paid. The car on being loaded with the filled boxes is drawn by a team of horses to the warehouse, where the berries are hoisted on an elevator to the upper stories, and disposed of in such manner as to secure the best ventilation. The floors are covered with tier upon tier of boxes of berries, there being sometimes 20,000 bushels under the roof at one time. On the ground floor, large fanning mills are in motion, into which the berries are running from hoppers in the upper stories, and all leaves and other impurities are blown out, after which they are put in barrels and hauled to Berlin, and from there shipped to the Milwaukee and Chicago markets. A coopering establishment on the property manufactures the many thousands of barrels which are annually required.

The question naturally arises, "How do these several thousand pickers subsist during the season, for no boarding establishment of sufficient capacity would be possible?" The answer is that the proprietor has erected barracks of frame buildings, for which there is no rental, the pickers boarding themselves each house being furnished with a kitchen stove, and the rooms fitted up with bunks. The greatest hilarity prevails during picking time, the nights being given up to innocent revelry and mirth on the part of the young men and maidens, while in the neighboring woods the Winnebagoes dance round their camp fires and make the night hideous with the drunken orgies with which cranberry time is invariably associated. Sackett's marsh is fitted by nature for its present use, and its advantages of location could not have been improved upon by the experience cranberry culturists. It is necessary to flood the entire surface during the winter, and this is rendered easy by the fact that the marsh is a basin lying in a wooded table-land, with an outlet at the lower end, across which has been constructed a dam 225 yards long and 44 feet wide, with double floodgates for regulating the height of the overflow. As soon as the crop is gathered the gates are dropped and the marsh gaadually becomes submerged by the autumn rains, the melting snow and the drainage from the higher ground, until it becomes a lake. This often freezes to a considerable thickness, furnishing a skating rink that puts to blush the contracted affairs of that name found in cities. In this manner the soil receives its only cultivation, and the tender plants are protected from the rigors of a Wisconsin winter. It is not uncommon for the marsh to be flooded eight or nine months in the year, the water not being drawn until June.

Of all fruit raising cranberry culture is the most uncertain, not more than one season in five or six escaping the early frost, against which there is no protection, and of whose approach there is no warning, while the vines are always subject to the attacks of the cranberry worm, which sometimes destroys the entire crop. The yield of 1871 was the largest ever known, and was successfully harvested, but it has been followed either by total failures or only partial crops. Hundreds of thousands of dollars have been invested in the business, which is attended with the greatest risk, but offers the possibility of a large fortune.

RULES FOR MAKING GILT-EDGED BUTTER.

Feeding.

Select your cows with reference to the quantity and richness of the milk produced. The best cows are the cheapest for butter, so get the best you can of whatever breed you select. Give them good pasturage in the summer, and plenty of pure water, with frequent access to salt. In winter, feed sweet, early-cut hay, well-cured corn fodder, roots, cabbages, etc., and a ration of bran, cornmeal, ground oats, or middlings.

Implements.

Have the best implements, and keep them scrupulously clean, well-scalded, and often exposed to the sweetening influences of the sun. The milk pail and pans should be of the best tin. A reliable thermometer is a necessity to every good dairyman.

Milking.

The milking should be done quietly and at regular times, and the utmost cleanliness observed. Nothing is tainted quicker than milk by foul odors, and surely at times, with nearly all cows, there is enough animal odor to it, without adding any more.

Setting.

Strain the milk slowly into the pans, four to six inches deep. It is an excellent plan to strain the milk into a large can set in cold water, and cool down to 60 degrees before putting into the small pans. The milk must be set in a pure atmosphere, at such a temperature as will permit the cream to rise in from thirty to thirty-six hours after setting. In order to do that the room should be kept at about 60 to 65 degrees, and not allowed to vary much either above or below.

In hot weather keep a large piece of ice in a tub in the room. Cover it over with a thick blanket, and, if arranged so that the water will run off, it will keep a long time, and keep the room very uniform.

In cold weather some arrangement for warming the milk room should be adopted.

Skimming.

Skim as soon as the milk begins to turn sour. Do not neglect this rule, as it is impossible to make good butter from cream that has become old and sour. When you pour your cream into the cream jar, splash as little as possible. Stir the cream every time you add more to it, and wipe the sides of the pot. Keep the temperature at about 60 degrees, and the cream pot in the coolest part of the house, covered with a fine gauze netting strained on a hoop, not with a tight cover. If covered too tight, fermentation is often too rapid.

Churning.

Churn often, as there is nothing gained by long keeping. Bring the temperature of the cream in the churn to 58°, and not allow it to rise above 64°. Churn early in the morning, while it is cool. First scald the churn, turn the paddles a few times; then pour off, and pour in cold water and turn the paddles; pour off and pour in your cream. In churning revolve the paddles with an easy, regular motion, not too fast nor too slow.

Coloring.

When likely to be deficient in color add a sufficient quantity of The Perfected Butter Color (made by Wells, Richardson & Co., Burlington, Vt.,) to keep it up to the June standard.

Working and Salting.

When it has "broken" and there is a difficulty to make the butter gather, throw in some cold water and give a few more turns. Some, and I think a majority, of the best butter-makers of to-day wash their butter with cold water before removing from the churn. Gather your butter with the paddle and lift it out into the tray, press it gently and incline it, and let the buttermilk run off. Work it gently with the paddle, with a cutting, gentle pressure, but not mash it; or, better, put it into the butter-worker.

Salt it about an ounce to the pound, or to the taste of good customers; only with the best salt, and free from lumps and coarseness. Work the butter only so much as to expel the buttermilk, but not to work it too dry. This can be done by the use of a weak brine prepared for the purpose. Put the bowl away in a cool place. After standing twelve or twenty-four hours gently press out, with a ladle or machine, the remaining buttermilk and any brine that will flow out with it, care being used not to work it too much. If this is done the butter has lost its grain and becomes salvey, and its keeping qualities are greatly injured.

Packing.

Pack in vessels that will impart no impurities to the butter. Fill within half an inch of the top. Place a thin cloth over the top.

NORTH CAROLINA TOBACCO.

Mr. T. L. Rawley, Representative from Rockingham county, presented to the Agricultural Museum a specimen of beautiful tobacco of his own raising. It sells readily at seventy-five cents per pound. Rockingham embraces some of the finest tobacco lands in the State, and is the leading county in this interest, as we learn from the returns in Col. Polk's office. The yield for the year 1877 is siated at 3,190,966 pounds. And in this connection another fact has been developed by these returns in the office of the Commissioner. He says that the total yield accredited to our State in the census of 1870 is about 11,000,000 pounds. He has already footed up nearly 17,000,000 pounds from partial returns from only seventy-eight counties, and three important tobacco counties are left out entirely. So we may safely assume that the yield in our State was not less than 20,000,000 pounds. Verily, Colonel Polk is correct when he says in his report that the foreigners are misled by the census reports.—*Raleigh Observer.*

OUR LOCAL ORGANIZATIONS.

AGRICULTURAL AND HORTICULTURAL SOCIETY.

ADJOURNED MEETING.

An adjourned meeting of the Agricultural and Horticultural Society was held Monday afternoon, March 17.

The meeting was called to order by the President, Calvin Cooper, esq.

The following members and visitors were present: Calvin Cooper, President, Bird-in-Hand; Henry M. Engle, Marietta; Levi W. Groff, West Earl; Henry Kurtz, Mount Joy; Joseph F. Witmer, Pequea; Dr. S. S. Rathvon, city; J. C. Linville, Salisbury; W. H. Brosius, Drumore; J. M. Johnston, city; Clare Carpenter, city; Peter S. Reist, Litiz; William McComsey, city; C. L. Hunsecker, Manheim; J. Hartman Hershey, Rohrerstown; Washington L. Hershey, West Hempfield.

Object of the Meeting.

The President stated the object of the meeting, and the Secretary also read so much of the minutes of the last meeting as referred to the object of to-day's meeting.

Dr. Rathvon spoke as follows:

When I, at different times, suggested the incorporation of this society, I had not in my mind the idea of making it a joint stock company at all—at least not until a necessity should rise for the issuing of stock. I believe it ought to be incorporated, in order to hold a legal ownership, as a society, in any property that might come into its possession. That it might be recorded in the archives of the county and the State as a legal institution, and become a responsible depository of such State and national documents as relate to the agricultural interests of the country. I only contemplated a charter granting the usual powers and privileges of such organizations, stating its name and objects. I am now a member of three incorporated societies in this city—the oldest of which was incorporated in 1828, the next in 1836, and the third one in 1862. The first two of these never issued stock, because there was no necessity for it; and the third one was in existence fifteen years before it issued certificates of ownership in its museum. All these societies own property amounting to thousands of dollars, although they commenced their careers on nothing; and I believe their existence this day is due to the fact that they became bodies politic in law and accumulated possessions. One of them acquired two thousand dollars as a legacy, which it never would have received, perhaps, had it not been chartered. The Berks and York county societies are incorporated, and so are the State Board of Agriculture and the State Agricultural Society, and perhaps many others throughout the State.

I do not suppose that the bare fact of incorporation is going to immediately increase the society into gigantic proportions, but I believe it will afford a more solid basis for increase and future development. Those that seek membership in it will feel more sensibly the permanency of the organization, and doubtless also they will take a greater interest in it.

It seems to me there is no other question but the bare merits of the case—without reference to stock or to exhibitions—that ought to enter into the discussion on a charter at this time. It will be time enough to learn to walk after we have learned to creep, although we have been a long while trying.

Henry Kurtz thought it was unnecessary to issue stock unless money was needed. If we have the power to sell stock we can do so when the necessity presents itself. If we need no money we will not be compelled to issue stock. He had spoken with a number of persons and found a general disposition to take the stock.

H. M. Engle was at a loss what to say about the stock feature. He thought the articles of incorporation ought to be as brief as possible. He was impressed with Dr. Rathvon's ideas on this question. The fear was that the stock might get into improper hands and turn aside the true intent of the society. The case presents some difficulties. He was not clear in his mind how the thing was to be managed.

Joseph F. Witmer thought the stock feature might be left out of the charter, and if its necessity was felt in the future it might then be applied for and be incorporated in the old charter. A charter can be amended after being granted.

Henry Kurtz thought this could not be done. The stock feature hurts nothing if in the charter. We need not avail ourselves of the privilege if we do not chose to do so; but should we need it, then it is ready to be made use of at once.

J. C. Linville thought there would be no trouble in getting a supplement to the charter of incorporation if it was wanted at any future time.

W. McComsey suggested that the charter of some of the other county societies be read, in order to throw some light on the subject.

Other Societies.

The secretary stated that there are fourteen county societies in the State that are chartered and nineteen that are not. He read that part of the constitution of the York county society as related to the officers.

The President called attention to the fact that the article adopted on this point by this society was more complicated than the one just read.

A motion was made to reconsider this section and passed.

H. M. Engle moved to adopt in its stead the article on this point in the constitution of the York county society.

W. McComsey thought the proposed plan threw too much power into the hands of the Board of Directors, instead of leaving it in the hands of all the members of the society. It seemed to him to centralize the power of the society in a few hands. He was not clear whether this plan was wise.

H. M. Engle thought the new scheme was decidedly preferable.

J. C. Linville thought there was little difference between the two. The President in the one was made elective by the society, and he preferred it to the other.

Article 5, adopted at the last meeting, was then rejected by a vote of the society.

The one proposed in its stead, being the one governing the York County Society, was then adopted.

The Incorporators.

The President made a motion that the Vice Presidents, Secretary and Recording Secretary be the officers of the chartered society until the next annual election.

Amended to include the President and two others in the number, and carried.

The present officers, with the addition of John C. Linville and Israel L. Landis, will constitute the Board of Directors and Incorporators.

Several other articles were also inserted, and the proposed charter was then adopted as a whole. It will be presented to the Court at once, and no doubt be granted.

The text of the document as adopted is as follows

Charter.

I. The name of the corporation shall be "The Lancaster County Agricultural and Horticultural Society." Adopted.

II. The purpose for which it is formed shall be to encourage and improve agricultural, horticultural, domestic and household arts, and any other matters pertaining to the interest of agriculture and horticulture. Adopted.

III. Its place of business shall be in the county of Lancaster. Adopted.

IV. The term of its existence shall be perpetual, subject to the power of the General Assembly, under the Constitution of the Commonwealth. Adopted.

V. The officers of the society shall be a President, two Vice Presidents, five Managers, a Recording Secretary, a Corresponding Secretary and a Treasurer, to continue in office for one year and until others are elected, all officers to be elected by ballot at the annual meeting, and the following are those chosen for the coming year:

President—Calvin Cooper, Bird-in-Hand, East Lampeter township.

Vice Presidents—Henry M. Engle, Marietta, East Donegal; Jac. B. Garber, Columbia, West Hempfield.

Recording Secretary—James F. Witmer, Paradise.

Corresponding Secretary—Johnson Miller, Litiz, Warwick.

Treasurer—Levi W. Groff, Bareville, West Earl.

Managers—Martin D. Kendig, Cresswell, Manor township; Wm. H. Brosius, Liberty Square, Drumore township; Casper Hiller, Conestoga Centre, Conestoga township; John C. Linville, Gap, Salisbury township; Israel L. Landis, Lancaster.

VI. The by-laws of this society shall be made by the members in good standing, at a general meeting called for that purpose, and shall prescribe the time and place of meeting of the society, the terms for the admission of members, the powers and duties of its officials and such other matters as may be pertinent and necessary for the business to be tranacted, provided that such by-laws are not inconsistent with this charter, the constitution and by-laws of the Commonwealth and of the United States.

VII. This society to have all the powers and authority, and be subject to the limitation and regulations of corporations of the "first class" under act of Assembly entitled, an act "To provide for the incorporation and regulation of certain corporations," approved the 29th of April, A. D. 1874, and its supplements.

A vote to adjourn was made and carried.

REGULAR STATED MEETING.

The Lancaster County Agricultural Society met in their room, in the City Hall, on Monday afternoon, April 7th, 1879, and was called to order at 2 o'clock. The following members and visitors were present: Calvin Cooper, President, Bird-in-Hand; Joseph F. Witmer, Secretary, Paradise; Levi W. Groff, Treasurer, West Earl; M. D. Kendig, Manor; Henry M. Engle, Marietta; W. H. Brosius, Drumore; Frank R. Diffenderfer, city; C. M. Hostetter, Eden; Tobias D. Martin, Warwick; Rev. S. M. Boyer, ———; W. W. Greist, city; J. M. Johnson, city; Clare Carpenter, city; Ephraim S. Hoover, Manheim; C. L. Hunsecker, Manheim; I. L. Landis, Manheim; Dr. S. S. Rathvon, city; Elam W. Eshleman, Paradise.

On motion the reading of the minutes of the previous meeting was dispensed with.

Amos L. Eshleman, of Paradise township, was proposed and elected a new member.

Report of Crops.

Mr. Brosius, Drumore township, said the wheat is not encouraging at this time, and the weather has been so cold that other things have not yet started.

Mr. Hostetter said the wheat crop in Eden township looks very encouraging. Grass is making its appearance, and timothy is getting along nicely.

Mr. Kendig, of Manor, reported the wheat crop as not looking very encouraging; it is short and thin. Grass looks better. Peach and pear buds look healthy. He stated that he had found that Pampass grass was not as hardy as stated in Vick's Catalogue report.

Mr. Cooper, of Paradise, said that the wheat needs rain. Peach buds are so far uninjured.

Mr. Engle, of Marietta, reported for East Donegal, that he did not think the wheat looked so poor as reported, considering the bad weather. It is too early to judge of the crop, and he thought a few weeks of such weather as this would make a wonderful difference. The grass crop promises well. The fruits are doing remarkably well.

Competitive Essays.

The committee appointed to decide on the merits of the competitive essays on the "Culture of Wheat," F. R. Ditlenderfler, William McComsey and Peter S. Reist, recommended the one written in pencil as deserving the premium. It proved afterwards that the prize essay was written by Henry M Engle, of Marietta. The other essay was written by John C. Linville.

Levi W. Groff answered the question, "With land and labor at present prices, can wheat be raised at one dollar per bushel?" After a short introduction, Mr. Groff proceeded to make a calculation, taking good land in the first place. He estimated the cost of raising an acre of wheat at $25.20, as follows. Interest on one acre of land at $150, $9; taxes, 50 cents; plowing and harrowing, $3.50; 300 pounds raw bone, at $30 per ton, $4.50; 1½ bushels seed, $1.50; drilling the seed, 50 cents; cultivating twice in the spring, $1.20; harvesting and threshing, $4.50. Against this he placed the product of the acre at 40 bushels, which will bring, selling the straw, $46, leaving a profit of $20.80.

He did not think the estimated yield was too large, but supposing it is a little too large there is room for deduction, and still leave a fair profit. Of course he proposed to cultivate his wheat in the spring, and based his calculation on the presumption that all wheat will be cultivated. From fair trials he had made, he was forced to conclude that on good land, using good fertilizer, the results will be as stated, and the land left in good condition for grass for years to come.

When wheat was well cultivated in France in 1877, a large farm was visited by Prof. Geo. H. Cook, of New Brunswick, N. J., who reported that on a field containing 275 acres the average yield was 44 bushels, and on another field containing 75 acres the average yield was 46 bushels. He thought the same thing could be done here.

Mr. Engle quoted the saying that figures won't lie, and said if Mr. Groff's basis is correct the conclusions are correct. He thought the production was rather high, but not too high. His expenses are not too high, and the speaker thought that Mr. Groff's calculations were fair.

Mr. Groff said that in his opinion the expense would be rather high for one acre, but when a large field is cultivated the figures would certainly be lower.

Mr. Kendig had made a calculation, and the figures corresponded favorably with Mr. Groff's. He estimated the entire cost of preparing ten acres at $34 or $3.40 per acre. But in his township they could not raise over 20 bushels to the acre, while Mr. Groff raised 40 bushels.

Mr. Engle was of the opinion that this was an important question, and deserved the attention of farmers generally. He differed a little with Mr. Groff when he says that his wheat stands better in consequence of cultivation; it is because it is sowed farther apart.

Mr. Hoover asked if any member had had any experience with Chester County Mammoth Corn, but no man answered.

Culture of Wheat.

Mr. Engle read his prize essay on the "Culture of Wheat," as follows:

The cereal receiving the title of "staff of life," should receive more than ordinary attention. In our best virgin soils, when properly prepared, it has hitherto scarcely ever failed to produce from a fair to what is considered a full crop, but after several years' cropping failures have been about as frequent as full crops, which was generally attributed to the favorable or unfavorable seasons. This has very commonly constituted the strong fort behind which the majority of farmers have and are still shelter-

ing themselves against investigating the real causes of failures, as well as of success. I would, however, not for a moment deny that the seasons have much bearing upon the success and failures of all crops, but at the same time we all know that in all seasons of general failures some fields produce full crops, while in the most favorable seasons there are always some failures. Now, these facts prove conclusively that either the soil, location, or cultivation, or all together, cause this great difference, side by side, in the same season.

If such results will not stimulate the tiller of the soil to trace effects to their true causes, and vice versa, an essay of this kind cannot be expected to accomplish the object. The object of your essayist is not so much to teach others just what to do in order to obtain regular good crops, as to set them thinking; for in all departments of life we have too many, who, instead of thinking, are simply aping.

The causes of failure are numerous, but soils being exhausted of their wheat-producing elements (or at least a portion of them) is one of the principal causes of failures, and to restore these elements should be the object of every sensible farmer.

To replenish the loss sustained by cropping, various methods are applied. Some claim barnyard manures as the best and only fertilizer worthy of his attention; consequently he is very particular not to let any straw pass from his farm, in order to increase his loads of manure, but forgets that his wheat, which contains the essential elements extracted from the soil, is very nearly all sold and transported to distant cities, or, may be, to distant lands, and none of its fertilizing properties will ever find their way back to their native soil.

As an offset to this great draft on their soil, many farmers feed their corn into stock on their farms, which goes a great way towards keeping their lands in fertile condition. Such farms almost invariably produce good corn, and also other crops, but their wheat crops frequently yield a superfluity of straw, while the grain is a short crop and inferior.

CLOVER AS A RENOVATOR.

Clover is no doubt one of the cheapest and best renovators of soils, and for corn is always beneficial; but while, when plowed down for a wheat crop, it usually produces good results in thin soils, in naturally strong soils it almost invariably produces an excess of straw and likely to lodge, while the crop of grain is short and inferior. Let it not be forgotten that clean, stiff straw indicates plump, heavy grain, and generally a full crop. Therefore in order to obtain a full crop of good wheat will also require stiff, heavy straw. It is therefore conclusive that in order to realize continuous good crops, where the essential fertilizing elements have been carried off the farm, they must be obtained from other sources. This brings up the question of special fertilizers, to which the progressive farmer must not shut his eyes; and I have only to say that he who will be a successful wheat grower must keep his soil supplied with all the elements necessary to produce perfection of both straw and grain, and if his barnyard manure does not contain all such they must be obtained from other sources. I am pleased to learn that the prejudice against special fertilizers is fast giving way. The chemical condition of the soil being right, the physical or mechanical must not be overlooked.

The best time to plow is still a mooted question, but the strongest testimony is in favor of early plowing, which allows the ground to settle while the surface is being cultivated, and should be in good, friable condition for seeding.

Manuring is also often in dispute, whether to plow it down or apply it to the surface, of which the latter method is fast gaining advocates, and for immediate effect is decidedly preferable.

Good seed is another essential to success, and while new kinds, or a change from other soils, often produce good results, the surer methods would be to select some of the largest and most perfect heads, and reject from these all inferior grains, as we do with seed corn. By following this every few years there need be no more occasion to change seed wheat than seed corn. Farmers may sometimes change to get another kind, but I have yet to learn of a farmer to change corn simply to get it from other soil. Were seed corn gathered promiscuously, like seed wheat, exchange of seed would, no doubt, be of some advantage, to keep it from running out, as the saying is, of wheat.

The best time for seeding is also an open question, but the most certain crops are produced in this section by having the soil in proper condition in every respect, and not to sow before the 15th or 20th of September; by adhering to this rule it is more certain to escape the Hessian fly, which is its greatest enemy.

Methods of seeding vary, but the drill has been in general use for a number of years, and is generally conceded to be superior to all other methods, although there are good authorities for broadcast. I am, however, strongly of the opinion that the general drill system is susceptible of much improvement. First, nearly all drills sow the seed in two narrow furrows, which place the rows in too narrow bodies to resist changeable winter seasons. Second, where the ground is loose the seed is put in too deep. Third, and greatest objection, the irregular depth which all drills sow, the shovels being immovable, and unless the ground is pulverized just the proper depth the shovels will be continually bobbing up and down, sometimes too deep and again above the ground.

The best and largest wheat crops that I have grown (and I have seen none better,) were sown with a drill with stationary shovels, three inches wide and eleven inches apart, from centre to centre.

After cultivation is the watchword now, and I will here predict that it will become general; but I will also predict that the coming drill will have stationary shovels, or at least,so arranged as to plant the seed of uniform depth, which is the only method by which seed will sprout and come up uniformly, as all planted seed should come up.

QUANTITY OF SEED.

That there is a general waste of seed, and often worse than wasted, has been demonstrated over and over again, and just as soon as farmers learn how to put their seed in the best physical condition, and will apply proper fertilizers in right quantities, and be particular in selecting their seed, as they do for corn, sow their seed at the proper time, and get drills that will sow a uniform depth and with wider drills, and will systematically follow after cultivation, then they will sow less seed and reap more wheat per acre, and have more uniform crops.

Mr. Linville's Essay.

The second essay on the "Culture of Wheat," written by J. C. Linville, was read by the Secretary. It was as follows:

First spread your manure, pulverizing or breaking the lumps so as to have it well distributed. It always hurts my eye to see manure flung around here and there, a forkful in a place. Of course if a very heavy coat is applied it does not require so nice spreading to make it cover the ground. If your soil is rich, it is better to apply a light coat and make it reach farther. Four loads to the acre, well spread, will benefit the crop as much as five or six loads thrown around in forkfuls, as is too often done.

PLOWING.

Having your manure out, the next thing is to plow it under. It makes little difference whether it is plowed in as soon as spread, or let on the surface a month or more. Much has been written by theorists about the escape of ammonia. The fact is there is, as a general rule, but little free ammonia in barnyard manure when hauled to the field, and if there was it would take flight immediately when spread,even before it could be plowed down. A good way to prevent the loss of ammonia (carbonate of ammonia) is to have a quantity of land plaster (sulphate of lime) on hand and apply some of it to the floors of your stables every time you clean them out. This is said to "fix" the ammonia. That is, the sulphuric acid leaves its hold of the lime and seizes the ammonia, forming carbonate of ammonia which is non-volatile. To prove that this is not mere theory, get some pulverized plaster, and when you clean your horse stable on a hot day, and the air is so redolent of hartshorn that you are almost strangled, sow a quart of plaster in each stall, and in five minutes the pungent odor will have gone. I once plowed a field covered with manure in the early part of August, with the exception of about an acre. This lay bleaching and roasting in the sun for a month—a plentiful crop of weeds grew up through it, and it was turned down in the beginning of September, and produced by far the best wheat in the field. It may be truly said that one experiment does not prove anything, but there can be no question but strawy manure is benefited by exposure to the sun. At the same time the soil is improved by the mulch.

As a general rule, early plowing is the best, but there are so many exceptions to the rule that it cannot be insisted on. When you are ready, and the ground is in a proper state of moisture, go to work and plow and pay no regard to the *signs*. The first thing in the preparation of the soil for wheat, or any other crop, is to have it well plowed. If this is not thoroughly done, no amount of after cultivation will remedy the evil. Bad and careless plowing is at the root of more slovenly farming than anything else.

In order to break the ground thoroughly we must have good plows. There are not any better adapted to our soils and suited to our wants than are made near home. I have long tried to get a steel plow that would "fill the bill," but I am now convinced that a chilled cast-iron mould will clean as well and last much longer than a steel one.

In regard to the much-vexed question of deep or shallow plowing, I think the almost unanimous voice of practical farmers is in favor of shallow or medium plowing. When I say shallow plowing I do not mean the skinning process practiced in some parts of the South. The Commissioner of Agriculture of the State of Georgia reports the average depth of plowing in that State to be *one inch*. Farmers in the sunny South must trust to Providence more than we. It has not yet been proven that a foot in depth is better than six or eight inches, and as long as the matter remains in doubt we will plow shallow or medium and save our teams.

CULTIVATING THE SOIL.

Having come to grief two or three times by cultivating the ground too much when in a dusty condition I hardly know what to say about its final preparation. I think there is not much danger of cultivating too much when the ground is moist. A safe rule is when the ground is dry *roll much* and *harrow little;* when the ground is moist and solid *harrow much* and *roll little*. The soil ought not to be disturbed when very wet or very dry, but we have no control of the weather and must shape our work accordingly. When the ground is not hard there is no better cultivator than the common tooth or spike harrow. The Thomas smoothing harrow is an excellent implement for finishing, but will not supercede the common harrow in hard, stubborn ground. If the soil is very hard it will require something of the shovel-harrow or the hoe-harrow species to prepare the seed-bed. A field in good order for sowing presents a firm bottom, a mellow surface to the depth of two or three inches, and a nice, even face.

SEEDING.

Have the ground properly prepared between the 15th of September and the 5th of October (don't wait on the moon), take your drill—the "Farmer's Friend" and "Buckeye" are good machines—and drill in your wheat to the depth of one and one-half inches, and at the rate of one and one-half to two bushels per acre.

THE RESULT.

If the fall is favorable and the winter not too severe, and the spring neither too wet nor too dry; if tornado, nor hail, nor mildew, nor rust destroy it; if midge, nor Hessian fly,nor any other of the legion of insects that prey upon wheat, molest not the crop, you may harvest a crop of fifteen to forty bushels per acre. One or more of these calamities will probably come and the balance will be on the wrong side of the account.

In this article I have not touched on the question of spring harrowing. I leave that to our friend, L. W. Groff.

Mr. Hoover called attention to one point in the first essay as deserving particular attention, the recommendation of wheat with strong straw for general culture, and spoke at length on the subject.

The Hessian fly was next touched upon, and Dr. Rathvon explained some of the habits of this pest, upon which several members followed in discussing the subject. In answer to the question whether two broods of the fly could be raised in one season, he answered negatively.

Food for Hogs.

Does it pay to chop feed for hogs? was answered by Joseph F. Witmer, who told of some experiments at the Michigan Agricultural College. These experiments, together with his own experience, led him to believe that it was decidedly profitable to do so.

Novelty in Fruit Culture.

President Cooper presented a plan, prepared by a learned Russian, Augustus F. Newnaber, of Chester county, showing how to raise peaches and other fruits without stones or seeds. Also how to raise fruit with one side sweet and the other side sour.

On motion a vote of thanks was tendered to Mr. Newnaber, and it was resolved to place the plan in the library of the society.

A committee of six members, M. D. Kendig, Jos. F. Witmer, Henry M. Engle, E. M. Eshleman, C. M. Hostetter and Ephraim P. Hoover, was appointed to make experiments in the matter.

Dr. Edge to Lecture.

Mr. Engle stated that he had written to Dr. Thomas J. Edge, Secretary of the State Board of Agriculture, and that gentleman had promised, if possible, to be present at the next meeting and deliver a lecture.

Adjourned.

POULTRY ASSOCIATION.

The Lancaster County Poultry Association held their monthly meeting in City Hall on Monday morning, April 7, 1879, and was called to order by President Tobias. The calling of the roll showed the following members and visitors present: J. A. Stober, Schoeneck; Rev. D. C. Tobias, Litiz; Tobias D. Martin, New Haven; W. J. Kafroth, West Earl; T. F. Evans, Litiz; G. A. Geyer, Spring Garden; J. B. Lichty, city; W. A. Schoenberger, city; F. R. Diffenderffer, city; J. M. Johnson, city; J. F. Reed, city; Charles Lippold, city; Amos Ringwalt, city; S. N. Warfel, Strasburg; Henry Wissler, Columbia; John Huber, Warwick; Jacob A. Buch, Litiz.

The reading of all except the most important part of the minutes of the previous meeting was dispensed with.

Some discussion ensued as to who was to pay the janitor for services rendered in cleaning the room. It was argued by some of the members that this was included in the rent paid to the Agricultural Society, and on motion the matter was referred to a committee of three, who were instructed to present the matter to the Agricultural Society. The committee is as follows: Simon P. Eby, W. J. Kafroth and Joseph F. Witmer.

Preserving the Proceedings.

President Tobias called Vice President Geyer to the chair, and made some remarks on preserving the documents of the society. THE LANCASTER FARMER is not patronized as it should be. He thought that if arrangements could be made to have the proceedings published in this journal, thus having them in book form, it would be to the advantage of the members and of THE FARMER, which would obtain a large number of additional subscribers.

Mr. Lichty had thought it would be agreeable to all concerned to have the answers to questions written out in full, and placed among the archives of the society. He did not know of any particular benefit to be derived from it.

Mr. Kafroth said that his plan for preserving the proceedings was to clip them from the daily papers and paste them in his scrap book.

New Members.

New members were proposed and elected as follows: William Beates, Spring Garden; S. W. Heinitsh, city; Dr. M. W. Hurst, West Earl.

Money in the Treasury.

Mr. Evans, the treasurer, stated, in answer to a query, that he had received $36, paid out $9.20, leaving $26.80 in the treasury.

How Long will Eggs Retain their Fertility.

Mr. Ringwalt answered the first question, which was, "How long will eggs retain their fertility?" He said it is hard to tell exactly how long they will retain their fertility. He had seen eggs three weeks old yield a fair percentage, but raisers like to set their hens as soon as possible. If kept in air-tight vessels eggs will keep three weeks. He had read of a case where eggs found in a ruin one hundred years old had been hatched, but he was a little skeptical on this point. He believed nature gives a hen 30 days in which to lay 20 eggs, and 21 days in which to hatch them.

Mr. Stober asked Mr. Ringwalt if it was his opinion that eggs would keep longer if deprived of air, and Mr. Ringwalt answered in the affirmative.

Mr. Evans, last spring, sent to Ohio for a setting of eggs. When received some of them showed by dates on the shells that they were over four weeks old. He got five chicks out of fourteen eggs, the chicks coming from the freshest eggs.

President Tobias thought a good deal depended on where the eggs are kept. Believed eggs are injured more by the condition in which they are kept than by length of time.

Mr. Geyer, last spring, sent a setting of fourteen eggs West, which were divided. One lot of seven was used immediately and five chickens were raised; the other lot was not used for three weeks and not one chicken broke the shell.

Mr. Warfel has kept eggs five weeks and all were hatched, and again had tried pullet's eggs, not getting three pullets out of a dozen eggs.

Mr. Lichty explained the uses of an egg tester, by which, within 48 hours after the hen commences to set, it can be told whether the egg is fertile or not.

Mr. Long had heard of a setting of Buff Cochin eggs, which, after coming across the ocean, were put under a hen. Eleven out of the thirteen were hatched.

Packing Eggs.

"What is the proper mode of packing eggs?" had been referred to Frank B. Buch, but he was not present.

Messrs. Ringwalt and Stober had received eggs for hatching which were packed in small baskets with hay placed in them, and were satisfied that this was a good way to do it.

Mr. Geyer got two lots of duck eggs packed in sawdust in boxes, and nearly all of the eggs were hatched.

Mr. Warfel had received eggs from Canada packed in sawdust, but got no chickens.

Mr. Long related his experience in importing eggs. Sent to England for Buff Cochin eggs, which cost him $17.25, but he got no chickens.

Mr. Tobias asked if eggs should be placed on end or side.

Mr. Geyer's duck eggs had been packed with side down; Mr. Ringwalt thought it made no difference how they were placed, and Mr. Warfel and other members agreed that they should be placed small end down.

Mr. Long thought they should be placed butt end down if to be kept any time. If they are only sent a short distance or kept a short time, it does not matter how they are placed.

Business for Next Meeting.

What is the best method of testing the fertility of a newly laid egg? Referred to Tobias D. Martin.

How often should fresh blood be introduced into a poultry yard? Referred to S. N. Warfel.

Members of the Society.

At the request of one of the members, Mr. Lichty read the list of members who had paid their dues, 39 in number, and a list of those who had not paid about 20 or 25.

Pullets' Eggs.

Mr. Warfel asked if any member had succeeded in obtaining chicks from the eggs laid by a pullet. He had never succeeded in getting any.

Mr. Diffenderffer stated that from his first hatching he had secured 9 chicks out of 13 eggs, and from his second hatching 10 chicks from 14 eggs.

Mr. Ringwalt had found that pullets' eggs hatched much better if the pullet was with a two-year-old rooster.

Adjourned.

WARWICK FARMERS' CLUB.

The Farmers' Club of Warwick township met at Uriah Carpenter's residence, March 8, 1879. The minutes of last meeting were read and approved.

It was proposed to make this organization a permanent one, whereupon Uriah Carpenter was elected President; John Grossman, Vice President; and S. M. Carpenter, Secretary, for a term of six months.

It was moved and seconded that a committee of three be appointed to draw up a constitution and by-laws. The President appointed the following persons as the committee: D. B. Becker (chairman), J. B. Becker and J. K. Huber.

It was also agreed upon that the next meeting of this club be held at the same place on Saturday, March 29.

As there were some here that had not been here before, the President again proceeded to an explanation, namely, the object of the meeting; the good there can be derived therefrom; that there is no secret about this meeting, therefore public to all.

It was moved and seconded that the first question for discussion be, "When is the best time to sow oats, and how?"

The question was opened by John Grossman, making a lengthy speech on his own experience in sowing oats.

This subject was spoken on by nearly all the members, and I think they will agree not to sow until the soil is in good condition.

It was agreed upon that broadcast is the best method for sowing.

Peter Wallason stated that the best way to sow oats even is to walk in the middle of the land furrowed for sowing, and throw to the right and left.

The soiling question, which was continued from last meeting, was next taken up, "how to raise double crops."

It was agr eed upon that the limited time of ten minutes be extended to each speaker.

An essay was read by John Grossman, on the subject of "feeding stock."

J. B. Becker thought of feeding stock in the stable during summer, instead of turning them into pasture. He thought by turning them into pasture they will eat an hour or so, and during the hottest part of the day will, on account of the flies, go from one shade tree to another, and therefore spoil more pasture than they will eat; but by feeding them in the stable they will requir less food and besides save the manure.

J. K. Huber thought it is no benefit in stabling stock; he thought it takes less food if given to them in their natural way by grazing, and the manure will still remain in the fields—that is not to leave them out all day—only an hour or so until done grazing; then take them home, thereby not spoiling much pasture.

Israel Becker thought that cutting fodder is of no benefit, for there is nothing left to accumulate the manure heap.

Uriah Carpenter said that stabling stock is profitable, thereby saving manure, fences and pasture. He thought if having some person to care for the stock, and doing some other work besides, would probably earn one-half the salary paid to him.

It was moved and seconded that the questions, "Is it beneficial to educate our sons and leave them go from home or keep them on the farm?" and "How shall we make our farms pay?" were questions adopted for discussion at the next meeting.

Adjourned. S. M. CARPENTER, *Sec'y.*

FULTON FARMERS' CLUB.

The March meeting of the club was held at the residence of Wm. P. Haines. Members present: E. H. Haines, F. Tollinger, J. R. Blackburn, Lindley King, Grace A. King, W. P. Haines, C. S. Gatchell and M. Brown; visitors by invitation, Timothy Haines, Dr. C. H. Stubbs and Joseph P. Greist. There being no agricultural nor horticultural specimens to exhibit the club proceeded to asking and answering questions.

Montillion Brown: Do any of the members intend to manufacture their own phosphate this spring? Several members stated that the benefit they derived from this article was so small that they were of the opinion that it was not profitable. Several receipts were spoken of, some of which cost as low as $16.50 per ton.

F. Tollinger: When is the proper time to graft cherry trees? All the members favored early grafting. He was recommended to cut the scions in February, and put in the stalks in the early part of March, although some of the members had succeeded well as late as May; but at this time it is necessary to be careful not to raise the bark of the scion.

E. H. Haines: What variety of cherries do the members favor grafting?

F. Tollinger favored the "Governor Wood," but found the natural fruit more hardy and more prolific bearers.

Dr. Stubbs: Does any one present know of any stimulant which, if applied to cherry trees, will make them bear?

Some of the members had tried boring and plugging sulphur in the holes. Club adjourned for dinner.

Afternoon Session.

After reviewing the building and part of the farm, the club convened, when the minutes of the meeting held here one year ago were read and criticism called for. The members noted no change; the stock looked well cared for, and was consequently in good condition.

Martha Brown noticed the excellent quality of the corn prepared for dinner, and asked how it was cured. She was informed that it was from Baker's canning factory, near Aberdeen, Hartford county, Md.

Literary.

A selection was read by Mabel Haines entitled, "The King's Gift;" one by Alla Gregg, entitled, "The Sea Nymph;" selection by Mabel A. Haines, entitled "The Farmer's Lot;" one by Mary A. King, "Fifty Years Ago;" recitation by Carrie Blackburn, "The Teetotal Mill."

Some of the young ladies in attendance furnished the club with some choice instrumental and vocal music.

Discussion of Regular Question.

Have farmers, by experiments they have made, arrived at any uniform conclusion from the actual results in the subject experimented with?

Mont. Brown thought the farmers had, to a certain degree, but there were subjects which had been experimented on for the last fifty years, and they were still unsettled. We have found that to grow cheat we must sow cheat, and that it is not a peculiar growth of wheat, as was formerly supposed; that potatoes of different kinds, planted in the same hills, would not mix, and that half-starved cattle would not pay.

E. H. Haines: We have never decided by experiment whether the modern plan of drilling wheat is an improvement on the old style of broadcasting it, and in the matter of raising potatoes one man recommends the planting in sod, turning the sod over the potato; another to plant on corn stubble and manure in the row, some under and some on top. Good crops had been raised each way and poor ones also. In time of planting one will recommend early and another late planting, and this is attended with the same results; and in feeding oats straw to our milch cows, some recommend and others discourage; even the grain is condemned by some as food for cows, but all were of the opinion that a liberal supply of nutritious food would hurt no animal. As to the manure and quantity of lime as a fertilizer, some preferred spreading on sod and turning it under; others to spread on plowed gr ound, in quantities varying from fifteen to fifty bushels per acre. Many of these questions he thought might be settled by actual experiment, but others were subject to the condition of the ground, atmospheric changes, etc., which, unless there was a uniformity in these particula:s, would never be permanently settled.

Dr. Stubbs agreed with E. H. Haines in the effect of atmospheric changes on vege'ation, and thought agricultur would never be an exact science while we are amenable to the weather His experience in potato culture was, that if well fertilized and properly tended you were certain of a good crop; but he could see no reason why such questions as the manner of settling milk, kinds of churns, breed of cows and many other questions relating to dairying are not settled.

Election of Officers.

The term of the officers having expired, the club elected the following for the ensuing year: President, F. Tollinger; Secretary, Montillion Brown; Treasurer, Joseph R. Blackburn; Librarian, Wm. P. Haines. The club then adopted the following question for discussion at the next meeting: Is the advance made in labor-saving machinery accompanied by a disinclination to labor? To furnish literary exercises for the next meeting, the President appointed Sadie Brown, Irene Tollinger, Mary A. King and Edwin Gregg on essays and selections, and Mabel Haines, Mabel A. Haines, Carrie Blackburn and C. S. Gatchell on recitat.ons. Club then adjourned to meet at Wm. King's next month.

LINNÆAN SOCIETY.

The stated meeting of the society was held on Saturday, March 29, 1879, President Rev. J. S. Stahr in the chair. After the preliminary opening the

Donations to the Museum

were examined and found to consist of a fragment of a Gneissic Rock, said to have been struck from the veritable flat rock near Bloody Run, in the vicinity of Richmond, Virginia, upon which the head of Captain Smith was laid to have it spoiled by the Indian's club, when the lovely Pocahontas came to his rescue. (?) So says the sender, Mr. Augustus Bischoff, of this county. He also sent with it a relic of the Libby Prison—a fragment of an ordinary brick; also, a portion of a geode, a hollow nodule of Hæmatite, a native oxide of iron, much in form of a thick bivalve shell. Mr. Gabriel Russel sent a piece of quartz, containing sulphuret of nickel, found in Bart township. A fine specimen of "Ruby Blend," found in a garden in Marietta, per Mr. John K. Fitler. This is much like that found in New Jersey, and may have been accidental in this latter locality. Samples of sulphuret and carbonate of copper found in York county, Pa. These were contrasted with like ores from Brazil, South America, by way of comparison, in the same box. Mr. John B. Kevinski also made a special deposit of his case of thirty drawers, containing numerous minerals, fossils and corals, and a valuable acquisition to others already on deposit. Missiles of various forms added to our former collection of war relics, from Antietam and Harper's Ferry, from D. McN. Stauffer, and others from the latter locality, by Dr. S. S. Rathvon. Specimens in alcohol, a domestic mouse, by J. W. Hubley. This had an excessive fungoid or scrofulous growth on the head, over the eye. It seems many mice about the city are affected with this strange disease, hardly understood, and must be bad on the mice, as it is a disgusting sight, but not the less curious, and should be inquired into. A specimen of a rare creature sent to Mr. Rathvon from Manatee, Florida. This was a desirable send, as it fills the link of our *Pedipalpi*, and comes near the figure of the *Phrynus reniformis*, but may be a distinct species. Mr. Stauffer took a drawing of it, and one copied from an English work, a West India species, which differs in the arrangement of the eyes. This paper has remarks upon it by Mr. Stauffer, supplemented by Dr. Rathvon, marked No. 514. The large bean pod sent to *The New Era* from Florida, and left with Mr. Rathvon, was submitted to J. Stauffer for a name, being of large size and the winged sutures so peculiar. After close scrutiny with all the Leguminosæ known or described as growing from Mexico to the Northern United States, not one would compare. A drawing sent to Prof. Grey was at once recognized and named as the *Canavalia Obtusifolia* from Malabar, not indigenous to the United States. A fine drawing of the bean and pod, with remarks upon the subject by Mr. Stauffer—paper No. 515—was deposited with the now shrunken, dried pod and red beans of the same. Mr. Charles A. Heinitsh also presented specimens of a new remedy for pulmonary diseases, from Santa Anna, North California, called "Yerba Santa," officinally *Eryodiction glutinosum*, per C. A. Moschar. The leaves a lanceolate serrate, thick and glutinous when green; gumlike incrustation when dry.

Historical Section.

Four envelopes, containing over fifty clippings of sundry historical and biographical reminiscences, per S. S. Rathvon.

Library.

Twenty-five volumes of the Geological Survey of Pennsylvania, with a letter from Dr. Wickersham; a treatise on insects injurious to potatoes, by Prof. Riley, donated by Prof. S. S. Rathvon; bulletin of new fishes, by Messrs. Good and Bean, Smithsonian Institution; donation from the publisher, G. P. Putnam's Sons; the biography of Lieutenant-Colonel C. Anderson, a soldier and pioneer of the Revolution, which contains much of historical value; part III. for October, November and December, 1878, proceedings of the Academy of Natural Sciences, Philadelphia; from the Department of the Interior, about the "Turtle Back" Indians of the District of Columbia, by W. J. Hoffman, M.D.; on the Crinoids, by Fred. Brau, Cincinnati, Ohio; Southeran's Price Current of Literature; proceedings of the Kentucky Historical Society; sundry book circulars; THE LANCASTER FARMER for March.

Paper Read.

No. 516. Dr. Rathvon read a paper on the *Pedipalpian Arxchnids*, showing the gradation between spiders and scorpions.

New Business.

The necessity of book shelves was discussed, for the third floor room. On motion, the treasurer was authorized to have the shelves made, and the *Journal of the Academy of Natural Sciences* and THE LANCASTER FARMER bound.

Scientific Gossip.

On a letter read by Rev. J. S. Stahr, from Prof. Porter, about a species of Equicetum found on an island near Safe Harbor, supposed to be a new species for the county. About the diseased mouse, Dr. Davis, without a close inspection, said he would not express an opinion as to the excrescence, but would like to have time for a closer inspection of a case before put into alcohol. After a pleasant and profitable meeting the society adjourned until Saturday, April 26, 1879.

ENTOMOLOGICAL.

The Imported Currant Worm.

(*Nematus Ventricosus.*)

It is less than twenty years since this exceedingly injurious enemy of the gooseberry and currant was first introduced into the United States. It seems to have been first introduced from Europe with some gooseberry bushes imported by Messrs. Ellwanger & Barry, of Rochester, N. Y. From there it spread in various directions at the rate of about twenty-five miles a year, till a large part of the Northern and Eastern States is completely overrun with it. It is probably also that this same insect has been introduced by importation to other points, from which it has spread as from the place named above. Wherever it has been introduced, whether from abroad or from some other part of this country, it has spread with great rapidity, and wherever it has gone it has laid the currant and gooseberry bushes under contribution to such extent as to almost entirely prevent the further production of these fruits. It often keeps the bushes so completely stripped that in two or three years they are killed. This insect belongs to the saw fly group, and is of the order of clear-winged flies. The most of these are strong vegetable feeders during the larval period of their existence.

This group of insects usually have, during their larval state, eighteen, twenty, or twenty-two legs, which is a greater number than the larvæ of moths are supplied with; they generally number about sixteen. The eggs from which the insect under consideration is hatched, are laid along the principal veins on the underside of the leaves of both currants and gooseberries. In a few days there hatch out from these eggs small, twenty-legged larvæ. They are of a green color, with a black head and numerous black spots on the body; but after the last moult all the black disappears except the large, eye-like spots on each side of the head. After the moult the entire body is of a green color, except that the first and last two joints are of a yellow color. There is quite a difference in the appearance of the sexes of this fly in its perfect state. The general color of the body of the female is a light honey yellow, and that of the male is black. The female is considerably longer than the male. The difference between the sexes is so great that they have been described by able entomologists as two different species. When about three-fourths of an inch long the larvæ attain their full growth and leave off eating; they then go into the ground, generally under the bushes on which they have fed, or in some cases they simply hide under the leaves that lie on the ground. They here spin a silken cocoon in which they go into the pupa state. In some cases they are said to spin their cocoons on the open bushes. The eggs are laid for the first brood during the fore part of May. These go through all their transformations and come out as perfect flies about the first of July; sometimes a little earlier and sometimes later. These immediately proceed to pair and lay eggs for another brood, which, on account of their great numbers, are even more injurious to the bushes than the first brood was.

The insects of this last brood remain in the pupa state till the following spring, when they come out perfect flies ready to continue the propagation of the species. Fruit grown on bushes infested with these caterpillars has been reported poison, but such is not the case; on account of the loss of foliage the bushes do not mature the fruit properly, and it is therefore not a very wholesome article of food. This insect has proved a great scourge to small-fruit raisers wherever it has been introduced. They multiply so rapidly that in but a few years after introduction they will completely strip the foliage from the largest plantation.

When the brood is first hatched the young larvæ remain together on the under side of the leaf, through which they eat numerous small holes. Their presence may be readily detected by these holes, and the leaves should be gathered and burned. By such thoughtfulness and care at the proper season they may be kept in check by this method. But when they have become larger and scattered over the bushes, other means must be employed for their extermination. Probably the best remedy in this case is powdered hellebore sprinkled on the bushes while wet with dew. Paris green will probably prove quite as efficient. Of course after the use of these active poisons the fruit cannot be used with safety. I have found fresh, unleached wood ashes a successful remedy. Strong soapsuds are also good to expel them from the bushes. So destructive are these insects that, if allowed to multiply unchecked, a few years will be sufficient to drive the currant and gooseberry from the country. Every person who has a bush of either of these fruits should unite in an early, persistent and determined war of extermination of these very injurious enemies of these useful garden fruits. Such a course well followed would soon result in such a reduction of their numbers that their ravages would no longer be seriously injurious.—*L. J. Templin, in Practical Farmer.*

The Tobacco Worm.

This insect (*Macrosila Carolina*), as is well-known, belongs to the class of hawk moths, (*sphingidæ*), large, beautiful moths, that are frequently seen hovering like humming birds over the blossoms of the petunia and other sweet-flowering plants just at sundown or in the deepening twilight. They scarcely ever alight, but flit away from flower to flower, very shy and difficult to approach, flying only at night, and hiding usually during the day. After pairing, the female lays her eggs on the leaves of the tobacco plant in the species under consideration. Another species feeds on the tomato, and is more generally familiar than the tobacco worm. Another species feeds on the leaves of the potato, and is also quite common. The habits of all the species are familiar, and most people have seen the great, savage-looking worm; a few have admired the perfect moth, and still less know the pupa in its mahogany-colored case, with the long proboscis of the perfect insect inclosed in its case and folded over like the handle of a pitcher. Farmers and gardeners are familiar with these pupæ, but few know them to be the destructive tobacco or tomato worm.

There are but few birds that will eat or even touch the tobacco worm, and turkeys are the only domesticated fowl that will eat them to any great extent. The principal remedy to prevent their ravages is hand-picking—taking the worms from the leaves and crushing them. A flock of turkeys will materially assist in this business. Under a correspondent to the Clarksville *Tobacco Leaf*, recommends poisoning the parent moths, with a solution of "cobalt" (oxide of arsenic and cobalt). The sphinx moth usually gets its food from flowers like the petunia, "jimpson weed," (*datura stramonium,*) and the latter grows freely in localities favorable to the cultivation of tobacco.

The writer mentioned says that the "cobalt is most conveniently used by melting an ounce in a pint of water and adding half a pint of liquid honey. The bottle containing this should be kept out of the reach of children, as a number of cases of poisoning have occurred owing to negligence in this particular. An ounce phial, with a cork stopper, into which is inserted a small quill, is suitable for putting the poisonous solution in the stramonium flowers. The best time for doing this is every evening about sunset. Two or three drops are sufficient for one blossom. Stramonium has a tubular blossom, which opens about an hour before sunset and remains open until after sunrise the next day, when it closes, withers and dies. Every evening there is an entirely new blossom. It is a mistaken notion that the cobalt kills the blossom. The moth sucks the poison by means of its long proboscis, and is killed. The time required to produce death depends upon the amount taken. I have often seen them killed by the poison in fifteen minutes.

"One or two dozen stramonium plants should be set in a rich, moist spot on the tobacco ground early in the season—say in May or June. All others in the farm should be cut down, for the moths prefer to feed from the unmedicated blossoms. In order to work the destruction on the moths effectually, the planters throughout every neighborhood should use the cobalt as directed. Planters should not rely too exclusively upon this preventing them from finding worms on their tobacco. The moths often do not get enough of the poison to produce death the first dose, and are apt to shun it afterwards, unless it be disguised by using another sweet instead of the honey."

The Utility of Entomology.

The science of entomology is daily gaining importance in a practical sense. The term "bug catcher," as opprobriously applied to its professors, carries with it, to intelligent minds, a far higher consideration than that of millionaire. When Henry Edwards—one of the most celebrated modern entomologists—sought to dispose of his admirable collection, worth over $25,000, for $12,000, he was snubbed by the ignorant and unreflecting who wondered what use could be made of a vast array of dead bugs. But within a few days new and hitherto unclassified insects of that sort have greatly aroused the fears of that bigger, self-conceited bug, called man. The Connecticut farmers complain that their corn is being devoured in great quantities by a bug not before known. It is described as a "good-sized, six-legged, evil-looking bug, rather larger and much flatter than the potato bug; in color brown, having a wide body and a very small head, provided with a pair of small feelers." From Santa Monica comes the report of a marine worm that has destroyed, or greatly injured, the wharves at that place. It is described as being very destructive, and rather more rapid in its operations than the ordinary *teredo navalis*. The services of a first-class entomologist would probably point out some way for preventing the depredations of these fearful pests.

Remedies Against Worms and Insects.

A correspondent says: The insect question is a very important one; they will destroy us if we don't destroy them. The following modes I use as occasion demands, and never fail: Melon and cucumber bugs like radish leaves better than any other kind. I sow a few radish seeds in each and never lose a plant. Earth-worms, cut-worms, white grubs and, in fact, all soft-bodied worms, are easily driven out by salt sown broadcast. You can do no harm with ten bushels to the acre, but a half bushel is ample. Dry slacked lime is also effectual. Potato bugs find their "anti" in Paris green, one tablespoonful; flour, ten spoonfuls; water, one bucket; mix and keep mixed as the Paris green settles; apply with a watering-pot. For cabbage-worms apply dry salt if the plants are wet, or strong brine if they are dry. Turnip-flies are destroyed by fine slaked lime dusted over the field. But the whole tribe of depredators are wonderfully kept down by making friends with the birds. They are the natural enemies of all insects, worms, grubs, &c. In fighting vermin we must not try to oppose nature, but to rather follow her plants, and assist her if she fails.—*Western Farmer.*

AGRICULTURE.

Harrowing Wheat in Spring.

The *Country Gentleman* publishes an article on the above subject from Mr. Franklin Sherman, of Ash Grove farm, Fairfax county, Va., which is of particular interest. Mr. Sherman, says: "P. Y. wanted to know if wheat or rye would be benefitted by harrowing in the spring, if it was sowed broadcast and covered either with the harrow or plow? If I have not heretofore occupied too much of your space on this subject, will you allow me to say to him that it will not hurt either the wheat or the rye, however sowed or however covered. Only two precautions I have found desirable to observe: Do not harrow when wet; and harrow before the stalk is formed.

"I have no hesitation in offering P. Y. this advice, as I have done the same thing myself, and with only good results. After experimenting sufficiently to satisfy myself on this point, I (two years ago) harrowed a field of wheat and rye which had been sowed broadcast and covered partly with the harrow and partly with shovel plows. The result was most satisfactory.

"One other item is of importance—harrow thoroughly, but sufficiently to break and pulverize the whole surface. Advice given by the editors of a paper like this should, above all other things, be *safe;* and in this case as in others, that given P. Y. is eminently so; when you say provided such a harrow is used as will not injure the plants. Will you allow me to say to him, and to all others thinking of harrowing their fall grain this spring, it is not necessary to get a 'smoothing' or sloping-tooth harrow to do this work.

"A proper harrow for the purpose is a sharp, upright, square-toothed one, of medium size-weight, with teeth three-quarters of an inch of one-inch iron, and projecting six to eight inches below the frame. If

found too light for thorough work it can be weighted enough to do it. I mention this kind first because it is the one I have used, and which has served me well; second, the sloping-toothed harrows. These have been so widely recommended and advertised for this special purpose as to need no words from me. I have, however, seen grain fields so crusted in the spring that an ordinary smoothing-harrow would not thoroughly break up the surface, and it is just at this time that a thorough harrowing is most beneficial.

"The fact I would like to impress is, that harrowing need not be omitted for lack of a certain kind of harrow. Nine times in ten the same harrow used to prepare the ground for sowing the grain will be equally useful in cultivating the grain in the spring. The proper time for this work is approaching, and if every farmer could be induced to harrow the land across his wheat field and note the result carefully, I think the practice would become universal in two years."

How to Grow Broom Corn.

Broom corn should be planted in the spring, about the same time as Indian corn, on good ground that has been thoroughly pulverized with the harrow. Mark out your rows three and one-half or four feet apart. Sprinkle the seed as evenly as you can by the hand; or what is better, use a common garden drill. This will save a great deal of thought. Cover by passing over a light one-horse harrow, going twice on the row if the ground is hard or cloddy. After it is up about two inches harrow with a two-horse harrow, going twice to the row. Don't be afraid of tearing it up, as the great fault with most people is in planting too thick. This kills the weeds and gives the corn a start. After this it requires the same cultivation as other corn. When it begins to shoot out in head go over and bend down all that is fairly out, to keep from getting crooked. This operation will have to be performed several times. When the seed is nearly fit to begin to cut. First cut the brush from two rows; cut just above the last joint; take off the leaf, then cut the stalks from two rows; lay them crosswise, so as to make a bed that will keep off the ground; lay your brush on this bed, which will hold the brush from eight or ten rows; let it lie in the sun two or three days, then tie up in bundles and stack in round stacks, putting ten or twelve in a stack; cover this stack with stalks, tent fashion, making it tight at the top, but so the air can pass through the bottom. In this manner it should remain two or three weeks, until thoroughly dry; then you may haul to the barn and take off the seed. This operation is best and quickest done by using a common threshing machine. Take off the top and have a boy to hand you the brush, taking as much as you can hold in one hand at once. One man and a boy can clean several hundred pounds a day in this way. There are several varieties of broom corn, but the evergreen is much the best, as it yields more both in seed and brush than any other, and is worth twice as much in the market. From two to four quarts of good seed will plant one acre, yielding on good ground seven or eight hundred pounds of brush and forty bushels of seed, which is nearly equal to corn for feeding purposes. Flat, loamy or river-bottom land, is the best for broom corn; but any good corn land will do, giving the preference to corn stubble or clover sod.

Salt as a Fertilizer.

For sometime much attention has been paid to the subject of sowing salt on grain. The effect of salt is to stiffen the straw and prevent the wheat from lodging. It sometimes has the additional effect of producing a clear light-colored grain. Some farmers sow as much as a barrel per acre; one or two bushels will generally be sufficient. An English experiment made on the farm of the Royal Agricultural Society of England is as follows: An acre of wheat dressed with three hundred pounds of common salt yielded thirty-nine bushels of grain, with a proportionate amount of straw; while an adjoining acre left unmanured, produced only twenty-nine bushels per acre, with the straw imperfectly developed. The entire cost of the crop is not stated, but this experiment shows that the additional ten bushels resulting from the salt were produced at a cost of thirty cents each. In another case a piece of ground intended for wheat was plowed the preceding fall, and again in May, when it was sowed with salt and afterward plowed before seeding. On the 1st and 2nd of September wheat was sown at the rate of two bushels to the acre. The crop when harvested yielded, according to the estimate of the owner, Mr. John Parks, not less than forty bushels of grain to the acre, with a luxuriant growth of straw.

Rolling Grain in the Spring.

If farmers would look at the theory of rolling the wheat and rye fields in the spring it would be resorted to much more frequently than it is. Occasionally the winter and spring have been so favorable to these crops as not to render it necessary. But in three seasons out of four it is necessary and doubtless adds considerably to their productiveness. The thawings and freezings of the ground, throwing or spewing out the roots and exposing them to the drying winds of February and March, very seriously affect the grain. Passing a roller over as soon as the soil is fit to go upon, presses back the roots into their beds, and gives them a fair grip again upon the supports on which the crop must depend. This must be apparent to every one who will look at its operation. We have no doubt that rolling clover fields, that have been badly thrown up by the frost, would also have a most beneficial effect.—*Germantown Telegraph.*

Use of Lime.

Prof. Caldwell reasons in this way in the New York *Tribune:*

"Hence the first and one of the most important rules to be observed in the use of lime is that it should be applied in these large doses only to soils comparatively rich in humus, or strong clay soils rich in finely divided silicate. It has been proved by experiment that lime will convert plant food from the insoluble to the soluble forms in either case. We find the proverb current in France and Germany, as well as in our own language, that 'Lime without manure makes the father rich but the child poor;' which means plainly enough that not only should we start with good soil in using lime, but should maintain its good condition by the liberal use of manure; and we find that whenever, in this country or elsewhere, lime is used intelligently, manure is used freely."

Corn Culture.

"The suckers," says H. M. Engle, "should, under all circumstances, be taken off before they appropriate too much substance which the main stalks should receive, but under no circumstances allow suckers to tassel, for, whatever pains may be taken to raise or keep corn at its greatest perfection by the selection of seed, the pollen from the sucker may undo what has been gained by years of careful selection. I would as soon think of breeding from a scrub male to a thoroughbred animal as to have the pollen from suckers cast upon an excellent variety of corn. It is also known that the pollen from a neighboring field is oftimes carried to an almost incredible distance, and consequently may cause more mixture than is desirable."

FLORICULTURE.

Flower Garden Hints.

So many people say that their flowers which once did well do not thrive any more, and the reason is incomprehensible to them. In many cases the trouble is from worn-out soil; and if a little fresh earth be added occasionally it is wonderful what an effect it will have on the renewed growth of half worn out root stocks. Some kinds of flowers especially soon grow surly and bad-tempered unless they have a complete change of soil every little while. The verbena is of this character. In perfectly fresh soil, that is earth which has never grown a verbena before, it grows like a weed; but the next year it is not quite so well; and in a few years it absolutely refuses to creep, run or do anything, and we are forced to confess that the verbena won't do for us as it used to years ago.

Other flowers are not quite so stubbornly fastidious as the verbena; but still all more or less like to feel rejuvenated by an addition of some kind occasionally to the earth-blessings they have already been treated to.

Almost all our best hardy flowers are natives of woods, or low, undisturbed lands, where the decaying leaves from the trees or the washings of higher surface lands make a new annual entertainment for them—and it has been found by experiment that nothing is so good for these pretty little flowers as well-decayed leaf-mold from the woods spread round the root-stocks just above the ground. But where this cannot be had any other well-decayed vegetable refuse, that may "be lying around loose," will do very nearly as well. Strong, rich manure—barnyard manure—has not been found very good for garden flowers. It makes the herbage too strong, and the flowers less in proportion. But if nothing more natural can be got at to help the flowers along, and the soil seems exhausted and poor, this will be found much better than leaving the plants to struggle along as best they can.—*Germantown Telegraph.*

How to Preserve Cut Flowers.

The most natural as well as the most economical mode of preserving cut flowers is to use any low, shallow vessel, either of glass or china, of about the size and depth of a soup plate. If this is filled with nice, fresh wood-moss, made up in a slightly conical or mould-like form, the flowers and foliage can be arranged to great advantage and made to look almost as natural as if growing in the positions in which they are placed, instead of having that excessively formal appearance they generally have when closely packed in a vase. Not only do they look infinitely better in this way, but they last fresh considerably longer, owing to the much larger surface exposed immediately under them, and from whence a stream of vapor is continually arising from the moss surrounding their stems. Besides the nice, fresh appearance this has, it is of great use both for the above-named purpose and for keeping the flowers in any position they may be placed in, so that they may be quickly and easily arranged. One reason why many flowers are so short-lived when cut is, that to get them in quickly they are sometimes subjected to more heat and confinement than is good for them, and when to this there is less of light, as occurs at this season, the petals must inevitably become thin and flimsy, in which state a dry air at once affects them unfavorably. This being the case, any plants that are being grown for the purpose of supplying cut blooms should be stood as near the glass as can be done without touching, and in such positions that they may have full benefit of all the sunshine available. So favored, there will be little difficulty in keeping them fresh for a considerable length of time, provided the situation they occupy in the room when cut is far removed from the fire, and not where they are subjected to draughts, as they would be by placed between the door and the grate, as there is always air passing from the one to the other, caused by the combustion of the fuel.

Sowing Garden Seeds.

As seed-sowing time is approaching, it will be in order to say that a very great portion of seeds annually sown are lost through deep sowing. Of course large seeds like beans and peas may be covered with an inch or more of earth, and yet be able to work their way easily through the surface; but with smaller things the merest covering is sufficient provided the earth is pressed firmly over the seed. Peas and beans, as the season advances, can be planted deeper and deeper.

In flower seeds it is quite common to sow them on the ground in a little patch, and then scatter a mere dust of earth over, beating it a little with the back of the trowel, and it is found that the seed germinates better than if put beneath the surface. There is not the tendency to rot, and, as we have known some of the lighter kinds of garden vegetables to be scattered along the garden line, and merely trod in with the feet, to grow so well that every seed seemed to sprout. This, of course, implies that the ground should be dry enough to powder under the feet, and so it always should be when seeds are sown. To sow deep, or when the earth is wet, are great mistakes.—*Germantown Telegraph.*

HORTICULTURE.

Planting Grapevines.

One would suppose that so simple a thing as planting a grapevine would not need writing about; and yet the number of people inquiring, "How shall we plant?" is so great that a few words to these inquirers may well be pardoned by those who think they already know enough about the matter. The rule is to plant the roots shallow. If they are long when we have to transplant them, instead of planting them deep we lay them along about four or five inches beneath the surface. It is, of course, very necessary to press the soil very firmly down over the roots; that is if the earth is tolerably dry, though in truth no vine should be planted except the earth is in this good condition.

It is very useful in planting a grapevine to cut it closely in. Unless the last year's growth be very vigorous it may be cut almost all cut away; and even where the growth is strong one-half may be cut away. This is the way to get a good strong cane for bearing next year, which is the most one ought to expect a vine to do. "Immediate bearing" is a delusion and a snare. Many a person spends a dollar or a half dollar extra on a vine which he is told by the seller will "bear this year," when for that amount of money he could buy treble the quantity of grapes it will bear for him, even if it bears at all. Still we like to plant good, strong, healthy grapes. The little scrub-quills, which come out as rare grapes at high prices, seldom give much satisfaction. Indeed, it is more than likely that the immense failures which generally follow all these introductions are as much owing to the way their propagation is forced as to any inherent inability in the varieties to become adapted to soils and climates.

Spring Planting for Strawberries.

There are many writers on strawberry culture, who advocate planting in the fall, arguing that an entire season is saved, and that a moderate crop can be secured the following season from the new plants. This may be true where but a few hundred are set out for home consumption, and where the number of plants or extent of the plantation admits of the best of care. For a large market plantation of strawberries, it does not pay, as a rule, to plant them when they demand so much care and attention, for the profits are thereby seriously lessened. Aside from this, several years' experience has proved to us that it is a very poor economy to fruit the

plants the first season, and that the plants grow better and pay larger profits the two or three succeeding seasons when the fruit is all removed during the first season's growth. This is based on sound principles, for all plants, when removed from the original bed to new plats, necessarily receive more or less of a check, and they will more readily overcome this when they do not have their energies diffused by attempting to perfect the fruit which was started in the beds in which they were grown.

By planting in the spring you destroy many weeds by thoroughly preparing the soil then, while the plants have the great advantage of getting a full season's growth in loose, mellow soil, which is not the case with fall planting, for the winter packs down and hardens the soil.

An Experiment in Planting.

Last spring one of my neighbors concluded to try an experiment in planting corn and potatoes, which he conducted as follows: He prepared the ground in the usual manner and marked rows each way, rather closer than usual (about three feet each way). Then commencing on one side of the piece of ground (an acre or two), he planted two rows of Early Rose potatoes, then two rows of corn, etc., alternating between corn and potatoes.

There are several advantages in this plan. The potatoes complete their growth and may be dug before the corn occupies the ground to any extent. Also, the corn has the full benefit of the sun and plenty of room, while the slight shade which the potatoes receive from the corn when they are nearly ripe, is rather beneficial than injurious.

The potatoes were cultivated and hoed the same as the corn and were not hilled. They produced an excellent crop, much more than the same number of hills planted in the usual manner, while the corn yielded eighty bushels of ears to each acre of ground; but as only one-half the space should be charged to the corn, it really produced one hundred and sixty bushels to each acre occupied. Thus, from each acre of ground he obtained eighty bushels of corn of the very best quality, and a good crop of potatoes, the exact amount of which I was unable to learn.—*W. W. Farnsworth, in Practical Farmer.*

Uncovering Protected Plants.

Many things which are supposed to be benefited by being protected during the winter suffer by being left too long protected at this season of the year. It is more than likely that many more things are lost by this extension of time to a protected article than ever are lost by utter neglect of protection. Many things are always covered which really need none, and these are often lost by the length of time the covering remains on them. Strawberry beds are often covered with a deep mass of decaying matter when they would have been just as well off under the naked atmosphere.

So long as the weather remains cold there is no injury from this litter, as it is termed; but with a few warm days the rotten mass begins to ferment, and soon decay is communicated to the healthy and living vegetation. People think that articles once covered are very tender, and that the slightest cold will injure them; but if a thing is tolerably hardy much more danger will accrue from warm damp than from dry cold.

Those things which, like raspberries, have been buried beneath the earth, will not suffer so much as those covered by decaying vegetable material; but yet these should not be taken out of the ground before the first of April, unless the sprouting should be going on for sometime.

Mulching.

This subject enlisted consideration at the late Fruit-Growers' meeting. There appeared to be no division of sentiment as to advisability, though we know that all persons do not favor it. For ourselves we have resorted to it as long as we have a garden, and are sure that there is great benefit in it. Putting grass, manure, weeds, sawdust, or pliable rubbish of almost any kind around a newly-planted tree, secures a prolonged moisture and more uniformity of temperature. But this mulching should be removed every three or four weeks and the soil underneath well-stirred and fresh mulching applied. This way it is of decided benefit and will save the life, or at least secure the health of many a tree. Mulching also protects the growth of tomatoes, egg-plants, beans, etc. With regard to peas it should be applied thickly, as it will tend to cool the ground, and the higher the flavor of this delicious vegetable will be. Some of the members at the meeting said they had mulched acres and found it "to pay." One strongly recommended *sawdust* for mulching, but as every fruit-grower couldn't have a sea near him, this suggestion will not probably be adopted by a great many.

Gooseberries and Currants.

There is no reason why both these very useful fruits should not be found abundantly in every garden. They are no trouble to raise. They grow readily from cuttings. Take the wood of last year from six to ten inches in length, prepare the bed or place where they are to stand permanently, force them into the ground not less than four inches, press the ground firmly around them, mulch them and let them alone. If a *bush* is desired let the buds on the cutting remain; but if a *tree* or a single stem is preferred, remove all the buds that would go beneath the surface. Let them stand about three feet in the row, and if there is more than one row let the rows be four feet apart.

In the spring the dead wood of both the gooseberries and currants should be cut out, and the new growth should be thinned where there are too many, as it will interfere with the product. The best red currant is the Dutch; and the best gooseberries are Downing's Prolific and Houghton's Seedling.—*Germantown Telegraph.*

Sprouting Potatoes.

Sprouting the white potato will advance the crop two weeks. They should be cut so that about two eyes are allowed to each piece, and these should be planted in hot-beds with very thin covering of soil; or it is better to plant in boxes and set these in a hot-bed, so that after they are properly sprouted they can be at once carried to the place of planting. If the nights should be anyway cold, protect with a thin covering of straw when the plants make their appearance above the ground. Some persons who want a large quantity sprouted, cut the potatoes as desired, and spread them on boards, boxes or crates, in a dark place, and when sprouted, say from one inch to an inch and a half, expose them to the light, moistening two or three times a week with tepid water. They should be planted out so that there is not more than two inches of soil over the top of the sprouts.—*Germantown Telegraph.*

DOMESTIC ECONOMY.

Some Items About Sugar.

On an average, every man, woman and child in the United States consumes each year about 30 pounds of cane sugar, and nearly 2 gallons of molasses, besides maple sugar, honey and other sweets . . . . 19 lbs. of pure cane sugar is actually made up of, and can be changed into, 8 lbs. of charcoal and 11 lbs. of water! Pure white starch is made up of 8 lbs. of charcoal (carbon) and 11 lbs. of water. Any boy can demonstrate this roughly by putting a small quantity of sugar on a piece of thin iron over a hot lamp or coals, and hold over it a glass jar bottom up. The sugar will change to pure charcoal, while the water will rise up and condense on the inside of the jar, if it be kept cool, and he will get nothing from the sugar but coal and water. The chemist can easily take the 19 lbs. of sugar and change it into 8 lbs. of charcoal and 11 lbs. of pure water, though he has not yet learned how to put the coal and the elements of the water together to produce the sugar. That requires the action of the living plant . . . . Our sugar comes mainly from the sugar cane grown in the Southern States (most from Louisiana), and from the West India Islands. The canes are somewhat like corn-stalks, but larger, taller, with narrower leaves. The sap or juice of the cane is pressed out between iron rollers, then boiled down to syrup, which crystallizes into sugar grains in large vats . . . . Most of the sugar used in Europe is from the juice of the sugar-beet. It is similar to our cane sugar . . . . The raw sugar is refined chiefly in Northern cities, by dissolving it, straining it through cloth, and through burned bones, after which it is boiled down until thick enough to crystallize in grains.—*Amer. Agriculturist.*

Necessity of Sunlight.

Instead of excluding the sunlight from our houses, says the *Manufacturer and Builder*, lest it fade carpets, draw flies and bring freckles, we should open every door and window and admit it outer. It brings life and health and joy; there is healing in its beams; it drives away disease and dampness, mold, mergrims. Instead of doing this, however, many careful housewives close the blinds, draw down the shades, lock the door, shut out the glorifying rays and rejoice in the dim and (sanitary) uncleanness and twilight of their apartments. It is pleasant and not unwholesome during the glare of the noontide to subdue the light and exclude the air quivering with heat, but in the morning and in the evening we may freely indulge in the sun bath and let it flood all our rooms, and if at its very fiercest and brightest it has full entrance to our sleeping rooms, so much the better for us. Wire netting in doors and windows exclude not flies and mosquitos only, but all other insects, and those who have once used it will continue to do so. With this as a protection from intrusive winged creatures, one may almost dispense with shades and shutters and enjoy all the benefits of an open house without any annoyances so frequent in warm weather. But better the annoyances with sunshine than freedom without it. Statistics of epidemics have shown that if they rage in any part of a city they will prevail in houses which are exposed to the least sunshine, while those most exposed to it will not be at all or slightly affected. Even in the same house persons occupying rooms exposed to sunlight will be healthier than those occupying rooms where no sunlight enters.

The Hours for Children.

"An excess of two or three hours' study a day for all children under twelve years of age is absolute cruelty." This was the view taken by Dr. A. C. Rembaugh, in an address on Thursday evening before the Social Science Association. "Two or three hours' mental work daily throughout the year would be far better than the present system. It would reach down into all classes, especially those for whom the public schools were particularly intended—the unschooled twenty thousand of our city, and the sixty per cent. of our children who graduate from our primaries and secondaries. Poor parents cannot afford to give the whole time of their children to the schools, and it is better for the child's morals and future usefulness that they cannot. Some kind of handicraft should be begun in the primary school, and should follow pupils all the way through, as it would greatly benefit both their moral and physical culture, and make them more useful and healthful. The time under twelve years should be divided thus, to insure future health and usefulness: Twelve hours in bed, three at mental, three at manual work and six in open air exercise of some kind or other, cultivating the soil the most beautiful and invigorating. Crowding into cities, of all, and especially the poor, should be discouraged. Each family should have its own plot of ground for the exercise and work of the children."—*Philadelphia Record.*

How to Use Coal.

Replenish a coal fire as soon as the coals begin to show ashes on the surface; then put merely enough to show a layer of black coal covering the red. This will soon kindle, and as there is not much of it, an excess of heat will be given out. Many persons almost put out the fire by stirring the grate as soon as fresh coal is put on, thus leaving all the heat in the ashes when it should be used to the new supply of coal. The time to stir the fire is when the new coal laid on is pretty well kindled. This method saves fuel, gives a more uniform heat, and prevents the discomfort of alternations of heat and cold.

Never put the hands into butter. There is no excuse for so doing, and every sense of cleanliness forbids it. Even if the hands are clean, still as the butter absorbs any and every impurity with which it comes in contact, excessive perspiration of the hands, or any humor of the blood might thus be imparted to the butter. A wooden ladle should be used to lift the butter from the churn, or turn it over while being washed.

HOUSEHOLD RECIPES.

Sick Headache.—This distressing complaint can generally be relieved by soaking the feet in very warm water, in which a spoonful of powdered mustard has been stirred. Soak as long as possible, or till the water gets cool; it draws the blood from the head.

Flannel Cakes.—One quart of flour, two eggs, one and one half pints of boiled milk (used cold), two teaspoonsful of salt, three tablespoonsful of yeast (added after the other ingredients have been mixed). Beat light and set to rise till morning; bake on a griddle.

Cup Fruit Cake.—One cup of butter, two cups raisins seeded and chopped fine, four cups flour, two cups brown sugar, one cup sour cream, three eggs well beaten, one teaspoonful of soda, one of cloves, four of cinnamon. Bake slowly and serve hot or cold with sauce.

Cookies for the Children.—One cup of sugar, one cup sour cream, two eggs, one teaspoon soda, Graham flour or fine middlings sufficient to roll out. If any spice is wanted ginger is best—one teaspoonful. If cream is not to be had, one cup of butter and one of sour milk.

Queen Biscuits.—Rub four ounces of butter into eight ounces of flour and six ounces of lump sugar, the yolks of two eggs, the white of one and a tablespoonful of brandy; roll the paste thin and cut with a tin cutter; egg over top of each with remaining white, and sift on white sugar; bake in a warm oven.

Boston Meat Pie.—Take cold roast beef, or indeed roast meat of any kind, slice it thin, cut rather small, and lay it with gravy, sufficiently salted and peppered, in a meat pie dish. Over the meat put a couple of sliced tomatoes and a thick layer of mashed potatoes. Bake slowly, and you have a fine meat pie.

Cranberry Rolls.—Stew one quart of cranberries in sufficient water to keep them from browning. Make very sweet, strain and cool. Make a nice paste, and, when the cranberries are cool, spread them on the paste an inch thick. Roll it, tie close in a flannel cloth, boil two hours, and serve with sweet sauce.

BURNS AND SCALDS.—The very best thing to be done when anyone has received a burn or scald, is to lay on the part that is injured a thick coating of cotton, wool or wadding, so as to completely exclude the air. If the above wool happens not to be at hand, scraped potato or turnip will ease the pain.

REMEDY FOR HOARSENESS.—Horseradish will afford instantaneous relief in most obstinate cases of hoarseness. The root, of course, possesses the most virtue, though the leaves are good till they dry, when they lose their strength. The root is best when it is green. The person who will use it freely just before beginning to speak will not be troubled with hoarseness.

EGGS IN CASE OF TROUBLE.—The white of an egg is said to be specific for fish bones sticking in the throat. It is to be swallowed raw, and will carry down a bone easily and certainly. There is another fact touching eggs which it will be well to remember. When, as sometimes occurs by accident, corrosive sublimate is swallowed, the white of one or two eggs taken will neutralize the poison and change the effect to that of a dose of calomel.

POTATO FANCY.—Mash one quart of hot boiled potatoes through a fine colander with a potato masher; mix with them one ounce of butter, one scant teaspoonful of salt, half teaspoonful of white pepper, a pinch of grated nutmeg, and the yolk of two raw eggs; pour the potato out on a plate, and then form it with a knife into small cakes two inches long and one wide, lay them on the buttered tin, brush them over the top with an egg beaten up with a teaspoonful of cold water, and color them golden brown in a moderate oven.

OATMEAL CAKES.—Into a quart of cold water stir oatmeal enough to make it about as thick as hasty pudding. Be sure that the meal is sprinkled in slowly, and that the stirring is so active that the mush will have no lumps in it. Now put it on the buttered pan, where it can be spread out to half the thickness of a common cracker, and smooth it down with a case-knife. Run a sharp knife across it, so as to divide it into the sized pieces you wish, and then place it in a warm oven and bake slowly, being careful not to brown it.

PRESERVATION OF FURS.—"Jennie," of Germantown, says: "As this is the season when we put away our winter furs, I will mention how I preserve mine entirely from the attacks of the moth. I first hang them out in the sun for a day or two, then give them a good beating and shaking up to be sure no moth is in them already. I then wrap up a lump of camphor in a rag and place in each; then wrap up each in a sound newspaper and paste together so that there is no hole or crevice through which a moth can gain entrance—and my furs are perfectly safe. You will say that there is no secret in this, and there is none. Every lady can take care of her own furs, *if it is not too hard work for her*, without sending them to the furriers, as many do."

LIVE STOCK.

Test Record for Dairy Cows.

It seems lately to have occurred to breeders of dairy stock claiming special adaptation to the production of milk, butter, or cheese, and increased value for purity of blood—it has just occurred to them that there might be one more important item attached to the pedigree of a Jersey, Ayrshire, Holstein or other cow devoted expressly to the dairy, and that test is her actual production of milk, butter or cheese. To all the rest of the world this has long appeared as the most important item in the pedigree, yet it has never been given. Purity of blood has been regarded as of more importance than performance—about as rational as it would be at a contest of speed between horses to decide it by the pedigree. The pedigree has a value only as indicating probable performance; but as in the case of the trotting horse, let us have the performance first, and then we shall be interested in the pedigree. This is a time when everybody feels like probing everything to the bottom, to see what it is made of and not what it calls itself.

This test record for cows is the most important thing suggested to dairy stock breeders for many years. It is bringing the pedigree to the only practical test that can be made. "Like produces like," but what is the "like" that is to be produced? Color, form and size are only accessories. The main thing to first ascertain as to the quality of a dairy cow is, how much milk does she give in a year? How many pounds of butter will this milk make? How many pounds of cheese? and what is the quality of the product? A cow that gives 10,000 lbs. of milk is extremely satisfactory to a milkman, and he wants to know her pedigree that he may assure himself that the purity of her blood will give her the power of "reproducing her like." The cow that makes 350 or more pounds of butter, of good quality, "takes the eye" of the butter dairyman, and he is all attention to learn how many such she counts in her line, and her age, that he may figure the number like herself that she may leave behind her. He is very little interested in her possession of "solid color," if she is a Jersey; he is vastly more interested in her "solid" and high-colored butter. The cow that produces 1,000 lbs. of cheese is beautiful and altogether lovely in the eyes of a patron of a cheese factory, and he wants just as many more like her as he can get.

A pedigree ought to represent achievements, not merely names. We second, most heartily, a "test record for dairy cows," and trust that none of our pure-blood dairy stock breeders will hereafter consider a cow's pedigree complete without a record of her production. In the light of a milk, butter and cheese record, the herd books would have a new and most valuable feature.—*Live Stock Journal.*

Full-Blood—Pure-Blood—Thoroughbred.

Again and again we have been called upon to answer the question: "What is the difference, if any, between full-blood, pure blood, and thoroughbred, as applied to live stock?" and as often we have answered, there is really no difference. All these terms are used to denote purity of blood. When applied to horses, the term thoroughbred, by common consent, has come to be recognized as the name of a particular breed—the English race-horse—and when we speak of a thoroughbred horse it is understood that we refer to a purely-bred animal of that particular breed. There are, perhaps, purely-bred, or well-bred, or full-blood Clydesdales, English draft horses, Percheron-Normans, Shetland Ponies, etc., but we never speak of them as thoroughbreds. In speaking of the various breeds of cattle we may say, a full-blood Short-horn, a purely-bred Short-horn, or a thoroughbred Short-horn, all meaning one and the same thing; and so of all the other breeds of cattle, sheep and swine. In some localities an arbitrary distinction has been recognized between thoroughbreds and full bloods. Thus, an animal showing a given number of crosses of a certain breed is classed as a full-blood, although it cannot be recognized as a thoroughbred. But such distinctions are merely local, and are not generally recognized by breeders.—*Live Stock Journal.*

APIARY.

Honey.

A correspondent writes to the *Pacific Rural Press* as follows, and it would be well if bee-keepers would adopt some of his general recommendations, and it would be to the interest of all if dealers would. He says: "While the bee-keepers of California are just on the eve of making their purchases of lumber and getting ready to make hives for the increase of the coming season, they are greeted with the news from their representative in New York that 'there is nothing to be done in honey here at this time, as there has been so much adulteration in this article that buyers are alarmed.' And from our English correspondent come gloomy reports of a small lot of California honey having been offered at auction on two different occasions without being sold. Then comes another, that a large shipment of California honey from New York by a large dealer there, and that the custom authorities had sized and destroyed it, in accordance with English laws, on account of its being largely adulterated with glucose. I, as a producer, will venture to offer a suggestion or two to those educated blockheads, that may be of service to them in the future if they will act on the suggestion. If you have cause to suspect adulteration in honey with glucose proceed as follows: Take a quantity of honey and add one part water, dissolving the honey thoroughly by stirring. Then add alcohol of 80° until a turbidness is formed which does not disappear on shaking. If glucose syrup is present in the honey soon a heavy deposit of a gummy, milky mass will form, while with pure honey there will be only a very slight milky appearance observed. This test is so simple, and at the same time so true, that any dealer who fails to become acquainted with the simplest test used for detecting frauds in the article in which he deals is unworthy of the calling he has accepted."

Pasturage for Bees.

It is now the proper time for all who contemplate keeping bees to think something about preparing pasture for them, as it is just as essential that they should be cared for as any other farm stock. Yet I hear much of failure in bee-keeping from others. When we think of how little preparation is made to help the industrious workers, it is no wonder that there are so many complaints coming up of failure. Let me advise all who may be in any ways interested, to procure at least four pounds of Alsike clover seed, and sow one acre of ground. This will supply at least twenty stands of bees. It yields the finest flavored honey I have ever tasted, and will sell for more per pound than any other honey for family use. This is not all that the clover is good for. It is also a very valuable pasture for cattle, sheep, horses and hogs; also, it produces fine hay that is not so woody and coarse as red clover, but of a fine stem, and usually about 12 to 15 inches high. The bloom is of a light pink color. It is also a fine fertilizer for land, well adapted to damp ground. It can be sown with wheat or oats, in early spring. I had twenty acres sowed two years ago, which has more than paid me back the cost of seed, 50 cents per pound. I now have a piece of wheat, on which I shall sow in the spring, at the rate of four pounds of seed to the acre. I say sow Alsike for your bees.—*J. M. H., in Bee-Keepers' Guide.*

How to Fasten Comb Foundation in Brood Frames.

Cut the foundation into pieces twelve inches square. Then cut the squares diagonally, making four triangular pieces out of each square. Remove the comb guide and insert the twelve inch side of one of the triangular pieces in the groove in the top bar, fastening by means of a pencil brush dipped into hot wax and drawn along the edge of the foundation. If the frames are to be filled entirely, a strip of wood grooved on the under side, same as the top bar, should be fixed horizontally in the frame, dividing it into two equal parts. The foundation should be cut 5¾x12 inches, a piece of which should be attached to the top bar, another to the center strip, fastening in the same manner as the triangular pieces. If the bars that hold the strip across the frames are not driven closely, they may be easily withdrawn, and the strip removed as soon as the comb is made fast to the sides of the frames. In a few days the space will be filled, making a perfect comb. This is a practical, safe way to use foundation in frames twelve inches deep. It does not sag or bulge. In shallow frames no centre strip is needed.

Glucose.

The following is taken from the *Scientific American*, a part of an article on food adulteration, and if the following statements are true we can see no good reason why glucose is not a valuable food for bees:

He never found granular or block sugar adulterated. In exceptional cases glucose has been worked up with cheap sugar, but glucose is not injurious. It is less sweet than cane sugar, but has almost the same food value. Glucose comprises about 80 per cent. of honey, and about 60 per cent. of dried figs. It is the substance into which, in the body, all starchy or saccharine food must be first converted before it can be assimilated. Bread and cane sugar, when taken into the body, are very rapidly changed into glucose. In molasses the absence of foreign substances is almost the universal rule. The cheaper grades of syrups are sometimes mixed with glucose.

POULTRY.

Caponized Fowls.

In Boston markets, capons are not so frequently found as in either New York or Philadelphia. In the latter city they are very popular, and command the highest price over all kinds of dressed poultry. For many years these desirable birds have been a staple product in Pennsylvania. Formerly they were made from the young male birds of the "Bucks county species"—a large bird well known in that region—but a coarse-meated fowl in any shape except as *capons*. At the present time, and in late years, the Cochins and Brahmas have been used for this purpose. and these have proved a most excellent substitute for the old-fashioned variety mentioned. With such large numbers of young cockerels as are now raised in New England, annually, there is no good reason why our farmers and poulterers should not avail themselves of the profit attainable in supplying these fowls for our home markets. At the hotels in any of our Atlantic cities they are always desirable; and the surplus male bird, of any man's yards where a respectably sized flock of poultry is reared, will every year furnish the breeder with many fowls that can be turned into capons to great advantage. We suggest this experiment to those interested. The "art" of caponizing young cocks is easily acquired; and, when once understood, it may be made a very profitable method for disposing of prime poultry roasters, about holiday time, in early winter.—*Town and Country.*

Chicken Cholera.

The proceedings of the Agricultural Society of Lancaster county, published a day or two ago in your paper, are almost a copy of the proceedings of kindred societies that have for the last ten years discussed this chicken cholera question. All have various cures to offer, but not enough is said about the cause and the preventive. Within the last seven years all around us have lost flocks of chickens by cholera, and had they neglected their own household as thoroughly few inmates would have long survived. We have educated the chicken to lodge in houses; it is our duty to make him comfortable there, not poison him. About the construction of the house it matters little; the entrance should face south and be inclosed with lattice work, to admit plenty of fresh air and

not expose the birds to cold draughts; but the all-important condition is to keep the chicken bedroom thoroughly clean. Every week let the droppings, wherever found, on the floor, or the shelves, front of the nests, or in the nests, be scraped up and removed, and then, with ground plaster or dust sprinkle the places so cleaned, not with lime, as many do, for that liberates the ammonia and brings out an unhealthy smell, but with plaster, that absorbs the ammonia, locks it up and keeps down unhealthy, offensive smells. See that you have at the door every morning, before the chickens come out, fresh water, for many will go immediately and take large drinks of it. Many places have we visited where cholera broke out, and too often the above conditions had been omitted. In some cases the droppings had not been removed for weeks, and water was never seen near the chicken house. A pump or creek was not far off, and if fowls could not go there it was their fault if they got sick. In most cases they got to the barnyard first and slaked their thirst on manure water. In plain English, how long would the human family survive if they slept for months in near proximity to their own excrement, or drank water poisoned with cow and horse dung? Cholera, fever—yes, the plague—would soon make every farmhouse as silent and as tenantless as some of the chicken-houses get to be.—*Philadelphia Record.*

Nest for Sitters.

All sorts of contrivances are resorted to by experimenters, to render what they consider their sitting-nests for hens the most comfortable, convenient, and best adapted to the purpose. The simplest and the most natural plan in our experience, is to rest the sitters upon the ground—whenever this method is practicable. A slight hollow in the hen-house corner, upon the earth-floor, is a good place to set a hen in. Fill this spot with soft hay, and place the hen upon nine or eleven eggs, and if she is undisturbed during the three weeks of her confinement, there, she will generally do well with fertile eggs. If the nests are made in boxes, the bottom should be covered with a fresh cut grass-sod, or with two inches of damp earth, upon which straw or hay should be scattered before the eggs are set on. This box should be thoroughly *clean* at the start, and the hen may well be dusted (through the under-feathers of breast and flanks,) with powdered sulphur or carbolic power, to keep her free from lice while sitting. This precaution will keep her steady to her work, and render her condition much more comfortable during the three weeks occupied in incubation.—*Town and Country.*

Eggs from Different Breeds.

A correspondent of the *Ohio Farmer* says: "After repeated experiments with the different varieties of fowls, and comparisons with others who have experimented in the same direction, I have concluded that the laying capacities of the principal varieties are about as follows:

Light Brahmas and Partridge Cochins—eggs, 7 to the pound; lay 130 per annum.
Dark Brahmas—8 to the pound; 120 per annum.
Black, White and Buff Cochins—8 to the pound; 125 per annum.
Plymouth Rocks—8 to the pound; 150 per annum.
Houdans—8 to the pound; 150 per annum.
La Fleche—7 to the pound; 130 per annum.
Black Spanish—7 to the pound; 140 per annum.
Leghorns—9 to the pound; 160 per annum.
Hamburgs—9 to the pound; 150 per annum.
Polish—9 to the pound; 125 per annum.
Bantam—16 to the pound; 90 per annum.

Fowls Eating Feathers.

Confinement and want of occupation are among the chief causes why fowls eat feathers. The former is often inevitable in winter, but the latter can be avoided by burying some of their grain food in sand and allowing them to hunt for it, which will afford them pastime and healthy occupation. Give them some green food, fresh meat two or three times a week, burnt bones, oyster shells, charcoal, clean water and a clean hennery, and if all this doesn't cure them of the habit, follow Lewis's advice and wring their necks, for they are incurable.

LITERARY AND PERSONAL.

AGRICULTURE.—Speech of Hon. A. S. Paddock, of Nebraska, in the Senate of the United States, Monday, February 10th, 1879, on the resolution offered by Mr. Davis, of West Virginia, instructing the Committee on Agriculture to consider and report on what ought to be done by the General Government to foster agriculture. 19 pp., 8vo. Good. "Hope something may come of it."

THE FARMER'S MAGAZINE AND PATRON'S GUIDE.—The March number of the first volume of this journal has reached our table. It is a sixteen page quarto, well gotten up both in mechanical execution and literary merit, embracing a somewhat wider scope than mere agriculture and domestic economy. With our experience in this field of journalism we sincerely wish that so able an effort may find a very large vacancy to fill. Published monthly by FAULKNER & WOOD, No. 17 North Tenth street, Philadelphia, at $1.00 a year. Of course, as its title in part implies, it is in the interest, specially, of the "Patrons of Husbandry," but is not exclusive.

HIRAM E. LUTZ, manufacturer of Philadelphia poudrette. Factory Thirty-first street and Gray's Ferry road; office 1136 Market street. Price, $25.00 per ton. His motto is, "*Feed the land and it will feed you;*" and he invites the attention of farmers and truckers to a series of *facts* contained in his 8vo. pamphlet of 20 pages, in which he fully describes the quantity and mode of application to corn, potatoes, wheat, rye, buckwheat, oats, peas, beans, carrots, onions, melons, squashes, grass, turnips, cotton, tobacco, &c., &c. If it was not for *poudrette* the Chinese nation would soon starve, but by means of this fertilizer *they feed the land and it feeds them.*

THURBER'S BEE-KEEPER'S ALMANAC AND REFERENCE BOOK for 1879. H. K. & F. B. Thurber & Co., West Broadway, Reade & Hudson streets, New York. This is a royal octavo pamphlet of 62 closely printed pages, with paper covers, containing not only a "calender of monthly management," and the proceedings of the last "National Convention of the Bee-Keepers' Association," but also a large amount of other matter, descriptive, historical and statistical, relating to bees, bee-keeping, bee supplies, exports and imports, and apiarian productions, and general intelligence on this subject. As this work is published for gratuitous distribution all who are interested in apiculture may obtain a copy by merely asking for it. One of its special merits is, that its statistical statements are authentic, being extracts from official documents in the bureau of statistics at Washington, and attested by the chiefs of bureaus. To our apprehension it sheds a practical light on bee culture that no progressive apiarist can afford to deprive himself of without jeopardy to his pecuniary success.

FRANCES DUNHAM'S circular of apiarian supplies for 1879, Depere, Brown county, Wis. This is an 8vo. pamphlet of 8 pp. in paper covers, illustrating various styles of hives, implements and machinery used in bee-keeping, with practical instruction on the subject. Accompanying this pamphlet were two small sections of the artificial comb foundation, made of beeswax, which in their structure are very perfect, vieing in execution with nature itself. What ought to commend this pamphlet, and the good intended to be accomplished by it, is the fact that the author and proprietor of the works is a lady. The report of the Northeastern Bee-Keepers' Association of Wisconsin, says: "Mrs. Fannie Dunham exhibited a specimen of comb foundation, made on a machine of her own invention, the peculiarity of which consists in making the base of the cells very thin, and using more wax in the sides of the cell; also, making the face of the foundation comparatively true and smooth, instead of fallowing the indentations of the base." We commend our progressive bee-keepers to the implemental inventions of Mrs. D., and especially to send for a copy of her late circular, believing it may be greatly to their material advantage.

AGRICULTURE OF PENNSYLVANIA, containing the reports of the State Board of Agriculture, the State Agricultural Society, the State Dairymen's Association, the State Fruit-Growers' Association and the State College for 1878. The whole forming a royal octavo volume of 625 pages, with 33 full page plates, and 63 other illustrations distributed through the letter press; besides, a large chart 24x30 inches, with one hundred figures, illustrating the GUENON CLASSIFICATION OF ESCUTCHEONS of male and female cattle for dairy stock, both for milking and breeding. The whole work is creditable to the agricultural interests of Pennsylvania, but really, without making an invidious comparison, the report of what is known by the "State Agricultural Society," would make a very poor show if it were not sandwiched in between the State Board and the State Dairymen's reports. On the whole, we don't know but what this consolidating these reports may be the best and cheapest plan for bringing them out and confining them within proper limits. Barring some unnecessary details in the State Agricultural report, we consider this the best volume on agriculture and stock that the State has ever published.

A DESCRIPTIVE catalogue of SELECT ROSES, offered for sale by Ellwanger & Barry, Mount Hope Nurseries, Rochester, New York, third edition. This is an octavo of 32 pages, with a superb colored illustration of the celebrated rose, the DUCHESS OF EDINBURG—a crimson Tea Rose—and is No. 5 of their series of catalogues of roses. This is not a mere catalogue, or a promiscuous list of roses, as the name would seem to imply, but a perfect hand-book on rose culture, giving descriptions, names, modes of culture, when to plant, what to plant, pruning, pegging down, protection, mildew, insects and the manner of their expulsion or destruction. Also advice to correspondents, prices for roses, transportation by mail and express, together with a most admirably classified and arranged list of species and varieties, both old and new. The two grand divisions: 1. SUMMER ROSES. 2. Perpetual, or AUTUMNAL ROSES. After which follow classes, sections, families, genera, species and varieties, giving not only the common or proper name, and the technical names, but short descriptions of each variety; giving their origin, their colors, and many other matters interesting to the amateur rose culturist, besides a hundred other little matters connected with this beautiful floral subject.

ELLWANGER & BARRY'S spring list of plants for 1879, including green-house, hot-house and bedding plants, and also lists of prices; 20 pages octavo, including a paper read before the Western New York Horticultural Society, on "The best hardy roses for general cultivation, and how to grow them, by Henry B. Ellwanger." This catalogue is as skillfully classified as the one on roses, and every plant is accompanied with instructive and explanatory remarks. Their *dollar collections*, sent by mail, postage paid by *them*, are especially worthy the attention of amateurs. Either 5 flowering begonias, 8 chrysanthemiums, 8 coleus, 8 fuchsias, 8 zonal, 6 double, or 6 scented geraniums, 8 heliotropes, 6 hardy phlox', 8 basket plants, 12 verbenas, 5 salvias, or 6 violets sent for *one dollar*. Ellwanger & Barry's supplementary list of NEW FRUITS for 1879, including new peaches, new pears, new seedling grapes, new strawberries, &c., &c., is also worthy the attention of fruit-growers. When we wield our pen against *nurserial tramps*, as we are sometimes compelled to do by our victimized patrons, be it known that we never mean *Ellwanger & Barry*. Their reputation is too dear to them to send out irresponsible agents with unreliable stock.

THE DISEASES OF LIVE STOCK, and their most efficient remedies, including horses, cattle, sheep and swine. Being a popular treatise, giving in brief and plain language a description of all the usual diseases to which these animals are liable, and the most successful treatment of American, English and European veterinarians; together with anatomical and physiological explanations, alphabetical and classified lists of the drugs used in veterinary medicine and their doses, a large collection of valuable receipts and formulas for condition powders, liniments, washes, drenches, &c., &c. By Lloyd V. Tellor, M.D. Published by H. C. Watts & Co., Philadelphia, Pa.

In addition to the recitation of the foregoing title, which is an epitome of the work itself, we may be permitted to add, that this is an excellently executed volume of 467 pages, royal octavo, handsomely bound in muslin. The quality of the paper and the letter-press are unexceptionable, and its contents such as ought to commend it to all veterinary surgeons, stock-men, and in fact to any one permanently possessing a single animal. The classification and general arrangement are admirable, and of easy and intelligent consultation; divided into four parts, as follows: 1st. General principles of veterinary medicines—five chapters. 2nd. Diseases of the horse—eleven chapters. 3rd. Diseases of cattle, sheep and swine—introductory remarks and six chapters. 4th. Hygiene and medicine—three chapters. Including a number of appropriate illustrations, and a copious alphabetical index. In short, it is a "ready-made horse and cattle doctor, at your service, sir," and the greatest difficulty involved in the question it presents, so far as we are able to judge, is how any stock dealer and owner can afford to be without it.

THE PHRENOLOGICAL JOURNAL.—In our reading of *The Phrenological Journal and Science of Health* for April, we were struck by the general tone of the magazine. Its aim is to elevate, and it is pure in character in every department, while entertainment and instruction are skillfully blended, so that its matter is exceedingly interesting from beginning to end. Indeed the *Phrenological Journal* is a capital illustration of what can be accomplished in the way of making science pleasant to the general reader. The first sketch is that of the Rev. Dr. Fair, an Episcopal divine of distinction in Baltimore. Then comes a very interesting description of the Chinese at Home, in which the reader finds many features that are entirely new to him, and bearing closely upon the special work of the *Phrenological Journal*. The installment of "Brain and Mind" furnishes clear and definite applications of the science to the delineation of moral qualities. An interesting article is that of "Poe and Rachel." Elizabeth Thompson, the English lady who has suddenly leaped into fame, occupies a place in this number, with an excellent portrait. Our young people will certainly be interested in the opening chapters of "Uncle Jimmie, the Cripple," a short serial which is pleasantly written. Real Teachers and Real Teaching, are some views of a veteran pedagogue, now a New York editor. The great work of Moral Reform is represented this time by Mr. William Noble, of England, and an appreciative sketch of him is given, with a portrait. Miss Coleman discourses upon the "Diet of Man" in her usually pleasant and careful manner. All the departments are replete with amusement and instruction. The smaller type especially abounds in valuable hints to the reader. The *Journal* is published now at $2.00 a year, 20 cents a number, with a choice of Premiums to each subscriber. Address S. R. Wells & Co., Publishers, 737 Broadway, New York.

WE would call particular attention to the advertisement of Baugh & Sons, in another column of this number of "The Farmer." Baugh & Sons are a reliable firm, and what they say they will do.

WALLACE'S MONTHLY.—The April number of this sterling periodical opens with a superbly illustrated and highly interesting article upon the race horse in America, from the pen of the editor. There is an exceedingly well written paper upon Breeding Ponies for Profit, by "Topside" a well-known Western breeder; also another on Breeding the Park Horse, by Frank B. Redfield, a name familar to all horsemen. Mr. Redfield further contributes his opinion regarding the effect of pool selling upon the trotting horse breeders' interest—an article which can be read with profit. The origin of Col. Lewis, by his owner; Bonner's Edwin Forrest, Washington co., N. Y., horses, and an illustrated article upon hornless cattle, by L. S. Hardin, form some of the principal topics discussed in the MONTHLY. Publication office, 212 Broadway, N. Y. Terms, $3.00 per year.

My annual Catalogue of Vegetable and Flower Seed for 1879, rich in engravings, from original photographs, will be sent FREE to all who apply. Customers of last season need not write for it. I offer one of the largest collections of vegetable seed ever sent out by any seed house in America, a large portion of which were grown on my six seed farms. *Printed directions for cultivation on each package.* All seed *warranted to be both fresh and true to name;* so far, that should it prove otherwise, *I will refill the order gratis.* The original introducer of the Hubbard Squash, Phinney's Melon, Marblehead Cabbages, Mexican Corn, and scores of other vegetables. I invite the patronage of *all who are anxious to have their seed directly from the grower, fresh, true, and of the very best strain.*

New Vegetables a specialty.

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Marblehead, Mass.

79-1-14

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The Cheapest, and we believe the most effective Manure in use, can be made with but little trouble, by using our Fertilizing Chemicals and Bones, which we furnish of the best quality, and at lowest prices. We offer, of our own manufacture or importation,

Dissolved Bones,	Sulphate of Ammonia,
Perfectly Pure Ground Bones,	Fertilizing Salt,
Acidulated Phosphate Rock,	Sulphate of Soda,
Phosphate Rock, fine ground,	Muriate of Potash, German,
Land Plaster, pure and fine ground,	Oil Vitriol, full strength,
Sulphate Potash (Kainit),	Sulphate of Magnesia (Kieserite).
Nitrate of Soda,	

HARRISON BROTHERS & CO.,

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79-2-3

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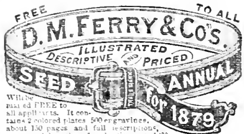
Only Single Ring Ever Invented that Closes on the Outside of the Nose.
Brown's Elliptical Ring and Triple Groove Hog and Pig Ringer. It overcomes a serious defect in all triangular and other rings which close with the joints together in the flesh, causing it to decay and to keep the hog's nose sore.

THE CHAMPION HOG HOLDER Speaks for itself in the above cuts.
79-3-3] CHAMBERS, BERING & QUINLAN, Exclusive Manufacturers, Decatur, Ill.



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D. M. FERRY & CO. Detroit Mich.

79-1-4

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TRADE MARK. **The Great English Remedy** will promptly and radically cure any and every case of nervous Debility and Weakness, result of Indiscretion, excess of overwork of the brain and nervous system, is perfectly harmless, acts like magic, and has been extensively used for over thirty years with great success. Full particulars in our pamphlet, which we desire to send free by mail to every one. The specific medicine is sold by all druggists at $1 per package, or six packages for $5, or will be sent free by mail on receipt of the money by addressing TRADE MARK.

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PANTS AND PANTINGS,
VESTS AND VESTINGS,
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as any other place in the city. Goods all wool, perfect, and **satisfaction guaranteed.** Orders respectfully solicited, and promptly executed.

1879 1879

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Is an energetic, natural manure, specially adapted for summer crops. It is highly recommended to tobacco growers, giving the plants a vigorous start and causing a rapid growth to maturity.

HIRAM E. LUTZ. Manufacturer.
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Descriptive Catalogue of 175 pages sent Free

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FLOWER AND FRUIT PLANTS

79-2-4

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A MONTHLY JOURNAL,

Devoted to Agriculture, Horticulture, Domestic Economy and Miscellany.

Founded Under the Auspices of the Lancaster County Agricultural and Horticultural Society.

EDITED BY DR. S. S. RATHVON.

TERMS OF SUBSCRIPTION:

ONE DOLLAR PER ANNUM,

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All subscriptions will commence with the January number, unless otherwise ordered.

Dr. S. S. Rathvon, who has so ably managed the editorial department in the past, will continue in the position of editor. His contributions on subjects connected with the science of farming, and particularly that specialty of which he is so thoroughly a master—entomological science—some knowledge of which has become a necessity to the successful farmer, are alone worth much more than the price of this publication. He is determined to make "The Farmer" a necessity to all households.

A county that has so wide a reputation as Lancaster county for its agricultural products, should certainly be able to support an agricultural paper of its own, for the exchange of the opinions of farmers interested in this matter. We ask the co-operation of all farmers interested in this matter. Work among your friends. The "Farmer" is only one dollar per year. Show them your copy. Try and induce them to subscribe. It is not much for each subscriber to do but it will greatly assist us.

All communications in regard to the editorial management should be addressed to Dr. S. S. Rathvon, Lancaster, Pa., and all business letters in regard to subscriptions and advertising should be addressed to the publisher. Rates of advertising can be had on application at the office.

JOHN A. HIESTAND,
No. 9 North Queen St., Lancaster, Pa.

ONE DOLLAR PER ANNUM.—SINGLE COPIES 10 CENTS.

Dr. S. S. RATHVON, Editor. LANCASTER, PA., MAY, 1879. JOHN A. HIESTAND, Publisher.

CONTENTS OF THIS NUMBER.

The Lancaster Farmer.

Dr. S. S. RATHVON, Editor. LANCASTER, PA., MAY, 1879. Vol. XI. No. 5.

EDITORIAL.

PRESERVING THE PROCEEDINGS.

"President Tobias called Vice President Geyer to the chair, and made some remarks on preserving the documents of the society. THE LANCASTER FARMER is not patronized as it should be. He thought that if arrangements could be made to have the proceedings published in this journal, thus having them in book form, it would be to the advantage of the members and of THE FARMER, which would obtain a large number of additional subscribers."

The above we clip from the proceedings of the April meeting of the Lancaster County Poultry Society; and, without regard to what the members may think they ought to do in regard to THE LANCASTER FARMER, we desire to say that we have published all the proceedings of the *Poultry Society* in our columns—both preliminary and subsequent—and we intend to continue doing so, whatever may be the result. We also, for the same reason, publish the proceedings of the Agricultural and Horticultural Society, the Tobacco-Growers' Association, the Bee-Keepers' Society, the Linnæan Society, and the proceedings of our county farmers' clubs as often as we can get them. These proceedings constitute a personal and practical epitome of the thoughts and doings of the agriculturists and collateral workers of the county; and as the volume in which they are published can be preserved in convenient book form, properly indexed, it can be referred to by those of the present generation as well as the generations to come. Therein can be found not only the names of the active participants in our local agriculture and kindred interests, but also what they, from time to time, thought, said and did. As an instance—the proceedings of the Agricultural and Horticultural Society have been published in THE FARMER for over ten years, and perhaps nowhere else is there now existing a more convenient reference to them, and every year enhances their value. Of course, if a substantial appreciation of these things were to follow, it would much encourage the arduous labors of both Editor and Publisher.

"NON-RECOGNITION OF AGRICULTURE BY GOVERNMENT."

"A striking commentary on the position of agriculture is, that although this pursuit is acknowledged to be of such great commercial and industrial importance to the country, yet, when its claims are contrasted with those of the natural sciences, it receives scarcely governmental recognition. We have expensive governmental surveys, and vast collections of birds, plants, rocks and minerals, and large, frequent and extremely valuable reports, published at great expense, written in the language of science for scientists, and this is as it should be. Yet, although the lands wandered over by our expeditions are desirable for agriculture, or have close relations with the extension of the population of those lands, no educated *agriculturist* is attached to the exploring staff, and the agricultural possibilities of those immense areas are unexplored. We have had exploring expeditions, and the explorers have been naval officers simply, or men of science have been attached; and when we examine the records as published, we look in vain for either a comprehensive or detailed account of conditions or circumstances applicable to our agriculture. We have boundary surveys, with abundant reference to scenery, to the trials of the explorers, to the wild vegetation, but few words given to the agricultural possibilities, and those few so superficial as to be nearly valueless.

Our Government measures and triangulates mountain areas, and the great reports are filled with valuable geological detail; but the rivers are not surveyed in their relations to irrigation, and the characters of the soil and the climate with reference to the needs of agriculture receive but a scant attention. Why cannot agricultural science receive recognition, and why not attach an educated agricultural observer and thinker to all our governmental science exploration parties? Such a course would be wise, just and proper. We commend this subject to our brethren of the agricultural press for their consideration."

The foregoing, from the editorial columns of the *Scientific Farmer* for April, 1879, will, no doubt, find an extensive endorsement, for it seems to be an expression of the sentiments of a large number of the most intelligent agriculturists of the country, and the persistent and continued non-recognition of that class, and the interests it represents, seems to us not only ungrateful, but also socially and financially suicidal, if it is not the most inexcusable presumption.

We do not think the government has done or is doing one whit too much for science; nor do we intimate that the editor of the *Scientific Farmer* thinks so or says so; but we think that from the very organization of the Government down to the present day, it has made less provision for and has exercised less energy in the agricultural interests of the country than it has in the interests of any other governmental department. Even its own agricultural department has never had sufficient government patronage to make it efficient and generally respected, hence it is always passing through a scrutinizing and often an unjust censorship. Its inefficiency, if any really exists, may not be due to the incompetency of its official incumbents so much as it is to the niggardly support it has received from the National Congress.

Our "Great Constitutional Expounder," in his recognition of agriculture as the most important factor in the social, civil and physical progress of mankind, has given expression to the sentiment that "*the farmer is the founder of civilization*," and it seems to us that it does not require much observation and reflection to perceive that this, properly understood, is, in an eminent degree, *the very truth*.

Of course, it is not to be inferred that the farmer himself, as a man, through his superior intelligence, morality, energy and enterprise, is the founder of our civilization; but that he represents a vocation and an interest that constitute the sure foundation upon which the civil and domestic superstructure of society can alone be most successfully reared. We can hardly conceive of a nation destitute of agriculture, without associating them with "uncivilized savages." Ancient Venice may have attained a high state of civilization without an agriculture of her own, but she would have been a naked starveling without the sustaining agricultural productions of other peoples. It is true there are many industrial interests not immediately connected with agriculture, which may have the appearance of thrift, but without agriculture there would be little or no demand for their productions. Man cannot live and prosper on the results of fishing and hunting alone any more than he can "by bread alone," and, whatever his calling may be, the highest civilizing influences of his physical and domestic condition are those which are due to agriculture. Agriculture ramifies throughout the entire length and breadth of our vast country, and there is not a nook or corner in the whole land where, by the manipulation of the soil, two blades of grass are made to grow instead of one that does not exhibit its benign influences.

And yet this almost universal interest—this *sine qua non* to human civilization—receives less governmental encouragement than any other of the great interests of the country. The government grants immense land subsidies—amounting to millions of dollars—to soulless corporations, endowing them with the power to dictate to agriculturists just where they may locate, and the tenure by which they may possess their homes, without reflecting that if it was not for the results of agriculture there might be precious little use for their railroads at all. Our national Agricultural Bureau may not be what it ought to be—not what its originators intended it should be—nor yet what its officials desire it to be; but there is little wonder of this since government permits it to fall, and then literally kicks it for falling by withholding the sustaining means of support. During two years of political excitement it had not the means to issue its annual reports, whilst thousands of dollars have been granted to bogus committees of investigation, and to pay for voluminous reports thereon that never will be read perhaps; whilst the agricultural elements of our country are daily compelled—amongst other things too numerous to mention—to drag out a feeble existence *unsupported* and *alone*.

Economy in the administration of the functions of an office is, no doubt, very desirable, and, perhaps, necessary to its success; but true economy is quite a different thing from "penny wisdom and pound foolishness," and it seems to us that much of this kind of economy has always characterized the general government in its relations to the agricultural interests of the country. The Department of Agriculture, as before intimated, may not have been managed with the efficiency that has been expected by the government or the people, but no one seems to reflect that the department may not have received the encouragement and pecuniary support that were necessary to develop its efficiency. During the years 1873 and 1874 it had not even the means to publish its usual annual report, inferior as those reports were, as compared with other departmental documents of the government; but in our view this inferiority was mainly due to the inferiority of the material used in its mechanical composition. It must also be remembered that the department had, and still has, to depend mainly on the voluntary and unpaid contributions of local amateur observers, who giving their service gratis, could only devote those fragments of time to the service in which they had nothing else to do. In the Entomological Department MR. GLOVER worked like a slave to develop practically the histories of *noxious insects;* but his reports—tinctured with the mechanical inferiority of the department—never compared with those issued by the several States reporting upon that subject. This was not his fault, but his misfortune in exercising an official function without the pecuniary means to bring his work in a proper manner before the country.

Sandwiched as those reports always have been among the general papers—statistical, meteorological, agricultural and otherwise that make up the reports of the department—they never elicited the special attention they would have elicited had they been published in a separate volume, on good paper, in clean type, and embellished with accurate and life-like illustrations.

Congress and the country are at this time sorely exercised about the rinderpest, that is spreading far and wide, and threatens to become a devasting plague; but any legis-

lation that may be had on the subject will be unavailable without the necessary pecuniary means to carry their legal enactment into practical effect. It appears to us that objects and questions involving the immense interests of *agriculture*, and such obstacles as rinderpest and destructive insects, to its successful development, ought to command the attention of government in a very special sense, even if something more should be appropriated than was barely necessary to sustain it in a work that is so intimately related to the happiness, the comfort, and the general welfare of the country.

The last incumbent of the Entomological Department was PROF. C. V. RILEY, who only recently tendered his resignation, because, according to the tenor of that resignation, he could not retain the office any longer without forfeiting his self-respect. We are not specially advised as to the grounds upon which the separation between him and the department was effected, but if we may judge present and coming events by those that are past, we may infer that the powers that be desired him to haul on a wheelbarrow that which by rights should employ nothing less than a six-horse team. If agriculture, and entomology in its relations to it, are of no use to the country they should at once be abandoned to their fates as other useless things are.

TRAMPS AND INCENDIARIES.

Our rural population have a fearful guantlet to run in these days of theft, violence, robbery and incendiarism, and it is difficult to advise exactly what line of conduct they should pursue in relation to these depredators upon their property, their homes, and, perchance, their very lives. "Eternal vigilance" has long since been proclaimed as "the price of liberty," and if this be so in retaining and maintaining the boon of freedom, it seems to be almost infinitely more so at this time in the protection of life and property. It is true our statute books are replete with stringent laws, but laws are of very little account so long as they are systematically evaded, slovenly executed, wilfully perverted, or studiously disregarded and violated. We are no advocate of the *revolver*, the bludgeon or the bowie-knife; but, as a man's domicile, under certain circumstances, is legitimately considered his "castle," we believe, in the absence of a law to protect it, every occupant of a tenement, legally possessed, should become "a law unto himself," by wisely and manfully protecting *it* and the dear ones it may contain. The hamlets and houses of our rural citizens are too often remote from the centres of justice and legal functionaries, and therefore their mansions may be burned down, and their lives imperiled before they possibly could invoke the intervention of the laws or their executors.

It is humiliating to think that the men and women whose ancestors were compelled to flee their native land, in order to escape persecution, spoilation and violence, and to seek safety and protection in a land of liberty, should, in this second century of American freedom, become the victims of impudent and indolent *outlaws* and *tramps*.

We believe that under any and all circumstances our rural population ought to prepare themselves to *defend* their property at all hazards, unless it is very manifest that the laws can protect it. In all cases when suspicious demonstrations have been made by the loose tramp population now infesting the country—where they have been impudent and exorbitant in their demands, or where the farmers have felt it their plain duty to deny them—a strict and continuous watch should be kept upon their subsequent conduct—even if it should require some of the family to sit up all night. It would be much better if there was no necessity for a single deadly weapon in all the land; but rather than suffer the loss recently sustained by Mr. Sener, of Martic township, we would recommend the advice of General Dix to the loyal citizens of New Orleans at the outbreak of the rebellion.

These tramps and incendiaries are bad enough in the towns, where the population is dense and the officials near at hand, but in the country they are simply intolerable. We are not prepared to say that there are absolutely none of them worthy of the alms of the people, but as it would be almost impossible to make the proper discrimination, they all should be vigilantly and continuously WATCHED. They are here amongst us; each one of them is the tabernacle of an immortal soul, and consequently they cannot be entirely ignored; but if it must needs be that offenses *will* come, then woe betide those through whom they come. It must be made manifest that it would be far better for them if they were taken up and cast into sea than that they should be permitted to offend with impunity.

"CODLING MOTH BANDS."

The "codling moth" (*carpocapsa pomonella*) has been so damaging to apples, pears and peaches, for several years, that fruit-growers are willing to grasp at any "straw" that may contain a hope, however remote, ultimately effecting their intervention or extermination. Many devices have been proposed or invented for the foregoing purpose, but it appears, from some cause or other, the results have not been entirely satisfactory. Under these circumstances, and also because the apple season will soon be on us again, we have thought it might be useful to our readers to call their attention to "*Ruhlman's Patent Codling Moth Bands.*" Price, 5 cents per yard, and kept for sale by D. M. DEWEY, Rochester, New York. They can try the experiment, at least, at a very small cost, and like a good many other enterprises, if there is nothing ventured there can be nothing won.

These bands have been endorsed by several of the most respectable authorities in the country, if we have any warrant at all in believing what has been published concerning them.

Dr. James Wood, of Muscatine, Iowa, in a report made to the *Western Horticulturist*, states that he destroyed 15,000 worms and pupæ in a small orchard by removing the bands every ten days to two weeks, from the middle of June to the first of October. The gentleman writes on and says 15,000 apples must have been required to breed the worms we killed under the bands, as it is seldom that more than one worm is found in an apple, and allowing 300 to a bushel, gives 50 bushels damaged or entirely ruined by these worms; and if we only captured one-half of the worms, the loss is increased to 100 bushels. Supposing one-half the worms destroyed to have been females, and one-half of these to have been of the first brood, they would have deposited in the late apples 750,000 eggs, thus damaging 2,750 bushels of the autumn and winter apples. Now suppose these eggs to have produced as many worms, and all to have passed the winter safely, they would in the following spring have aggregated, with the 7,500 of the late brood destroyed under the bands, 757,500 moths. If a small crop of apples on 10,000 trees be estimated at one bushel per tree, or 3,000,000 apples, it would require 15,000 female moths to deposit an egg in each one. Of course on a larger crop of ten bushels per tree, it would require 150,000. If the large orchardist puts into constant practice a system of wholesale destruction like the bands we use, it would seem that the moths coming from the small orchards in his vicinity could not cause him very great injury, but woe to the owner of 50 trees in the immediate vicinity of a mammoth plantation, if the latter is persistently neglected.

Of course, the application of these bands can have no sensible effect upon the moths that will come forth in due time to produce the first brood of the present season, but if it destroys or prevents that brood from perpetuating itself, a great advance in the right direction will have been made; and it is our opinion that no remedy is of any possible use for the destruction of this moth, except one involving the principles this does, whatever its special form may be.

MILK.

Although many of our readers may have heard of such a thing as "pigeon's milk," or the "milk of human kindness," yet we, in what follows, entirely discard all such lacteal mythologies and confine our remarks to milk as the product of the class MAMMALIA, all the females of which yield that nourishing fluid as the sustaining element of their offspring during their infancy. At the head of the milk-producing Mammals, notably, stand the female animals belonging to the genus *Bos*, and especially the various breeds of the domestic cow, including the Natives, the Ayrshires, Devons, Holsteins, Jerseys, Swiss, Durhams, Alderneys, and their various crossings—polled, long-horned and short-horned; because the milk of these animals, ever since the beginning of modern history, has been an important factor in the domestic and commercial products of civilized nations.

Of course milk necessarily must differ in its quality, its flavor, its richness and its general appearance, according to the animal from which it is drawn, and in this difference it may adapt itself more fully to the fundamental object for which it was provided, namely, the nourishing of the young during the early periods of their infantile development. Other objects, whatever their magnitude, must be regarded as beneficent contingencies, adapting themselves to human necessities.

Experimental analyses have been made, from time to time, at various places, in different countries, by eminent chemical authorities, and their results have been published to the world, but it is not our purpose to include these results in this paper, except partially, perhaps, by incidental reference. In addition to the domestic cow the milk of various species of the genus *Bos* have been the subjects of chemical analysis; as, for instance, the Buffalo, the Gayal, the Gyall, the Yak, the Jungly Gau, and the Zebu. Also the Goat, the Ewe, the Camel, the Reindeer, the Mare, the Ass, the Sow, the Llama, the Bitch, the Porpoise and the Whale; and last, but not least, the women of our own species. In reference to the milk of the Ass it is said to be the sweetest and most digestible of all milks, and hence it is recommended by European physicians as a proper aliment for delicately constituted invalids; and although, perhaps, not easily obtained in our country, yet it can be readily obtained in many places abroad. In the city of London, for instance, it is said that in times past one might frequently meet with such signs as "*Vender of Ass's Milk to His Majesty.*" or, perchance, to "*His Royal Highness the Duke of York*," or some other distinguished nobleman or other personage. It is used by "wet nurses," who have not enough of their own, in rearing children, and is said to make the nearest approximation to woman's milk of any other kind that is known. No doubt our people would revolt at this "Aber es ist evva yousht wee mens 'gwaned ist." The milk of the cow, the ewe and the goat are, however, the principal milks used in the manufacture of butter and cheese. In Iceland the ewes are regularly milked, and so are they to a considerable extent in Europe. It is said that ewes' milk furnishes a considerable quantity of the cheese manufactured for export from the region of the Pyrenees, as well as from some districts in France, and it is far superior to the cheese made from the milk of the goat. Goat milk is said to be very disagreeable to some persons, although those accustomed to it prefer it to any other. The cheese produced from it has a strong flavor, but this is not at all objectionable to lovers of "loud flavored" cheese, such, for instance, as *Limberger*, which, however, like *saur kraut*, tastes much better than it smells. Here, in Pennsylvania—especially in Lancaster county—the goat has never been very popular as a producer of butter, cheese and milk, except, perhaps, among the poorer classes in the suburbs of Philadelphia; but in some of the Eastern States, as in Massachusetts, and also in New York, goats' milk, of late years, has come into quite

extensive use, especially among the poor and the foreign population. But, perhaps, the greatest use made of it is in Malta, Italy and the Levant. The *sussonage* cheese, made from a mixture of milks of the cow, the goat and the ewe, is in high request in foreign countries. The Arabians milk their camels, the Laplanders their reindeers, and the Central Asiatics their mares; but the principal use made of it by them is in the preparation of an intoxicating beverage.

Although in the *animal kingdom* it is only the female Mammals that produce milk, yet there are various subjects of the vegetable kingdom that are milk-producing, though, perhaps, not so rich in nutritious elements as animal milks, not even the "milk in tae cocoanut."

Our preferences, however, by dint of habit, education, social custom and locality, lean strongly towards the "philosophical cow;" and we will conclude these remarks by condensing from the columns of the *Scientific Farmer* a brief analysis of the milks of different breeds of cows:

	No. of Analysis.	Water.	Fat.	Caseine.	Sugar.	Ash.	Author.
Ayrshire	5	87.13	3.47	4.00	4.73	0.63	Sharpless.
Devon	1	84.41	5.96	5.29	4.23	0.89	Wilgin.
Holstein	1	87.34	3.85	4.78	4.20	—	Hayes.
Jersey	12	84.91	4.73	4.19	4.86	0.89	Waller.
Natives	50	87.27	3.15	4.60	4.60	0.71	Emlebardt.
Short-Horns	9	86.27	4.88	4.16	4.34	0.54	Playfair.
Solus	4	87.48	3.75	3.75	4.75	0.27	Boussingalt.

To which we add the following table of local analyses:

	No. of Analysis.	Water.	Fat.	Caseine.	Sugar.	Ash.	Author.
England	22	87.90	2.94	2.95	5.37	0.83	Reid.
France	46	85.76	4.51	4.86	4.22	0.65	Vernois.
Italy	10	86.28	4.58	3.80	5.27	0.27	Poggiati.
Sweden	1 yr	87.18	4.04	3.32	4.70	0.73	Muller.
Bengal	8	86.66	3.42	5.19	4.07	0.77	Macnaner.
New York swill	4	88.28	1.30	5.40	4.77	0.90	Reid.
Massachusetts	22	85.51	4.88	4.13	4.82	0.66	Sharpless.

From the same source we glean that five Holsteins, owned by the Oneida community, in 1878 yielded 43,771 pounds of milk; highest yield for one cow, 10,850. Also, that thirty-seven Ayrshires yielded 207,445 pounds, an average to each cow of 5,498 pounds in one year, and that the highest yield was 8,316 pounds to one cow. For further particulars we refer the reader to that rare and excellent journal, the *Scientific Farmer* for April, 1879, edited with more ability than any other farmers' journal in the country.

MONTHLY REMINDERS.

In the Middle States, during the past month, some of the hardier vegetables have been sown, and by the middle of the present one, all will have been put in; hence the labor will now mainly consist of the various operations of transplanting, thinning, weeding, hoeing, &c. The following alphabetical directions will serve as a reminder to the unpracticed gardener, who is also referred to the directions for April.

Beans, Bush, plant for succession; Lima, Carolina, and other Pole Beans may now be planted. Beets, Long, sow. Cabbage, plant; sow seed if not done last month. Capsicum (pepper) plant. Carrot, Long Orange, sow. Cauliflower, in frames, remove glasses. Celery, weed. Crops which have failed when first sown, repeat sowings. Cucumber, Early Frame, plant. Lettuce, Large Cabbage and India and Dutch Butter, sow in drills, to stand; thin out if too thick. Melons plant; of the Water, Icing or Ice-rind is the best. Parsnips thin out, if ready. Weeds destroy as they appear, and hoe and otherwise cultivate the advancing crops; it is needless to particularize each duty. Where the interest and taste lead to gardening, directions for every operation are necessary to but few. Is it not, however, discreditable to the character of many farmers who till their own land, and should reap the reward of well-cultivated gardens, that none but the simplest vegetables may be found upon their tables, and in too many instances that scanty supply is the result of women's labor?

We have in former issues of our *Rural Register* recommended a "Farmer's Kitchen-Garden" where nearly all the preparation of the land may be done by horse-power, and thus most ample supplies of vegetables be obtained at all seasons without hand labor or occupation of time which may not be readily spared from farm duties, and the women of the household be relieved from toiling to supply household wants.

Wherever onions of fit size for table use may be raised from seed (the black) the first season without the agency of "sets," we can confidently recommend the Early Red. It ripens ahead of all others, the "Queen" excepted; is solid, mild, a good keeper, and does not produce bulbs with stiff necks as common with the large red, otherwise Wethersfield Red. The onion is indispensable in every family, and if the production can be facilitated without the tedious and expensive interposition of sets, not always within reach, there is economy and comfort; therefore we advise trial of the Early Red, and shall be pleased to have our customers report results.

An experiment made with the Bloomsdale strain of Early Red in Wisconsin, in latitude 44° (north of lat. of Toronto, Canada), gave the most surprising results; another with the same variety in Nebraska, latitude 45°, excited the highest admiration; not a single stiff neck was observed.

These facts are at least highly suggestive, and merit the examination of Northern and Northwestern onion growers and dealers in seed.—*Landreth's Rural Register.*

TO MARKET-GARDENERS THROUGHOUT THE UNION.

List of Approved Varieties of Cabbage.

Bloomsdale Bullock-Heart.—This is the first and best Early, ripening with the English Large York, and a few days in advance of Landreth's Large York. It is large for a first early, uniform, and invariably produces marketable heads. Where the winter is severe sow in hot beds February or March, according to location, transplant under glass to secure sturdy plants preparatory to setting out. Seed by ounce or paper only this season—next year in quantity.

Bloomsdale Early Market.—This is offered as a second early, succeeding the Bloomsdale Bullock-Heart. It is of extraordinary size for an early ripening variety, head reaching eight to fifteen pounds under good culture, which it must have to attain perfection. Were we to write a page in its praise we could not say too much.

Bloomsdale Brunswick.—This is a very distinct variety, and may be designated as a summer cabbage, following as it does immediately after the Bloomsdale Early Market It would be difficult for us to speak too highly of this sort. Short in the stem, flat in form, firm, weighty, compact, and attractive in every respect, it needs only to be seen by market-gardeners to be approved. It is, however, necessary to treat it as an *early* variety, as it suffers under the sun, and should make its growth prior to July in the Middle States, and still earlier in the South.

Bloomsdale Early Drumhead.—This is in some respects similar to the Bloomsdale Brunswick—more robust, and may be transplanted later to head it. September and October—of this we have the seed in papers only the present season.

Bloomsdale Late Flat Dutch.—Everybody knows this variety. For three-quarters of a century we have been spreading it broadcast, until now nearly every locality in the Union has had an opportunity to judge of and appreciate its merits. Whatever good there may be in "Premium Flat Dutch" (so called) has been derived from this stock.

It is not too much to predict the above five varieties of cabbage are destined to be the standard sorts of the market-gardens of the Union. For family use they are equally reliable.—*Landreth's Rural Register.*

WHAT BECOMES OF THE BIRDS.

"A German dealer recently received 32,000 dead humming birds, 80,000 dead aquatic birds, and 800,000 pairs of wings of birds of all kinds for ladies' bonnets."

This is a brief but significant paragraph. All these birds are sacrificed on the altar of *Fashion.* Should the fashion be much longer continued our birds may all fall victims to it, and then the insects will have their own lively time of it. The only salvation from such a threatening contingency is in making the wearing of insects fashionable by the whole people. Handsome bonnet ornaments might be compounded out of grasshoppers, cockroaches, butterflies and moths; and splendid jewelry out of Colorado potato-beetles, curculios, apple tree borers and chinch bugs. We mean exactly what we say. If things continue as they are going now, this will ultimately be our only safeguard against noxious insects.

BOOK FARMING.

"New England has now over 230 farmers' clubs, with 72,000 active members, and library books to the number of 21,000."

That's the way it is done in New England. Put all the New England States together and their combined territory will hardly be larger than the single State of New York, and not much larger than Pennsylvania. Their land is, and always has been, naturally, more sterile than either Pennsylvania or New York, and yet farmers, as a class, are more intelligent, as good cultivators, and average as much off their few acres as they do in the two great States last named; and, doubtless, they live as bountifully. They seem to apprehend that all traditional things are daily becoming more precarious in their tenure, and, therefore, they are not too conceited or prejudiced to become BOOK FARMERS. They join clubs, take agricultural journals and thoroughly read them.

EGGS-TRAORDINARY.

"Statistics show that the annual consumption of eggs in the United States is about 10,600,000 barrels. The poultry marked or consumed in 1877, is estimated at 680,000,000 pounds of the value of $68,000,000."

Eggs-actly so. And yet many of our farmers consider the egg and chicken business too small to recognize as a branch of commerce; and in the face of the fact, too, that the market is seldom or never overstocked with this species of merchandise. Eggs, like lucifer matches, would be used—and always used—by the entire population, if they could be uniformly furnished within the abilities of the poor, or those in medium circumstances—the working people, for instance. They go farther in a family than many other things consumed, which cost a great deal more. No animal substance contains so much *meat* with so little quantity of *bone*—for eggs-ample.

HENSLOW ON THE SELF-FERTILIZATION OF PLANTS.

The Rev. George Henslow concludes, from his studies on the structure of plants, that the prevailing views as to the necessity of cross-fertilization are too extreme. He claims that "Mr. Darwin's works have gone too far to strengthen the belief that intercrossing is absolutely necessary for plants; and that if self-fertilization be continued for lengthened periods the plants tend to degenerate, and thence to ultimate extinction. This I believe to be absolutely false." Mr. Henslow arrives at the following conclusions in his article in the *Popular Science Review:*

1st. The majority of flowering plants can, and possibly do, fertilize themselves.

2nd. Very few plants are known to be physiologically self-sterile when pollen of a flower is placed on the stigma of the same flower.

3rd. Several plants are known to be morphologically* self-sterile, in that pollen cannot, without aid, reach the stigma of a contiguous flower, but is effective on that of the same flower.

4th. Self-sterile plants, from both the above causes, can become self-fertile.

5th. Highly self-fertile forms may arise under cultivation.

6th. Special adaptations occur for self-fertilization.

*That is, in the development and metamorphosis of their organs—*American Naturalist.*

QUERIES AND ANSWERS.

Mr. F. R. D.—The large, long-winged insect you sent us is the "Great Shad-Fly"—*Perla xanthenes*, one of the largest of the species, and which usually make their appearance in the spring. They are, perhaps, later this spring than they usually are. Some of the smaller species appear as early as the end of February or the beginning of March. The larva lives a whole year in water, and some of them for a longer period, feeding on small water animals, but the *Imago* never eats anything. Length of body, 1½ inches; caudal spine, ½ inch; length of wings, 2 inches; expansion of wings, 4 inches; antennæ, 1 inch; color, gray, orange and brown. Order, NEUROPTERA; section, *Pseudoneuroptera;* family, *Perlidæ.*

ESSAYS.

SMALL FRUITS.

The following entertaining and instructive essay on "Small Fruits" was read by Henry M. Engle, Esq., at a meeting of the Donegal Township Farmers' Club, April 5, 1879, held in Marietta:

The great majority of land owners and cultivators of the soil look upon *small fruit culture* as too small a business for their consideration, and more so to plant and attend to it for either pleasure or profit. We admit that too large a proportion is grown in such a slipshod manner, and offered in our markets in such an uninviting condition that many who would otherwise be consumers pass it by with disgust. On the other hand, what is more inviting to both the eye and the palate than ripe, fresh, well-grown strawberries, measuring from an inch to two inches in diameter, and which cast their fragrance quite a distance? What is more delicious, appetizing and healthful than a dish of ripe strawberries, as the heated season comes in, and when the system requires such food; and which is followed with raspberries, blackberries, currants and the larger fruits during the summer season, all of which supply the human system with just what nature designed for the health and happiness of man? When we consider how prolific "mother earth" yields her bountiful supplies, with such little intelligent care on the part of man, it seems next to criminal on his part to be so negligent in this department, which his Creator designed for his welfare. As to adults who have blunted their finer sensibilities with all manner of stimulants and narcotic poisons, and having no longer that keen relish for such delicious food, we have only to say, let them follow their idols and reap their legitimate harvests; but how shall we deal with the children, whose unpreverted appetites crave so irresistibly such a natural relish that in many cases they seem to be almost forced to pilfer for their natural good that which is in so many cases denied them, and which often might be supplied with the money spent by their parents for health and soul destroying articles? This may be a question for philanthropists and benevolent societies, but who is better prepared to make progress in this great field than the tiller of the soil? But while the latter has all the advantages possible his table is generally more scantily supplied with small fruits (and I may add the best of vegetables,) than that of the working classes in the cities and larger towns throughout the country. This is rather a sad commentary upon the mass of farmers, but it is, nevertheless, a true one. At a time when only a small proportion of land was under tillage, and wild berries generally abundant, and the improved kinds few and far between, and prices high, there was some excuse for indifference in the matter; but since the larger proportion of land is under tillage, by which most of the wild fruits are destroyed, and the plants of the new and improved kinds so cheap and in such abundance, there is no longer a plea for the neglect of this important branch of industry, which brings pleasure and health to the consumer, and pays so well the producer. It is pretty safe to measure the intelligenee, comfort and general health of a family by the variety of earth's products which they consume. Those who avail themselves of the greater number of the bounties of "mother earth" stand highest in the scale, while those who are content with hog and potatoes stand at the foot. It will, no doubt, be conceded that a larger proportion of fruits (and especially small fruits) should compose the general bill of fare, but the question arises, "How shall this be brought about?" In answer I would say, let a half dozen leading men in every township organize a farmers' club, and hold regular monthly meetings (or oftener if the interest will justify), and discuss topics of interest on horticulture, and hold annual or semi-annual exhibitions of the finest of earth's products and the object will be to a great degree gained. Demand and supply will meet each other, and a review of the past will cause both surprise and regret over benefits which might have been enjoyed. Few persons have an idea how soon they can learn enough to grow small fruits with as much success as any other crop, and how ready consumers are to patronize them, provided a good article is produced and offered fresh and in good condition. Strawberries can be produced with as much certainty as any other crop, and no crop will pay better; but such results must not be expected with slovenly cultivation. We are often asked, "When is the best time to plant strawberries?"

I would say spring, as a rule, is the most certain, as the ground is then cool and moist. The soil being in proper condition and good plants, well put in, well cultivated during the summer, and a light mulch for winter, will usually yield a full crop of fruit the first season after planting, which is more than can be said of any fruit in this latitude. As to varieties, the Wilson continues to stand prominent on the list, while Jucunda, Charles Downing, Green Prolific, Boyden's No. 30, and others of the older kinds are preferred by many.

Among the newer kinds, Monarch of the West, Cumberland, Capt. Jack, Great American, Centennial, Forest Rose, President Lincoln, and others, have all proven excellent with some growers, and may become standard varieties, but none have been more highly extolled than Crescent Seedling and Sharpless, the former for its wonderful vigor of plant and great productiveness, and the latter for its good quality, fine appearance and firmness, and as the largest berry yet produced. Unless indications fail, some of the older standard varieties will be cast in the shade by the newer.

Raspberries are the next fruit in order of ripening, sometimes overlapping the strawberry season a little, and therefore indispensable to keep up supplies in their line. The cap varieties, which propagate from tips and generally as hard as oak, are preferred by some. Doolittle, Miami, Mammoth and Seneca are among the older standard varieties, while the Gregg promises to supersede all others of this class.

Among the reds, the Hudson River, Antwerp, Philadelphia, Brandywine, Turner and Herstine are standard varieties, while Pride of the Hudson, Henrietta and Queen of the Market, among the newer, may, on account of their larger size, supersede the former.

The reds are not as hardy as the cap varieties, but most of the above-named are sufficiently so to make them reliable, and, as they bring higher prices as a rule, they are more extensively grown. Those multiplying with suckers (unless intended for planting) should be treated as weeds, except three to five on a bush, left stand for fruiting, which should be topped when three to four feet high, so as to form side branches, which should also be topped when growing beyond reasonable length. By this method stouter canes will be produced, which will not be so likely to fall or be blown over. The caps may be treated the same way. As an inducement to planting raspberries, they will flourish very well in the shade and may be planted along tree rows, where, by liberal manuring, they will yield surprising crops. Three by six feet is a proper distance for planting raspberries.

Blackberries will follow the former very closely and keep up the succession of small fruits. They should be planted four by eight feet and treated similarly to raspberries. They are great feeders and will respond well to liberal manuring. The Lawton, being the first to make a sensation in blackberry culture, continues to be largely grown, but the Wilson, being earlier and fully as large, is *the* market berry for New York and Philadelphia.

Kittatinny is a berry of best quality, nearly as large as either of the former and more hardy, but has of late been more subject to red rust. It has lost much of its former popularity. Snyder, Wallace and Taylor are newer varieties and quite popular in some sections. The currant is a bush that is considered indispensable in almost every garden or back yard of reasonable pretensions, but as a rule has to make its way among so many serious obstacles, that it would not be surprising if it had succumbed and gone out of existence long ago. When properly treated it will yield as liberal and as fine as any other fruit, and it is of more value than it generally gets credit for. Cherry and La Versailles are the largest varieties, but the old Red Dutch will yield more than either and is less acid. The White Grape and White Dutch are less acid than the reds, of fair size and quite productive.

The gooseberry can only be grown in a cool and humid atmosphere, so that in this latitude we scarcely learn to know what a gooseberry is; therefore the nearer we can bring about the above conditions the greater will be our success with this fruit. Our native kinds, however, yield crops as regular and abundant as any other fruit, but small and inferior to perfect foreign gooseberries.

CONTRIBUTIONS.

For THE LANCASTER FARMER.

LARGE FARMS AND STOCK-RAISING IN LANCASTER COUNTY.

Although Lancaster county, being noted for its fine farms and its good farming and farmers, we cannot, as a general thing, boast of large farms like some other counties and States, our farms averaging from fifty to one hundred acres, seldom over one hundred and fifty, and a few two hundred acres. As an exception to this, however, we find a few in the northeast and northern sections of the county that may be worthy of notice and interest some of the many readers of THE FARMER, of which we will endeavor to give a short description.

About twenty miles northeast from Lancaster and about five miles from Ephrata, near the Berks county line, there is a farm containing about seven hundred acres, owned by Mr. Texter, who manages the whole farm; he has it stocked with common stock of all kinds, from sheep, swine and cattle to horses by the score, mostly or always a surplus on

hand. There is but one main building on the whole. He has quite a number of acres of grazing or meadow lands, and also forests, such as chestnut sprouts. Although mostly sand and gravel land he has a good deal of it in a good state of cultivation.

Then about fifteen miles from Lancaster, five miles north of Litiz, you will find several large farms also; one of them owned by the heirs of Dawson Coleman, and the other by the heirs of Robert Coleman. The first, owned by the heirs of Dawson Coleman, is located in Elizabeth township, used to be called the Elizabeth Furnace, but is now abandoned and turned into a stock farm; it contains about thirteen hundred acres. It is managed by Mr. Colin Cameron, who has turned it partly into a stock farm from that of a cheese factory, which was carried on by his predecessor. Mr. Cameron keeps mostly Alderney stock, from which he sells many at a distance, and at home; he has also any number of poultry, from the game to the Plymouth Rock. There are three large houses and barns on the land, but all managed by Mr. Cameron, who lives in the old mansion where Mr. Coleman used to live many years ago. The land is divided into grazing and farming, and a good deal is in forest. The most of the old furnace can yet be seen, together with the large number of tenant houses, for whose occupants Miss Coleman built a church to worship and hold Sunday-schools.

The latter farm, west of the former, containing about forty-five hundred acres, owned by the Coleman heirs, formerly called the Speedwell Forge place, managed by Mr. George Youtz, who occupies the old mansion, and has, among other older buildings, built several large barns and houses; scarcely any of the old forge and dam being visible. This farm also contains much grazing and meadow lands, and chestnut timber, from which many rails and posts are made and sold; also, charcoal burned from the wood.

Mr. Youtz has, if not the greatest stock farm in the State, at least one of the greatest. His stock of cattle are, as far as I saw, ordinary with the exception of a pair of oxen, which he values highly; but his stock of Hambletonian horses exceeds any that I have yet seen. He has about twenty colts, about twenty yearlings, that many two yearlings, and, perhaps, forty or fifty work horses, including his stallions, besides a number of what he calls Percherons, (small ponies).

He has a stallion of the Middleton stock for which he paid fifteen thousand dollars, and three and four yearling stallions which he values from one to two thousand dollars. He has a number of Hambletonian colts now training on his half-mile course, made on purpose to train, which he expects to turn out two-forties, and is sending them out to different points. These farms are none of our Lancaster county limestone land—rich farms—nor are they so pleasantly located, but it will do anyone good to see some of these farms and stock.—*Stock Admirer.*

For The Lancaster Farmer.

WANTS TO KNOW.

Mr. Editor: A young man wishes to know where he can buy good land for $150 an acre that will yield 40 bushels of wheat per acre. He has seen in the papers notices of Mr. Groff's system of cultivation, but it was not stated where such land could be bought for $150 an acre. In his neighborhood land costs a good deal more than that, and the yield of wheat per acre, one year in another, hardly averages 25 bushels per acre.

Will Mr. Groff please state, through The Farmer, where land can be bought for $150 per acre that will yield 40 bushels of wheat to the acre? And, also, whether the farm can be kept in good condition with 300 pounds of rawbone to the acre; and, if the straw is all sold, what are we to use for bedding for the horses and cows?—*Warwick, May*, 1879.

[We apprehend that either of the propositions might be realized singly, but the compound proposition may be difficult to realize.]

For The Lancaster Farmer

SPRING DAYS.

And now the merry days have come,
The gladdest of the year,
Of meadows green and daisies bright,
And streamlets running clear;
The buttercup and cowslip, too,
Peep from their mossy bed,
They love the gentle sun's warm ray,
Above their lowly head;
The apple tree is in full bloom,
And from their tops the Jay
Is piping out his welcome notes,
Throughout the live long day.

The little lambs upon the hills,
They skip and run about,
And children on the village green,
They give a noisy shout,
And say that merry spring is here,
And in the woods they hie,
To gather flowers and make a wreath,
Beneath the bright blue sky;
For school books now are laid aside,
And all their tasks are done,
And in the fields they roam about,
Beneath the genial sun.

The plowman hurries to the field,
To turn the mellow sward,
And drop within the golden grain,
And wait the rich reward;
Full well he knows that it must die,
And rise to life again,
Ere he can reap the sweet reward
For all his toil and pain;
He thinks not of the gentle breeze,
That fans his sweaty brow,
He only thinks of those he loves,
For those he's toiling now.

The ice-king now no longer rules
This beauteous world of ours,
The gentle sun upon us beams,
And brings us southern showers;
For now the trees are decked in green,
And everything is bright,
O, welcome to the lovely spring,
It is the heart's delight.
Let us enjoy it while we may,
And do what good we can,
And leave the rest to Him above,
It is the better plan.

Then welcome, welcome to the spring,
It brings us birds and flowers,
It brings to us the breezes soft,
It brings us April showers;
It brings to us the rippling rill,
From out the mountain glen,
It makes the blood leap in our veins,
It makes us young again;
The insects, too, have sprung to life,
In every woody dell,
Oh, how we love the spring time,
The hungry heart can tell.

But some are grieving for their loved,
Whom they have laid away,
Forgetful of the blessings here
That they have every day;
Nor thinking of the time they'll meet
Upon the golden shore,
And walk within the light of God,
And live for evermore:
We there shall walk the golden streets,
It is the spirit's rest,
It is the spring time of the soul,
The sweetest and the best.

—*Leoline.*

For The Lancaster Farmer.

ABOUT EGGS.

Mr. S. S. Rathvon—*Dear Sir:* In reading over your valuable paper, The Lancaster Farmer, I see many questions are asked by the Lancaster County Poultry Association, and not all being able to agree I will here give a few ideas of my own experience. Eggs will keep for one month and hatch well if they are laid on their sides, instead of standing on either end, but not air-tighted. When standing on end the spiral cord is on a strain, as the yolk is hung in the centre, having a spiral cord attached to each end, and each one being twisted the contrary way from the other keeps the yolk on the one side up all the time; you can turn the shell but not the yolk; therefore, on the side is the proper way to keep them, the same as when the hen is brooding over them. Fertile eggs are those that show the air bubble at or near the big end. When it cannot be seen the egg is not fertile. Some are not full, and we can see the light through the top of the egg; and, move it backward and forward slowly, you can see the contents move on the inside. These are non-fertile eggs.

Pullets' eggs will hatch as well as hens, but it is necessary to give them the cock in the fall, and by spring they will be all right; but they will give more cockrels than pullets. The "egg-tester" is of no use to test the fertility of an egg; this fact should be ascertained before the eggs are set, by the air bubble; the tester is very useful, after they have been sit on one week, to test the life of the egg. If the vitality has not been destroyed by the hen or hens it will show itself by the use of the tester. I have one of my own make, worth 20 cents, far superior to those sold at 75 cents. Fresh blood should be introduced every year, and not bred in and in; and it matters not whether it is a cock or a cockrel, providing they are vigorous ones. White Leghorns, if well bred, will lay 225 eggs per annum, and will average seven to the pound. Where I have one that will fall short of this number I have two that will overreach it; or 19 doz. per annum for each hen, at a clear profit of $3.60 per year, and the hen gratis, so if one dies I lose nothing, only minus one chicken. Gentlemen, it is eggs that pay, not poultry flesh.—*Yours, &c., Wm. J. Pyle, West Chester, April 17th*, 1879.

P. S. Here is something for the society to debate on. In the spring of 1876 I had 35 hens and one cock. About the first of April I lent the cock to a friend to run a few days with his fancy hens (White Leghorns). He kept him five weeks, and during this time I sold 32 settings, and sit 8 settings myself; but I examined every egg, and some of my customers ordered the third setting, reporting to me of hatching 12 out of every 13 eggs. At the fifth week they began to show non-fertile eggs—nearly one-half of them. I then had him sent home again, and in four or five days they were all right again.—*W. J. P.*

For The Lancaster Farmer.

THE MOON'S INFLUENCE.

Editor Lancaster Farmer: I am obliged to your correspondent J. G. for his communication in the April number in answer to mine of the preceding month, though I regret to say it was not in all respects satisfactory. He makes clear what he meant by the expressions "rising" and "setting" of the moon in his former communication, so far as the almanac is concerned, but he does not explain what the moon's "ascension" or "descension" consists in, or how we are to know, aside from the almanac, whether it is in one or the other of those periods, so that we might be the better able to judge if the change from one to the other is *likely* to have the important effects attributed to it. But let that pass. It must be admitted that the belief in the moon's influence on the crops is to be established or overthrown by facts and actual experience rather than by abstract reasoning or theory; but I fail to find in either of J. G.'s two communications in The Farmer any statement of facts or reference to experiments that demonstrate the correctness of his belief, or that go very far to show even a probability in its favor.

He tells us, it is true, that he plows and plants when the moon is in such and such signs, and leads us to infer that he has thereby succeeded in raising good crops; but it seems to me this is not enough, unless he has also tried the experiment or known of somebody else trying, not once only but a number of times, of plowing and planting in the *opposite* sign, and proving by actual experiments that the crops were inferior in the latter case to the former. This test seems necessary from the fact I referred to in my former communication, that many of our most intelligent and some of our most *successful* farmers pay no attention whatever to the signs or phases of the moon, and do not believe they have lost anything by their incredulity in this particular. Of course these men plow and plant about as often in what J. G. would call the wrong sign as in the right one, and if it is a

fact that they raise quite as good crops as those who follow his plan, is not the inference pretty strong that the latter are probably laboring under a delusion? If, however, J. G. can show by a series of carefully conducted experiments, by himself or others, extending over a considerable space of time, that the signs or changes of the moon have the effect attributed to them, or any sensible effect on the crops, then we will have to admit that he is justified in his belief. Until that is done, it cannot be expected that intelligent agriculturists will generally adopt this theory.

J. G. correctly supposes that none of us know much about the invisible operations of nature or *how* a seed germinates and grows. We do know, however, something of the *conditions* indispensable to growth and germination. We know that it requires a certain degree of warmth and moisture. Plant a grain of corn in perfectly dry earth, or where the ground is and remains of a temperature below freezing, and it will not germinate till doomsday, no matter what the sign of the moon. On the contrary give it warmth and moisture, and it will as surely germinate and grow up out of the ground, be the moon's sign what it may.

Now, it sometimes happens in planting seeds, in actual practice, the ground is so dry, or so cold, that the seed placed in it will remain for a week or more with no more change or approach to germination than if it had been left in the bag or the granary. But while the seed has lain there in the ground, perfectly dormant, the sign which was right when it was planted has changed, and when it begins to germinate the sign is wrong. Does J. G. conceive, in that case, that the seed planted after the sign had thus changed would be less likely to produce abundantly than the one planted a week before? If he admits that the result would be the same he will then have to acknowledge that knowing the right sign is of very uncertain practical use, as the sign may be different at the time of germinating from what it was at the time of planting.

It is claimed, however, that the *weather* is affected or governed by the moon's changes, and of course whatever affects the weather, indirectly if not directly, affects the crops. But is there sufficient evidence that the changes or changing signs of the moon have any effect upon the weather? Dr. Lardner, the celebrated English scientist, who delivered a number of lectures on various scientific subjects, some thirty years ago, asserts that complete registers of the weather at many different points throughout Europe had been kept for fifty to a hundred years, the times of lunar changes also being kept, so that the one can be compared with the other. "The result of such an examination," he says, "has been that no correspondence whatever has been found to exist between the two phenomena." He further declares that abundant experiments have proved that the notion that plants and trees should be grafted or timber felled in a particular sign or phase of the moon is entirely without foundation; and equally unfounded, he says, is the notion that vegetables whose roots are used as food should be planted in the decrease of the moon, while those that bear the fruit on the stalks and branches should be planted during the increase of the moon. These conclusions of Lardner, he affirms, have been established by many long-continued and careful experiments by competent observers. Can J. G. bring forward any record of experiments in corroboration of the contrary opinion he holds?

The mere fact that our "fathers and grandfathers" held certain opinions is not sufficient ground for us believing they are true, or else a great many of us would discard the demonstrations of modern astronomy and believe that the earth is flat instead of round, and that the sun daily moves round it to produce day and night.

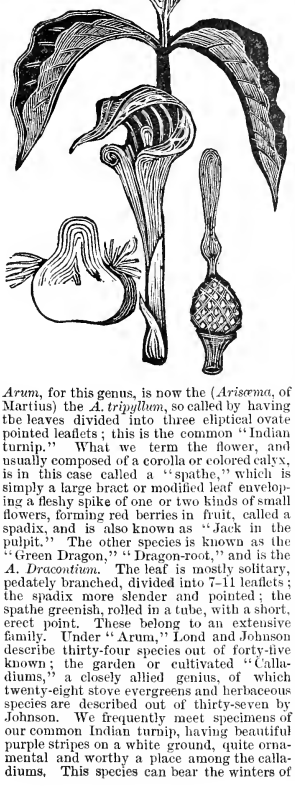
The tides of the ocean are referred to as showing the effect the moon may have upon matter on the earth's surface. If J. G. could show that any effect similar to the rise and fall of the tides is produced in our lakes and ponds and mill-dams, it would be more convincing. As this cannot be shown, and as the periodical times of the rising and falling of the tides, (twice in twenty-four hours) have no correspondence whatever with the times of the changes of the signs from "ascension" to "descension" (twice in twenty-seven to twenty-eight days) it can hardly be claimed that the moon's influence in the matter of the tides lends any weighty confirmation to the theory we have been examining.—*Amateur Farmer.*

For The Lancaster Farmer.

THE INDIAN TURNIP.

Every school boy knows the "Indian Turnip," as one mischievous lad will often excite the curiosity of many to take a bite or chew a bit, and then enjoy the fun to see them spit it out and scrape their tongue as if beset by pricking nettles. This pungency is quite sharp for a brief period in the fresh root, which is called a *corm*; it is not a bulb nor onion. Although shaped like a turnip, it differs in its structure.

We have two species, very commonly met with in moist, rich woods. I find the old name,



Arum, for this genus, is now the (*Arisæma*, of Martius) the *A. tripyllum*, so called by having the leaves divided into three eliptical ovate pointed leaflets; this is the common "Indian turnip." What we term the flower, and usually composed of a corolla or colored calyx, is in this case called a "spathe," which is simply a large bract or modified leaf enveloping a fleshy spike of one or two kinds of small flowers, forming red berries in fruit, called a spadix, and is also known as "Jack in the pulpit." The other species is known as the "Green Dragon," "Dragon-root," and is the *A. Dracontium*. The leaf is mostly solitary, pedately branched, divided into 7–11 leaflets; the spadix more slender and pointed; the spathe greenish, rolled in a tube, with a short, erect point. These belong to an extensive family. Under "Arum," Lond and Johnson describe thirty-four species out of forty-five known; the garden or cultivated "Calladiums," a closely allied genius, of which twenty-eight stove evergreens and herbaceous species are described out of thirty-seven by Johnson. We frequently meet specimens of our common Indian turnip, having beautiful purple stripes on a white ground, quite ornamental and worthy a place among the calladiums. This species can bear the winters of Canada and the perpetual summer of Brazil. When carefully examined it is found to be one of our most singular vegetables. Its erect scape, often spotted with purple, invested at base by the peticles and their acute sheaths; and above bearing the acuminate spathe, convoluted at its bottom, flattened out and bent over at the top, like a hood, either striped with green or purple; some plants are more or less barren. The fertile plant has a roundish crowded germ, each tipt with a stigma; some have stamens below the germ, (Monœcious). The germs grow and form a large compact bunch of shining scarlet berries; these, later in the season, always attract attention by the large, vermilion red-colored head peeping out. The acrid property, which resides in this and other species of Arum, appears to depend upon a distinct vegetable principle in chemistry at present but little understood. It is extremely volatile, and disappears almost entirely by heat-drying or simple exposure to the air. This, no doubt, like the edible Arum, (*colocasia esculentum* of Schott), "Arum colocasia" or Egyptian Arum, was extensively used for food. No menstruum has yet been found to retain the acrid principle in its power—alcohol, vinegar, water, milk, etc. It seems to consist of or escape in the form of gas—in solution, distillation, &c. The acrimony of the *Ranunculi*, which approaches that of the Arum, is lost by drying, yet is soluble in water, and passes over with it in distillation.*

The acrimony of the Arum when fresh is too powerful to render its internal exhibition safe. The roots, when dried whole, retain a small portion of their pungency, and in this state they have been given by some practitioners in this country for flatulence, cramp in the stomach, &c.; also, for asthmatic affections. As topical stimulants, they promise to be useful when any method shall have been discovered of fixing and preserving their acrimony.

The late Dr. Barton, of Philadelphia, observes that, "the recent root of this plant boiled in milk, so as to communicate to the milk a strong impregnation of the peculiar acrimony of the plant, has been advantageously employed in cases of consumption of the lungs." Dr. Bigelow says: "This statement, however, should be qualified by the recollection that the Arum imparts none of its acrimony to milk upon boiling." No doubt a partial mixture of the root steeped in the milk might answer the object in view.

These corms contain a large proportion of very pure white fecula, resembling the finest arrow root or starch. By simply reducing them to a pulp while fresh, placed on a strainer and pouring cold water repeatedly over it, carrying the farinaceous part with it through the strainer, leaving the fibrous portions behind, it loses its acrimony, and when thoroughly dried forms a very white, delicate and nutritive substance. Dr. McCall, of Georgia, found these roots to yield one-fourth part of their weight of pure amylaceous matter. This is no rare occurrence of acrid roots, or like the *Cassava* or bread-root tree of the West Indies, the fresh juice of which is highly poisonous.

There seems to me a hint of a profitable industry that might arise from the cultivation and treatment of this singular product so wholly neglected or overlooked among the many other gifts of a benevolent Creator. Remember the "tomato." When I was a boy I was cautioned against handling and tasting it, as if it were the "Apple of Sodom," and sure death to eat. Well, we need education and experience; also, enterprise and experiment. So my agricultural friends, as well as gardeners, will please excuse me for so long

*M. ch. Musset, a celebrated Dutch anatomist, gives a highly interesting account of an "Arum colocasia," that distilled water from the tips of the leaves with some degree of force, ejecting from 10 to 100 drops in a minute, in proportion as the water was added to the root-stalk. Raysch also says of an Arum which he kept in a green-house in the Botanical Garden, at Amsterdam, that the leaves transpired very abundantly, distilling water drop by drop from the extremities of its leaves.

a yarn about the "Indian turnip;" if you won't profit by it, it can harm no one to know what is known about it.—*Very respectfully, J. Stauffer.*

For The Lancaster Farmer.

TIMBER AND FENCES.

Much has been said and written on the subject of *timber* and its uses in the near future. Although the discussion of the subject has continued for years, yet we find that timber is cheaper than it has been for a quarter of a century. As a general rule, when any species of merchandise becomes plenty and low in price a scarcity will follow; therefore let us not wantonly destroy what little we have, nor cease the agitation of the subject of reproducing it, through the *American Forest Association*, of which Dr. Warder, of North Bend, is the President. Notwithstanding wire fences will eventually take the place of wooden fences, and save millions of dollars to the husbandmen of the Union, still we will continue the use of and cannot dispense with timber, for purposes too numerous to mention.

Nevertheless we ought not to forego the pleasures of reproducing it for the general benefit of our fellow-men. If for no other purpose, it is an ennobling satisfaction to behold the beautiful foliage as it bursts forth in the spring through the "forces of nature," wielded by one who is the author and builder of all things beneficial to the human family. Also, for the protection and enjoyment of our feathered friends, who make their houses and their homes under the sombre shades of our trees, chirping and singing praises to their Creator, almost showing more reverence for their Maker than those under whose dominion their lot is cast.

But, a truce to moralizing, as I propose to say something about wire fences. They are amply sufficient everywhere for middle fences, and also for roadsides; beautiful to look at, straight as a line, and fastened every twenty or thirty feet to a straight post. They require from three to five lines; people who do not keep sheep on their farms only require three. Along roadsides, to keep out sheep and swine, the barbed wire is the best and will deter all animals from making an attempt to break through. I may instance a neighbor, who had a barbed fence around an enclosure in which was his herd of cattle, including a bull. Another neighbor had turned his cattle into a near adjoining field, among which was also a bull. These bulls soon scented each other and commenced menacing each other with bellowing; the one in a wired enclosure and the other separated by an old rail fence. The latter commenced horning and pawing, making desperate attempts to break through and attack his antagonist, who kept a respectable distance from the barbed wires, although not less furious in his menaces. The other, however, not succeeding in breaking through, the fun was spoiled. Now, the bull inside of the barbed wire fence kept from four to five paces off from it, bellowing, snorting and scratching up the ground at a furious rate, but cautiously keeping away from the barbed wire, manifesting a dread to approach it too nearly. It appears to me that this was a satisfactory illustration of the merits of such a fence, and that the cattle will soon learn its nature, and avoid it. Wire fences also admit of cultivation nearer to them, and in the course being easier kept clean of weeds and brambles. I predict that in less than twenty years one-half of the fences of the country will be made of wire, unless fences should be dispensed with altogether. In some parts of the country they have many miles of this kind of fencing, and as far as I am able to learn it gives general satisfaction.—*L. S. R., Warwick twp., May*, 1879.

The Pennsylvania Board of Agriculture will hold a grand meeting in the Hall of the Permanent Exhibition Co., Fairmount Park, Philadelphia, commencing on Thursday, June 5th. Our readers will please take notice.

SELECTIONS.

CIDER VINEGAR AND SUGAR FROM SUGAR BEETS.

Sugar beets are a crop very easily raised, and in good soil the produce is abundant. All cattle are fond of the leaves, which add much to the milk of cows, without giving it that bad taste which is unavoidable when they are fed with turnips or cabbages, and which is chiefly owing to the greater rapidity with which the latter undergo the putrefactive fermentation.

The seed is sown in drills 20 to 24 inches apart, and thinned out to the distance of 8 to 12 inches from plant to plant in the rows. From four to six pounds of seed are required per acre, and they should be steeped 48 hours before planting; the best depth for sowing is from three-fourths of an inch to an inch; the culture is similar to that of carrots or parsnips, and the cost of seed, labor and fertilizers will amount to about $40 per acre.

The yield, according to the quality of the land fertilizer used and the cultivation bestowed, should average not less than 27½ tons or 908¾ bushels beets per acre, and 5½ tons beet leaves.

Analysis shows that 1,000 pounds of sugar beets contain 184 pounds dry substances, 1.69 nitrogen, 7.10 ashes, 3.914 potash, 0.379 lime, 0.536 magnesia, 0.780 phosphoric acid. In manufacturing these elements are distributed as follows:

	d. s.	nit.	ashes.	pot.	lime.	mag.	p. acid
T's & B's,	19	0.24	1.15	0.336	0.108	0.132	0.144
Fibre,	46	0.44	1.71	0.585	0.390	0.100	5.165
Refuse,	24	0.60	1.20	0.380	8.640	0.250	0.380
Molasses,	25	0.31	2.47	1.741	0.141	0.069	0.015
Sugar,	85	——	0.57	0.872	——	0.040	0.072

After harvesting the roots are first topped, then washed and pulped in a grater, and pressed to extract the juice.

Fifty pounds pressure to the square inch extracts 60 per cent. of juice; 80 pounds pressure to the square inch extracts 64 per cent. of juice; 400 pounds pressure to the square inch extracts 80 per cent. of juice.

Twenty-four pounds of pulp for every 100 square inches of press surface is the best proportion to use. The cider-press and grater, made by the Boomer & Boschert Press Co., of Syracuse, New York, is worked by power, and has a capacity, with the labor of two men, of grating and pressing one thousand bushels of beets per day of 10 hours, and yields 5,000 gallons of juice.

The press and grater cost $510, and require less than six horse-power to run them, and the press is the best and cheapest there is for this use. The ordinary cider-press will answer, but it costs more to run it and not as much juice is obtained, on account of its not being able to produce as much pressure as the other.

One bushel of sugar beets, mixed with nine bushels of apples, makes a cider richer and of superior flavor to that made from apples alone. Sugar beet juice can be converted into vinegar in the same manner cider now is; it makes a stronger vinegar than cider does, of equally good but different flavor, and if treated the same as maple sap or sorghum juice, it will yield a good article of brown sugar, and all of this not used by the producer in the brown state, would be readily purchased to be refined by the refineries already established. To refine sugar requires costly machinery, such as vacuum pans, centrifugal machines, filters of bone coal, &c., and also skilled labor, but the manufacture of sugar from beet juice requires only the evaporating pan and the addition of some lime to the juice to neutralize the acid.

The best pan is that made by the Blymyer Manufacturing Company, Cincinnati, Ohio, 4x15 feet of copper costs $210, has a capacity to evaporate 4,000 gallons per day of 24 hours, and requires three cords of wood or its equivalent in coal. They also have larger and smaller pans, both iron and copper; the former being lower in price. I have no personal interest in presses or pans, and mention them, that each, for himself, can make an estimate of the cost of the machinery required, and what it will cost to convert his beets into cider, vinegar or sugar.

The estimated quantity of the sugar supply of the commercial world in 1875 was 2,140,000 tons of cane sugar and 1,317,625 tons of beet root sugar, of which latter France produced 362,256 tons as against 1,565 tons produced in 1828, which shows the progress of this industry there. The consumption of sugar in the United States is about 700,000 tons, and is rapidly increasing. We now produce of cane sugar 100,000 tons, and of beet sugar 1,000 tons, and there is no reason why this cannot be increased to the quantity we require, if the farmers will raise the beets.

In France there is a heavy tax on the beet root sugar they produce, and cane sugar is admitted free, yet, notwithstanding these disadvantages, they successfully compete with it; here the reverse is the case—a heavy duty on sugar imported and no taxes levied on its manufacture; certainly under these conditions we should produce all the sugar we consume, and have a surplus for export.

After the juice is expressed from the rasped beet, the dry pulp remaining is an admirable food for cattle, sheep and swine. The average amount of pulp is 20 per cent. of the original weight of the beet, and three tons of it for feeding purposes are equal to one ton of hay, and should be fed in connection with straw and oil cake or cotton seed meal. As the pulp is fed back to stock, the land is constantly growing richer, all the mineral substances taken from it being restored in the manure; this enables the farmer to raise larger crops of various produce, and consequently keep more stock, which enables him to make more butter and cheese.

The present cider mills and cheese factories could add to their present machinery the pans or presses as required, and by co-operation on this, as in other products, we can produce profitably all the sugar we require. This will bring the business of sugar making within the reach of small farmers, and is of vast importance.

The notion prevails that to make sugar profitably it must be made extensively. This is certainly erroneous, and the sooner the illusion is dispelled the sooner we shall begin to realize the productive resources of our lands and employ our now idle laborers on a very remunerative crop now grown only to a limited extent. The introduction of the cultivation of the sugar beet generally, subsequently to be converted into sugar or vinegar, would be of great benefit to farmers. It would insure to them superior methods of agriculture, increased crops, more remunerative prices, and enhanced value of farms.

It would create industry and diversity of labor, thereby increasing the general prosperity, intelligence and happiness of the community.

It would eventually reduce the prices of sugar, of bread, and of meat, butter and cheese, and render the United States more independent of foreign countries. One acre of land will produce 1,000 bushels of sugar beets, which made into sugar will yield 4,800 pounds of sugar; or into vinegar, 5,000 gallons, or into proof spirits 1,000 gallons; they are profitable to feed to cattle, particularly to milch cows, in connection with hay, and the pail acquaints the farmer with the fact.—*Andrew H. Ward, Bridgewater, Mass.*

ONE-EYE SYSTEM OF POTATO-GROWING.

Mr. Gerald Howatt, Placerville, Cal., writes that he procured the secret of potato-growing advertised by Isaiah T. Clymer, of Quakertown, Pa., and found it to be substantially a reproduction of the method practiced many years ago, and which he described as follows, in the *Country Gentleman* of June 25th, 1857:

I grew those potatoes on an old pasture field without any manure of any sort. I plowed in the spring (April) five inches deep, then harrowed lengthwise of the furrows, then

plowed it crosswise, harrowed it in the same way first, then cross-harrowed it with a double Scotch harrow. I then opened the drills thirty inches apart and five inches deep. This I did with a two-horse plow. I then dropped the sets twelve inches apart and covered with a common hoe by hand, level with the surface. This is to have a level surface and to have the stalks all come up evenly. I then ran the roller over them. I planted from the 18th to the 21st of May, 1856. I grew on this acre the Jenny Lind and Prince Albert. My seed was prepared in the following manner: I cut all my potatoes two or three weeks before planting, leaving but one eye to each set. When the eyes are cut I spread them on a loft, and sprinkle them over with a little slaked lime, to heal the cuts. By this system I have no sets rot in the ground, and am sure of having no vacancies. I also get a much evener crop of potatoes, as the one stem, from the one eye, will give you a large potato, and all about an equal size. Two or three stalks will give you a larger quantity of small potatoes, but they will not be fit for market. If I grew potatoes to feed cattle I should cut my sets with two or three eyes to each set. My object in that case would be quantity, not quality. The sample before you will prove that my practice is correct. I had no small potatoes in them; they have been as you see them.

After Culture.—About two or three weeks after planting I give them a good harrowing with a Scotch double-harrow. If the ground should be caked I lay a weight on the harrow, so that the teeth penetrate the soil two or three inches. This answers two purposes; it lets the stems come through quicker, and cuts up the weeds. If there should come on a rain immediately after this operation, I repeat it after the ground dries, which keeps all clear of weeds—a very essential point in potato culture.

When the stems are three or four inches high I run Knox's horse-hoe through the drills four or five times during their growth. I do not use a plow with them, neither do I use a hoe to them. Knox's horse-hoe puts a sufficient quantity of earth to the stems. A common cultivator with teeth reversed would answer.

One acre of Jenny Lind and Prince Albert potatoes yielded, under the above treatment, *two hundred and sixty-eight bushels of table potatoes*, measured (the acre) by a surveyor. Two barrels of potatoes planted over an acre of land. The total produce of two barrels was two hundred and ninety-four bushels of table potatoes, measured by a sealed half bushel, and each half bushel heaped in measuring.

This statement was elicited by the fact, that in the earlier part of the same volume several large crops of potatoes had been reported by correspondents who had used seed cut small, to which the late C. E. Goodrich, of Utica, so widely known as an experimenter with potatoes, had replied in the issue of May 14th, in opposition to the practice. In the number of June 18th, Mr. Howatt rejoined, giving his views in opposition to Mr. Goodrich's reasoning, and enclosing the above statement with the following remarks:

"I have tried all systems of potato culture, the five and six-eye system, the half-potato system, and the wonderful small potato system. * * If you want a good crop of potato stalks, plant a potato with five or six eyes on it, but if you want good tubers, plant a set with one eye. * * I have grown them in this country for the last six years on the one-eye system with perfect success, and have taken premiums (first) at the Allegheny County, Pa., Agricultural Society, the Pittsburg, Pa., Horticultural Society, and I think at the Pennsylvania State meeting. Let both systems be tried and the results published—the sets being prepared as I do mine, and plant the same as other potatoes, either for forcing or field culture."

Mr. Howatt now adds:

Mr. Clymer's one-dollar prescription is not quite right, however. He says: Take the potato—ordinary seed—cut away enough of the seed end to remove the cluster of eyes there situated (cutting these away at once saves much time, and does no injury to the seed.) Then cut out all the remaining eyes, except two, with the point of the knife, softened and bent round, to form a quarter-inch gouge. (This, with a three or four-inch blade, makes the most convenient tool, but an ordinary pocket-knife will do very well.) They may then be rolled in a plaster; but this is not indispensable.

Much of this is simply to mislead. He says cut away the seed end, but it is well known to all potato men that the eyes at the seed end will mature from one to two weeks earlier than the other eyes. He says to throw them away. I commence cutting at the root end, throwing it away, or rather feeding it, as it is well known that the eyes immediately at the root end will produce small and late potatoes. He speaks of the point of his knife softened, and made into a gouge, and it is strange to me that he has not got up a patent knife for the purpose. But it is well known that a pocket-knife is not fit to cut a potato; the back is too thick, and if the potato is hard it will split it. A table knife is proper, and the best. Had he said, in the fall spread out your small potatoes in the sun, to get thoroughly greened, which makes the flesh harder and ripens the eyes, I should have said he knew a little. As to covering with plaster, he has never tried it, and lost them. Plaster is cold, and if they are covered with it, it draws the frost. Having seen last spring thirteen barrels so frozen in shed, I know. Had they been covered with lime, that would not be the result, lime being heating.

In conclusion, I advise Mr. Clymer first to learn how to grow a potato properly, and then give us the result, and we shall be glad to copy from him.

KEEPING WORK AHEAD.

Though most farmers and gardeners know well the value of starting early in their war against weeds, the importance of the task is very apt to be forgotten in the hurry of spring work. We scarcely need give the advice as advice, but a suggestion is always encouraging, and the more so when we know it to be true.

The great trouble with most of us is that we lay out too much work for ourselves to do. We get a great many things half done, and work twice as hard as need be, when the same amount of labor judiciously expended would have a threefold result. This is just how it is in the war against weeds.

We are accustomed to get into such a "flurry" about getting in the crops in time that we forget the weed crop is already in, and going on at a rapid pace. We have not unfrequently seen the greatest exertion in getting in seeds or plants that would have done just as well a week later, when the same time spent in harrowing or weeding ground, would have been equal to four times the time at a later period. These remarks of course apply more to garden than to farm work. Where horse-power is at hand weeds half an inch high, if annual weeds, are as easily destroyed by a broad-toothed cultivator as if they were but just pushing through the ground; but in garden work a simple raking of the ground when the seeds are just sprouting is quite as effective as the best hoeing would be. An hour or two raking of a garden between the rows of the various crops will, in fact, almost render hoeing unnecessary, and thus save many a hard day's work.

Some Hints on Tree Planting.

Calling into a nursery some time since, the subject of tree-planting came up, and the remark was made that there was a great difference in trees in regard to the ease with which they would recover from the necessary injuries of removal. One friend dissented from this. He contended that one species of the tree was just as easy to remove as another one. He said the difficulty was in the lack of knowledge of those who professed to be tree-planters. Here, for instance, would be a row of oaks, there of tulip trees, another of some other thing generally regarded as hard to transplant, yet all were doing equally well. Hundreds of trees, two or three feet apart, were all growing and doing well, one after another, just as they had been planted, without a single failure among them all. It was regarded as ignorance which made a tree die provided it had roots, these roots not permitted to dry before planting, and the earth firmly set in about the roots. All this being granted, our friend believed, and his success warranted his faith, that no tree ought to die if the planter knew his business. Some trees are of a softer wood than another, and the softer the wood the more they should be pruned at transplanting. The hard, close-grained, wooded trees, such as red or sugar maple, would do tolerably well with a little pruning; the silver maple, with a softer wood, required more, and so on, just as the bark or wood was light or porous or not.

The difficulty which many people find in getting willow trees to grow shows that there is much sense in this view. Many persons set them out with all the slender twigs attached to them, and they have great difficulty in getting a good growth. We have seen such willows stand a whole year with only a leaf here and there, often half the slender wood becoming entirely dead, and very often the tree dying outright; and all this too with trees having an abundance of roots.

Now, if we take a large branch of a willow tree and make a post of it, cutting away all the branches but the one single, thick post, and stick it in the ground precisely as all posts are, it will grow, and in a few days push out an immense mass of green foliage. If we put in a thousand of them all will do the same. We could safely say, that not one of such thousand would die. Yet we see in the unpruned willows how they go off, and indeed just in proportion to the free, vigorous head on the transplanted willow is the danger of loss.

Surely here is a hint by which all may profit. In proportion as the wood is soft is the danger of drying up; and in proportion to the danger of drying should the pruning-knife be used. There is room for intelligence here.—*Germantown Telegraph.*

COMPOSTS FOR TOBACCO.

The following we clip from the Richmond *Tobacco Journal:*

For tobacco, in making composts, more potash must be used and less phosphoric acid (bone). It should be remarked, that if dissolved bone is used in composts, gypsum (plaster) will not be necessary, as the dissolved bone will furnish enough sulphuric acid to prevent the escape of ammonia. If ground bone, not dissolved, is used, then gypsum must be applied to the compost heap.

One thousand pounds of tobacco (which is a good crop per acre,) are found in the air-dry state to contain:

	POUNDS.
Phosphoric acid, equal to	8.6
Sulphuric acid, equal to	9.3
Lime, equal to	88.3
Magnesia, equal to	25.0
Potash, equal to	73.7
Silica, equal to	23.0

This shows that tobacco requires a large amount of potash and a very moderate quantity of phosphoric acid. The ammonia in air-dried Virginia tobacco was found in five samples analyzed under supervision of Prof. Mallett, University of Virginia, to average a little more than 4 per cent. (4.31), or in 1,000 pound about 43 pounds of ammonia, which is an evidence that tobacco requires a liberal amount of ammonia. Tobacco, as we all know, requires rich land, and the farmers cannot raise stable manure enough to supply its wants, and they will do well to make composts for this crop and thus eke out their stable manure as much as possible. By making large quantities of stable and farm-pen manure and composting this with rich earth and all their tobacco stalks and stems and

ground or dissolved bone, a large supply of excellent manure can be accumulated by spring for their tobacco. Dissolved bone should be used if the time for composting is short, otherwise ground bone should be preferred, as it is less apt to be adulterated; and that made from bones which have not been steamed or subjected to heat has not had any of its nitrogen driven off. This is not so important if the farmer has a liberal supply of stable and farm-pen manure to furnish the nitrogen, which, however, is not often the case. For the compost made in the fall, and say up to Christmas, we may well use the ground bone, and after that dissolved bone. If the farmer, from any cause, should not use his tobacco stalks and shattered tobacco in the compost, then he must furnish the potash in some other form, either Kainit or sulphate of potash, which is better for tobacco than the muriate. Of this—the sulphate, which usually costs about 3½ to 4 cents per pound—put about 60 to 80 pounds (proportioned) to go over the acre, it being supposed that the plant always gets considerable potash from good land, as it is only the wornout land that contains no appreciable quantity of potash.

In composting for tobacco the amount of stable manure to be put in a compost will vary with the quality of the land and previous manuring. We should say 10 or 12 cart loads will be sufficient to an acre of good land with the same quantity or more of good dirt; and if we can safely rely on the report of a compost as used by Judge Turner, in Georgia, in which about seventy-five pounds of stable manure, in combination with the same amount of cotton seed and fifty pounds of dissolved bone, produced one thousand and eight pounds of cotton per acre (which we suppose is a good crop), then much less stable manure than this will answer. It is the opinion of many that in a compost "a little leaven leaveneth the whole lump," and the experiment of Judge Turner seems to sustain this opinion. As to the quantity of dissolved bone in the compost we would say, judging from the 1,000 pounds of tobacco containing 8.6 pounds of phosphoric acid, equal to phosphate lime or bone phosphate of 18.7, that 100 pounds of a good article of dissolved bone would be sufficient. A 24 per cent. dissolved bone will yield 11 pounds per 100 of phosphoric acid and the soil will always supply some. It is cheaper to buy a good article of bone. Stable manure, it must be remembered, contains notable quantities of phosphoric acid and potash.

* * * * * *

Since my last report I have had reason to modify directions about composts, believing now that stable and farm-pen manure and less phosphoric acid will auswer per acre. For corn and tobacco these composts may well be put in the drill, not hill, as they diffuse themselves through the land, as is evidenced in the wheat crop following, which is usually even in its growth over the ground and no better in the drills, and this plan will require less than broadcast. But more experiments are necessary in composts to determine the quantities to be used in the composition and in application, for these experiments will be worth more than directions based entirely upon chemical analysis.

It is better, generally, to form composts under shelter, gradually mixing the one and then the other material, by layers, until the heap is completed. If there is deficiency of moisture under shelter, as there will be, this must be supplied by sprinkling water over, or, what is better, salt brine. Should potash be used, this must be dissolved in warm water and sprinkled over each layer of compost as it is gradually formed. The heap should occasionally be forked over, until thoroughly mixed. If gypsum is used with ground bone it must be sprinkled over each layer in forming the compost; that is, occasionally, as the manure and bone are thrown on the pile.

If the compost is not formed under shelter, then it had best be done in a scooped basin, sufficiently deep to have a drain from it leading to a barrel or half-barrel hogshead, watertight, to catch the drainage, which must be scooped up, particularly after rains, and sprinkled over the compost. Of course, in forming composts, less of these ingredients will do for rich than poor lands, particularly of phosphoric acid or ammonia. If these directions for composts are not sufficiently definite correspondence with me on the subject is invited.—*Annual Report of Virginia Commissioner on Agriculture.*

SANDY SOILS.

Of all soils to be cultivated, or to be restored, none are preferable to the light, sandy soils. By their peronsness free access is given to the powerful effects of air; they are naturally in that state to which draining and subsoil ploughing are reducing the stiffer lands of England. Manure may as well be thrown into the water as on land underlaid by water. Drain this, and no matter if the upper soil be almost quicksand, manure will convert it into fertile, arable land. The thin covering of mold scarcely an inch in thickness, the product of a century, may be imitated and produced in a short time by studying the laws of its formation. It is a well-recognized fact that, next to temperature, the water supply is the most important factor in the product of a crop. Poor soils give good crops in seasons of plentiful and well-distributed rains, or when skillfully irrigated; but insufficient moisture in a soil is an evil that no supplies of plant-food can neutralize.

Sandy soils are rich in mineral constituents, and fail to give good crops in time of drouth only, on account of their inability to retain moisture. This can be obviated by the application of peat, or clay, or the sowing of clover—all of these enable it to retain moisture in times of drouth—and the decay of the vegetable substances in the soil give of carbonic acid, a powerful solvent of the soil. Peat contains two per cent. of nitrogen, or the same quantity of barn manure; but, as it is dug out, its nitrogen is locked up in insoluble combinations, and, applied to land in this condition, brings in sorrel and coarse grasses; composting it with soda ash, to neutralize its acid, renders it soluble and fits it for food for plants at a cost of about two cents a pound for nitrogen. A cord of peat, as dug, weighs about 9,000 pounds, and, well dried, will lose three-quarters of its bulk.

To this quantity add 100 pounds of soda ash, well mixed through it, in powder or solution, depending upon whether the peat is wet or dry, and leave it in a heap to ferment. The heap will need to be larger in cold than in warm weather to accomplish this; and, after it is fermented, turn it over once and it is then ready for use and in all respects equal to barn manure. If the land is in condition to bear clover, it is easily brought to a state to produce any crop; and, if not in such condition, it can readily be made so at a trifling cost for fertilization. A crop of three tons of clover contains the following constituents: 117 lbs. potash, 5.4 lbs. soda, 55.2 lbs. magnesia, 153.6 lbs. lime, 44.8 lbs. phosphoric acid, 13.6 lbs. sulph. acid, 12.6 lbs. chlorine, 12.6 lbs. sulphur, 127.8 lbs. nitrogen.

Soils are not exhausted when is seen the power a suitable crop has to liberate and convert the insoluble substances existing in the soil and store them in the plant for future use. The clover should be cut for fodder the first year; the second year cut it once for fodder, then allow it to grow again and go to seed, which save for future use, and there is left in the soil to the depth of ten inches 6,580 lbs. clover roots, which contain 77 lbs. potash, 19 lbs. soda, 46 lbs. magnesia, 246 lbs. lime, 71 lbs. phosphoric acid, 24 lbs. sulphuric acid, 180 lbs. nitrogen, available for a crop which, when plowed, leaves the land clear, light, retentive of moisture, and easily tilled, with available constituents in the clover roots, and soil enough to produce any crop profitably, and the necessity of purchasing fertilizers and applying them is saved. The farm is made, as it should be, self-supporting, but it can only be done so by a judicious rotation of crops.

If this is not resorted to, fertilizers, which are much more costly, must be supplied. The constituents in clover roots above, amount in value, at prices commercial fertilizers are calculated at, to $35.17 for the nitrogen, phosphoric acid and potash alone, saying nothing of the other constituents, which are equally as important to the growth of crops. Rye is also a good crop to grow. There is left in an acre of its roots and stubble 3,400 lbs., containing 30 lbs. potash, 40 lbs. soda, 14 lbs. magnesia, 69 lbs. lime, 21 lbs. phosphoric acid, 12 lbs. sulphuric acid and 62 lbs. nitrogen.—*Andrew H. Ward.*

AMOUNTS OF SUGAR CONTAINED IN NECTAR OF VARIOUS FLOWERS.

Nectar is the term applied by botanists to the sweet-tasted fluid which is secreted within the cups of insect-fertilized flowers; and the object gained to the plant by its presence is, that insects induced to visit flowers for its sake are useful to the plants by effecting a cross-fertilization. Mr. Darwin has shown what an amount of additional vigor is thus conferred on the seeds which subsequently result in the contrast with the evil effects produced by continuous inbreeding. In many instances this sweet liquid is exuded from special glands, but in other cases from portions of the flower that do not seem to have been specially adapted for this purpose. Morphologically nectaries may represent very different structures, but not unfrequently they are of the nature of an aborted organ—such as a petal or stamen. It is a point of dispute among biologists whether this saccharine matter is a true secretion or simply an excretion of effete matter from the vegetable cells—a by-product of the chemical changes taking place with these cells. The latter view seems to be favored by the fact that a similar sweet-tasted fluid, much sought after by insects, is exuded in different parts of some plants quite unconnected with the flower, as in the laurel, brake fern, lime tree, acacia, &c. As to the use of such exudation of sweet fluid various suggestions have been made by those who are disposed to regard it as a true secretion; as, for instance, that it serves as an attraction to certain insects to frequent the plant, these insects rendering service by keeping off animals to whose attacks the plant may be subject. Probably this is to some extent true, but it cannot be said to hold universally. Nectar is, of course, the source whence the bee derives honey, but it also affords food to many kinds of insects which do not possess the habit of storing up. A division of the humming-birds is named Mellisugæ, on account of living on this substance; but it is probable that in some cases the small insects seeking the nectar, and not the nectar itself, may be the objects of the visits of these birds to nectar-producing flowers. The bright colors, as shown by Sir John Lubbock's experiment, serve to guide insects to the flowers, and the odors which they emit fulfill the same end. The markings of a flower's petals, it is to be noted, always converge towards the nectar, as in the violet. The importance of these guides to insects will be apparent from the following estimations, which show how indispensable it is that as little time as possible should be lost by an insect collecting honey. It must also be remembered that the nectar is usually contained in the most secure and best covered part of the flower, the object being to prevent the access of rain, which, owing to the extreme solubility of sugar, would speedily cause it to be transferred to parts of the plants where insects could reach it without being of any service in the way of cross-fertilization. The chief purpose of the flower would in this way be frustrated. The formation of nectar is observed to take place most freely in hot weather, and to be prevented by cold or wet. So great economy is exercised by the plant that it is only formed at the time when insects' visits would be beneficial, *i. e.*, when the anthers are ripe and shedding their pollen, or when the stigma is mature and ready to receive pollen. By biologists the visits of bees, butter-

flies and other insects are believed to have exercised in past times an important influence in modifying the size, shape, color, &c., of flowers; and the following experiments, in spite of their incompleteness, are of interest as showing to what an extent this action takes place in nature, and as helping to determine the value of this factor. These estimations are only the first of a series, and the writer regrets that he has been unable to give them the desirable completeness, but hopes to continue them.

The nectar was extracted with water, and the sugar determined before and after inversion by means of Fehling's copper solution. Many of the estimations were done in duplicate, and gave results that agreed perfectly. In the case of fuschia—which is not deprived of its nectar by any insects in this country, the nectar being inaccessible to native species—we have probably the whole amount formed, but in the other cases the visits of bees, etc., may have reduced the amounts considerably. In this case it is a clear, colorless liquid, having an acid reaction and an intensely sweet taste; that of many others has the strong characteristic odor of honey.

SUGAR IN FLOWERS.

	Total M.m.g.	Fruit.	Care? (as Fruit.)
1. Fuchsia per flower, -	7.59	1.69	5.9
2. Claytonia Alsinoides, do.,	0.413	0.175	0.238
3. Everlasting pea, do., -	9.93	8.33	1.60
4. Verbb (Viva Cracea) per raceme, - - -	3.16	3.15	0.01
5. Ditto, per single flower,	0.158	0.158	—
6. Red clover, per head, -	7.93	5.95	1.98
7. Ditto, per floret, - -	0.132	0.099	0.033
8. Monkshead, per flower,	6.41	4.63	1.78

Approximately, then, 100 heads of clover yield 0.8 grm. of sugar, or 125 give 1 grm., or 125,000 1 kilo of sugar; and as each one contains about 60 florets (125,000 x 60,) that is, 7,500,000 distinct flower-tubes must be sucked in order to obtain 1 kilo. of sugar. Now as honey, roughly, may be said to contain 75 per cent. sugar, we have 1 kilo. grm., equivalent to 5,600,000 flowers in round numbers; or, say two and a half millions of visits for one pound of honey. This shows what an amazing amount of labor the bees must perform, for their industry would thus appear to be indispensable to their very existence. Another point worth notice in these results is the occurrence of what appears to be cane-sugar, and that in the case of fuchsia, in the proportion of nearly three-fourths or the whole. This is remarkable, as honey is usually supposed to contain no cane sugar, its presence being usually regarded as certain evidence of adulteration. The question therefore arises, whether the change, which takes place while the sugar is in the possession of the bee, is due to the action of juices with which it comes in contact while in the honey-bag or expanded œsophagus of the insect, or whether the process of inversion goes on spontaneously, as may perhaps be the case?—*Alex. S. Wilson, in Chemical News.*

OUR LOCAL ORGANIZATIONS.

AGRICULTURAL AND HORTICULTURAL SOCIETY.

The regular meeting of the Lancaster County Agricultural and Horticultural Society was held in their rooms in the City Hall on Monday afternoon, May 5.

The meeting was called to order, and Mr. Henry M. Engle was elected chairman.

The following members were present: H. M. Engle, Marietta; William H. Brosius, Drumore; Levi W. Groff, West Earl; Wm. McConusey, city; Hugh R. Fulton, city; W. J. Kafroth, West Earl; M. D. Kendig, Manor; John H. Landis, Manor; J. C. Linville, Salisbury; J. M. Johnston, city; F. R. Diffenderffer, city; W. W. Griest, city; Johnson Miller, Warwick; J. F. Witmer, Paradise; Jacob Bollinger, Warwick; Levi S. Reist, Litiz; C. L. Hunsecker, Manheim; Israel L. Landis, city; E. S. Hoover, Manheim; W. L. Hershey, Chickies; J. H. Hershey, West Hempfield; John G. Garber, city; S. S. Rathvon, city; J. Hofman Hershey, Rohrerstown; C. A. Gast, city.

On motion, the reading of the minutes of the preceding meeting was dispensed with.

Crop Reports.

Mr. Linville reported the wheat crop in Salisbury not to be doing very well. The fields look very poor, except where the ground was plowed early and sowed early. The corn is nearly all planted. Cherries and peaches are doing well.

Mr. Miller reported the wheat crop in Warwick as looking pretty well. Hay crop also looks well. The prospects for fruit are generally good.

Mr. Brosius, of Drumore, reported the prospects of the wheat crop to be favorable. Grass looks very well.

Mr. Kendig said the wheat crop is not so promising as in some seasons, but with good weather it may turn out well. Fruit crop looks very promising.

Mr. Groff, of East Earl, said wheat looks well, considering the weather of last fall. Grass is very good. Corn not so good. Fruit crop looks very promising.

Mr. Witmer, of Paradise, reports wheat not so good as it might be. Oats is coming up very nicely. The prospects for a good fruit crop are good.

Mr. Bollinger, of Warwick, said his last year's wheat crop was not quite so good as it might have been, on account of getting out too early. The growing crop is not so good. The seed was not very good. He sowed some other seed, and it is now coming up. The grass looks promising and may do very well.

Mr. Engle, East Donegal, said the wheat crop is slow, except along the river, where it generally looks well. Grass is very promising. Fruits are looking very well, and the prospects for a full crop are very good. The rainfall for the spring has been very small, and it is surprising that the wheat and grass look as well as they do.

Making Farm Life Attractive and Pleasant.

The question, "How can farm life be rendered more attractive and pleasant?" was opened for discussion.

Mr. Kendig said he liked rural life and rural improvements. There should be more done in this respect. Fences should be kept straight, furrows straight, yards clean and planted with good plants. All the cost of which would be a little labor.

Mr. Linville said home should be made attractive on the outside as well as on the inside. More expense should be put on the outside—on the surroundings. The house should be made cheap but comfortable, and more time devoted to the grounds. Books and papers should be procured and read.

Mr. Miller said the home would be made very pleasant by fixing up the yards and houses more than they now are. Farmers should be without debts, and then they can make farm life very pleasant. The farmer should read and study several hours every day. He should have good laborers, and have them understand that his interest is theirs.

Mr. Witmer thought the home should be adorned and kept clean and well-fitted up. Plenty of reading matter should be kept on hand at all times. The fences should be kept straight, but he did not think the gardens and fields should be all fenced in. Instead of straight lines about the place he would devote more space to landscape gardening. The keeping of good stock will always add to the pleasure of farming. Farmers should get out and interchange views with each other.

Mr. Brosius thought there are two sides to this question. Some who have read about the poetry of farming have failed in practical life to find it. We should inculcate our faith in our work to our children, so that they may follow in our footsteps. There is no more ennobling calling than the work of the farmer. We should go to our work with a pleasure. We should make our children part owners with us, so that they may take pride in it.

Mr. P. S. Reist thought we could not live from farming only. A farmer should do his duty with pleasure. Farmers should learn what is their duty, and then take pleasure in it. They should first find out whether they are fitted for farming, and then follow it.

Mr. Miller thought the homes could be made more beautiful by painting and whitewashing every year. It will also be found to be a saving of expense. Farms can be made more beautiful with very little expense.

Mr. Hunsecker said farming has its shady and sunny sides. It is the farmer's own fault if his home is not made more attractive. He would not put unsightly objects in the front of the house.

Mr. Landis said he could have no idea of any question which should be more interesting to farmers.

Mr. Fulton said he could appreciate the beauties of farm life, being born on a farm, although he has since gone into another business. This question is of very great importance, because the young men are disposed to leave their farms. This can be avoided by making their homes more attractive. Give them their newspapers and books, and make home pleasant for them by giving them an interest about the place. Farmers should read and discuss matters relating to farm life, and give their sons the benefit of their knowledge. Farm life pays about 3 per cent., and that, in connection with the pleasure derived from it, is a good investment.

Mr. Hershey said the most pleasant associations of his life are those connected with a farm. He could appreciate a beautiful farm as much as anybody. Farmers should not devote too much time to their lawns and houses to the exclusion of their fields. They should not spend too much time about the tavern. They should spend more time in reading papers and books. They should teach their sons that there is as much credit and honor in being a good farmer as in being a professional man.

Mr. Engle said farming ought to be considered attractive now in comparison with olden times. There is a great deal of farm life that is unpleasant, but still it is not mainly so. The buildings should be kept in good condition and the lawns and fields in well-ordered shape. It is not necessary to expend much money in order to accomplish this. He thought unsightly objects should be kept out of view. Books and papers are important factors in making the home pleasant. Farmers put in too many hours of hard labor. They should do all their work in much less time by a proper system. They should also pay more attention to lessening the labors of their wives. Give them more comforts and attractions. In addition to ornamentation about the place, they should pay more attention to fruits and vegetables. They require little room, and are easily cultivated, and when ripe they afford a vast amount of pleasure to the family.

Mr. Hoover said farming should be made profitable and then it would become pleasant. The young farmer has just as good a chance to reap a good harvest as the one who has been in the business for twenty years. The young girls and boys should be taught what they are working for, then when they grow up they will not be likely to leave the farm. Give them some part of the crop, and tell them to farm it for themselves; then they will take a pleasure in it. The farmer's life is very conducive to health, and they should enjoy that. This not only adds to their ability for the business, but it also adds to their happiness.

The New Charter.

The charter of the society was presented by Mr. Diffenderffer, in the absence of the attorney, Mr. Eby.

Fruits.

Mr. Erb presented to the society a fine specimen of Rambo apples.

Mr. Espenshade, of East Lampeter, presented to the society several fine apples for name.

Mr. Engle presented several ears of yellow gourd corn.

Miscellaneous.

The yearly rent for the room being due, it was on motion ordered paid.

The report of the State Board of Agriculture was presented by Mr. Engle for the use of the members.

The following committee was appointed to prepare by-laws: S. S. Rathvon, M. D. Kendig, S. P. Eby, H. M. Engle and Joseph F. Witmer.

"Ought we to scrape the bark of fruit trees?" was referred to Mr. H. M. Engle for answer at the next meeting. Adjourned.

POULTRY ASSOCIATION.

The regular meeting of the Lancaster County Poultry Association was held on Monday morning, May 5, in the rooms of the Agricultural Society.

The meeting was called to order by the President, Rev. D. C. Tobias.

The following members were present: Rev. D. C. Tobias, Litiz; J. B. Lichty, city; W. J. Kafroth, West Earl; S. N. Warfel, Strasburg; Amos Ringwalt, city; William Shoenberger, city; Chas. B. Keller, Strasburg; Joseph D. Gonder, Strasburg; Frank R. Diffenderffer, city; J. Hofman Hershey, Rohrerstown; John C. Linville, Gap; J. M. Johnston, city; H. H. Tshudy, Litiz; John C. Reed, city; Colin Cameron, Brickerville; Mrs. Cameron, Brickerville; Charles Lippold, city; William Stober, Schoeneck; John C. Burrows, city; C. A. Gast, city.

The minutes of the preceding meeting were read and approved.

The Finance Committee reported that the society were to pay only seventy-five cents per month, which included janitor's fees.

New Business.

J. B. Lichty read a statement showing the amount received from printing the constitution and by-laws. The cost of the book was $15, and the receipts were $17.25—leaving a balance of $2.25 to the credit of the society. The report was received and the thanks of society tendered the committee.

The names of Joseph R. Trissler, of Lancaster, and J. H. Hershey, of Rohrerstown, were proposed for membership, and the gentlemen were elected.

The committee reported the following questions for discussion at next meeting: "What is the best cure for gapes?" Referred to Colin Cameron; "What is a preventive for vermin in fowls?" Referred to W. J. Kafroth.

T. D. Martin not being present, the question referred to him—"What is the best method of testing the fertility of newly laid eggs"—was opened to discussion by the society.

H. H. Tshudy thought the question was of much importance, and was anxious to know something about it. He knew of no true means.

J. B. Lichty was able to tell after several days' incubation whether eggs would hatch, but not immediately after being laid. He gave his method of detecting the bad egg. He said a bad-formed egg would seldom hatch.

W. J. Kafroth stated that some people seem to have unusual luck in bringing out chicks.

Amos Ringwalt knew of persons who placed the large end of the egg to their mouths and moistening it, and if it dried rapidly they were fertile.

The question was discussed by other members of the society, and a number of views were advanced.

"How often should fresh blood be introduced into the poultry yard?" This question having been referred to S. N. Warfel, was answered by him as follows:

The individual breeder of fowls will suspect that he needs fresh blood for his stock, when the annual number of eggs diminish, when a loss of size is noticeable, and when the flock begins to show signs of debility. But the frequency and method of introducing fresh blood is a matter that can only be decided according to the object sought after. If size and utility are desired, with no regard to permanent type, crossing every year with distinct, fresh blood, will give progeny, as a rule, superior to either parent stock; but these hybrids cannot be depended upon to produce others with the same merits. On the other hand, if it is desired to establish a strain of thoroughbreds, which may be relied on to breed true, then the most judicious influx of fresh blood every second year is necessary. But here, while near relationship should be carefully avoided, it is equally important to use birds of not too remote connection with the dominant strain, in order to preserve the preponderance of the breed sought after. Scientific breeders usually prefer hens for this purpose, as it has been ascertained that the male bird has the most influence upon the color of the progeny and what may be called the "fancy points," while the form, size and useful qualities are principally derived from the hen. Hence, if the object is to preserve a specific type, there is less risk in using a hen, as the progeny, if not satisfactory, may be killed, while if the cross be with a male from new blood, and the young prove undesirable, the whole season's work is lost. When a strain has been fully established it is a good plan to put a promising cockrel in an adjoining yard, and bring him back in a year or two, when the relationship will be remote enough to infuse vitality without deranging the type.

As we have said, all depends upon the want of the fancier; and whether the object be for economic purposes, or to improve a strain of thoroughbreds, fresh blood, understandingly introduced, is the great important factor.

Colin Cameron only bred from good strains, and he would only breed from winning birds.

J. C. Linville did not pretend to be a hen fancier, but found it best to introduce new blood into his yard every year. He introduced the Plymouth Rock into his yard this year, and he had very good luck. He did not think it the best plan for farmers to breed from thoroughbreds. He thought it best to cross the stock.

H. H. Tshudy agreed with the views of Mr. Warfel.

A. Ringwalt thought it best to introduce new cocks in his yard. There should be fresh blood introduced every year.

The President, Rev. D. C. Tobias, agreed with the views of Mr. Warfel and Mr. Cameron. He thought farmers should not breed thoroughbred fowls. He should cross with some that are not so pure. That makes very good stock. By doing this there are better results found. He thought the best thing to do is to put the cock into another yard for a year or so, and then take him back again. By this means you would effectually have a change of blood. He only bred chickens for show, and not for fighting qualities. You should be careful in exchanging cocks, or you may spoil a year's work. The greatest breeders in this country keep their own cocks and do not introduce new ones.

W. M. Stober asked for information in reference to removing the cock and bringing him back again. He would like to know whether that would be as good as introducing strange blood.

The President thought it did not destroy the relationship, but there would be a strangeness between them, which would be very beneficial. The idea is to introduce strange blood of the same kind. Our best breeders change their hens and cocks. When they have an established breed, they do not care to risk introducing new blood. He was going to introduce some new blood to his black-breasted games, and he wrote to a breeder for a fine cock. He bred the cock to his hens. The cock was a fine one and was a good fighter, but he bred anything but black-breasted games.

Mr. Lippold thought it could not be expected to breed black-breasted red fowls from a pure game cock.

Mr. Tshudy did not think it would do to remove the cock and then put him back to the same hens. He thought by putting it back to a younger generation would bring a much better result.

Colin Cameron agreed with the remarks of Mr. Tshudy. He was also of the opinion that there was no better game chicken than the black-breasted red.

Mr. Lippold agreed that they were black-breasted red in color, but he fought some of them, and they ran away. He found that to be his experience in every case.

Mr. Ringwalt had some experience with the chicken cholera, and gave them white oak bark with good results. He discovered the gapes on some of his fowls, and was told to dip a feather into some spirits of camphor and rub it on the windpipe, but it did no good.

Mr. Stober discovered gapes in some of his chickens, and he procured a horse hair and drew out the worms, and the hens immediately got well.

Messrs. Witmer and Tshudy believed the best way to prevent gapes was to sprinkle sulphur in the yard. He thinks the best cure is to put in the coops as much dust and lime as possible.

Mr. Kafroth never found the gapes in small breeds of chickens, but always in those of large breeds.

Mr. Cameron did not find the gapes in chickens hatched by the patent inculator. He believed in the horse-hair remedy. He did not have a very high opinion of the sulphur remedy. A chicken would have to be very strong in order to sneeze the worm out.

The President thought we ought to discriminate between the gapes and pips. The pip never harmed his chicks. The cause for gapes certainly comes from the mother. It comes either from heat or vermin. He thought the best plan to cure gapes was to use a horse hair. By using a feather you are likely to push the membrane into the throat and cause the death of the fowl. The fowl should be operated upon as soon as the gapes are discovered, for if it is left go on the chicken would become very weak and likely to die from the operation.

Mr. Ringwalt advocated the use of a fine wire instead of a horse hair.

Mr. Tshudy used lard on the heads of his hens when they had lice, and found it to be a very good remedy.

The President always found sulphur too violent for a young chick, but it would do for an old one. He had lice on his chickens and he used lard and sulphur; they did well for several days, but they soon began to mope and finally died. He also used Persian insect powder, by forcing it on the head and under the wings, and it always proved effectual.

Mr. Ringwalt used the insect powder mixed with lard, and it cured his fowls of lice.

The question, "How is the egg shell formed?" was referred to Mr. Linville for discussion at next meeting. Adjourned.

LINNÆAN SOCIETY.

A stated meeting of the Linnæan Society was held on Saturday, April 26th, and in the absence of the President and Vice Presidents, on motion, John M. Grider, Esq., was called to preside.

After the opening duties were attended to the contributions to the museum were examined. First was a large-sized crab taken out of an oyster and presented by Mr. Copland. Mr. Stauffer, Chairman of the Committee on the Crustaceæ, compared it with some of his illustrations, and found it to be the *Panopeus limosus*, or mud-crab, also called oyster-crab. Dr. S. S. Rathvon presented some native nitrate of soda, from Peru, South America, a bottle of crude coal oil or petroleum from Canada, and a fine green mineral known as "Amazon stone," the *Microcline*, a green variety of feldspar, containing nearly equal quantities of potash and soda, from Pike's Peak. Mr. A. Barnes presented the peculiar jaw-bone of a porpoise, *phocaena*, a sub-genus of dolphins from Greenland.

To the historical collection were added two rare coins from Mr. Bowers, from Hollidaysburg, one old English coin from Dr. S. S. Rathvon, and one supposed to have Japanese characters, by J. Stauffer; S. S. Rathvon gave four envelopes containing 55 clippings, relating to historical and biographical sketches, gleaned from sundry sources.

To the library were added the *Patent Office Gazette* for April 1st and 8th, 1879; THE LANCASTER FARMER for April; a pamphlet from the Department of the Interior, on the moulting of the "Horned Toad," *Phrynosoma Douglassii*, of Gray, and sundry book circulars.

J. Stauffer read a paper on the so-called "Zoospores," No. 517, so called from the Greek for animal and seed or spore, a name given to the active spores of Algæ. A slipheaded "Green Scum" was also read. Mr. Stauffer brought some with him, with his microscope, and the members present were much gratified by seeing the actual movements of these singular bodies. That such active, twisting and oscillating bodies, moving with more or less rapidity, apparently controlled by voluntary action, should be of vegetable origin is wonderful, and it is no wonder that the statement of the occurrence of spores endowed with such motions was either rejected as unworthy of credit, or the organisms which produced them were considered as animals. It is now, however, it seems, admitted or generally allowed that there is no essential difference between animal and vegetable life.

The chairman of the Committee on Book Shelves reported progress. On motion, the committee was continued. After some scientific gossip the meeting adjourned.

ENTOMOLOGICAL.

Insects and Animal Diseases.

A few years ago it was the general impression that slabbering in horses, staggers in sheep, and many other disorders in cattle, were caused by various forms of weeds or herbage in the food they ate. It may be that in some cases it is so; but with the progress of discovery it has been found that plants have not near so much to be blamed for as we one time supposed. It was, for instance, once an almost universal belief that the Texan cattle fever was brought about by some small fungoid vegetation which existed in the Texan prairies; but a commission, appointed by the Department of Agriculture, went to Texas and reported that there was nothing whatever to warrant the popular belief.

So with the staggers in sheep, which so often proves a fatal disease, and subjects sheep-raisers to great loss. Dr. Darlington tells us, in his Flora of Chester county, that it was common to attribute it to a plant—*andromeda mariana*—and which was called by the sheep-breeders stagger-bush on this account. Besides this, various other plants in other sections have been supposed to produce the same disease. But now it is known very clearly that no plant has anything to do with it, but that it results from a small wormy parasite, which after developing in its early stages in the stomach of the animal, works its way to the head and feeds on the sheep's brains.

All this is well-known now, but it is not so well-known how these parasites are produced, and are scattered about so as to be introduced into places which were once free from it. The clue was furnished some few years ago in the case of the trichine in pork; it was found that a parasite often found a home in the flesh of the hog, and fearful results followed on the human frame in many cases. There was no doubt but the very same insect could be communicated from the animal eaten to the human system. But subsequent experiments proved without the slightest doubt that high heat totally destroyed the enemy, and that therefore meat properly cooked was entirely innocuous. Since then it has been placed beyond question that some other fearful parasites that once in a while infest the human system, come from imperfectly cooked beef. Raw beef cures have been popular with some empirical mendicants, and the parasites which have followed have been a matter of calculation with no doubt as to the origin.

The great question has been how these troublesome things first get into these animals. Recently in some anatomical lectures Dr. Joseph Leidy, who probably stands at the head of this branch of science in this country, gave it as the result of his own personal researches, that the animals which eat raw meat—cats, dogs, and-so-forth—take in the eggs with the raw meat they eat, which pass through their system unchanged, and that then the eggs become scattered eventually among the herbage, and again are taken into the system.

How Insects Hear.

It is very common to say of a stupid but active fellow that all the brains he has is in his heels. No one ever imagines the organs of the senses to be anywhere but in the head; certainly the ears, which help us to hear, would hardly be expected to be near one's stomach. But it seems that this is what happens to insects, as the following, in rather too learned language, from the *Independent* says:

While the organs of sense are in vertebrate animals invariably attached to the head, in the lower animals ears and antennae-like organs, and perhaps smelling organs, may be found in the abdomen or elsewhere. That all those insects which produce sound must have the faculty of hearing it, seems a truism; still it is difficult to discover the seat of the organs of hearing. In locusts or grasshoppers the organs of hearing are situated at the base of the abdomen, in two large sacs, situated next to the stirmata, in the basal segment. Mr. A. H. Swinton has now found that somewhat similar organs of hearing likewise exist at the base of the abdomen of some moths, as certain noctuidæ of owlet moths. "If," says Mr. Swinton, "after having killed an individual of a large Noctua and denuded the abdomen of scales and hair, we examine its junction with the thorax, we observe a constriction of the segments that has occurred in the metamorposis, whereby the first and second abdominal segments of the caterpillar are represented by dorsal arcs indicating a pedical. In the Noctunna the organ of hearing is found between these contracted segments and the metathorax. The external ear is recognized in a rather large cavity, that here penetrates the abdomen on each side, and is oval in section, with a posterior excavation or conch. There is, besides a tube which is the counterpart of the Eusta[illegible] tube. In its

general structure the moth's ear is like that of the grasshopper." Mr. Swinton has observed similar ears in moths of the silk-worm and geometric families, and they may be traced in certain Diptera, as the crane-fly.

AGRICULTURE.

The Wheat Crop.

Reports from every point in the wheat-growing region, in the West and Northwest, show the condition and prospect of the growing crop in Minnesota, Iowa, Nebraska, Kansas, Illinois, Michigan, Indiana, Ohio, Kentucky, Wisconsin and Missouri in detail, by counties and districts. With regard to the winter wheat crop the reports, almost without exception, are favorable, the present fine condition of the crop being largely attributed to the snows of the past winter, which afforded complete protection. From Ohio somewhat increased acreage is reported, with most encouraging prospects. In a comparatively few counties there is reported some nipping of the plant by the late cold snap, and some apprehensions are expressed as to the effect of the March frosts, but the best advices indicate that an increase of about 10 per cent. is promised, the yield for the year being estimated at 30,000,000 bushels, against 27,000,000 bushels last year. The prospect in Kentucky is generally reported encouraging, and a fair increase in the yield on last year is confidently expected. All reports from Indiana go to show the excellent condition of the crop. The acreage seems somewhat increased, on the whole, while the prospect in yield is estimated as high as 25 per cent. over that of last year, though some apprehensions are expressed as to the effect of the present cold snap. The reports from Michigan are that the prospects are better than last year, and an increased yield is expected. Missouri reports are to the effect that the prospects are better than a year ago, and that the yield promises to exceed that of last year. The better estimate as to Nebraska is that the acreage of winter wheat is fully 25 per cent. greater than last year, and that 20 per cent. more spring wheat will be sown. The condition of the winter wheat crop generally is reported favorable. In Kansas the acreage is reported to be about equal to that of last year, while the condition of the crop is far more promising, the prospect being the average. Michigan reports show the crop to be in good condition generally throughout the State, with slightly reduced acreage in some localities estimated as high as 20 or 25 per cent. And from other regions in the winter wheat region the prospects are generally reported above the average.

The chief question, and one which has been considerably agitated as to the spring wheat crop, has been as to the seed supply. There has been division both as to whether the lighter wheat of last year, the berry of which was shriveled, will germinate; and whether, if it germinates, it will yield a good crop. As to the question of germination, there would seem to be small room for doubt in view of the results of the experiments made in Chicago, showing that in some instances 93 per cent. of the blighted berries germinate, while in no instance was the percentage less than 68. The prevailing opinion among the wheat men of this city is that not more than 5 per cent. of the blighted berries will fail to germinate; and that with that much increase in the sowing there need be no apprehension of any failure on account of the seed. In Iowa there seems to be little apprehension as to seed wheat, and it is reported that by screening a sufficient supply of good seed grain can be obtained.—*Prairie Farmer.*

Grain in Orchards.

In a recent issue of your paper I notice an article in which the writer is desirous of becoming familiar with the project as to whether sowing small grain (oats) in an orchard would prove satisfactory. I think not, should he be dealt with similarly to myself. Though the raising of such had only once been engaged in, and its proving by far contrary to my expectations, I unhesitatingly abandoned the idea of raising small grain in an orchard of any age in the future. I now take pleasure in giving my experience to young farmers and any others of your numerous readers.

In the spring of 1876, having an extensive and superior selection of choice fruit trees, variously mixed, I concluded (the trees being widely set apart and planted in virgin soil) to experiment in raising oats. As the ground needed cultivation, I thought the oats would be beneficial instead of injurious. Sowed them in March, and gave the matter but little attention until June 1st, when, to my surprise and dissatisfaction, I observed the trees were very scaly, bark dry and in places scorched—caused, as I thought then and know now, by the reflection of heat or rays of the sun. The straw was fast maturing, and capable of reflection. But my neighbors frequently persisted in causing me to believe otherwise, but of no avail. I afterward confirmed my belief. Becoming dissatisfied at the turn things were taking, I had the oats harvested. But it was no improvement, for the stubbs seemed as forcible in returning heat as did their better half. Finding there was no chance of saving them except by hard work and diligent nursing, I resolved to adopt the two latter methods, thereby saving more than half of my trees.

"Young Farmer" will observe by the foregoing that the oats paid dear for themselves, and were worthless. If he should still feel inclined to raise a crop in his orchard, I would suggest the raising of corn or potatoes, or other crops with green foliage.—*M. A. Stier, in Rural World.*

Bone Dust.

Many a poor fellow has worn out his bones trying to work a piece of poor ground; but such bone application has seldom resulted in large profits. Our English friends have discovered that it is much better to use other people's bones in these cases than their own, and the bone-trade of England has assumed gigantic proportions. All the old battle-fields have been ransacked, and unless reports do them no injustice, many an old fellow whose bones were supposed to rest in peace in some grassy, daisy-flowered churchyard would have to hunt some modern turnip field to find all that remains of them. Foreign countries have not only to pay tribute to England of their wealth during life, but even their bones have to follow, in order to enrich British soil, as while living they worked to fill British pockets. Australia sends an enormous quantity of bones to England. It has become such a heavy trade that the article itself was found too light for profit. Science has been called in to enable the ship owner to take the same weight in less bulk. The bones are first ground, then the dust mixed with some substance which will give it just enough adhesiveness to make the particles stick together. Then the material is put under heavy pressure in moulds about six inches square, so that it can be packed in the hold without any loss of space. One ton of this bone-cake measures only twenty-six cubic feet. Of course these bones are all of wild or domestic animals, but still "silence is golden."—*Germantown Telegraph.*

The Question of Weeds.

Every good farmer knows that to insure satisfactory crops his land must be cultivated in the best manner, and if it is so cultivated few weeds will be found upon it. Sometimes, even upon well-managed farms, a field here and there, owing to adverse weather, a shortness of hands, or a rush of work generally, may be neglected for a few days and the weeds may get a start; but this happens rarely, and an observing man can always judge of the character of the farmer by glancing his eye over his premises. If the weeds are not to be regularly and systematically destroyed, the idea of conducting agricultural operations profitably may as well be abandoned, for the one is incompatible with the other.

And even this is more pointedly so with the garden. Weeds and a garden crop are as antagonistic as life and death. They cannot stand upon the same platform. One must be master, and it is for the owner to say which. If a garden is systematically worked—and without system no garden is worth having—the labor of keeping down the weeds is reduced one-half. But let them once get ahead, and they may be fought all summer and prove victorious in the end.

Again, let no weeds go to seed; and do not throw into the public highway such as do, to be washed down upon the land of your neighbors.—*Germantown Telegraph.*

An Immense Farm.

Twenty-seven miles north of Fargo, Dakota Territory, is the famous Grondin farm, the largest cultivated wheat farm in the world. It covers about 40,000 acres, embracing both railroad and government land, and is close to the Red river. The farm is divided into four parts, and has dwellings, granaries, blacksmith shop, elevators, &c., and has a stabling capacity for 200 horses, and has a granary capacity for 1,000,000 bushels. In addition to the wheat farm there is a stock farm of 20,000 acres. During the seeding season they employ about seventy men, and in harvest time as many as 200 men are busily engaged. Seeding commences about the 9th of April and ends the first of May. The work is done very systematically, the machines following each other about the field four rods apart. Cutting commences about the 8th of August and ends the forepart of September. Then comes thrashing, which is done by eight steam thrashers. After thrashing the stubble ground is plowed with gang-plows, that cut two furrows, drawn by three horses, and this work continues until it "freezes up," which is about the first of November.

Store of Grain in the West.

Chicago elevators, as per official returns, contain 419,097 bushels of wheat, 634,537 bushels of corn, 95,295 bushels of oats, 31,346 bushels of rye, and 350,157 bushels of barley, making a grand total of 1,530,432 bushels, against 2,231,646 bushels one week ago, and 6,363,807 bushels at this period last year. Milwaukee warehouses stored with 496,363 bushels of wheat, 20,133 bushels of corn, 19,607 bushels of oats, 16,393 bushels of rye, and 357,490 bushels of barley.

HORTICULTURE.

Grafting Grapevines.

We have been experimenting in a small way for ten years in grafting grapevines, and latterly have met with such complete success that we would like to give our experience to your many subscribers. The first experiments were on an old Catawba and the Wild Frost grape, an inch or more in diameter. They were cleft-grafted at the surface of the ground, two grafts in each stock, and two eyes to a graft, set and waxed the same as an apple graft, but never a bud even started on the graft, but plenty of suckers shot up from the old vines. In after years experiments were made with *very long* grafts, set some inches below the surface and banked up to the uppermost bud with earth. They would start nicely, but all die before autumn. No permanent union was formed between stock and graft.

Our first successful experiment was five years ago. We had noticed that a short one-eyed grape cutting, properly placed in a shallow box of sand in a greenhouse and regularly supplied with the necessary amount of heat and moisture, would start the bud with the same certainty as the parent vine, if the graft had not been detached, and in due time it would callous and throw out roots. This suggested a new idea, and we determined to make another trial on some seedling wild Blue grapevines three or four years old, that covered a trellis. Having cleared away the earth with a hoe around the vines to be grafted, an inch or two below the surface, or until the upper roots appear, they were sawed off far enough above the crown to get a good split, and cleft-grafted, using a short graft with one eye on each. Over this was placed a box six inches square and open at the bottom and top. Sand enough was filled in the box to raise it two inches above the grafts. The sand was thoroughly wet, the earth hauled up around the outside of the box to keep the sand from drying out and also from extremes of heat and cold, an 8x10 window glass placed over the box and the work was done. After grafting several in this way we found it more convenient to use three common bricks in lieu of the box; they were set edgewise around the grafts, the inside corners touching and making a triangular inclosure. The earth was hauled up and glass put on the same as first. Every graft grew that year, some of them fifteen feet long, and we have been equally successful since, except in '77—a few failed that year from using winter-killed wood.

If the weather is very hot and dry before the grafts appear above the sand remove the glass, water, and cover lightly with coarse litter. When large vines are worked a wedge should be inserted in the centre of the cleft to prevent too severe pressure on the grafts, and very small vines should have a bandage of waxed thread at the union to prevent them from opening. All suckers from the old vine must be removed as they appear. The best season for grafting is March, before the sap starts. They can also be grafted early in June after the vines cease to "bleed" when cut.

We do not claim that our *modus operandi* is essential in all its details, but would say to amateurs, use bricks when *convenient*, as they are porous and absorb and give off moisture readily. Also bear this in mind, that to successfully graft any plant so porous as the grape it is essential to surround both stock and graft at the union with some material that will furnish heat, moisture and air until the parts callous and unite, and that pure sand is much better for this purpose than loam. Another important feature in favor of sand is that no injury results from hard freezing.—*H. G., in Practical Farmer.*

Grape-Growing.

A writer in the *Practical Farmer* says: "I see much written in the *Farmer* about growing grapes, but have seen no plan described and recommended like mine. As I never lose a crop of grapes from frost in the spring or from rot or mildew in summer, and have used this plan, after experimenting with many recommended methods of training, pruning, etc., for eight years, I can recommend it confidently. The vines can be grown as for other plans of training, the first two years. At the first pruning, after the vines are two years old, if the vines are strong so as to have two arms to fasten to the wire, in opposite directions, I put in a stake equally distant between each two vines. The stakes should be six feet long and put eighteen inches deep into the ground. I then fasten a wire—No. 16 will do—to each stake along the row, and give each vine a wrap or two around the wire; they need no tying. I then place plank, full length of the rows, on top of the stakes, driving one nail through the plank into each stake. The plank should be twelve to fifteen inches wide, and six inches above the vine. I always let two shoots grow about six inches below the wire, for the next year's fruiting; all other shoots I pinch the ends off of, at about three leaves from last bunch of grapes, and take off all suckers that may appear after pinching, except the end one, which I do not

pinch any more. I have no tying up of young shoots, as I let them grow in their own natural way, and by the time the fruit is full grown the vines loaded with fruit are under cover where dew and heavy rains and hail can not injure in the least, and the fruit—even the Concord—can be kept on the vines for weeks after being fully ripe. I have kept them sound on the vines until frost in autumn. This is not costly here where plank is worth only $1 per hundred feet. Forty of the leading varieties of grapes have been grown here on this plan, and all proved successful."

How to Plant Peas.

It is a novelty to read in such a magazine as Harper's such literature as "How to Plant Peas," yet in the April number we have no less a personage than E. P. Roe, author of "Barricks Burned Away," thus discoursing on the subject: Last spring I put in my first peas and potatoes, on March 15th, and had splendid crops of both, but usually we cannot do much in the open soil before the first week in April. As soon, however, as the frost is out and the ground is dry enough, I shall plant in my driest and warmest soil some Little Gem and Laxton's Alpha peas. I shall open furrows three inches deep for Gems, and one foot apart, and in these furrows scatter compost about an inch deep, draw a pointed hoe through the furrow to mingle the manure with the soil, and then sow thickly—three peas to an inch. I will treat the Laxton's Alpha in the same way, with the exception that the rows will be two and a half feet apart. The Little Gems grow only a foot high, and require no support. The Alphas require 2½ feet brush. Two weeks later I shall plant for second crop Little Gem, M'Lean's Advancer, and Champion of England. I have tried a great many kinds, and have come to the conclusion that the four kinds I have named are the richest flavored and sufficiently productive—in brief, all things considered, the best.

Grapevines in California.

California has, probably, twenty vines, each of which produces more than 600 pounds of grapes as an average crop. Among these are vines at Coloma and Blakes, and near Montecito and Stockton—representing the Sierra Nevada, the coast mountains north of San Francisco, the San Joaquin Valley, the southern coast, the level of the sea, and an elevation of 2,000 feet above it. The Stockton vine, a mile southeast of the town in the yard of Mr. Phelps' house, is a foot in diameter, and last year produced 5,000 pounds (2½ tons) according to the *Independent.* We have heard nothing lately of the yield of the Montecito and Coloma big vines. We saw the latter in 1867 when young, and it then bore 1,500 bunches of grapes. The Montecito vine grew from a cutting of the old vine at the same place, set out in 1795, and cut down in 1875, when eighty years old. It had a diameter of 15 inches, covered an arbor of 114 feet long by 78 wide, and averaged three tons in its annual yield. The big vine at Blakes separates at the surface of the ground, into two stems, each six inches in diameter. The vine at Coloma is an Isabella; the other three are of the Mission variety.—*San Francisco Alta.*

Sowing Garden Seeds.

As seed-sowing time is approaching it will be in order to say that a very great portion of seeds annually sown are lost through deep sowing. Of course, large seeds, like beans and peas, may be covered with an inch or more of earth, and yet be able to work their way easily through the surface; but with smaller things the merest covering is sufficient, provided the earth is pressed firmly over the seed. Peas and beans, as the season advances, can be planted deeper and deeper.

In flower seeds it is quite common to sow them on the ground in a little patch, and then scatter a mere dust of earth over, beating it a little with the back of the trowel, and it is found that the seed germinates better than if put beneath the surface. There is not the tendency to rot. Again, we have known some of the lighter kinds of garden vegetables to be scattered along the garden line, and merely trod in with the feet, to grow so well that every seed seemed to sprout. This of course implies that the ground should be dry enough to powder under the feet, and so it always should be when seeds are sown. To sow deep, or when the earth is wet, are great mistakes.—*Germantown Telegraph.*

Where Tomatoes were First Eaten.

It is a Newport tradition that tomatoes were first eaten in this country in about 1823, in a house still standing on the corner of Corne and Mill streets. About that time there came here an eccentric Italian painter, Michele Felice Corne. He bought a stable on the street now called for him, fashioned it into a dwelling house, and there lived and died. Previous to his coming, and long after, tomatoes, then called "love-apples," were thought to be poisonous. A gentleman told me to-day that in 1819 he brought them from South Carolina and planted them in his yard, where they were looked upon as curiosities and prized for their beauty. They became later, however, a very unpleasant missile in the hands of the small boy. A charming old lady also told me to-day that in 1824 she was sitting with a sick person when some one brought the invalid as a tempting delicacy some tomatoes. "Would you poison her?" was the exclamation of the astonished attendants; and yet Corne in this section of the town had been serving them for a year previous. As late as 1835 they were regarded as poisonous throughout Connecticut.—*Boston Transcript.*

How Many Tobacco Seed to an Acre?

As we have been asked over and over again how much seed is necessary to plant an acre of tobacco, we have taken the trouble to find out how many seed there are in a grain, an ounce and a pound. In one grain we found by actual count 1,494 seed. This would make by multiplying by 480, the number of grains in an ounce, 717,120 seed to the ounce, and 8,605,440 seed to the pound. Estimating 5,000 plants to the acre, and supposing every seed will make a plant, every half ounce will plant nearly 72 acres, an ounce, 144 acres, and one pound 1,721 acres! As many farmers are contemplating planting largely this season, we recommend a careful study of these figures, and merely intimate that we have a few pounds of seed still on hand.

One little drawback to the immense number of plants, and one which we devoutly wish, for the best interests of the farmer, may be the result this year, is that bad seasons, &c., destroy so many tender plants that a careful farmer will sow his plant beds for at least six times more than he intends to cultivate.—*Cincinnati Tobacco Journal.*

Bananas.

Few people who see bananas hanging in fruit dealers' shops think of them as more than a tropical luxury. In fact, they are the staple article of food in some parts of the world, and, according to Humboldt, an acre of bananas will produce as much food for a man as twenty-five acres of wheat. It is the ease with which bananas are grown that is the great obstacle to civilization in some tropical countries. It is so easy to get a living without work that no effort will be made, and the men become lazy and intolerably shiftless. All that is needed is to stick a cutting into the ground. It will ripen its fruit in twelve or thirteen months without further care, each plant having from seventy-five to one hundred and twenty-five bananas, and when that dies down, after fruiting, new shoots spring up to take its place. In regions where frosts never reach, bananas are found in all stages of growth, ripening their fruit every day and every month in the year.

Pruning Peach Trees.

Frequently old peach trees are made thrifty and fruitful by severe cutting back—cutting the large branches down to the very stubs. Not long ago we were told by a very intelligent and experienced fruit-grower that he was once very much surprised by seeing some previously fruitless old peach trees hanging full of superior, large fruit. Inquiry led to the statement that they were apparently worthless trees, which had been the year before closely trimmed to get the outstreaching limbs out of the way of working around them with a team, so that the trees presented little more than a trunk with stubs sticking out a foot or two, and now hung full of fine fruit.—*F. & F. Magazine.*

DOMESTIC ECONOMY.

Whitewash.

Following is the Germantown *Telegraph's* recipe for preparing whitewash:

Take the very best stone-lime, and slack it in a close tub, covered with a cloth to preserve the steam. Salt—as much as can be dissolved in the water used for slacking and reducing the lime—should be applied, and the whole mass carefully strained and thickened with a small quantity of sand, the purer and finer the better. A few pounds of wheat flour mixed as paste may be added, and will give greater durability to the mass, especially when applied to the exterior of buildings. With pure lime, properly slacked and mixed with twice its weight of fine sand and sifted wood ashes, in equal proportions, almost any color may be made by the addition of pigments. Granite, slate, freestone and other shades may be imitated, and without any detriment to the durability of the wash. This covering is very often applied and with good effect, to underpinning, stone fences, roofs and the walls of barns and other outbuildings. Probably the pure whitewash is more healthy than colored, as its alkalescent properties are superior, and when used in cellars, kitchens and sleeping apartments produces salutary results. No person who regards the health of his family should neglect to apply a coat of it every spring. Country places, especially farm outhouses, fences, &c., are greatly improved in appearace by an annual coat of good whitewash, and will add to their permanency much more than many would imagine. It is cheap and easily applied, so that neither expense nor labor can be pleaded against it.

Signs of a Prosperous Farmer.

When you see a barn larger than his houses, it shows that he will have large profits and small affections. When you see him driving his work instead of his work driving him, it shows that he will never be driven from resolutions, and that he will certainly work his way to prosperity. When you always see in his woodhouse a sufficiency for three months or more, it shows that he will be more than a ninety days' wonder in farming operations, and that he is not sleeping in his house after a drunken frolic. When his sled is housed in summer and his farming implements covered both winter and summer, it plainly shows that he will have a good house over his head in the summer of his early life and the winter of old age. When his cattle are shielded and fed in winter, it evinces that he is acting according to scripture, which says that "a merciful man is merciful to his beast." When he is seen subscribing for a paper and paying in advance, it shows that he will never get his walking papers to the land of poverty.—*Minnesota Farmer.*

Home-Made Cracked Wheat.

Cracked wheat, which has in the last few years become a staple article of food, may be made at home at a much less cost than when bought ready prepared from the grocer. Use the best wheat, which at $1.50 per bushel would cost two and a half cents per pound. Spread the wheat upon a white cloth, and pick out of it all the oats, straw and the like; set it in some open dish in the stove oven to dry, but not to scorch; when very dry run it through a coffee mill, set so as to crack every kernel. This will be a kind of wheat-hominy, mixed with some fine. To cook it let the water be boiling, then stir in the wheat and keep it stirred till it has done settling; then a very gentle fire will keep it boiling, with an occasional stirring. A big fire will surely burn it. It is better to boil it an hour or more. This may be eaten warm, with any kind of dressing, or, when cold, may, like corn mush, be sliced and warmed for use. If stirred when in a cooling state, it becomes sticky, like paste. It may be taken up hot into dishes, and cut into slices, or otherwise, when cold.

Cream Instead of Butter.

A housewife, writing for the New York *Tribune*, proposes virtually to abolish butter. She says: "It would be well to train a family from the outset to regard butter as an incidental or luxury, rather than a necessity. The manufacture of it is one of the hardest and most time-consuming tasks that a farmer has to perform. Moreover, with all the work it involves, butter adds less to the health and sustenance of the family than would the eating of the cream that goes into the making of it. Where one physician advises the eating of butter, a thousand recommend the consumption of cream. I think not one will dispute the statement that of cream and butter-eaters the former enjoy the best digestion, the best health and have the finest complexion. Then, why work one's self to death for worse than naught? Why not eat milk and cream instead of turning it into butter? Good bread is good enough without the addition of a condiment to make it palatable; and, eaten with sweet cream, what is more delicious."

Use Plenty of Paint.

The farmer who keeps his house, barn, and other outhouses; his house-yard fences; his wagons; the wood-work and unused iron-work of his machines and implements, constantly covered with a coating of good paint, saves a great deal of money in the long run. In fact we know of no small expenditure that pays as well. The work of painting these things needs no very skillful hand. Fancy colors on mowers and reapers, plow beams, harrows, cultivators, etc., are of no account. Good, durable paints, ready mixed, can now be bought at reasonable prices, and of any color, all over the country. But any farmer can mix his own paint if he desires. Ground paint, paint brushes, oil, and a little turpentine as a drier, compose the whole outfit. Oil and lamp-black make a black paint. A simple red paint is made of red lead and oil. Paint put on in cold weather is more durable than when put on in hot weather. The heat dries out the oil too rapidly.

A Good Night Lamp.

Alpheus has been having a long spell of fever, and it was necessary to have a light burning all night in his room. We live in the country, so no gas was accessible. Candles flickering disagreeably, and a kerosine lamp when turned low always has an annoying smell for an invalid, so I bethought of a light my mother used to improvise when I was a child, before kerosene, with its attending dangers, was known. It was made by slaking a saucer of lard and cutting a piece of newspaper in a circle about three inches, then twisting the centre of this up to a point

and burying all but the tip in the lard. It will burn all night—a shady, dim light—and in our case prove a real comfort. Some of these homely facts are well worth remembering.

French Bread.

As a rule the French bread is always sweet and good, and two things contribute in a great degree to this—that is the manner or form of baking. They never make a thick loaf; no matter what the size or shape, it is always thin, and more than two-thirds crust. They bake their bread until it is perfectly cooked. The loaves being so thin, the heat strikes through very soon after they are placed in the oven; hence all fermentation is stopped, while in the case of large loaves fermentation goes on after the bread has been in the oven for some time, and of course much of the sweetness is lost. Then in baking so long, and having so much crust, there is a peculiar sweetness given which can be obtained in no other way.—*American Miller.*

To Destroy House Insects.

To thoroughly rid a house of red and black ants, cockroaches, spiders, bed-bugs, and all crawling pests which infest our homes, take two pounds of alum and dissolve it in three or four quarts of boiling water. Let it stand on the fire until the alum disappears, then apply it with a brush while nearly boiling hot, to every joint and crevice in your closets, bedsteads, pantry shelves, and the like. Brush the crevices in the floor of the skirting or mop boards, if you suspect that they harbor vermin. Cockroaches will flee the paint which has been washed in cool alum water. If, in washing a ceiling, plenty of alum is added to the lime, it will also serve to keep insects at a distance—*Scientific American.*

Cleaning a Brussels Carpet.

As the season is now approaching when carpets must be handled, the following will prove of interest: First have the carpet well shaken, then tack it down in the room where it is to remain; sweep it as thoroughly as possible; take a pail of hot water, put in two tablespoonsful of pulverized borax; wash the carpet all over the surface, using a flannel cloth. For grease spots or very dirty places, use a scrub-brush freely and a very little soap, taking care to rinse the soap off well after scrubbing; change the water quite often; rub the carpet well with a dry cloth after washing, and open doors and windows so as to dry the carpet as quickly as possible.

Household Recipes.

Potato Noodles.—Grate one dozen of boiled potatoes, add two eggs, a little salt, half a cupful of milk, enough flour to knead stiff, then cut in small pieces, then roll long and round, one inch thick; fry in plenty of lard to a nice brown.

To Preserve Gum Solutions.—A few drops of cloves, alcohol, or acid will preserve a quart of the mucilage of gum arabic or gum tragacanth from turning sour. A small quantity of dissolved alum will preserve flour paste.

Ham Dressed in Claret.—Take a glass of claret, a teaspoonful of sugar and a teaspoonful of chopped onion; place in a frying-pan; when the claret boils place in the rashers of ham, not cut very thick; cool well and serve with the sauce. This is a most appetizing dish.

Velvet Cake.—Three cupsful of sugar, one and a half cupsful of butter stirred to a cream, six cupsful of flour, with two teaspoonsful of Boston yeast powder well mixed in the flour. Flavor with essence of lemon. Four eggs, the yelks and whites beat separately, and add last.

Ice Cream Cake.—One cup of butter, two cups of sugar, one cup of milk, three cups of flour, whites of five eggs, three teaspoonfuls of baking powder; bake in thin layers; three small cups of sugar, dissolved in a little water, and boiled until done for candy; cool a little, and pour over the unbeaten whites of eggs, and beat together a half an hour.

Whith Fruit Cake.—One cup of butter, two cups of sugar, one scant cup of sweet milk, whites of five eggs, one grated cocoanut; one pound of almonds, blanched and cut fine; one pound of citron, cut into very thin pieces; three and a half cups of sifted flour, two heaping teaspoonfuls of baking powder. Flour the fruit and add the last thing.

Lemon Pie.—Grate the yellow rind of two lemons; beat together the rind, juice, ten tablespoonfuls of loaf sugar, and the yelks of four eggs, until very light, then add two tablespoonfuls of water. Line a large plate and fill with the mixture; bake until the paste is done; beat the whites stiff and stir into them two tablespoonfuls of sugar, spread it over the top and bake bright brown.

Cheap Pudding.—Peel and core four or five apples, according to the size, cut them in slices, and lay them in a pie-dish; sprinkle them with sugar (pounded), and then put a thin layer of apricot or other jam. Take two ounces of sugar and a small piece of butter; stir it over the fire until it boils, and then pour it into the pie-dish with the apples and jam, and bake until done.

To Wash Silk Stockings.—The best way to wash all silk stockings is to make a good lather of curd soap and rainwater; use it nearly cold, and then wash, rubbing as little as possible, and doing each stocking separately. Rinse in clear, soft water; squeeze out the wet as much as possible in a soft cloth, do not wring the stockings; wrap each one in a dry cloth, and when almost dry rub them with a piece of flannel, always the same way. A small quantity of liquid ammonia should be added to the lather when black stockings are to be washed.

Baked Fish.—Take any nice fish, boil it, remove the bones, and chop considerable parsely very fine, with one small onion. Have about as much bread-crumbs as fish. Take a pudding-dish and butter it, then lay in a layer of bread-crumbs, then a layer of fish, ending with bread-crumbs. Mix your parsley and onion with salt and pepper through your bread-crumbs. Put lumps of butter over the top, a very slight grating of nutmeg, and pour over it all sweet cream or very rich milk, till it rises nearly to the top. Bake in a quick oven till it has a nice, rich brown crust.

Apple Preserve.—Peel, halve and core six large apples, selecting those of the same size, having prepared a syrup made of one pound of granulated sugar and a pint of water; when it boils drop in the apples with the rind and juice of a lemon and two or three cloves. As soon as they are tender care should be taken that they do not fall to pieces. Take the halves out one by one, and arrange, concave side uppermost, in a glass dish. Drop a bit of currant jelly into each piece, boil down the syrup, and when cool pour around the apples. This makes a very nice preserve for tea.

Live Stock.

Treatment of Cows at Calving.

Cows in good condition should be watched carefully for any symptoms of fever; for its progress is so rapid in some cases as to afford little time for treatment. The early symptoms are, dullness, languor, red eyes, hot head and horns, a strong pulse, sometimes uneasy movements of the hind legs, the cow then lying down, placing its head on its flank, or striking its horns on the ground. Sometimes the symptoms are only fever, rapid pulse, and quick and strong breathing, with loss of power over the limbs, want of sensation, torpor of bowels and bladder. One of the best things to do in case of an attack, is to apply moderately cold water to the whole body; and this is best done by placing a woolen blanket around the cow, from udder to foreleg, and pouring water between the blanket and the body, wetting the body and blanket thoroughly, covering with a dry blanket if the weather is cool. Matting or old carpeting is good to place around the body; place it under, and bring the ends together over the back. If the cow is down, roll her over on the blanket, having first wetted it, and also the side of the cow. This wetting will produce a fomentation and gradual cooling of the whole surface of the body, modifying the fever, and usually producing relief in a short time. If it is that form of the disease in which there is great heat of the head, pour ice-cold water upon the head between the horns, at the same time that water is applied to the whole body; and as in most cases the udder is swollen and hot, this should be treated with the water-bag, which is useful in garget and fever in the udder. This bag may be made of oil-cloth, or, better, india rubber, large enough to enclose the udder, coming up to the body, flaring at the top, held up by a strap over the back, and filled with soft water of a moderate temperature—say 65 degrees. This will soon allay the irritation in the udder, and the water can be changed when it becomes warm. Give at the same time copious injections of blood-warm water, which will assist in relieving the bowels and intestines. It is well to chafe the back and hips gently. We have seen these applications work well, even when the cow was unable to rise, and had passed beyond the bleeding stage.

We give this rational treatment, because it may be applied by the dairyman himself, with great hope of success, when he cannot have the skill of the veterinarian, and will save many more cows than any attempt of the dairyman himself to apply veterinary medicines.—*National Live-Stock Journal, Chicago.*

Color in Jerseys.

It is well known that for some time past the more prominent breeders of the Island of Jersey have been swayed against their own best judgment by the prejudice against parti-colored cattle, on the part especially of English buyers. To such an extent is the color mania carried that it is said that no breeder in Jersey would raise for his own use a bull which had any material amount of white in his color. On the other hand, bulls that are fit only for the shambles are kept at the head of some of the choicest herds, solely on account of their prepotency in regard to solid colors; and cows have the preference as breeders, not because of the presence of those qualities that have given the race its world-wide celebrity, but simply because of the absence of white hairs.

Col. Waring, in an account of his late visit, tells us that almost invariably in examining a herd the farmer or agent by whom he was accompanied would point out such and such an animal as being "very good;" "the best in the herd;" "the finest animal in Jersey," etc., etc.—animals which obviously were good for very little indeed. And on his calling attention to the superiority of another in the same field, he was answered, quite as a matter of course: "Oh! yes, for the dairy that cow is worth ten of these, but look at this one's color!—not a white hair on her." All this will sooner or later bear its legitimate fruit. And it is not at all surprising that its deteriorating effects are already beginning to be felt. Intelligent observers, on visiting the Island, are struck with the inferior characteristics everywhere manifest. Good animals are, of course, to be found in every herd, but the percentage of poor animals is alarmingly large, and, what is worse, is on the increase.—*National Live Stock Journal.*

The Difference.

Mr. A. A. Crane, a farmer residing at Osco, Henry county, Illinois, called at our office a few days ago, and gave us some facts and figures in regard to his business that are interesting. He had just come to the city with a lot of cattle and hogs, which he had sold as follows: 100 hogs, average weight, 496.3 lbs., at $4.35, brought $2,158.90. 14 head of cattle, averaging 1,483 lbs., $5, $1,038, making a total for the hogs and cattle of $3,196.90. By a reference to the market reports of the same day we find that a large majority of the hogs sold changed hands at less than $3.85. Taking $3.85, however, as the average, we find that Mr. Crane received $248.15 more for his hogs than the average price for the day for an equal number of pounds. On the same day the quotations for fair to medium fleshy steers were $4 to $4.35. Taking the latter figure, we find that, by having *good* steers, Mr. Crane realized 65 cents per hundred more on his 20,760 lbs., making a difference of $134.94; and on the hogs and cattle together, the difference in favor of good animals, in good condition for market, over the average of the day for the same number of pounds, was $383.09—a very handsome showing in favor of good stock and good feeding, over the slip-shod methods prevailing so generally among farmers. We might say further, that the price obtained by Mr. Crane for his cattle, although 65 cents above the average price of the day, for fair steers, was 30 cents below the *highest* price of the day—$5.30 having been paid for a fancy lot of steers averaging 1,555, for the English market.—*National Live-Stock Journal, Chicago.*

Stallion Shows in Spring.

The awarding of a prize for "the best stallion" in any given class at a county fair held in the autumn does good undoubtedly. It furnishes horse breeders with an opportunity of seeing good horses. If the prize is for the stallion and a showing of his colts it gives an opportunity for seeing those which have proved their excellence as sires. But there is no certainty that any direct future good will come from such a prize, beyond its stimulating effect. Often the winner is not owned in the county, or, if he be, he is often sold or removed for the next season.

Would not awarding prizes to the best stallion to make the next season in the county do much more good? Our cirumstances are so different, we cannot well adopt the plan which has proved so successful in Scotland—of having representatives of various societies annually come to a great national stallion show and pay handsome premiums to secure the standing of their choice of stallions in their districts, with a fixed service fee, but there is nothing to prevent a more general holding of spring shows of stallions, thus giving breeders an opportunity for comparison and selection; and the plan of offering prizes, with condition of the season being made in the county, would be an advisable step. As the taking of the prize would give some reputation and help in receiving a good patronage it might be well to include in the condition a moderate sum as the maximum fee for service.—*National Live Stock Journal.*

Worms in Hogs.

Before administering a vermifuge it is always proper to relax and clear the intestines of accumulations of ingesta. For this purpose give to each hog, in the morning, an hour before feeding, according to the size of the animal, from two to four ounces of castor oil, mixed with one drachm of oil of turpentine. Next day, and once daily during a week, administer remedies which combine in themselves the properties of a tonic, a bitter, and an astringent. For this purpose we recommend the sulphate of iron and gentian root, in doses of one scruple to half a drachm of the powdered sulphate of iron, and one to

two drachms of the powdered gentian root. For the purpose of ready administration such a powder may be mixed with a teaspoonful of honey or treacle, and in the shape of thick paste or electuary, smeared upon the root of the tongue, which is far preferable to drenching. It is best given in the morning, an hour before feeding. A frequent change of food, plenty of sour milk, and always ready access to pure drinking water, are essential.—*National Live Stock Journal.*

Exercising Cows.

A correspondent of the *Country Gentleman* writes: In countries where cows are the most productive they are not allowed to range at will, but are confined in comparatively close quarters. On the Channel Islands where the Jersey and Guernsey cows are bred, they are tethered and kept confined the year round. The Holsteins live with their owners, generally under the same roof, while the bonnie Ayrshire almost shares the bed and board of her master. These customs have perfected breeds of cows and made them profitable, while the American system of pasture ranges and barnyard "exercises" has perfected nothing, and never will, and in most cases has afforded really no profit. On the one side is philosophy and cow sense; while on the other, old notions and human prejudice govern. Result, we go abroad to improve our cows and increase our profits and still hug the delusions of our fathers. Gentlemen, this is not progressive.

Tender and Small Feet.

A horse with tender, thin-walled, and small front feet is certainly better off without shoes on; and the longer time he can be spared from work, the better. Such a horse should not be k pt tied in a single stall, but should be given outdoor liberty when the weather permits; and when indoors he should go loose in a comfortable shed or box-stall, with earthen floor. Look out for corns. A few months' liberty on pasture in the spring would be beneficial. Such a horse should never wear heavy shoes, and the smith should be told not to draw the nails tight when shoeing.—*National Live-Stock Journal, Chicago.*

APIARY.

Practical Bee Culture.

At the session of the Northeastern Bee-Keepers' Association, held at Syracuse, N. Y., during the past week, Mr. Bacon, of Oneida, took strong ground in favor of allowing bees to stir about and clean up, while others as strongly objected, saying that if kept on pure, good honey and allowed to remain dormant no cleaning is needed. The President took the latter ground, and stated that he kept his bees dry, and at a low enough temperature to keep them quiet, and never disturbed them until the blossoms of the soft maple are out, which he regards as a fair indication that the cold weather has left and that bees will be able to live and work.

Another question, as to the relative amounts of honey consumed, was raised. Mr. Baer claimed that he raised honey enough in a single season to pay for his bee-house. Mr. Snow claimed that he had all the honey left that he cared for, and preferred to have the honey used from the comb, in order to vacate the cells for the use of the queen. Mr. Root had weighed two swarms and found that indoors the swarm used four and a quarter and five and a half pounds during the winter, against six and three-quarters and seven pounds used by those left out.

Some further discussion took place, and it was finally resolved to take up the question of the best method of caring for bees in the spring. The discussion was very warm, and the views of several members were strongly expressed. Several members took the ground that an early flight was desirable, and others opposed it as being a fruitful source of disease and spring dwindling, which so many complain of. The president took the ground that an early flight and a subsequent return to the dormant state was a detriment to the health of the swarm. He keeps his bees as quiet as possible, but when the blossoms start he places them on the summer stands, taking all necessary care to insure sufficient moisture, which he deems necessary at this time, and allows them to begin work and also to brood. He feeds them honey in the comb, simply breaking the ceiling of the cells, thus giving the comb to the queen to be used for breeding. He believed dysentery among bees was caused by early exposure and by allowing them to get cold water. Several members expressed the same views and the sentiment of the convention was found to be in favor of the plan adopted by Mr. Root.

A Good Word for Bees.

A correspondent of the *Indiana Farmer* writes: While most all other industries are full to overflowing, that of bee culture is just beginning to attract attention. Our own State is about as good as any other State for honey. Where white clover, golden rod, linn, poplar, or basswood and many other honey trees and plants abound, bee-culture can be made profitable. We have hundreds of people in our State of small means who might as well as not engage in the bee business and make it profitable as well as to enjoy the luxury of eating honey. The outlay to the beginner need not be very great. One hive will do for a start. A book giving instructions on bee management is almost indispensable. The art of handling bees must be learned in some way, or failure will be the result, sooner or later, and the sooner generally comes first. The best way to learn an occupation is to go to work with some one that knows how. Bee-keeping is no exception to this rule. My experience has taught me this much, that very little valuable instruction is got from patent bee-hive men. They will tell some big thing about their hive to make it sell, whether it is true or not. Men who can count their colonies by the hundred, and are making money at the business, certainly know what a hive should be. Some of the most successful ones use a common affair. A hive of bees can, with ordinary management, be doubled every year for five years. In the fall of the seventh year we have 64 colonies; 20 pounds of honey to the hive every year will be a low average for that length of time; 15 cents per pound is not high for honey; we have 2,540 pounds for the seven years; that is, at 15 cents, makes $381, if I have made no mistake. The 64 colonies at the low price of $7 per colony makes $448; this added to the value of honey gives the snug sum of $829. This is no big thing but it is enough to pay for all the trouble it costs. Some will say it looked well enough on paper, but not one man in fifty can do that well. I believe it can be accomplished every time with proper care. I would like to hear from some of our bee-keepers on the subject. If they think that I am extravagant in my calculations let them say so.

Farmers and Bees.

Everything in bee-keeping does not depend upon location. The manner in which many farmers keep their bees, almost forces one to conclude that they are either too indolent or ignorant to keep them successfully, and that in reality they should not make any attempt. I will enumerate the kind of farmers who can keep bees, at least enough to supply themselves with honey sufficient for the wants of their own families. The farmer who has sufficient sense to plant corn at the right time, and energy to eradicate the weeds and stir the soil to insure a good crop, can keep bees. The man that adorns his home with shrubs and flowers, delicious fruits for his table, and desires the education of his children in every useful art that agriculture and home affords, will keep them. On the other hand the one who has not the interest or energy to do all these things, need not expect to get either money or honey from bee-culture. Some of the requisites to care, even for a few stock of bees, are, first, a love for the bees. No one succeeds well who keep bees with only large profits in view, for in this business "he who maketh haste to be rich," will surely fall into a snare. Second, knowledge and energy to do the right thing at the right time. This can be attained by reading and observation, and time and money thus expended will prove a good investment. Third, faith that bees will pay if rightly kept. A like faith is necessary in this vocation as that which the farmer exercises in all his farm matters.—*G. W. Niehardt, in Bee-keepers' Guide.*

POULTRY.

How the Young Bird is Hatched.

What more wonderful provision in nature is there than that by which the young bird is vitalized and matured in the egg. As all who have paid any attention to embryology know, the germ of the future bird is placed on one side of the yolk, and that side is always uppermost, being suspended by chalazae or twisted cords in the albumen of the egg.

If you take an egg, and placing it on its side, break out a circular hole in the upper side of the shell you will always find the blastoderm or embryonic shield, as it is called, on the upper side of the yolk looking you in the face, almost like an eye.

The reason that this embryonic shield is always held uppermost is because the parent bird in incubating applies the hot surface of the skin directly to the upper side of the egg, and that the embryo may receive its proper heat and receive no injury it is suspended in a thick and elastic deposit of albumen.

The parent bird in the period of incubation, knowing by instinct that the eggs in the middle of the nest receive more than their proportionate share of her heat, she is often employed in changing the position of the eggs, putting those that were on the edge in the middle and those that were in the middle on the outer edge. Observe now how this very act beautifully carries out another provision of nature; if by chance a bird could impart to her eggs the same degree of heat throughout so that there would be no necessity for changing their position, the young birds would not hatch; because, the heat being applied to the eggs at one point without change, the veins which are thrown out to the shell to obtain oxygen for the embryos would be over stimulated and strong at that point, and weak and powerless at all other points, where the heat was not employed. The result would be that the chicks would be confined or anchored to one side of the shell, and, as they could not turn around in the shell in order that they might break a circle around it to liberate themselves they would die at the time they should break their prison walls.

Nature thus implants in the parent bird the instinct to keep changing the position of the eggs, in order that the embryos may be born.

"What Breed Shall I Keep?"

In the long list of questions which established breeders of poultry are called upon to answer, there is none that appears more frequent than the one at the head of this short article.

The breeding of thoroughbred poultry for profit or amusement is becoming general, and each one embarking in the enterprise asks this question first, "What breed shall I keep?"

To answer this question, as it should be answered, requires that we should know the tastes and habits the person, the buildings, and time to be given for care and feed, and the amount of yard room and grass run which a flock would have. Of course the breed I keep is the best for me, and also all others who have a moderate amount of room. This is a natural conclusion, and yet before I settled down to the breeding of Plymouth Rocks, I had tested the other leading varieties, and failed to realize what *I have realized* during the five years I have bred this variety. In egg production they have surpassed anything I ever had, not excepting the Leghorns, while the weight, and consequent value was much greater.

For table uses they are not equaled by any variety of breed, the flesh being more evenly distributed over the body, and especially on breast and sides of breast bone. They are large, and yet compact; heavy, and not bony; with bright yellow legs, and a disposition to take on fat; making them the best for all practical purposes. They do not have a disposition to roam, and are easily kept within bounds, a four foot picket fence being all that is necessary.

One cannot ask for chicks larger than this breed secures, as cockerels five months old dress from five to six pounds. They are hardy, and remarkably free from disease.

The hens have a moderate desire to set, but, with my experience, not sufficient to make them good sitters or mothers. Some of my flock, three years old, never having shown any desire to brood.

The Plymouth Rocks are of good form and fine color, and so please the eye of all, while their intrinsic worth made them favorites everywhere.—*G. M. Twitchell.*

Eggs and Egg Culture.

The traffic in eggs in this country is estimated, by competent authorities, to equal $150,000,000 per annum. New York receives in a single year 530,000 barrels of eggs, valued at $9,000,000. In 1877 there were exported from this country 5,202,205 dozen eggs, valued at $668,701. It is claimed that Philadelphia consumes daily 80,000 dozen eggs. The approximate receipts of eggs in Boston for the year 1878 have been as follows: 107,627 cases, containing 49 dozen each; 43,000 boxes, containing 100 dozen each, and 17,783 barrels, containing 70 dozen each. These figures give as a result, 168,410 packages, containing 6,515,652 dozen eggs, or 78,187,836 single eggs. It is estimated that fully 95 per centum of all receipts are consumed in Massachusetts, and that about 80 per centum are consumed in and near Boston. In nearly all small towns and villages enough eggs are raised to supply the local demand. The number of eggs consumed in this State, when computed, is found to be at an average of 52 eggs per year to every inhabitant, or one egg per week. All these eggs come to Boston from various sections in about the following proportions: Eastern eggs, mostly from Maine, by boat and rail, at all seasons of the year, 24 per centom of total receipts; Northern eggs from Northern New York and Canada, 37 per centum; P. E. I. eggs, from Prince Edward's Island, between the months of April and November, 17 per centum; Western eggs, 19 per centum, and Southern eggs, from Virginia, during a few weeks in the spring, 3 per centum. Of the Northern eggs the greater part comes from Canada, and this trade is constantly increasing. A single Boston firm, the largest receiver of eggs in this market, handled nearly 600,000 dozen eggs last year.

What I Know about Roup.

DEAR SIR: I would like to tell what I know about roup. The symptoms are various. A sniffing and sneezing, sore eyes, swollen head, a discharge from the beak and nostrils, and a loss of appetite, are all indications of roup. Another good way of discerning roup is to take the fowl on your lap, open its beak and smell of its throat. If it smells badly, your fowl has the roup. At the first appearance of roup, the fowl should be promptly removed from the rest, and treated as described below.

Treatment.—The best and cheapest remedy and preventive for roup is invariably the German Roup Pills, which should be immediately administered according to directions, also give twice a day if your fowl has the roup badly, if not once a day will be found sufficient, a pill made by melting some fresh lard in a vessel over a fire, and adding enough red pepper to thicken. When it gets cool it may be made up into pills and administered by pushing it down the throat. Red pepper should be given in their drink. Also, wash the head and neck in a solution of chlorate of potash in water. Feed the German Roup Pills exclusively, and your fowl will, nine times out of ten, get well. Always keep sick fowls warm and dry. If you think this worthy of notice please publish it in your excellent paper, the *Poultry Yard.—G. A. L., in Poultry Yard.*

"Brown Leghorns."

Mr. Henry Lively furnishes us with an account of the eggs laid by his Brown Leghorn chickens during the month of March. His fifteen pullets laid 284 eggs in 31 days, being an average of 9 5-31 per day. In February these same fowls laid 253 eggs in 28 days, being an average of 9 1-28 per day. The lowest number laid being 4, the highest 13. These fowls are confined in a coop 6 feet wide by 10 feet long, with yard attached 11 feet by $12\frac{1}{2}$ feet, including a few moments' run occasionally on a small grass patch. These fowls are pure bred Brown Leghorns bred from 3 pullets and from a cock brought direct from Bonney by J. B. Long, and sold by him to Mr. Lively.

The number of eggs laid day after day was as follows:

March	1	4	March	17	10
"	2	10	"	18	11
"	3	8	"	19	7
"	4	5	"	20	11
"	5	10	"	21	10
"	6	12	"	22	7
"	7	7	"	23	10
"	8	11	"	24	10
"	9	10	"	25	6
"	10	10	"	26	11
"	11	9	"	27	11
"	12	9	"	28	6
"	13	9	"	29	13
"	14	11	"	30	8
"	15	10	"	31	9
"	16	[illegible]			

—*Examiner and Express.*

Poultry Profits.

I have kept a strict account from March 5, 1878, to March 5, 1879, and with good success. First, I purchased seventy-two choice hens for laying purposes, and with good care, such as feeding and watering, I have had the following income free from all expenses:

Bought	72 hens, 50 cents each	$36 00
"	3 cocks, $1.00 "	3 00
"	28 doz. eggs, 10 c. "	2 80
"	11 hens, 40 c. "	4 40
"	3 P. R. hens, $1.00 "	3 00
"	1 P. R. cock,	2 00
"	Grain, meat and vegetables	51 00
	Total	$102 20
Sold	72 hens, 50 cents each	$36 00
"	11 P. R. pullets, $1.00 each	11 00
"	3 " hens, " "	3 00
"	1 " cock,	2 00
"	5 " cockerels, 76 cts. each	3 75
"	11 Light Brahma hens, 50 cts. each	5 50
	144 chickens used and sold	50 65
	544 eggs, " "	68 39
"	20 bushels of pure manure	6 00
	Total	$186 29
	Bought	$102 20
	Profit	$84 09

—*H. H. C., in American Poultry Yard.*

Fowls in Orchards.

Last fall we visited an orchard in which fowls were kept, the owner of which told us that before the fowls were confined in it the trees made little or no growth, and only a corresponding amount of fruit was obtained. But what a change was evident now! The grass was kept down, the weeds killed, and the trees presented an appearance of thrift which the most enthusiastic horticulturist could not but admire and envy. The growth of the trees was most vigorous and the foliage remarkably luxuriant; the fruit was abundant, of large size, and free from worms and other imperfections. The excellence was accounted for by the proprietor, who remarked that the "hens ate all the worms and curculio in their reach, even the canker-worm." He found less trouble with their roosting in trees than he expected, and that a picket fence six feet high kept them within bounds. His orchard was divided into three sections, and the fowls were changed from one to another, as the condition of the fowls or the orchard-sections seemed to require.—*Poultry World.*

Facts Worth Remembering.

An enthusiastic breeder of poultry says: "Farmers will feed a bushel of corn to produce six pounds of pork, while the same amount of corn will keep a good laying hen one year, and she will produce at least twelve dozen eggs, averaging eighteen cents per dozen, which would equal $2.16. In addition, she would rear a brood of chickens worth as much more, making a total of nearly five dollars, against six pounds of pork at ten cents, equaling sixty cents; or, in other words, the hen will yield seven times as much as the pig fed on the same quantity of food." Aside from the profit, which is an important consideration in the keeping of poultry, it affords a healthful recreation and enjoyment to all classes. Those who daily toil in the counting house, factory or mill, each and all need some light, attractive, health-producing employment.

Threshing Ducks.

In a recent conversation with an eminent poultry fancier, of West Goshen, the subject of raising ducks was brought up and reference made to their propensity for straying, when an effective cure for this habit was imparted which should be made public, so that all may be able to reap its benefits.

Our informant states that when his ducks are partly grown he allows them to wander off and stay away from the parental duckfold *one* night, when he, the next morning, sets out in pursuit and brings the truants home at the end of a piece of brush, which he applies to the ducks without mercy, and as they tumble along over obstacles and each other, they soon realize that the way of the transgressor is hard and thereafter confine their trips entirely to one day, returning punctually home at the fall of night.—*West Chester Republican.*

Home Advice as to Poultry.

J. A. Roberts, of Malvern, Chester county, who takes much pride in breeding light Brahmas, thus writes to the *Farm Journal:* "In making new houses see that they are freely ventilated, for without it you will have sick fowls. Keep their quarters clean; whitewash occasionally. In winter and when the ground is frozen and covered with snow, give a variety of food, not all whole corn, but wheat, buckwheat, boiled potatoes, scraps of meat, etc., a head of cabbage for them to pick at when kept from the grass by snow; hens thus treated will repay you in eggs. Always keep the fowls with an appetite, not cram one time and starve the next; feed morning and evening; if milk is plenty let the chickens have all they can drink; it goes toward producing eggs and flesh.

A flock of hens will pay for themselves before they are one year old, if they are rightly cared for. You then can sell them, if you choose, for a good price and raise another lot, but it is not advisable to do so, as the second year is the most profitable, but do not keep them after they are two years old, for after that age they do not pay so well.—*Ex.*

Literary and Personal.

A message from the President of the United States. Communicating, in answer to a Senate resolution of June 8, 1878, information on the subject of sheep husbandry. Read January 14, 1879, and referred to the Committee on Agriculture, and ordered to be printed. An octavo of 130 pages, with three full-page plates, illustrating choice specimens of the Merino, Hampshire Down, and improved Kentucky sheep, containing a vast amount of statistical and local information on a very useful subject, including the origin and history of the growth of sheep in the United States. This work ought to fall into the hands of all who are practically interested in sheep husbandry at least; for in it they will find much that is of great commercial value, in that the information is practical and local, containing practical information on one of, or greatest and most prolific industries that the country has. It is fit that the United States Senate should make such an inquiry, and it is also fit that the President of the United States should be the medium through which it should be communicated to the public; it shows that the highest functions of the government have manifested, at least a *quasi* recognition of an interest in the realm of husbandry that involves their own food and raiment; *but*, where did they go to obtain the necessary information? Where, but to the half-starved Department of Agriculture. Had it not been for the laborious gleanings of that poorly-paid and much-abused department, it is not likely that a report could have been made at all. The pamphlet we are discussing is an interesting and useful one; *but*, (it is natural that in discussing the subject of sheep, there should be some "buts") will it get into the hands of those most interested in it, and who most need it? There is an immense amount of this kind of literature to be found in second-hand book stores, street book stands, post-offices, and other nooks and corners, *but* little, comparatively, among the people, which seems to imply that some received these documents who did not want them, and that others were deprived of them.

Pre-emption of Kansas Pacific Railroad Lands.—A demi-folio containing the "Decision of the Secretary of the Interior," and the "Opinion of the Hon. Jeremiah S. Black," being the full text of those decisions and opinions in the celebrated Dudymott land case, as well as other information relating to the Pacific Railroads and their lands. It appears that an attempt had been made to reclaim the lands granted to this company by the National Congress, on the ground, if we recollect rightly, that the company had not fulfilled its part of the contract. Perhaps it had been discovered that Congress had given the company too much (we are inclined to think it has), but that was the fault of Congress and not that of the company. But that is "neither here nor there" now; the deed has been done; a test question was made, and the company has been secured in its possession. Right or wrong, had it been otherwise, great injustice might have resulted to many hard working and self-sacrificing pre-emptioners. One thing seems inevitable, and that is, if this company acts honestly and faithfully, it must ultimately become immensely wealthy. If it respects the rights of the belts of sturdy yeoman, that time will locate on either side of the road, it will be a great benefactor. We wish we were thirty-five years younger, we would pre-empt a respectable slice of those lands in a "jiffy," and work them up to A, No. 1. The country needs now willing, thrifty and economical workers more than it needs capital. Capital is the result of effective working, and will soon accumulate and make itself manifest, if the aperture through which it goes out is not larger than that through which it comes in. It is a simple matter, but unfortunately many never make this discovery until they get too old to avail themselves of its advantages.

Colorado Rural Life.—This is to be a 16 page quarto weekly (No. 1, Vol. 1, now before us, merely exhibiting the general style and scope of the paper, has but 8 pages), costing only the low price of $2.00 a year. Edited by N. A. Baker, and published by Baker & Hill, No. 250 Fifteenth street, near the corner of Larimer, Denver, Colorado. The present number, containing not only the prose of *life*, but also much of its poetry, is a remarkably clever effort for a beginning, and it ought to be, and doubtless will be, amply sustained. Devoted to farm and garden operations; live stock growing; dairying in its branches; the latest markets; rural life in all its phases; horticulture and floriculture; tree-growing; landscapes; grain-growing; poultry and bee-keeping; sporting and fishing; the care of pet stock; notes on fish culture; latest Colorado news; general topics and news; domestic sketches and stories; household economy; the ladies, our youth, &c., &c. Presenting a literary banquet that must be relished by the citizens of that far-off region, as well as those in the East and elsewhere, who have friends in that young state. The typographical execution and the general make-up of the paper will compare with the best in the country.

California and its Offerings for Colonization.—An octavo pamphlet of 50 pages, by J. P. Whitney, No. 14 West Swan street, Buffalo, N. Y., May 1st, 1879, containing a full-page map of California, specially illustrating its railroad system; also, one representing a plan of the "Town of Covell," and the "Central California," and "Washington Irrigated Colonies," with a portion of the "Southern Pacific Railroad," &c.. &c. Those of our readers who may contemplate emigration to California should by all means send to the above address and obtain a copy of this pamphlet before they make a move in that direction, because it contains information on climate, productions, quality of soils, laws, culture, irrigation, fruits—especially orange and grape culture—trees, nuts, wines, &c., &c., and an immense amount of general information on subjects relating to the cultivation of the soil and marketing its products; and showing what may be done in California with a small capital; truly an appropriate balm for the present "hard times."

Special Notice.—All who desire to have their names entered as subscribers for one copy (or more) of our contemplated Treatise on Noxious and Beneficial Insects—and remedies for their destruction—will please send their names at once to the editor of this journal. Price per copy, $3.00, fully illustrated, good paper, clear print, and substantially bound; pp. 500, 8vo.

Everett Brothers' circular and price list of apiarian supplies—honey extractors a specialty. Toledo, Ohio, 1879. A neat little 16mo. pamphlet of 16 pages, with 14 illustrations, containing explanations, statistics and testimonials, with a list of all the bee publications of the country. Truly *multum in parvo* in its character.

Quarterly Report of the Pennsylvania Board of Agriculture for December, 1878, and January, and February, 1879; 48 pp. 8vo. of most interesting and valuable matter relating to the agricultural interests of the commonwealth, and of which we shall have occasion to speak more fully hereafter.

New and old books offered to the highest bidder, American Book Exchange, No. 55 Beekman street, New York, March, 1879; a 16mo. catalogue of 32 pages, including list of Economy Club. Prices to suit the times.

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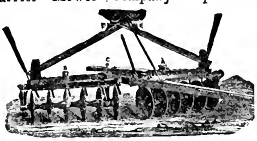

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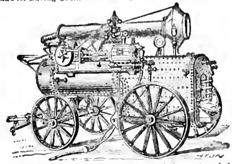

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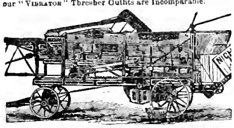

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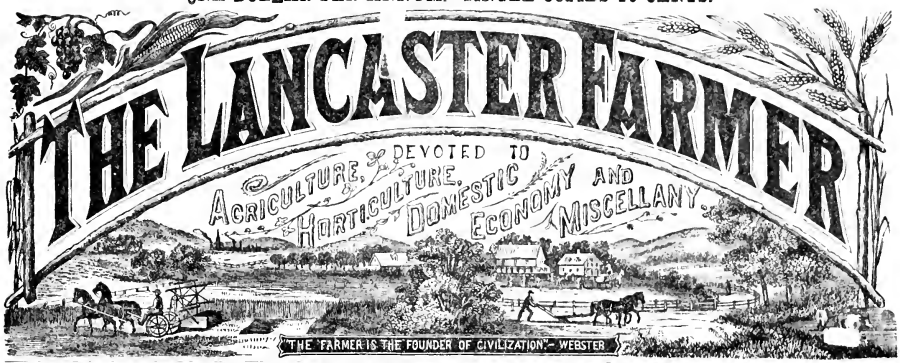

Dr. S. S. RATHVON, Editor. LANCASTER, PA., JUNE, 1879. JOHN A. HIESTAND, Publisher.

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The Lancaster Farmer.

Dr. S. S. RATHVON, Editor. LANCASTER, PA., JUNE, 1879. Vol. XI. No. 6.

EDITORIAL.

LARGE FARMING A PRECARIOUS BUSINESS.

The following figures are given by a San Francisco correspondent of a Philadelphia paper, as evidence that farming on a gigantic scale is profitable neither to the country nor to the farmer. He says: "The largest wheat producer in California, or in the world, is Dr. H. J. Glenn. He was formerly from Monroe county, Mo. He is a man of great enterprise and energy. His ranch lies in Colusa county, and comprises 60,000 acres, nearly all arable land. He has this year 45,000 acres in wheat, which, at a low calculation, will produce 900,000 bushels. His wheat will sell for 85 cents per bushel, or $750,000. Dr. Glenn has been farming ten years, and one would suppose he ought to have a handsome credit in bank; but what, with a failure in crops—which occurs two years in every five—and the enormous interest he pays on his loans, he is said to owe a round million of dollars. Last year his credit was bad, as he had no crop. Now, with his splendid crop in prospect he will probably get out. The Dalrimples, of St. Paul, who, ten years ago, were the largest farmers of wheat in Minnesota, raising as much as 40,000 bushels in a single year, went to the wall.

"Another large wheat raiser is D. M. Reavis, whose land lies on the borders of Colusa and Butte counties. He is also from Monroe co., Missouri, and has an unpretending little estate of 15,000 acres, 13,000 of which are in wheat, which he thinks will average this year thirty bushels per acre, or 390,000 bushels. He also is hard pressed, and I am told is paying 9 per cent. on a couple of hundred thousand dollars of borrowed money. If farmers raising half a million to a million bushels of wheat cannot get out of debt, it might be well to inquire, what is the use in having so much land?

"The truth is that from the frequent failure of crops in California, and the waste that attends on large operations of that kind, farming on a gigantic scale in this portion of the Pacific coast must be considered a failure. North of this, in Oregon and Washington Territories, there is no failure of the harvest; farming operations are carried on on a smaller scale, and consequently the farmers, while not rolling in wealth, are all well to do."

We clip the above from the columns of the *Scientific American* for June 7, as an illustration of the *great greed* there is in the industrial operations of the world; how they look from an inside view, and what eventually comes of them. We have had occasion heretofore to allude to these mammoth farms, and however they may have a peared from the outside—even if financially sound inside—we have alluded to them depreeatingly, simply because of their monopolizing tendencies, their social and commercial inequalities, and their liability to result eventually in anti-republican landed aristocracies.

But they do not seem to have succeeded very well, and we cannot see why they should, because every such a gigantic establishment that succeeds crushes just so much of the breath out of the other portion of the farming community of the country. The country is capable of producing a limited quantity of anything, and the more equally that amount can be divided among the producers the greater equality will there exist, and the less imposition will there be upon consumers, because there will be a less tendency towards those monopolizing "Corners," which so often oppress the public. Even the unnecessary waste of such an establishment would often prove a handsome income for an ordinary farmer. When it was glowingly stated that Dalrimple had only 5,500 acres in wheat, and that he had some twenty-five reapers and ten threshing machines in his employ, and was sending off to market ten car loads of wheat daily, we felt that it would have been much better for the country, and for Dalrimple himself, if that harvest had belonged to fifty-five thrifty and industrious farmers, than to be all under the control of one man who, perhaps, was not a farmer at all. Like a game of hazard, such farming may be lucky in one or two turns of the cards in succession, but it is prone to ultimate in failure, or abandoned, wornout lands, and a poverty-stricken community for years thereafter.

Any practical farmer can see what the upshot of such farming must be in the end. Read the minutest details of such operations and not the least allusion is made to the replenishment of the soil. It is true the soil may be virgin and not in immediate need of replenishment, but this state of things will not always exist. "Wear and tear" is written upon all the works of human hands; disintegration must be balanced by integration, or physical decay and ruin must follow.

Here and there on such large farms a threshing machine is located, the wheat is threshed and winnowed, then sent on its way to some distant market, and the straw and chaff is left on a heap to be burnt or blown away by the prairie winds. No grass, or stock to feed on it, can be kept on an exclusively wheat farm, and therefore there can be no return to the soil again of the elements that have been exhausted.

A thrifty republican yeomanry are the bulwark of the nation, but so soon as they resolve themselves into landed aristocracies they encourage feudalism, or exclusiveism, and become its bane. Doubtless many of those who sell their Pennsylvania farms and "go West" may be more or less influenced by the desire alone to own large farms. There is plenty of room in the Middle States for thousands of thrifty farmers, if they could content themselves with smaller farms, and a more thorough and intelligent culture.

SOUTHWARD, HO! vs. WESTWARD, HO!

We sincerely believe that it will be ultimately demonstrated that people of limited means *have*, and are *now* making, a great mistake—and often a sad mistake—in their impulsive emigrations to the "Great West" without having first availed themselves of the opportunities which are nearer home—namely, in the Virginias, Maryland and our own Pennsylvania. Many localities in these States, within a 6, 12 or 14 hours' run by rail from Lancaster county, offer inducements that ought to command the attention of those who really desire to better their pecuniary and domestic condition. It is all well enough for the sake of expansion and settling up the Western States; for if nobody had settled in Lancaster county long years ago, it would not have become the "Garden" it is to-day—but it would have been folly for our ancestors to have come here if they could have done better nearer home. It is quite possible that some of these West-stricken emigrants are like the little cat in pursuit of its tail. Away it goes heedlessly round and round in a circle after its tail, when if it only would stop a moment and look, it would find the end of its tail right at its nose. In looking over the columns of the *Weekly Examiner and Express*, a few days ago, we noticed the following advertisement, which includes one of the many inducements that now are offered for a profitable settlement in the great border State of Virginia, and is worthy of special attention:

Rev. C. E. Houpt is well known in this city, and is the energetic pastor of one of our city Lutheran congregations; therefore, any one who wishes to avail himself of the opportunity to better his condition, without going to Kansas, Nebraska or Colorado, would do well to give the subject his most earnest consideration. The reputation and standing of those who offer "A CHANCE FOR ALL," are such as the utmost confidence can be reposed in. Without a doubt, any one possessing the necessary business vitality of a thrifty farmer, can do better here than in subjecting himself to the deprivations, vicissitudes and hard labor of breaking up the virgin soil, and building up a new home in the far-off west. This is only one of the many notices of the kind which we find in the papers every "now and then," from parties who are entirely reliable. Some of the best farmers in Virginia, especially in the Shenandoah valley, migrated thither from Lancaster county years ago, and they have done well.

Men whose minds are imbued with the true principles of progress—men of intellectual culture—men who are not prejudiced against scientific farming, and who have been instructed in the practical application of the laws governing the physical world, may find as profitable and successful an illustration of the principles of culture in old Virginia as in any new State, and will also find a nearer and a more appreciative market for the physical results of that culture. One old, or partially wornout farm, renewed and restored to a productive and paying condition, is of more value to the country than half a dozen virgin farms that need no prolification; because it is just that much added to the material wealth of the country—it is practically making two spears of grass grow where only one had grown before. The recuperator of such a farm adds to the material benefit of the country, because it is the result of his own labor, under the guidance of his own mind, and if systematically pursued cannot relapse into general unproductiveness again. Simply because all his operations have been conducted on scientific principles—principles that exist everywhere, but may not be as necessary where the soil is new and prolific, as where it is old and partially exhausted.

THE BELASTOMA GRANDIS.

We were recently presented by Mr. J. L. Witmer, residing near town, with a very fine specimen of the *Belastoma Grandis*, or Water Bug, captured by him in the creek near his residence. Below will be found a very interesting account of this "pirate" from paper read before the American Fish Cultural Association, by H. D. McGovern, of Brooklyn, and published in the *Forest and Stream* of March 20th. The specimen is now at this office.

The question has been asked me more than once, "Why is it that our streams, which used to abound with fish, are so depleted, particularly with young trout?" I at once commenced an investigation, and commenced to think why it was that the good old streams of Long Island, that used to furnish so much pleasure to the sportsman, were now almost unpeopled by large trout. The question, I thought, could be easily answered; knowing that there were so many pot-hunting sportsmen around, in and out of season, who would not hesitate to kill a large trout even if they knew it was on the spawning bed and in the very act of spawning. This, with the assistance of the mink and snake and other enemies, I

thought, would answer the question, but I was mistaken. I will pass the large trout for the present and give you the result of my investigations of the small fish. When I say small, I mean from one year to eighteen months' trout. I was in the habit of placing some of the fish in spring well for general observation. As the water was clear and the space narrow, it afforded me a good opportunity to watch the growth, habits and movements of the speckled beauties. Several times I came to my spring and found some of the number missing. I examined the screens and found there was no chance of escape by that means. I then placed six eighteen months old fish in the spring. Next morning I found one missing. At 4 p. m. on the same day two were missing. On the following morning only two remained. Then I became alarmed, and thought the fish were playing cannibal; so I determined to solve the problem if it took me the balance of the year. Knowing that one of the fish was taken or disappeared between 10 a. m. and 4 p. m. the previous day, I began to watch, and was rewarded at 2 p. m. by noticing something crawl from under a bunch of water cresses that grew on the edge of the spring. It first appeared like a mouse. When it reached the water it dove down and like a flash it was up again, with something attached to it. I was not slow in capturing the intruder, and found to my surprise that it was a large bug, resembling a good sized locust, having one of my small fish in his grasp.

Now, gentlemen, as I am no entomologist, I do not know the name of it, but from the manner in which it held the trout I should call it the bear bug, for indeed the poor fish was getting a bear's hug. Having placed it in a jar of water it still hung on to the fish and seemed to enjoy its imprisonment. From observations with the naked eye, while the bug was in the glass jar, I could see that it tortured the fish from a tubular jaw prong, which it cast from the tail and fastened on the fish. In a second it became inflated to double its size. Now, gentlemen, as our worthy treasurer remarked, I think this is a blood-sucking fisherman, and largely the cause of the depletion of our small fish. Being inquisitive to know whether the thief would live out of water, I emptied the jar and placed some screen work over the mouth for the purpose of procuring air. Next morning I found the bug with his toes turned up and his victim beside him; so I found, good fisherman as he was, he differed from many anglers of the present day. Nothing but spring water would suit his bugship, and enable him to feast on his dainty morsel.

Professor Fuller said there was but one thing in the United States that would do as the insect described would do. It was the bug, scientifically known as *Belostoma grandis*. It was about three inches long and one inch broad, with powerful claws and a long proboscis.

[We can scarcely imagine anything more horrible than this armor-clad, cold-blooded monster, which runs like a swift on land, darts through the water and out of it like a fish torpedo, soars high in air and drops like a fish hawk, a shooting star, or a hot potato, upon some devoted trout's back, which is momentarily exposed at the surface of the water in which he swims. No strategy of the trout can outwit this frightful beast. At some opportune moment he quetly drops from aloft and fastens his sharp hooks in his side; he pins him fast with the point of his tail; and sucks his blood with his long proboscis. No effort can shake him off. Though he dive to the deepest part of the pool, or scour himself against the sharpest stones; though he leap from the surface or drag himself ashore in his agony, this big bug is there all the same and all the time. He hangs to him like the Old Man of the Sea, and never lets go until the trout is sucked dry and succumbs to the loss of all his juices. Were the Belastoma grandis as large as the octopus he would be infinitely more terrible. Inasmuch as we once had the knowledge only of the little cuttle fish, but now know of the existence of his gigante relative, even so may there not somewhere exist a Belastoma to which the little chap now called "Grandis" is but as a trifle in comparison? We shudder at the possibility.]—*Forest and Stream.*

The foregoing, from *Forest and Stream*, we reprint entire, with the exception of one word, where the writer calls the animal a *beetle* instead of a *bug*, which is a misnomer, and we must insist on the distinction just as strenuously as if he had called a *goat a sheep*, or an *ass* a *horse*. The "Gigantic Water-Bug" (Belostoma *grandis*,* Lin.) is a HEMIPTEROUS insect, and may be regarded as the typical representative of the order to which it belongs. This account may present a very interesting history of the habits of this insect, and from the fact that but few have the opportunities of making such observations, it is both interesting and valuable so far as it goes. There is just a probability, however, that people will draw exaggerated conclusions from such descriptions—indeed, the editor in his comments has reached some such conclusions, and when he says "it runs like a swift on land," he states a practical impossibility, as is at once apparent from the organic structure of its pedal appendages. Its anterior feet are semi-raptorial and formed for seizing and holding its prey, and the posterior pair are flattened, fringed and oar-shaped, efficient propellers in water, but only indifferent as runners on land. It is true they can move on land, but we have never seen one yet that was in any wise remarkable for its running abilities. Out of the water, however, they are swift and powerful on the wing, and hence, like the large "Water-Beetles," they are often found far away from their native ponds and streams; and, like the beetles aforenamed, we have often found them in early spring, partially covered with mud, indicating that they had passed the winter hibernation in mud at the bottom of ponds or streams. The females carry their eggs on their backs, in a sort of adhesive cake, and very probably when the young come forth, they also remain there in a cluster for a certain period.

We know that they are sanguinivorous in their characters, but we are at a loss to know how they could make way with the fish, inasmuch as the "screens" were too small for the fish to pass through them, or to be pulled through by the bug. These insects have no masticating organs, only a haustellum or piercer, and all their food is taken in a fluid state. Therefore, after all the fluids or blood of the fish was sucked out, they would relinquish the carcass (if they are like other predaceous *Hemiptera*) when it would be very likely to float on or beneath the surface of the water. There is not a single doubt, however, but that these bugs prey upon small fishes—fishes small enough to embrace in their grasp, but they probably could not seize a large one. Water-beetles have the same habit, especially the larger species of *Hydrophilus*, *Dytiscus* and *Cybister;* and many complaints have been filed against them by proprietors of fish ponds, both in England and America.

The above account is valuable, also, because it does not rest upon mere inferentialities, but upon personal observation; although it might seem a little hyperbolical to say that, "In a second it became inflated to double its size," moreover, may not the gentleman be in error when he says that the bug "tortured the fish from a tubular prong which it cast from its tail, and fastened on the fish." Did he not mistake the head for the tail? We are practically aware that these bugs can inflict a painful wound, for on several occasions we have had our fingers penetrated by Hemipterous insects, and on one occasion slightly by an individual of this very species. But we do not think that the presence of these insects can account for all the fishes that are destroyed. They may be an unimportant factor in their destruction, but we have never seen or known them to be sufficiently abundant anywhere to be remarkably destructive. The *larva* and *pupa* are probably still more voracious than the *imago*, for, like grasshoppers, they feed through all their stages of development.

B. americanum, Say.

THE LAW OF NEWSPAPERS.

"The courts have decided that if a person orders his paper discontinued he must pay all arrearages, or the publisher may continued to send it until payment is made, and collect the whole amount whether the paper is taken from the post-office or not. Also, action for fraud can be instituted against any person, whether he is responsible in a financial view or not, who refuses to pay for a publication. Some forget this, and think by merely refusing to take the paper from the post-office settles the matter."

We would most respectfully call the attention of delinquent subscribers to the foregoing, in illustration of the fact that editors and publishers have legal rights which the public, in equity, are bound to respect. There is a long list of subscriptions still due THE FARMER for the years 1877 and 1878, and even some anterior to those dates, which subscribers may feel under no obligation to pay, merely because they have refused to lift their papers out of the office—neglecting to accompany their discontinuance (if they have ever given such notice) with their arrearages for subscription. We can condone a neglect, but it is otherwise with an absolute *refusal.*

WONDERS WILL NEVER CEASE.

A New Refrigerating Liquid from Beets.—In Europe the principal supply of sugar is derived from beets; the annual production of beet sugar being now 700,000 tons. Besides this a large quantity of beet molasses is produced, a portion of which is distilled and a coarse sort of whisky made; the stuff remaining in retort yields potassium salts, which are employed as fertilizers, sugar, spirits and potash have heretofore been the chief products manufactured from beets. But Mr. Vincent has now succeeded in realizing from the refuse that remains after the beet molasses distillation, a combustible gaseous body, which is easily condensed into liquid form, and is called chloride or methyl.

This liquid, obtained, as stated, from beets, is used in the preparation of some of the analine colors, but is now found to be especially valuable as a retrigerating agent. By its rapid evaporation a temperature of 55° C., or 67° F. below zero, may be maintained, which is far below the freezing point of mercury.

Prof. Huxley says that by this means mercury (which freezes at 39° F. below zero,) may be frozen by the pound. For the manufacture of ice this new beet root product promises to become of much importance.—*Scientific American.*

This is something for farmers of the Northern States to think of if the cultivation of wheat becomes too precarious. Beets can be grown here most luxuriantly, and they must be of more value than merely for pickles or stock feeding.

QUERIES AND ANSWERS.

LOUELLA P. O., WAYNE STATION, P. R. R., } Delaware county, Pa. }

S. S. RATHVON, ESQ.—*Dear Sir:* I cut inclosed leaves from a young ash tree growing on a piece of land I have recently purchased in this neighborhood, which contain, as you will see, the eggs of some insect.

I shall feel obliged if you will tell me what position in the scale of destruction this insect occupies, (I don't admit that insects have any place in the scale of creation,) and what is the name thereof, and at what time and in what shape may I expect it to begin its depredations; and how, if that be possible, can its devastation be arrested. Direct as above, and believe me, very truly, your friend, *S. W. M.*

Your letter containing infected leaves of the ash tree duly received, and specimens in good condition. So far as it relates to *insects*, you may calm your apprehensions, for the substances on these ash leaves are no insects' eggs at all, but a species of *Uredine Fungus*, a group, or family, which includes the rusts, mildews, smuts, &c., which infect the different kinds of vegetation, especially the wheat, rye, oats, barley and corn; and also the blackberry, dewberry, raspberry, hickory, ash, hawthorn, &c., &c. Different species sometimes infect the same plant, and the same species also infect different plants; as, for instance, the *Uredo ruborum* is found on the blackberry, dewberry and raspberry. Last summer we found a group of hawthorn trees, both the leaves and the fruit of which were seriously infected, very much injuring their beauty, harmony and general health. The *Uredo liliophila* infects different plants, but the *Uredo rubigo-vera*, the *Uredo caries* and the *Uredo fœtida* (stinking rust,) usually infect our cereals, and is commonly called "Rust," or "Red-rust." The grain smut is the *Uredo segmentum*. We have often seen it plentiful on the raspberry, blackberry, ash and hickory, but we are not enough of a *Mycologist* to determine whether they are the same species or

not. Those on the ash may be a distinct species or a different genus from those we have mentioned above—indeed, even those are now included under different generic names. None are now accessible to us with which we can compare them. These fungoids consist of groups of minute orange, or rust-red cups, and these cups are filled with still more minute sporules, which are the seeds of the fungus, and these seeds or spores are scattered abroad and germinate, forming new fungus plants.

We may know that they are not the eggs of insects from the fact that the groups are of different sizes, and even the cups in the same group are different in size. Those in the centre of the groups are two, three or four times larger than those at the outer margins, increasing in size from the centre to the circumference, from which the group was produced, perhaps, from a single central cup, and that the others grew up successively around them. The smaller ones are still covered with a cap, or lid, and when they are matured this cap or lid is bursted open or thrown off and the sporules are scattered.

The best remedy for this species of rust is the removal of the parts infected, even if it should require the sacrifice of the whole plant. But a wash of sulphate of copper, lime water or glauber salts is also recommended in minor cases. Large trees, however, may thrive reasonably, in spite of the infection, because something is due to meteorological causes, and in another season they may disappear entirely.

KIMBLEVILLE, Chester co., Pa., June 5, 1879.

DR. S. S. RATHVON—*Dear Sir:* I here send you a kind of insect, and I would like to know the name of it. It is a pest to the corn. It will get at the stalk right below the surface, and just eat down to the roots. It is their first year here. We have a field of corn of about twenty acres, and they have destroyed about seventeen acres of it. I had these insects in a bottle for twelve days, and they are living yet. I thought I would send some of them to you to see what they are called, as I have seen your name often in the proceedings of the Lancaster County Agricultural Society. I would very much like to know what they are, and if you can find a name for them you will oblige yours, &c., *B. F. L.*

Your insects (somewhat crushed) came duly to hand, and are the "Corn-plant Weevil," (*Sphenophorus zea*). They are becoming every year, slowly but su ely, more destructive to the young corn plants. They belong to the great "snout-beetle" family (CURCULIONIDÆ), but do not breed, so far as is yet known, in the stalk of the corn; but are usually to be found in decayed wood under bark, and we have found them also under stones. They belong to a group that are destroyers of timber, trees, &c. The removal of old, dead wood would, perhaps, be the best preventive.

May 19, 1879.

MR. EDITOR—*Sir:* In THE LANCASTER FARMER for May, 1879, (page 69) I see that a young gentleman wishes to know where he can buy good land for $150.00 per acre. If it is not asking too much, please give me his name and address, and oblige a subscriber.—*Respectfully yours, Emanuel Toomey.*

Address, Newport, Perry county, Pa.

We regret to state to our correspondent that when we attempted to "look up" the manuscript of the article to which he refers, it was not *findable*, having been transferred to the "waste-basket," and from thence (so far as we know to the contrary) perhaps to *limbo*. We have done what we thought the next best thing, by placing his communication before our readers, which, no doubt, will bring the interested parties in *rapport*, although it may occasion some delay.—ED.

Mr. D. R. H., Ephrata, Pa.—The small, oblong, black insects which you found in the bloom of the plum, are not *exactly* in any of their varieties or forms. Among the flowers sent us we were only able to detect two specimens, and only one of these was in a condition at all recognizable. We do not think, however, that you need have any apprehensions in regard to them, for they evidently are present in the flowers for the purpose of feeding on the pollen or nectar that they afford. We have noticed these and other allied insects in various kinds of flowers these twenty years, and we have never known them to be of any positive injury. Perhaps if they occurred in numbers sufficient to devour all the pollen they might diminish the quantity and quality of the crop. It is those insects that feed on vegetation during their larval period that are most injurious to vegetation. Our first impression was that they were a species of *Coanrus*, a minute "rove-beetle," but a subsequent examination led to the conclusion that they were species of *Conotelus*, (of an allied family) perhaps *C. obscurus;* that they breed in decayed animal or vegetable matter, and that their presence in the flowers, in the mature form, is only temporary. Later in the season you will probably find them in various flower cups, especially in those of the "Morning-glories" and "Pumpkiu vines."

Compound Grape Gall.

Two or three persons, at different times, have sent us large green and pinkish galls, which they found on their grapevines, near the ends of the tender branches. On opening these they contained a number of cavities, in each of which was a small orange-colored larva. This is, doubtless, Osten Sacken's *Lasioptera vitis*, or "Grape Gall Gnat." Remedy—cut them off immediately and boil them.

ENTOMOLOGICAL.

FLIES.

"The Society for Promoting the Condition of Flies has issued another address to the country, through the Boston *Advertiser*. It reminds us that in the warm days at this season heavy and unhappy flies crawl out from their hiding places and walk sluggishly about on the window panes. According to the calculations of Professor Uhlhorn, each of these is now about to lay 2,000 eggs. If each of these eggs produces a fly which lays 2,000 eggs before the first of June, and from each of these 2,000 young ones are hatched which are ready to lay before the first of July, to furnish each a brood before the first of August, the number of descendants from this single ancestor by the first of September is sixteen trillion. It is, therefore, we may conclude, the duty of every one who sees a fly in these days to incontinently demolish it, with all the energy and sweet satisfaction which can be inspired by the knowledge that he is annihilating, at one fell swoop, 16,000,000,000 of these concentrated Gehennas on wings."

The estimates in the foregoing extract are merely theoretical *possibilities*, but not at all *probabilities*. It has also been estimated that from the days of Adam down to the present time, a single herring could have produced a progeny the aggregate mass of which would be larger than the planet we inhabit; but how many contingencies are there between the spawn of the herring and the adult fish, by which it becomes the food of some other animal, or is subject to destruction through environing casualties? The case is similar with flies, but still a sufficient number of them survive to perform the functions in the general economy of nature, for which they are permitted to exist. If we could find a local habitation where there were no flies, unless we were sure there were surrounding compensations, we do not think we would pitch our tent in such a place. If there were perishing animals, decaying vegetation, or animal excretions there, we would suspect its sanitary status. A redundancy of flies is doubtless a serious annoyance, but nothing to be compared with the continued putrefactions, stenches and miasmatic atmospheres that would exist if there were no flies to devour their cause, and transform them to a more healthy condition. If flies refuse to alight on a human body and devour its oleaginous oozings, it would be a sure sign that the exhalations from that body were vitiated, and hence that it could not be in a healthy condition. The substances which flies consume or damage in their *imago* states are not at all comparable with the filth they deodorize and displace in their *larva* or maggot states. Even the much-derided and much-hated mosquito performs a purifying function which it never receives any credit for; and, for one that in its lifetime gets a taste of human blood, there are millions that perish without ever having had a taste of anything unless they prey upon each other. In their larvæ forms they purify ponds and swamps that otherwise might become dangerous for human beings to approach on account of their repulsive and unhealthy stenches. To sum up the whole, insects are most wonderful in their uses; and it must be that for that purposes they are permitted a place in the great natural plan of the Creator in his government of the physical world, in which flies form no inconspicuous part. "They fertilize the soil by scattering decomposing matters, and prevent them from vitiating the atmosphere. A plant grows luxuriantly and increases too rapidly; the caterpillars arrest its growth and propagation; the caterpillars after a while become too destructive, and the ichneumons kill them by myriads. The vegetarian insects which lead a luxurious and quiet life, tend to increase greatly in number, and yet the carnivorous kinds are ever at hand to keep this prolific race within bounds. Century after century this curious equilibrium is maintained in nature, and although occasionally locusts increase to such an extent as to ruin great districts, still, as a rule, the interference of man produces the ravages of the flies that injure his crops, for he is constantly deranging the balance of insect power. It would appear that nature requires the multiplication of the *Articulata* to be carried to the greatest excess, and that they should often lead different lives during the successive stages of their growth and development; that they should be able to live under most opposite conditions of existence, being clothed in the most varied garbs, and that they should undergo transformations."

Human progress and human enterprise being the prime cause of the derangement in nature's plan, human genius and human invention must develop the means to restore the balance or provide for the deficit. Where insects are not absolutely hurtful or destructive to human products or human values, it would be best to let them have their own way, especially when their presence is known to be ultimately beneficial. Mere *annoyance* is not a sufficient ground for their destruction.

GRAIN SILVANUS.

(*Silvanus surinamensis.*)

This very small brown beetle seems to be plentiful in some of the grain bins of Lancaster county at the present time, as we also know it to have been in the past. Complaints of its presence, and also specimens of the insect itself have been sent to us from different parts of the county; and, unless there is something done to check its increase, our millers and farmers may suffer a diminution in the quantity and quality of their stored wheat and other grains. The "grain silvanus," or "corn silvanus," as it is called in England, is hardly one-eighth of an inch in length; very long and flat, and of a rusty brown color, thickly and coarsely punctured, and sparsely covered with yellowish, depressed hairs. The head is proportionally large, and approximating a triangular form. The *antennæ* are stout and slightly clubbed at their ends. It has small, short, horny jaws, &c., which are concealed under the front part of the head. The thorax, or middle section of the body, is oval and a little broader than the head, and has three latitudinal ridges down the back, forming two broad channels, and on each thoracic margin there are six little spines. The elytrons are broader than the thorax, long, elliptical, and have four slightly elevated latitudinal lines down each of them. The larva is a little yellowish-white worm, with six feet, and is a little longer than the mature beetle. It is

somewhat depressed, with twelve transverse segments, and otherwise differing from others hereinafter named.

The insects sent to us by mail were not a true "weevil," although where very numerous they probably would be quite as destructive. They are the "Grain Silvanus" (*Silvanus surinamensis*), and we have frequently seen mills and grain bins seriously infested by them during the past ten years.

As their name implies they have a foreign origin, and have probably been introduced into our country from England or the continent of Europe. You may not be able to get rid of them without some considerable trouble. They usually come forth in the beetle form during the months of May and June, but after that period they do no other harm than depositing their eggs, from which will be bred a future generation. It is while they are in their larva state that they feed on the grain, and were they are numerous they injure it very much. They have long been known to European millers and farmers as serious grain pests, and they employ the same remedies to destroy them that they do to destroy "grain weevils," (*Sitophilus granarius et S. oryzea,*) and the "grain moth," (*Butalis cerealella,*) They submit the infested grain to a temperature of about 167 degrees of a Fahrenheit thermometer, and let it remain in that condition for twenty-four hours. This is sure to kill all the beetles, whether in the beetle or the worm states. This heat does not subject the grain to fermentation, nor to be devoured by insects, nor make it less capable of vegetation when sown as seed, than that which has not undergone this operation, and does not cost more than about a penny a bushel, which is a small amount compared with a total loss.

The heat is applied by placing the grain in ovens, or in what they call *insect mills*, constructed somewhat like a large coffee-roaster.

Burning sulphur or charcoal in the bins, after the grain has been removed, will destroy such insects as may remain in corners and crevices. Tobacco fumigations would have the same effect. Instead of ovens or mills some have rooms, into which the necessary degree of heat is introduced. To show how they multiply and how destructive they may become, it is estimated that five or six thousand individuals may be produced from one pair of these insects in one season.

These insects sometimes also inhabit bran, flour, and other kinds of meal or stuffs made from ground grain. On one or two occasions we found millions of them in the grain and flour bins of a mill in the northern part of Lancaster county, in company with the "Grain Weevils," (*Sitophilus granarius* and *oryzea,*) the "Cadella," (*Tropasita mauritanica,*) the "Meal Worm," (*Tenebrio molitor,*) and perhaps the "Little Cucujus," (*Cucujus minutus,*) all of which insects have been introduced into our country from Europe, and are, perhaps, more destructive here than in their native country. Except the first named, however, these insects are found under very different circumstances. They are generally found under the bark of trees and in various kinds of nuts. We have found them alive in unroasted peanuts, &c., and our *Silvanus* has often occurred under the same circumstances, but mostly in company with them.

SOOT vs. WIREWORMS.

A correspondent of the London *Land and Water* found the wireworm so abundant in every part of the garden he was set to cultivate, that he could scarcely grow a potato or carrot without it being rendered useless by it; and among the various things he was led to adopt as preventives, soot appeared to be the only effectual remedy. This he applied to potato crops in the following manner: The drills were got ready in their usual way, and the sets laid in at the bottom of each drill; the soot was then put down upon them, in quantity sufficient to cause the drills to assume quite a black appearance. This being done, the drills were closed in the ordinary manner to the natural level, and the work was finished. Wherever soot was applied the crops turned out clean and good, scarcely a trace of the wireworm's ravages were to be seen, while those from rows not dressed with soot were quite the reverse—the potatoes being pierced through in every direction, and fit only for feeding pigs.

PEACH TREE BORERS.

Regarding borers in peach trees, says the *Country Gentleman*, it is useful to heap a peck of dry slaked lime about the peach trees after the grubs have been picked and before the earth is drawn back to the tree. The lime kills any grubs that may be left. If a live grub is thrown into dry lime it will soon die; this may be tried to satisfy an inquiring mind. Having used lime in this way in 1877, the writer found no borers at all in his trees in 1878, and therefore has confidence in this means of repressing the depredations of this pest.

CONTRIBUTIONS.

COMMUNICATION.

In reply to a note addressed to Mr. Houpt, by an inquirer, in relation to the land advertised in the *Examiner and Express*, and which we quoted in our editorial on the subject of settlements nearer home, he submits the following:

Dear Sir: Your note of the 2d inst. inquiring for further particulars about lands in Clover Hollow, Giles county, Va., is at hand, and in reply I would briefly state all the circumstances. The land is new land and rich; the pure, unploughed virgin soil, not worn out. There is timber growing on most of the land, growing the hard woods, although in some places there is growing pine. The country is well watered, a valley sloping down to Sinking Creek, which runs through the valley, and sinks away further down into a limestone cave. The size of tract for each man has not been fixed at any specified number of acres. First come shall be first served with whatever land each may select suitable to himself.

The why or reason is this. I have an uncle, by name Herman Haupt, who some years ago bought a large tract of this land in the State of Virginia, embracing this beautiful valley, and also a body of water some miles further on to the north, at which place he has erected a summer boarding house.

Now, as by profession he is a civil engineer, and cannot, owing to his business, clear up and farm this land, and as there are so many good men needing, and so many making long, expensive journeys out to the West for thousands of miles, when here in Virginia, not more than 400 miles from where we now are, is a most fertile and beautiful country: not bleak prairie, but rich Virginia bottom-land, my uncle, in a spirit of pure liberality, and to help poor men who are willing to work, has resolved to lease a portion of these lands for *five years* free of all rent. It is intended simply to help industrious men to a home and to settle that new country. *He does not, nor do I, who write this, make one cent* by the operation. It is intended to do good. The land must be cleared up and prepared by the man who leases it, and we think that by five years' time you would be able to lay up enough to buy yourself a snug farm of your own. To be sure, there is no home yet upon the uncleared land, but there are houses in the neighborhood which could be had, either at the hotel (or boarding house) or elsewhere. A small temporary house suitable for a short time, could easily be made. As the country is removed from the communications by rail a short distance, there is no special market, but grain can easily be sent in any quantity to any of the Atlantic cities. Or, if you choose, my uncle and his son will buy and send it to market, as he has a store in connection with the hotel. The prices of land per acre are different, ranging from $2 up to $15 (to buy). This land is located in Clover Hollow, Giles county, Virginia. I would be glad to talk with you face to face if you like our proposition. My home is at No. 45 South Duke street, Lancaster city. There I can show you maps and views which I have of that country. A better, safer offer could not be made, and you will find everything exactly as I represent. The people are kind and hospitable. You need not be anxious about the market, as that is right upon the spot. The country lies high, amid mountain scenery, and is very healthy and very beautiful. Many pretty spots and wonderful caves of limestone formations can be visited by little pic-nics in the summer time. If you could spare the time and come to see me, I could let you know many more facts. I have been down there upon the spot.—*Yours very truly, C. Elvin Houpt, Pastor of Christ's Evan. Lutheran Church, Lancaster city, Pa.*

For The Lancaster Farmer.

CORRESPONDENCE.

Prof. Rathvon, Editor: Since migration from the East to the West seems to be the order of the day with the class that are looking for good and cheap farm lands, and in the main moving for Kansas and Texas, I would call the attention of the migrating farmers to the cheap and fertile lands of Northeast Missouri. Here improved, as well as unimproved farm land, can be bought for one-third the price it commanded ten years ago. Farming, as a general thing here, is considerably below the average of ordinary farming. No regard is paid to manure, and the plow is not put over shoe deep into the ground. Your farmers would call it scratching the back of the soil. The agricultural economy seems to be reversed here, by showing the smallest amount of produce to the largest amount of surface. In short, farming here about seems to be a smouldering ember of African agriculture. Cross the river, and go into Illinois, and the difference appears at first sight.

There is nothing flourishes so much around here as circus shows and church revivals. In the metropolis of Pike county, Mo., with a population estimated at four thousand five hundred souls, about one-fourth negroes, there are eleven churches, of which one or the other is all the time on a scheme to raise the wind—by festival, concert, recitation, bazar, &c., &c. So you see there is no danger of the people suffering for want of religious exercise, of all and any of the various sects. There are also plenty of public schools in Pike county.

This county, ranging along the Mississippi, is a limestone region, with hill ranges for a distance of ten miles westward, and thence commences the prairie. This hill land is covered with apple orchards, and from the town of Louisiana alone from forty to sixty thousand bushels of apples are shipped, northward and westward, annually. These orchards are covered with heavy growths of clover. Farms of this character, with household improvements, from a hundred to a hundred and fifty acres, with some wood and arable land, sell for from twenty to twenty-five dollars an acre. Where it is covered by mortgage of some years' standing, at ten per cent. interest, it can, when bought under the hammer, be bought for less than the prices above stated.

Many of the Pike people have gone to Kansas and Texas, and many are the wails now coming back for the better lands they have forsaken.

If your Eastern overcrowded populations were half as gregarious as are the people in this region they would opportunely be thinned out, and well appointed to land in Northeastern Missouri. Pike is an old settled county, and for a long time ranked as the fifth county of the State in agricultural and dairy products. The winters are short, and most of the time grazing continues the winter through. About one degree more south than your county, it has, nevertheless, a much milder winter as to duration of time.

Everything that can be raised on the soil of your county can be raised here. The bottom land brings forth good wheat crops, an average

of twenty bushels per acre, and that without manure. The climate is of the healthiest character. Railroad facilities more than enough. A direct railroad from Chicago to Kansas City runs through Pike. Another from Keokuk to St. Louis, now in process of completion. Another from Hannibal, to intersect the North Missouri, that runs north and south, inland of the county. Another, on the Illinois side of the river, from Burlington to St. Louis. Besides these, comes the nine months' navigation of the Mississippi up to St. Paul and down to New Orleans. There is no place west of the Ohio that holds out better inducements for investment in farms than there is at present in Pike county, Mo. From two to three thousand dollars will buy a good sized, improved farm now that could not have been bought ten or twelve years ago for double that money. An intelligent Lancaster county land agent could do well to locate in this county, to serve himself and those in the East in search of cheap farms.—*J. W., Louisiana, Pike county, Mo., May 12th, 1879.*

For The Lancaster Farmer.

LETTER FROM NORTH CAROLINA.

Editor Lancaster Farmer: The wheat and oats crop, so far as I have seen and learned from inquiry, is promising a good yield in this and adjoining counties. I speak of spring sown oats: that sown in the fall will not be so good, having mostly frozen out. In some localities there will be plenty of apples but no peaches, while in other localities plenty of peaches but no apples, and in some localities some of both. From what information I can gather there will, in all probability, be enough of each for home consumption. Pears I have seen none or heard of any, but of prunes, gages and damsons I have seen some; also yellow Siberian crab apples. Grapes, so far as I have seen and heard, promise a fair crop. I noticed in the garden at my eating place two peach trees, not more than twenty-five feet apart; one was full and the other had but few on it—both unprotected.

All garden vegetables, such as potatoes, peas, onions, radishes, Lima and other beans, lettuce, cabbages, &c., look healthy, and at this time promise a fair remuneration for seeds, labor and time. So far as I can learn the corn, cotton and tobacco crop is doing well. Strawberries, both old field and cultivated, are plentiful at from 5 to 10 cents per quart.

I feel a great interest in the success of The Lancaster Farmer, and would write more and on different matters, but for want of time decline at present. May write you again if you desire it; let me know through the Farmer.—*Yours, &c., M. R.*

For The Lancaster Farmer.

CYPRIPEDIUM ACAULE.

The generic name is derived from the Greek name of *Venus* and *Shoe*, or "Shoe of Venus," from which the common name, "Ladies' Slipper" comes; it is also called "Moccasin flower," and it resembles an Indian's moccasin more than it does a shoe or slipper; another name is that of "Noah's Ark." The petals and sepals of the single flower on its peduncle are not showy, but the two lower petals, united into a drooping lip of a rose sed color, beautifully veined with a fissure in front, makes it an object of curiosity. This genus is principally composed of plants native to America. There are fourteen species, of which Loudon describes eight; of which five are North American; one of England; two of Nepal. They belong to a highly interesting order of plants; the *Orchidaceæ*, well known for the singular form of the flowers. Some of them grow in the earth, while others inhabit rocks and branches of trees, often agreeably scented, and sometimes produce an aromatic, fleshy fruit, as in the case of vanilla, which contains a large quantity of benzoic acid. The nutritious substance called salep, is prepared from the amylaceous roots of several plants of this order. The plant above figured is not very common, and yet I have met with it on several occasions in woods under evergreens, flowering in May and June, growing from eight to twelve inches in height. The root is composed of rather thickish, flexy fibres, and were much employed by the Indians and Indian doctors, in domestic practice, also; in many parts of the country, as sedative and antispasmodic, acting much like valerian in alleviating the nervous symptoms attendant on many diseases. Good evidence is had that it proved very useful in *hysteria* and even *chorea*. Most persons know what is meant by "hysterics," but perhaps the word *chorea* will be better understood by the name of *St. Vitus's dance*, a disease once established very difficult to manage. The so-called "nerve root" is, however, referred chiefly to the *Cypripedium pubescens*, a very similar plant called the "Yellow Ladies' Slipper," and grows in bogs and low, damp woods, chiefly near the mountainous portions of our county, attaining the height of two feet, and is more pubescent; the lip flattened laterally, and pale yellow. Dose of the powdered root, a teaspoonful occasionally in tea, or a tablespoonful of the tincture in water. Those who have tested this root say that the other native species, "*C. acaule*," above

named, as also the "*C. spectabile*," &c., possess the same properties; and Gmelin states (*Flor. Silur.* 1, 6), that the *C. calceolus*, of Europe, is considered efficacious in epilepsy. Much more might be quoted were I writing on medicine, but while I indulge in my hobby, botany, I would also give some useful information in the space I occupy, and venture upon a little gossip, which those who understand me will allow for. When on a visit, some years ago, to the hilly portions of Lebanon county, my curiosity was very much excited on hearing the name and graphic description of a wonderful flower found growing in a woody bog, about half a mile off, near the foot of the mountain. From the vulgar German name given me and the construction of the flower, I concluded that this must be something not known to botanical scientists, as I had in all my reading heard of nothing like it. Eager to get a specimen of this marvel of the vegetable kingdom, I determined to find this wonderful flower. I took the directions given me to find it, and I did not only go half a mile, but five, at least, before I returned. I met with several new and interesting plants—the gold-thread, cucumber root, a trillium and a beautiful balsinaria; these I had only seen figured in Barton & Bigelow's botany and other works, together with fine specimens of *cypripedium*. I met my instructor on my return, regretting that I failed to find the wonderful plant I set out for, but rejoicing over the new things I had found, which I displayed to him in my tin box. What was my surprise when he assured me that me that the *Cypripedium* I had collected was that very plant! Thus I found it necessary to listen with caution to the description of some ordinary things when extraordinary fertility of the imagination was mixed up with it, and so highly exaggerated that it produced a nondescript to my mind not found in earth, air or water, however wonderful we find the varied forms in nature.

Nevertheless, facts are often as difficult to comprehend as the wildest fictions could be, and it is easy to say humbug and delusion; but sober men of sound judgment may come to conclusions, under proper conditions, that others, however wise they may deem themselves, would come to under the same tuition or experience. We must live and learn, and well it is for us if our learning raises us above ignorant superstition, and gives us that calm, patient spirit to wait and trust, that however truth may be sneered at, it is powerful and will eventually prevail. If this is not botany or science, call it gossip, and pardon me for its infliction.—*J. Stauffer.*

For The Lancaster Farmer.

MOONSHINE.

Mr. Editor: The subject of the moon's influence on terrestrial matters being remarked on by two of your correspondents, in late numbers of the Farmer, and as it appears to be "a free fight" please count me in. I may not throw much light on the subject, so my cogitations may be taken for what they are worth. J. G., of Warwick, tells us "that the moon's influence is worth attending to," while your "Amateur Farmer" is strongly skeptical and demands comparative experiments; but as J. G. is a working farmer he may not have leisure, and your "amateur," having plenty of leisure, ought to be the proper person to disprove or prove the truth or falsity of such moonshiners. But he must lay prejudice aside and honestly try experiments.

Some thirty-five years since I had occasion to run a lane or passage-way through a part of my farm; I had post-fences set on each side, with a lane between of about twelve feet. The man who did the work, when he had set the fence on one side, had to leave for about two weeks. He then came again and set the fence on the other side of the road. In a year, or perhaps less, I noticed that the fence on one side settled down so that the bottom rails touched the ground, while the other fence remained up so high as to permit small pigs to creep under the bottom rails. I did not know the cause of this difference, but as I had kept a record of the times the fences were set, I then referred to the almanac to find out if the "signs" had caused this difference, and I found that the fence that had thus settled down was actually set when the *sign was down*, and the other fence was set when the *sign was up*.

Another case: Having a worm fence, several corners being full of briars, on a particular day in August I took a grubbing-hoe and dug up all the blackberry sprouts; the next spring a few sprouts came up, but they appeared sickly and soon died down again. Were these merely by *chance*, or was it brought about by stellar influences? Can "amateur" tell us the reason why?

A lady, who is a great lover of flowers, having several rooms filled in the winter with pot-plants, it was remarked that her plants were particularly healthy and free from insects, lice (aphids) and other live stock—which all know who keep plants in pots that it is a great bother to have the plants made unsightly by a host of insects—she was inquired of how she managed to keep her plants so free from insects? She was fearful of being laughed at, and it took some persuasive talk to induce her

to tell the secret. At last she said she always transplanted her plants *when the moon was passing through the sign Libra!* She said no insect could then stay on the plants. I might remark on such singular coincidences, but enough.

Now, as to Dr. Lardner. Your "amateur" lays great stress on what the doctor said thirty years ago, "that the moon has no influence on the weather," is simply about as reliable, or trustworthy, as his lecture on steam-power. He very earnestly predicted "that steam-power could never be used as a motor to cross the ocean to England as a paying adventure," yet we now find steamboats traversing old ocean in all directions in opposition to sailing vessels.

The new science of "Planetary Meteorology," by Prof. Richard Mansill, of Rock Island, Ill., takes strong grounds in favor of planetary influence on mundane affairs, foretelling more than a year in advance the probable state of the weather—heat and cold, storms, cyclones, floods, and a general synopsis of the state of the weather over the whole world, with many other wonderful influences brought about on *terra firma* through the various changes and configurations of planetary conjunctions, oppositions and other aspects of the planets affecting our earth. Although he calls it a "new science," yet the belief in planetary agency is as old as the hills, and has been handed down from father to son for ages. But the Professor is probably the first who has reduced it to a science. Though, of course, when he takes the terrestrial and celestial effects of the planetary system into his calculations he cannot be expected to give local data.

It is admitted by a great majority of astronomers that the tides in the ocean are caused by the attractive powers of the sun and moon—raising the water in the Bay of Fundy forty or more feet high, though the force may not be perceptible in a small sheet of water like "amateur's" little "frog pond."

Prof. Mansill's new science of Planetary Meteorology is really wonderful, and confirms the saying, "There are yet more hidden mysteries in nature than was ever dreamed of in our philosophy;" and as a writer once said, "The stars were set in the firmament for signs, for seasons, for days and years."—*A Seeker after Truth.*

For The Lancaster Farmer.

BEE LABOR.

Mr. Rathvon—*Sir:* I see by the last number of The Lancaster Farmer where Darwin has made some calculations in regard to "bee labor," and I think he is a little wild in his ideas. His number of trips for a bee to make one pound of honey is up in the millions; I will here give your many readers of The Farmer my idea in this matter, and any one who is well posted in bee labor by self-experience (not book learning) will say that I am not far wrong. The honey-comb when put on frames is generally about one and a quarter inches thick, and a piece three inches and a half square will weigh one pound, and it contains 882 cells, with the division in the centre. It will allow the cells four-eighths and a sixteenth long on each side; and it requires but 441 bees to build and fill the same in twelve hours, and they will go the distance of one mile for the material, and make two trips per hour; their honey sacks holding one drop each time, and each cell holding but twelve drops only, it will, therefore, require one bee to make 10,584 trips, or 441 bees to make twenty-four trips, each, in one day, to make one pound of honey, and this they will or can do. The honey sack is filled to its utmost capacity, and as it is constantly going through a churning process or digesting, in making white wax for comb material, there still remains in the sack one drop of sweet liquid; this is thrown up by the bees into the cells, and there it goes through a slow canning process from the heat of the bees, and also extracting back from the comb its sweetness that it contained in its first gathering. The largest yield I ever had in one day by one stock was ten and a half pounds, and the greatest amount consumed in one winter by one stock was fifteen pounds. This has been a backward spring for bees, but my stocks are strong, and the hives are all full and the bees are commencing work on the frames for surplus honey. This is the advantage my hives have over many others, not swarming, and getting the labor in the mother hive of the whole summer's broodling in surplus honey.—*Yours, &c., Wm. J. Pyle, May* 24, 1879.

For The Lancaster Farmer.

A WORD MORE.

Editor Farmer: Your correspondent, J. S. T., having in the March number of the Farmer declared a statement of mine, in the preceding number, to be of "doubtful veracity," I beg you to allow me room to substantiate what I there stated, and what J. S. T. so rudely denied, viz.: That in Great Britain (as well as in our own country,) the rule holds that in periods of prosperity the imports of a country will exceed its exports.

In the April number of the Farmer I gave a statement derived from the official government report, showing that in every decade, from 1790 to 1860, the imports of the United States exceeded its exports by many millions of dollars—the aggregate excess amounting to over $900,000,000. At the time of writing that article I could not, as I then mentioned, lay my hands on a statement of the imports and exports of Great Britain, which I had read some time before, and which went to confirm what I had affirmed in regard to the foreign commerce of that country. Since then I have been fortunate enough to find in the State Library, at Harrisburg, in "Executive Documents, 2d Session, 43d Congress—Commercial Relations—printed by order of the House of Representatives, 1874-75," the information I desired. It is a tabular statement, for a period of fifteen years, of the "value of imports from and exports to the various foreign countries and British possessions," viz.:

	IMPORTS.	EXPORTS.
1859 to 1863, (inc.)	£1,081,894,248	£ 842,915,373
1864 to 1868, "	1,411,191,476	1,125,937,855
1869 to 1873, "	1,655,714,183	1,390,253,928
Total,	£4,148,789,907	£3,357,107,156
	3,357,107,156	
	£791,682,751	

Thus showing an excess of imports averaging upwards of 52,000,000 pounds sterling—about $250,000,000—per year for the whole fifteen years. According to the "Balance of Trade" theorists, Great Britain should have been impoverished, if not ruined, by this state of things; but her people did not suspect that such was the case, and, on the contrary, regarded the period embraced in these years as one of more than usual commercial prosperity. And is it not the most natural thing in the world that it should be so regarded, seeing that they were enabled to acquire and possess (import) 4,100 millions worth of property by an outlay (export) of only 3,300 millions?

I may add that statements of the foreign commerce of Denmark, Austria and Hungary for the years 1872 and 1873, found in the same executive documents, also show a large excess of imports into each of those countries over the exports from the same. I was unable to find the corresponding returns from France and Germany.—*J. P., Lancaster, May* 25, 1879.

SELECTIONS.

PROMISE OF THE CROPS.

The New York *Times*, on Saturday, published a large body of reports upon the present condition of the crops and the promise of the harvest throughout the United States. The letters and dispatches come from about 100 places, covering more than 1,000 points, in 34 States and one Territory. In the case of all the larger States advices have been received from several correspondents so stationed as to best cover the geographical area and most fertile sections of the State. These reports fill 22 columns of this morning's issue of the *Times*. It is impossible to sum up in a general statement the results of this canvass, because of the material variance in the crop prospects at different points. The varying tone and marked local coloring of the reports, indicating a careful study of the situation at each point, is one of the best possible evidences of their faithfulness. It may be said, however, that while there is no such universal promise of overflowing harvests as was reported a year ago, resulting from the exceptionally early spring of 1878, there are satisfactory indications of an average product in most sections and of most crops, while in the case of some staples an increase is expected. The general characteristics of the season have been everywhere the same. A cold and late spring was followed by a severe drought, from which crops had begun to suffer seriously, when the rains of last week brought the needed relief. The lateness of the season was not without some compensating advantages. Had the seed been sown early the dryness of the first two weeks in May would have hindered its germination, and a thin and uneven growth would necessarily have resulted. The favorable weather succeeding the rains has caused all kinds of vegetation to push forward rapidly, until they are now in a state of advancement equal to that of an ordinary year. The wheat and corn crop of the Western and Northwestern States will surpass that of last year, should the later season prove favorable. The condition of the fruit crop in New England and the Middle States is one of unusual promise, but in many sections of the South and West the trees have been injured by the cold winter or late frosts. The crop of oats, rye and barley will not be above the average. The hay crop will be large, except in some limited areas, as indicated in the dispatches. The cotton crop will be larger than usual, notwithstanding the unfavorable weather, owing to the effect of the recent increase in prices in extending the acreage in most of the Southern States. Farmers everywhere have planted more potatoes than usual, and vigorous measures will be taken to protect them from the ravages of the Colorado beetle, which has already appeared in threatening numbers, in Pennsylvania, New Jersey, Kentucky, Ohio, and some other States. Tobacco is being more largely cultivated by the farmers of Massachusetts and Connecticut. In Massachusetts and New Hampshire the sugar-beet industry is receiving considerable attention, and sorghum has come into favor in many sections of the South and West. Thousands of acres of new land have been opened up and put under cultivation in Michigan, Nebraska and Texas during the present year. The population of Nebraska has increased 60,000 by immigration. Many farmers in the Northwestern States are engaged in stock-raising to a larger extent than in previous years.

THE AMERICAN'S ADVANTAGE.

Why Our Wheat Can be Sold in England Cheaper than English Grown.

The main advantage of the American farmer seems to be in the cheapness with which he obtains his crop. It is somewhat surprising to find that wheat grown in the Far West still pays as much freight before it can be placed in the English market as the rent charge amounts to at home. The average yield of an acre of land in England is thirty bushels, against thirteen in the Western States. The American farmer must, therefore, cultivate two and a half acres before he can sell as much produce as is grown on a single acre in England. This, however, he does at an incredibly small outlay. The difference in tillage is most striking. An English farmer, accustomed to drive three or four horses painfully over a stiff clay, can scarcely imagine the ease with which a light plow runs through the rich loam of a Western State. In Northern Minnesota, the Red River settlement is just being opened up. A

furrow may be drawn for fifty miles across the alluvial prairie without meeting a hill, a tree, or stone. Various estimates of the cost of labor for tillage and harvesting have lately been published. If these are correct, an acre of wheat in America can be cultivated for about one-half the expense in labor of cultivating an acre in England. We do not, however, place implicit reliance on such estimates. The American farmer, as a rule, does his own work, or the greater part of it. The amount of wages paid in actual money is comparatively small. If he cultivates fifty acres of wheat, and has growing sons, he may manage without any help, except at harvest time, when he hires an extra hand for a month. If he has no family to assist him, he will probably hire a hand for the year at $12 or $15 a month. In all cases board and wages are included, the hired men sitting down to meals with the farmer and his family. We may fairly estimate, then, the capital of £12 required by an English farmer to cultivate properly a single acre of land will not more than suffice to purchase and cultivate the two and a half acres which will yield the same amount of wheat in America. Up to this point neither competitor has a decided advantage, and, if anything, the difference is, in our opinion, on the side of the huge agriculturist. But the heavy yield in England is only obtained by the application of costly manures, and this outlay is spared the American grower. At present only the richest lands are cultivated, and the earth yields her increase without any assistance at her hands. Of course this will not last forever. In twenty years' time all the more fertile lands will be taken up, and even these will be exhausted by successive crops. In California the average has already fallen from twenty to fourteen bushels. In the Atlantic States it has long been necessary to revert to a rotation of crops and the application of fertilizers. But until this stage of exhaustion is reached in the Western States, the English farmer will require something more than the set-off of freight against rent charge. This protection the Americans themselves gave them until recently. The Morrill tariff imposed an excessive duty on iron, and the construction and maintenance of railways was thereby rendered so costly that it was necessary to mulct the producer in freight. Also, the cost of living was artificially raised by duties imposed on every article of manufacture. Prior to the war a comparatively free trade policy existed in the United States. Had this been continued, agriculture in the Mississippi Valley would years ago have achieved the prosperous position it has at length reached by the collapse of manufacturing industries in the Eastern States. The prostration of every branch of manufactures has been so great that practically the tariff has been in abeyance for the last few years. Should these revive the cost of living will again be raised, and to that extent the former protection restored to the English producers. But this contingency is too remote to arrest the impending fall in rents. It lies entirely at the option of the landlords whether this shall be wholly given in abatement of rent, or partly take the form of security of tenure and protection to the occupier's capital. For the sake of the country at large it is to be hoped they will choose the latter alternative.—*London Economist.*

PLEURO-PNEUMONIA.

Its Symptoms, Treatment, Causes and Development.

So much is now being said and written about this insidious disease, which is thinning out the dairy stock in many sections of this country that we have selected from the West Chester *Republican* some explanation of the nature of the epidemic, as given by Dr. J. B. Raynor, a veterinary surgeon who has treated numerous cases of this disease in all of its various stages.

The doctor says the disease which has now assumed the title of pleuro-pneumonia is not a new one, but has been known under various names for the last twenty or thirty years; at times devastating a whole locality, and at others limiting its attacks to a few cases in a neighborhood.

Its appearance is manifested by the rough appearance of the hair of the animal attacked, followed by a general dullness, loss of appetite and disinclination to move, the head drooping as the disease progresses, and a short cough, succeeded by a moan of suffering, until death intervenes. This occurs generally about two weeks after the sickness becomes apparent, though prolonged in some cases to that of many months; the blood quickly communicates its infection to the lungs, and the filling up process goes on, from day to day, until breathing becomes impossible.

The first stages of the disease are difficult for the casual observer to detect, and the time when treatment would produce relief frequently passes by before the animal is known to be afflicted, when it is then too late to resort to any remedies. This irregularity of the discovery of the disease has made it one very difficult to handle, and each case appears to require special treatment, the only general specific being in external application of mustard, and with blistering in acute cases. The internal treatment is then administered, with reference to the condition of the bowels, but in many cases, despite prompt attention and good care, the remedies have no effect.

The primary cause of this scourge is due, in the first place, to close confinement and want of necessary exercise, it most frequently making its appearance and doing the greatest damage in herds of dairy cows which are fastened up in the stable during the greater portion of the time, with scanty ventilation and forced by high feeding to their utmost producing capacity. This establishes the disease, but its dissemination is brought about by the unscrupulous conduct of persons, who, finding their cows in this condition, have them driven to a distance and sold, with the incipient seeds of pleuro-pneumonia in their systems, to farmers who thus unknowingly inoculate their healthy stock with the same malady. Instances where this has been done have been traced back to the guilty actors, and a law was passed a number of years back for Pennsylvania, and we think is still in existence, making it a misdemeanor for any person to sell or remove any cattle from a place where the disease has raged, within six months after it has been checked, and at the present time it is evident that the only way to prevent a general epidemic is by the enforcement of a stringent law of this nature, which should inflict severe penalties on parties guilty of such an offence against the the general welfare.

To accomplish this a committee of experts in veterinary surgery should visit every place in the country where the disease makes its appearance, and place it in quarantine for a certain period, during which no stock subject to the disease should be allowed to leave the premises.

The only preventive, so far known, which has proved successful, appears to be pure air, exercise and keeping the animal in a healthy condition, by judicious feeding and absence of overcrowding.

The indications are, that unless precautions of this nature are taken the disease will become general in the country, and involve great loss in many ways; so it behooves all owners of dairy stock to move in the matter, as soon as possible, for the adoption of measures of defense and prevention.

The knowledge of the inroads which the disease has made in the dairies in the vicinity of New York and Philadelphia has become widespread, notwithstanding efforts to suppress it, and the fears of the residents of those cities that they may be consuming the milk and butter of infected cows, or the meat of diseased cattle, which have been at once marketed on the discovery of the evidence of the presence of the pleuro-pneumonia, makes the subject one of the utmost importance to consumers as well as producers, and action tending to extripate the disease would meet with strong support on all sides.

TOBACCO CULTURE IN PENNSYLVANIA.

Employment it Indirectly Affords Women.

A writer in the Philadelphia *Times*, who has evidently been suddenly awakened to an appreciation of the magnitude of cultivation of tobacco, says:

The amount of capital employed in the tobacco trade of Pennsylvania is considerably over five millions of dollars annually. Regarded in all its ramifications of extraneous industries, this sum might be estimated at little less than ten millions, an immense growth of prosperity within the last thirty years. There was a time within the memory of the present generation when Pennsylvania tobacco was only worth two cents per pound in the market. Now the best Lancaster commands from twenty to forty cents. This astonishing advance in the value of an agricultural product has been primarily brought about by the sagacious foresight, enterprise and public spirit of one Philadelphia merchant, Mr. Raphael Teller, a member of the firm of Teller Brothers. At an early period in his business career, Mr. Teller, who is both an agriculturist and scientist, discovered that tobacco raised in Pennsylvania was suitable for making cigars. At the risk of his firm, he sent heavy consignments to California and various foreign markets, and really introduced this product, which bids fair to become one of the staples of the Keystone State. The immense benefit this has been to Lancaster county, where the price of the crop is now worth about as much as the price of the land upon which it is grown, will be readily understood.

The writer refers in detail to the further development of this industry by Mr. Teller's improved system of sweating tobacco and preparing it for the market in much shorter time than was previously required. This process, he says, consists simply in experienced and skillful manipulation, and a proper adaptation of artificial heat, backed by a determination to apply skilled treatment of first-class tobacco. From Messrs. Teller the *Times* writer obtained other interesting data regarding the tobacco trade:

More than ten thousand persons earn their living by making cigars. One-half of these are women, the latter being the most skillful, owing to their superior delicacy of touch. The price of cigar-making ranges from two and a-half to six dollars per thousand. A skillful worker can make five hundred cigars per day. Germany buys largely of Pennsylvania tobacco. Women also find employment in bundling, boxing and stenciling boxes.

Tobacco seed is sowed early in the season in hot beds. From these the young plants are removed to drills, where they grow rapidly and require constant weeding. The country girls of Lancaster and other counties are often engaged in this business, which pays them about seventy-five cents per day. When the plants are matured, they are cut and hung on frames to dry or in some cases dried indoors, and later the leaves are stripped off and prepared for sweating. Frequently they are re-sweated in order to produce a darker color, which is now a fashion in cigars. The test of good tobacco is the steadiness with which it will burn to white ash.

Through the courtesy of Messrs. Teller, several samples of tobacco leaves were brought forth for my inspection. The soft, pliable, semi-transparent texture of the leaf was in curious contrast to the tensile strength of the fibre and the effect of the re-sweating very evident in the heightened color and more delicate aroma. Forty thousand cases of tobacco are produced annually in Lancaster county.

Tobacco culture may be regarded as comparatively an innovation in this State, but as a means of promoting industry, developing agriculture and increasing wealth it is in every sense an ascertained success, and will, in the near future, be one of the chief factors of Pennsylvania's prosperity.

Nothing can be a matter of indifference to women that furnishes their sex with remunerative occupation. The ordinary fields of labor are already overstocked. Many of these, such as weaving, etc., can only give employment to women amid dangerous machinery and undesirable associations. To such objections, cigar-making is not open. It is hand-work, requiring skill, judgment and delicacy of manipulation. Formerly this industry was confined almost exclusively to the State of Connecticut, but, through the enterprise of the Brothers Teller, the tobacco culture of Pennsylvania has been fostered to prosperity, and thus offers new avenues of paid labor for women. Surely these gentlemen may be regarded as the best sort of philanthropists, and benefactors to the sex.

THE EVIDENCES OF SUCCESS.

"What is a successful farmer?" was one of the questions which the club considered the past winter. Our attention has recently been called to it, in contrasting the different farms that have come under our observation, and we find that the question cannot be properly decided from outside appearances. Mankind are prone to render judgment upon superficial evidence, without knowing all the facts in the case. Thus, if we pass a farm upon which we see good buildings, neat surroundings, improved stock and evidences of thorough cultivation, we pronounce the the owner a successful farmer. On the other hand, if we see a farm with shabby buildings, ordinary stock, and but little in the way of ornament, our feeling is that here is a man who is not a successful farmer. But in order to pass intelligent judgment in this case, we must understand all the varied circumstances of the individuals—the assistance they have had, discouragements to contend with, expenses incurred and met, with all others that would naturally have any influence in the result.

Not a hundred miles from here lives farmer A. He has a large farm, soil almost inexhaustible in fertility, large and handsome house and barns, with cribs and all necessary outbuildings, all constructed of the best material and best style; his farm is stocked with short-horned cattle, thoroughbred hogs and sheep, and all necessary implements and machinery of the latest and most approved kinds. His work never drags, but is always done at the proper time, and he is sure of good crops if anyone can grow them. The appearance of everything about the place indicates thrift and prosperity, and one passing by would pronounce the owner a successful farmer.

In his immediate neighborhood lives farmer B. His farm is on the hills and was selected because it could be bought cheap. His buildings are comfortable, but they are old, and there is little show or ornament in them or the surroundings. Straw-covered sheds and temporary makeshifts detract from the beauty of the farm. His stock, though well cared for and in good condition, are not thoroughbred. His work is not always driven, but often drives him, and we have seen his crops suffering for want of attention. Is he, as the casual observer would decide, a poor or unsuccessful farmer? Before rendering judgment let us look at the influencing circumstances.

Farmer A. inherited several thousand dollars, and when he married, his wife brought him an additional sum. He received a good education and engaged in business in the city until, when he commenced farming, he had plenty of money to buy a good farm with, to furnish and stock it as he desired, erect such buildings as his taste dictated, and a cash capital left to work with. He has no family, and hires all the help needed to keep the work of the farm in good shape. Nevertheless he is always grumbling about hard times, and declares—and we believe truly—that he expends on the farm every cent he makes.

Farmer B. began life single-handed and without a dollar inherited. He worked by the month until he had saved money enough to buy a team, and then began to farm on shares. It required years to save the first thousand dollars, and then, in his twenty-eighth year, he married and purchased this farm, paying one thousand dollars down and giving notes and mortgages for more than that sum. His wife brought him only strong, willing hands and a loving heart. They have raised seven children, and given them all a good education; he has furnished his family with good books and papers, and his boys and girls have grown up intelligent and promise to be useful in the world. Although still in debt he has properly on the tax list valued at six or eight thousand dollars, and is hopefully and laboriously struggling on. He has never owned a dollar he did not honestly earn, and has never earned one but what he has asked, "where *must* this be spent?" Now, after all these years of toil and hardship and self-denials, he begins to see his way out of financial embarrassment, and in a few more years will have placed himself where farmer A. began, twenty years ago. In twenty years more, with youthful vigor and manhood's strength on his side, he would accomplish all that his more fortunate neighbor has done. But age creeps on, with dimmed eyes, palsied limbs and weakened frame. The desire to accumulate may still exist, but it has grown weaker as strength and will to execute have gradually slipped away. He may not be able to pass his declining years in ease and luxury, but he is surrounded with plenty and can give his children the help he so sorely needed in the beginning.

Knowing all these facts and circumstances, who will say that farmer B. has been less successful than farmer A.? Who will not say that he has been even more successful?—*Practical Farmer.*

A CHAMPION WHEAT FIELD.

The complaint this year is general that the wheat crop will be short. The wheat stands thin and irregular, and should the present drought continue long, the crop will certainly be a short one. There is an exception to this where the system of wheat culture is followed, as laid down by Mr. J. M. Heiges, on the western suburbs of York. Mr. Heiges' wheat crop never fails; he has a full yield every season. To be convinced one need but visit his place and see his present wheat fields. His wheat stands thick, strong and thrifty. We would venture to say that there is not a field cultivated on the old method in the State like this, and no doubt it will yield from 60 to 70 bushels to the acre, as it did on previous years, although the season is regarded as unfavorable for a full yield.

That the Heiges plan of wheat culture is a success in this vicinity can no more be doubted; his remarkable crops year after year, and his uniform success during all seasons, and when the wheat crop fails as a rule, is certainly good proof of its value. The objection is made that the labor required to cultivate wheat on this plan would increase the work of the farmer, and therefore it would be impracticable on many of our large farms. But, on the other hand, it is claimed if sixty bushels can be raised to the acre instead of twenty bushels, then there would be less land required, less capital and less ground to work, and in the end would make wheat culture more profitable. It would, no doubt, be a matter of interest to our practical farmers to pay a visit at this season to Mr. Heiges to see his extraordinary growth of wheat. There is no reason why every farm in York county should not have a few acres of wheat put out on this plan. The question how he puts his wheat fields into grass is solved; on Mr. Heiges' place he has certainly the best grass we have seen this year, on a tract that yielded last year 57 bushels of wheat to the acre. He is experimenting on a new wheat, where he is planting each grain separately, 3 by 10 inches apart; this wheat is remarkable for stooling and its size of heads.

Mr. Heiges claims that one peck of seed is enough for seeding of one acre. We counted the wheat stalks that came from one grain of wheat and found them to run from 16 to 25 stalks. By culture with the hoe or cultivator, it is claimed that an extraordinary crop of this wheat can be grown.

This "Mold" wheat is new, it being first made known at the Paris Exposition, and was spoken of by the agricultural papers. The originator then refused £50 guineas for a single stalk. Mr. Heiges secured one pound of this wheat last fall for $1.00, as the seed is becoming disseminated, and will soon be generally cultivated, especially where the merit of large heads and prolific stooling is sought by the growers.—*York Daily.*

INFLUENCE OF FORESTS ON CLIMATE.

Many rivers have totally disappeared or have been reduced to mere streams by an irrational and heinous felling of the forests. In the northeast of Germany the Narp and Gold rivers exist only in name. The classic lands of antiquity are rich in sad lessons of deforestation. The springs and brooks of Palestine are dry, and the fruitfulness of the land has disappeared. The Jordan is four feet lower than it was in the New Testament days. Greece and Spain suffer severely to this day from the effects of destroying their forests. Many parts of the kingdom of Wurtemberg have been rendered almost barren by the felling of trees. In Hungary the periodically returning drought is universally attributed to the extermination of the forests.

We attribute the present unfruitfulness of Asia Minor and Greece to the destruction of the woods; steppes, ruins and tombs have taken the place of what was the highest culture. Sardinia and Sicily were once the granaries of Italy, but have long since lost the fruitfulness sung by the ancient poets. On the other hand, man can improve the land in which he lives, more slowly indeed, but as certainly, by cultivating and preserving the forests. In earlier years reliable authorities have told us that in the Delta of Upper Egypt there were only five or six days of rain in the year, but that, since the time when Mehemet Ali caused some 20,000 trees to be planted, the number of days of rain in the year has increased to forty-five or forty-six.

The Suez canal has produced remarkable results. Ismalia is built on what was a sandy desert, but since the ground has become saturated with canal water, trees, bushes and other plants have sprung up as if by magic, and, with the reappearance of the vegetation the climate has changed. Four or five years ago rain was unknown in those regions, while from May, 1868, to May, 1869, fourteen days were recorded, and once such a rain storm that the natives looked upon it as a supernatural event. Austria herself has a very striking instance of a change of climate being produced by deforestation and replanting.

We refer to that stretch of miles of country over which the railroad passes, near Trieste, as you go from Austria to Italy, bleak, barren, stony, with hardly earth sufficient for a weed to take root in, a stretch of barrenness on which some dread anathema seems to rest. It is a curse that rests on it called down from heaven by man. Five hundred years ago an immense forest stood on the ground where now is nothing but a sea of stone. Venetians came and hewed down the forests in order to procure wood for piles and mercantile purposes.

HISTORY OF CELLULOID.

Many persons do not know the value of this article, the extent of its manufacture, nor the varied uses to which it is applied. The Newark *Daily Advertiser* gives the following interesting account of it:

Celluloid was invented by Messrs. I. S. and J. W. Hyatt, of this city. Mr. J. W. Hyatt began the experiments which led to its discovery in 1864, being prompted to do so by the fact that Phelan & Collender, of New York, had offered $10,000 for a substitute for ivory in the manufacture of billiard balls. He was not successful until 1868, when he produced a substance similar to celluloid, of which billiard balls were made. Not satisfied with this he continued his experiments, and his

brother, Mr. I. S. Hyatt, became engaged with him, and their experiments were continued until the spring of 1870, when they produced the substance now known as celluloid, which is understood to be mainly a composition of cotton, nitric acid and camphor. It forms a most successful substitute for ivory, and is the basis for the imitation of coral and other valuable materials for ornament and use, the latest application being the imitation of linen collars, cuffs and neckties. In July, 1870, a patent was obtained, and in the fall a company und r the name of the Celluloid Manufacturing Company was organized in Albany under the laws of the State of New York, with a capital of $50,000, about $30,000 being paid in. The Albany stockholders were subsequently bought out by New York capitalists, the late Marshal Lefferts being at the head, and the works of the company removed to this city. The business of the company has been steadily increasing, new branches of manufacture have been started, and its capital stock, now $500,000, is returning large dividends to its holders.

Some idea of the immense business done may be formed when it is stated that they make from two three tons of piano keys alone in a month. These keys are made in sheets large enough to cover the keyboard, and then the keyboard and the keys are sawn apart together, instead of sawing the keyboard apart first and then cementing the keys on separately, as formerly done.

The first articles ever made of celluloid were dental blanks or plates for false teeth. This is now a large branch of the business. Harness trimmings came next, then knife handles and trusses, and after these jewelry and a host of other articles, among which may be mentioned piano keys, cane, umbrella and parasol handles, brushes and combs, billiard balls, carriage trimmings, pencil cases, penholders, collars and cuffs, neckties, thimbles, card-cases, cigar-cases, book-covers, pocket-books, pistol-handles, paper-knives. All articles in ivory, tortoise shell and jet are closely imitated.

There are at present four wealthy and prosperous companies engaged in the manufacture of celluloid in this city as well as three firms or individuals, and the amount of capital invested in the business here is about $1,000,000. The number of articles made out of celluloid is constantly increasing, and during the past year no less than twelve patents were taken for additional improvements in the manufacture, new articles and machinery, to be used in this growing branch of industry.

M'KINSTRY'S GREAT ORCHARD.

Thirty Thousand Fruit Trees, 1,500 Vines, and 6,000 Currants.

The largest orchard in the world is doubtless that owned and worked very successfully by Mr. Robert McKinstry, of Hudson, Columbia county, N. Y. The orchard is situated on the east bank of the Hudson river, on high, rolling table land, and contains more than 24,000 apple trees, 1,700 pears, 4,000 cherries, 500 peaches, 200 crabs, 200 plums, 1,500 vines, 6,000 currants, and 200 chestnuts. The varieties grown are: Rhode Island greening, 7,000; Baldwins, 6,000; King of Tompkins County, 4,000; Astrachans, 800; Northern Spy, 500; Wageuer, 500; Gravenstein, 400; Cranberry Pippins, 200; Ben. Davis, 200; Duchess of Oldenburg, 200; with Jonathans, Hubbardson, Cayugas, Vandeveres, Pearmain's, Peck's Pleasants, 20 ounce Pippins, Russets, and others in less number.

The pears are Bartlett, B. d'Anjou, Sheldon, Seckel and Lawrence, chiefly. Of cherries there are twenty-eight varieties. The orchards are remarkably thrifty, and the oldest trees are about twenty years old. The soil is dry, rolling gravel, with some limestone; the trees are planted twenty feet apart and do not by any means seem to be crowded. The ground is ploughed several times in the year and kept fallow; except when thought advisable, it is seeded to clover. The orchard is intersected by roads over six miles in length for the passage of wagons, and is bounded by a continuous row of apple trees, set ten feet apart, for four miles and a half. The apple crop of last year was 30,000 barrels. Twenty-four men and fourteen horses are employed hauling out the crop or in ploughing.

The success of this orchard has not been achieved, nor is it maintained, without the closest supervision and most industrious work. Suckers and sprouts are removed as soon as seen; the borers are watched and followed with vigor. Wires are used to reach them in their burrows, and the damaged bark is removed with chisels. As trees fail others are planted in their places.

As the market for good fruit is extending every year, and foreign customers are seeking supplies, the business of growing fruit cannot fail to be profitable and permanent. No other business pays better than this, for the most skillful attention and management; indeed, without these, it is vain to expect a crop that will sell in the market for remunerative prices. Good fruit sells itself, and the grower is soon sought for by the purchasers. Those who desire to take a lesson in things appertaining to the business, and to prove the truth of these facts, may we.l study the ways and methods of Mr. McKinstry and his orchard.—*Rural Home.*

ROSE LEGENDS.

In the neighborhood of Jerusalem is a pleasant valley, which still bears the name of Solomon's Rose Garden, and where, according to a Mohammedan myth, a compact was made between the Wise Man and the genii of the Morning Land, which was writ, not in blood, like the bond between Faust and Mepaistopheles, nor in gall, like our modern treaties, but with saffron and rose water upon the petals of white roses. In Paris, in the sixteenth century, an edict was issued requiring all Jews to wear a rose on their breasts as a distinguishing mark. In the Catholic Tyrol, in the present day, betrothed swains are expected to carry a rose during the period of their betrothal, as a warning to young maidens of their engaged state. Roses have played and still play an important part in popular usages in many other parts of the world. In Germany, young girls deck their hair with white roses for their confirmation, their entrance into the world, and when, at the end of life's career, the aged grandmother departs to her eternal rest, a last gift, in the shape of a rose-garland, is laid upon her bier. Julius Cæsar, it is recorded, was fain to hide his baldness at the age of thirty with the products of the Roman rose gardens, as Anacreon hid the snows of eighty under a wreath of roses. At mid-Lent the Pope sends a golden rose to particular churches or crowned heads, whom he designs as especially to honor. Martin Luther wore a rose in his girdle. In these instances the rose serves as a symbol of ecclesiastical wisdom. A rose has figured on the headsman's axe of the Vehmgericht. Many orders, fraternities and societies have taken the rose as their badge. The "Rosicrucians" may be instanced. The "Society of the Rose," of Hamburg, an association of learned ladies of the seventeenth century, is a less known example. It was divided into four sections—the roses, the lilies, the violets and the pinks. The holy Medardus instituted in France the custom of "La Rosiere," by which, in certain localities, a money gift and crown of roses are bestowed on the devoutest and most industrious maiden in the commune. The infamous Duke de Chatres established an "Order of the Rose" with a diametrically opposite intention, the avowed object being the undermining of female virtue. At Treviso a curious rose feast is or was held annually. A castle was erected with tapestry and silken hangings, and defended by the best born maidens in the city against the attacks of young bachelors, almonds, nutmegs, roses and squirts filled with rose water being the ammunition freely used on both sides.—*Gardener's Monthly.*

OZONE.

Ozone is a principal constituent existing in pure air. It is one of the elements whose presence is indispensable to the existence of health, vigor, and even life. It abounds most freely in certain salubrious situations, such as mountain slopes, fertile agricultural regions, the seashore and elevated plains. It is never absent from the air except during the presence of epidemics. It is found in very small proportions in the air that passes over large towns. Its presence in the air is a standard of purity, and an indication of the healthfulness or unhealthfulness of a region, as unerring as the rise and fall of the barometer in telling atmospheric changes. Ozone possesses a peculiar odor which is readily distinguished after a thunder storm.

This odor was known to the ancients; it was described by a Grecian poet who lived four thousand years ago, but it was not until 1785, when Van Marum, a Dutch savant, observed it, that its origin was traced. No practical effect resulted from this discovery. It was reserved for the eminent Swiss chemist, Schoenbein, to discover this vital principle, in 1840. He demonstrated the fact that paper saturated with a solution of iodide of starch is a test for it, and determined the conditions under which it exists. Since then its molecular constitution has been the subject of repeated investigations. The most brilliant of these was the theory of Prof. Odling in 1860, which was confirmed by Sir Benj. Brodie in 1873, that it is a condensed form of oxygen. Oxygen contains two atoms in each of its molecules, but ozone contains three in a molecule of equal volume. Hence the formula for ozone is that which is now assigned to it, namely O 3. It is obvious that ozone should be half as heavy again as oxygen, should have in fact a specific gravity of 21, as compared with hydrogen. Oil of turpentine, chloride of tin (stannus chloride), and hyposulphite of soda, absorb the whole molecule of ozone.

OUR LOCAL ORGANIZATIONS.

AGRICULTURAL AND HORTICULTURAL SOCIETY.

The regular monthly meeting of the Agricultural and Horticultural Society was held on Monday afternoon, June 2, in the room in the City Hall.

The meeting was called to order by the President, Calvin Cooper, esq.

The following members and visitors were present: Calvin Cooper, Bird-in Hand; Jos. F. Witmer, Paradise; C. M. Hostetter, Eden; William H. Brosius, Drumore; J. C. Linville, Salisbury; P. Hershey, city; W. W. Griest, city; F. R. Diffenderffer, city; J. M. Johnston, city; J. P. McIlvaine, Salisbury; Johnson Miller, Warwick; Sylvester Kennedy, Salisbury.

There being so few members present, a motion was made to adjourn until the second Monday of July, which was carried. The usual meeting on the first Monday of that month will be omitted, as it will most likely come when farmers are busy with their wheat harvest and be unable to attend.

As the by-laws under the new charter will then be acted upon, it is hoped there will be a full attendance of the members.

It would be most fortunate for the society if it had some far-seeing member to anticipate and admonish it in time of such contingencies as are likely to interfere with the attendance of its members at the stated meetings. The Fourth of July, Whitsunride, Easter and similar holidays occurring on Monday, are not favorable to either large or attentive meetings. There are too many attractions upon the street and elsewhere, besides many of the elder and graver of our stauncher country people avoid coming into town at all on such occasions. Stick a pin in this for future reference.

THE LANCASTER COUNTY POULTRY ASSOCIATION.

The regular monthly meeting of the Lancaster County Poultry Association was held in their rooms on Monday morning, June 2, with rather a meagre attendance.

The meeting was called to order by the President, Rev. D. C. Tobias.

The Secretary called the roll and read the minutes of last meeting, which were adopted as read.

The following members and visitors were present: Rev. D. C. Tobias, Litiz; J. M. Johnston, city; Simon P. Eby, city; W. W. Griest, city; Frank R.

Diffenderffer, city; H. H. Tshudy, Lititz; T. F. Evans, Lititz; G. A. Geyer, Spring Garden; J. B. Lichty, city; J. H. Miller, Marietta; Washington L. Hershey, Chickies; C. L. Houseeker, Manheim; J. W. Brookhart, Solunga; J. G. Reist, Mount Joy.

New Business.

Under this head the following questions were submitted for discussion at the next meeting:

"Is it advisable to hold a poultry show next winter?" Referred to S. P. Eby, esq.

"Should fowl lanciers breed more than a single variety?" Referred to G. A. Geyer.

Regular Discussions.

"What is a preventive for vermin on fowls?" This question having been assigned to W. J. Rathoth, who was absent, the discussion was taken up by Mr. S. P. Eby, who said that a first consideration was a clean nest to hatch in. Three days before the chicks come give the hen a red nest a good dusting with insect powder. If this is not done vermin will surely come, retard their growth and perhaps kill the chicks. They must be watched afterwards. Keep the roosts clean also. He keeps the hen house dusted with coal ashes mixed with dry earth. He removes these with the droppings occasionally, and no vermin get a foothold. The red spider louse often causes much trouble. Insect powder will remove the trouble. Ointments are harmful.

Mr. Evans' method to prevent vermin is to put tobacco into the nest where the hen sits, along with dry sulphur. In the poultry house he uses coal oil and tobacco siftings. The young ones he treats with a preparation composed of one part of oil of sassafras and seven parts of sweet oil, and greases the chicks under the wings. He recently tried this on badly infected chicks, and it killed them at once.

H. H. Tshudy believes in a liberal use of dust. He uses street dust with fine lime, and finds it does very well. Live gather in small openings in the boards of roosts, where they can be reached with coal oil. It is a bad plan to use coal ashes in the room where others roost. He has never tried coal ashes, and believes in tobacco siftings and sassafras oil, although he has doubts about greasing chicks with anything; cleanliness is the main part.

Mr. Evans said a dust bath of any kind is good. Fancy fowls need it, however, have the kind that preserves their plumage best.

Mr. Geyer's way of setting hens is to use tobacco in the mother's nest. Birds that run in the fields are freer of vermin than those more confined.

Mr. Miller uses a box filled with coal dust; carbolic acid. Insect powder he also finds very good. He uses the insect powder mill to apply the powder with—it reaches the skin in this way.

S. P. Eby has known tobacco to kill larger animals than birds. Insect powder can be used on canary birds, showing that it does not affect the health of chicks.

F. R. Diffenderffer uses street dust, in which sulphur has been freely put.

Rev. D. C. Tobias said since our last meeting he had received a letter from Mrs. R. Baldwin, who gave a new method for removing the membrane or worms from the windpipe of chicks affected with gapes. It was the use of the thin wire wrapped around the silk or gut of a G violin string. This was introduced into the windpipe and the spirals entangled the dangerous obstructions and brought them along when the wire was drawn out. This remedy seems a very simple one and can easily be tried.

F. R. Diffenderffer said he had a hen that was afflicted with leg-weakness. For a few days after being taken from the nest with her chicks she was put on a board floor, where the disease first developed. The chicks were taken from her, but the disease still remains, although not so severely as at first.

J. H. Miller recommended rubbing the legs with ammonia.

There being no further business before the society, it adjourned.

THE BEEKEEPERS' ASSOCIATION.

The Lancaster County Beekeepers' Society met on Monday afternoon, May 12, at 2 o'clock, in the parlor of the Black Horse Hotel. The following members were present: J. F. Hershey, Mt. Joy; I. G. Martin, Earl; D. H. Lintner, Millersville; John Huber, Pequea; D. Kreider, West Lampeter; J. H. Davis, East Earl; L. D. Wenger, West Earl; Jacob Gorgas, Ephrata; Henry Shiffer, Pennville; J. B. Eshleman, Ephrata; Henry Huber, Pequea; Adam Shreiner, city; P. S. Reist, Lititz.

The meeting was called to order by the Vice President. In the absence of the regular Secretary, Mr. F. R. Diffenderffer was elected Secretary pro tem.

Condition of the Bees.

Mr. Hershey reported that he had wintered seventy swarms indoors, and all came out strong in bees and brood, and had plenty of honey. He dug in the ground four feet and made a frame of boards and filled in with sawdust. Boarded up the whole building and inserted ventilators. They wintered very well. The temperature should be kept even at about 40 degrees. He had no trouble in reference to mouldy combs.

Mr. Detwiler went into winter quarters with seventy-five swarms, and all came out strong. He took his swarms out only once in three months.

Mr. Lintner went into winter quarters with thirteen hives. He left them on the summer stand. Four of them died of dysentery. The bee house was built close to a fence, and there was considerable noise which caused excitement. The others had dysentery, but he stopped it with anisesced oil mixed in syrup, and they are now doing well. The four which died had plenty of honey.

Mr. Kreider went into winter quarters with fourteen swarms, and lost two. His bees are now all doing well. He packed chaff around two swarms, and they are now doing better than the rest.

Mr. Shiffer had thirty-eight swarms in the fall and just left them on the summer stand, and all came out in good condition. He puts corn fodder around the houses to keep them warm. He fed the bees five or six pounds of honey in each box, and that kept them in good condition.

Mr. Martin went into winter quarters with twenty-nine colonies packed in chaff, and they are now in very good condition in bees and honey. Some were very weak when he went into winter quarters, but are now in very good condition. The bees had a fly in January and one in February, and very few during the remainder of the winter. All the bees in Earl township are doing well.

Mr. Eshleman put up thirty colonies about the middle of November, and lost two, one became queenless and one died from want of food. His bees are all in good condition. He built a shed to protect them from the north winds. The advantage of packing in chaff is that you will have a larger brood in spring. By giving them proper attention you could make it more profitable.

Mr. Gorgas wintered eight swarms of bees well, and they will be ready to swarm as soon as any in the neighborhood.

Mr. Davis went into winter quarters with twenty-eight swarms on summer stands, and all are doing well. He uses no honey board. He has a shed built to protect them from the north and west winds.

Mr. Reist knows of fifty or sixty swarms that all came out strong. They had no protection except from the north wind.

Mr. Hershey reported that he had a letter from New York States which reported very heavy losses in that State.

Mr. Huber thought it more necessary for bees to have good ventilation in winter than in summer. He found that plan worked very well. There should be a chaff cushion on top to absorb the moisture.

Mr. Reist thought there should be an understanding among beekeepers as to how much honey they should sell and at what price.

Mr. Hershey said honey was selling at his place for 19 or 20 cents. The price will depend upon the size of the crop.

Dysentery in Bees.

The following question had been referred to Mr. Davis: "What causes dysentery in bees?" He thought extremely cold weather without a fly would cause the dysentery in bees.

Mr. Hershey thought dysentery was caused by chilling and bad honey for food. They must eat a certain amount of good honey in order to keep up the heat.

Mr. Huber thought bees were as much subject to dysentery in summer as in winter. He thought they were feeding on some kind of food which was not good.

Mr. Eshleman thought dysentery was caused principally by the food. You will find dysentery in summer as well as in winter.

Mr. Hershey said he had weak colonies with as good honey as the strong ones. The strong ones got the disease while the weak ones did not.

Mr. Reist said sweet cider would not produce dysentery, while sour cider would. He thought it was caused by unwholesome food.

Virgin Queens.

"Will a virgin queen, if she meets no drone within ten days, afterwards prove fertile?" Referred to Mr. Hershey.

Mr. Hershey said he had queens that went eight or nine days after they were hatched before they met the drone, and they proved fertile. He knew them to go out within fourteen days and then become fertile.

Mr. Huber said the queens mostly came out the third day, if the weather is favorable. Sometime since he found a box that was queenless. He procured a queen before he had any drones, and when the eggs were hatched they were all drones.

I. G. Martin said he had a queen that could not fly out, and every egg she laid proved a drone.

Mr. Davis had a queen that could not fly, and she became fertile and perfect; her hive was well supplied with bees.

Business for Next Meeting.

"Should glucose be fed to bees or not?" Referred to I. G. Martin for answer at next meeting.

"What is the best method to prevent increase?" Referred to P. S. Reist for answer at next meeting.

Introducing Queens,

Mr. Hershey read the following paper:

Three months have passed since we met last, and now we are here again to see how we can improve beekeeping in our day. The honey season has now commenced, and we have to work among our bees. As the season for introducing queens is at hand I will try and say a few words about the subject. I first remove the queen from the swarm where I want to put the Italian queen. I put the Italian queen in a wire cage, and put a stopper, made of some comb that the bees did not breed in yet, in one end of the cage; the other end I pinch together. Now hang the cage with the queen between the combs near the brood, so that the bees will cluster on it. If the stopper is not made too large and pressed too tight together, the bees will liberate the queen in 24 or 36 hours. If the honey is plenty in the fields and the bees store pretty fast, I take the cage out the third day after I have put the queen and cage in. If the honey is scarce and the bees store very little, I wait one week before I take out the cage. I don't disturb the swarm at all for one week. The bees will liberate the queen in a few days, and she will lay just as well with the cage between the combs as if the cage is out. If the cage is taken out as soon as the bees have liberated the queen, then she has not commenced to lay yet, is light and wild, and will run over combs. The bees will go and try to push hold of her and then she tries to get loose. Then she will be surrounded, and the bees will smother her. As soon as a queen moves fast over the comb the bees go after her. If it is their own reared queen they want her to move slowly over the combs. If a swarm is not disturbed for one week after the queen is introduced with the cage, then she will be out and laying; is heavy with eggs, feels at home, and will move slowly over the combs. A great many of the queens that are killed when introduced are killed on account of the swarms being disturbed before the queen has commenced to lay. Queens that are shipped and have stopped laying for three or four days, are harder to introduce than queens that are just changed from one swarm to another in the same apiary. The best time in the day to introduce queens, when honey is scarce, is in the evening just before the sun sets; then very nearly all the bees in the other swarms are at home, and if they would try to rob, night would soon overtake them. The next morning bees that were disturbed by the introduction of the queen will be ready for a fight if strange bees should come. If the honey is plenty in the field a swarm can be opened at any time in the day with safety to introduce a queen.

Mr. Martin tried Mr. Hershey's plan and only failed once.

The Honey Market.

Mr. Martin read the following paper:

Marketing honey is of great importance to the beekeeper. If we had but a small number of colonies we can find ready sale for our honey at home, and it is not of much importance in what shape it is put up. But if we have a large number of colonies and get thousands of pounds of honey, we must have some other than the home market. Honey to be sent to the city market must be put up in neat and attractive shape, and so arranged as not to give the dealer any trouble. One leaky box or can may do great injury. Comb honey should be chiefly in small sections of one and two pounds each, for such packages are sure to sell. They should be clean and white; the honey should be taken from the bees as soon as it is capped, for if it is on the hives long, after it is capped, it will get dark-looking by the bees traveling over it. By having it in sections which only contain a single comb, the consumer can see what he buys. The sections can be glassed if the market demands it; but I think it will sell better without glass, because if the consumer wants to buy a few pounds of honey he does not want to pay for one-fourth weight of glass which he cannot eat. I think the two-pound sections are preferable for the following reason: the bee will store more honey in them than in the one-pound sections, for by using the one-pound sections the hive is too much divided into small compartments. Besides, we can afford to sell them cheaper, and the cousumer will not have so much care as when he buys them in the one-pound sections. But if the market demands the one-pound sections, then we should furnish them.

If separators have been used (and every progressive beekeeper should use them), these sections will be in good condition to be glassed, if glass is demanded; and they will also be in nice shape to be shipped without glass, as they may stand side by side without marring the comb. These should be packed in crates of one dozen of the two pounds, or two dozen of one pound sections; and the crates should have glass on two sides, so that the honey may be seen.

Extracted honey has all the flavor and is in every way equal, if not superior, to comb honey. When the people once know what it is, and know that it is not strained honey, the demand for this article will largely increase to the advantage of both the consumer and the producer. Extracted honey is the pure honey removed from the combs and is free of all impurities. It is not the *strained honey*, pressed

out of the comb and which contains pollen and brood, which impurities are mixed with the honey. Extracted honey should be put up in glass jars—the one-quart fruit jars are very good and will hold three pounds each, and when they are empty, they are very useful in every household. But jf the market demands smaller jars, that will hold only one and two pounds apiece, they should be furnished and nicely labeled and put in crates of one dozen each.

Further, we should instruct buyers that extracted honey will granulate in winter when exposed to a low temperature, and that granulation is a pledge of purity; for honey adulterated with glucose will not granulate, and that granulated honey can again be brought to a liquid state by simply placing the jar that contains it in hot water until it is melted, but not long enough to bring it to the boiling point.

Sell to the consumer as much of your honey as you can, and take the remainder to the retail dealers yourself instead of sending it to the wholesale dealers, who will sell it to the retail dealers and then charge you a commission.

On motion, adjourned to meet on the second Monday in August.

FULTON FARMERS' CLUB.

The May meeting of the club was held at the residence of Wm. King, Little Britain township. All the members were present except Joseph R. Blackburn and S. L. Gregg. Visitors, Jonathan Pickering and Alice Coates.

In answer to the question asked at the last meeting, "Which is the best cherry for general use?" E. H. Haines said that a friend of his, who has a great variety of trees, considered "Coe's Transparent" the leading variety.

Wm. King: What is the cause of the cherry trees splitting in some localities, and what is the remedy for it?

No one present was able to give any satisfactory information on the subject.

Day Wood: What is the prospect for fruit this year?

W. P. Haines: No blossoms on the Baldwins; most other kinds tolerably full.

E. H. Haines had been around quite an extent of country this spring. According to his observations there would not be a full crop of apples. Pear and cherry trees were full of blossoms. Siberian crab apples also bid fair to make a full crop.

Josiah Brown: Would it be better to sell wheat at present prices than to hold it?

In answer to this question, the club all concurred in the opinion that there were no indications of a rise in the price, although the prospect for a full crop of wheat next harvest in the lower end of Lancaster county was very poor.

Montillion Brown: What has been the experience of members in mulching wheat? In three cases where it was tried in this neighborhood it has been a decided injury to it.

Day Wood had noticed the wheat referred to, but had no experience himself.

William P. Haines and Josiah Brown had each manured some wheat after it was drilled in. It did not benefit the crop like that where it was plowed under, though no injurious effect was noticed.

Charles S. Gatchell had noticed another piece of wheat besides the three spoken of, where mulching appeared to have a bad effect. Had tried it himself about four years ago. At that time both the wheat and the grass after it were benefited by it.

Grace A. King: What will remove the stains made by lubricating oil from clothing?

Mary Ann Tollinger: Put on lemon juice and expose to the sun.

R. B. Gatchell: Sheep sorrel and salt will take out iron rust. Never found any oil stains that would not come out by washing and drying on the grass.

Esther K. Haines: What kind of peas are best for late planting?

W. P. Haines: Champion of England, for both early and late planting.

Josiah Brown: What is the best way to destroy the Sodom apple or horse nettle (*Solanum Carolinense*)?

Most of the members that had any experience with this plant thought this a very hard question to answer, as it is nearly indestructible. Some of them advised covering the ground with straw or some other substance so thick that all vegetation would be destroyed, using salt with it.

The forenoon session now adjourned to dinner, after which the club made the usual inspection of the farming operations, live stock, etc. But little change was noticed in the stock since the club last met at the place. Buildings somewhat improved and some new fence noticed.

Afternoon Session.

In lieu of an essay the host read some articles from the New York *Tribune*, giving the Higgins method of making and packing butter. Instead of being gathered in the ordinary way, the butter, as soon as it comes, is gradually cooled down to about 54°, when, instead of adhering in a mass it gathers in small pellets about the size of grains of wheat. Then, instead of working, the milk is washed out with cold water, or, what is better, brine. It is then salt d to suit the taste.

Day Wood objected to the use of so much water. He knew plenty of good butter makers who did not wash their butter, because it was injured thereby.

Alice Coates had been trying the method since she saw the articles that had been read. She found some difficulty, but was improving. She, too, knew of butter makers who objected to the use of water, but in nine cases out of ten it would benefit more than hurt.

Mabel A. Haines recited "You are Growing Old Together;" Grace A. King read a selection on "Silence," and Charles S. Gatchell "Evidence of Success in Farming," from *The Practical Farmer*.

The question "Is the use of machinery followed by a disinclination to labor?" was next discussed at some length, most of the members coinciding in the opinion that a disposition to be idle did not follow the introduction of machinery, although a disinclination to do by hand work that which could be done by machinery was very apparent among laborers.

E. H. Haines, Day Wood and William King were appointed to make inquiry, and report to a future meeting whether, in their opinion, dairy factories can be successfully carried on in this community.

Adjourned to meet at C. S. Gatchell's in June.

LINNÆAN SOCIETY.

A stated meeting of the society was held Saturday, May 31st, 1879, with Prof. J. H. Dubbs in the chair. After attending to the reading of the minutes, etc., the donations to the museum were examined and found to consist of three mounted specimens of birds: The "Harlequin Duck," with its numerous synonyms; a fine Polish Bantem, per Mr. George Flick, the well-known taxidermist of this city; and a fine specimen of the Golden Crowned Thrush, per Mr. Snyder, North Queen street; a pair of beetles, skip jacks, per Mr. Reynolds; sulphate of copper and native copper, from the sediments of a galvanic battery, formerly used in the telegraph office; a beautiful black and red bean or seed, per Mrs. Zell (a similar bean-like seed grows on a spike in plants allied to the tapioca or Indian Turnip family); two large lumps of brown oxide of iron, from Mr. Fordney's farm, Warren county, Virginia, per S. Johns, of this city, a variety of the Hematite; a box of lichens and mosses, per S. S. Rathvon.

Historical.

Copy of the Federal *Intelligencer*, Baltimore, December 29th, 1794, containing interesting historical matter; five envelopes with sixty clippings of interest from various papers, per S. S. Rathvon.

Library.

Official Patent Office *Gazette* to May 20th, 1879; The Lancaster Farmer for May, 1879; botanical contributions from Vol. VI.; Botany of the Wheeler Government Surveys, by Prof. Thos. C. Porter, sent to Prof. Stahr, for the society; Pamphlet, Naturalists' Leisure Hours, A. C. Foot, December, 1878; books, circulars and advertisements.

Papers Read.

Ornithological notes, on the deposits, the Harlequin Duck, No. 518, S. S. Rathvon, (*Anas glacidis, Lin.*) This peculiar duck has any number of common names besides that of "Harlequin," and generic names to suit any group; in short, 112 synonyms are or have been given to it. Paper 519, on the "Golden Crowned Thrush," (*Sciurus auro capillus, Swainson*), giving interesting particulars of the species, and their habit of nest building, by Dr. S. S. Rathvon. Although the name is usually accepted, D. S. Jourdan, in his late popular work, does not give the generic name *Sciurus*, nor can we find "Golden Crowned Thrush." He has a "Golden Crowned Kinglet," under Cuvier's generic name of *Regulus*, and Lichenstein's specific name, *R. Satrapa*, but this is the "Golden Crested Wren." Both descriptions are very similar, yet they are both recognized in the Birds, by Spencer F. Baird, assisted by Cassin and Lawrence, published 1858, under two distinct genera. Such changes or omissions are very provoking to the student.

A paper, No. 520, was read by J. Stauffer, in relation to a rare bird caught by Amos Kauffman, in a woods between Manheim and Sporting Hill, near the residence of Amos Kauffman. The children noticed five in a flock, but could only capture one. This they have now caged; it seems to be a pugnacious bird, but is gentle with young chicks. A similar bird was shot by Charles Lehrer, in the vicinity of Mt. Joy, May 9th, 1856. This shows that the *Purple Gallinula*, occasionally visits Lancaster county. Wilson considers it a very rare bird north, and says his description and drawing is taken from a specimen in Peale's museum, sent from Georgia. He calls it *Gallinula porphyris*. Jourdan describes it under the name of *Torphyrio Martinica*, Temmicks name, etc., and only allows of one species being in the United States. This, too, has seven generic names, and different specific names also. Prof. Baird says it is accidental in the Middle and Northern United States, and that "It is occasionally met with as far North as New Jersey, and more rarely in New York and Massachusetts," page 753, Birds of the United States, S. F. Baird, et. al., Vol. IX., Government R. R. Publication, 1858. We have a mounted specimen of this bird in our collection, no doubt from the old museum of Judge Libhart, of Marietta.

The committee on book cases reported by calling attention to the improved condition of the room, and the shelving in the upper store room, not fully completed. The committee was continued.

Much interesting scientific gossip was indulged in. Rev. Prof. Dubbs, and Drs. Davis and Baker, each had something to say, and the time passed with pleasure and profit to the few who met to enjoy it. Why are there not more to take an interest?

AGRICULTURE.

Plowing in Crops as Manure.

A large number of farmers are unable to understand how it is possible to better the condition of lands by plowing in clover, rye, buckwheat, etc., in a green condition. The difficulty is in comprehending methods by which crops that are supposed to draw their sustenance from the soil in which they grow can return anything more to the soil than they took away in their growth. The point is cleared up when it is known that all plants draw nourishment from the *atmosphere* as well as from the soil, and this is one source of gain. While the leaves are accumulating stores of fertility from the air the roots are busy searching for it in the soil, and thus the two distinct parts of plants work together. It is probable that crops absorb in some way nitrogen from the atmosphere; at least it has never been satisfactorily proved that they do not, and hence from that source one of the most valuable of the various forms of plant food may be derived. If this point is in doubt it is certain that the leaves gather from the atmosphere the elements of organic matter, and organize them so as to form the great body of the plant; and when we turn under the clover it leaves its organic matter in the soil, and this is, in an important sense, manure.

But the excellent effects of plowing under clover or other green crops are not due alone to elements of fertility obtained from air. The great, deep-penetrating roots go to a point lower than most of the cereals, and hence they draw supplies of mineral food from sources inaccessible to other valuable plants; and, further, it is to be observed that these roots of coarse texture disintegrate and loosen the soil, so that air is let in, and in some sense the work of the plow is performed by them. When these roots decay they form a considerable portion of organic or vegetable matter, which, combined with the mineral, gives a good compost for better plants to thrive in.

From these brief considerations it will readily be seen how it is possible to manure land by plowing in green crops; and we will here remark, that it is a practice not often enough followed by our husbandmen. The clover is perhaps the best of all plants for green manuring, and it is easily and cheaply raised. A thin dressing of superphosphate (home-made) will almost give a heavy crop of clover on common land, and this crop turned under, when at its maturity, and allowed to decay, brings it into good tilth, and certainly affords to the farmer a wide margin for profit in successive crops.—*Journal of Chemistry*.

Farming on a Large Scale.

The largest cultivated wheat farm on the globe is said to be the Grondin farm, not far from the town of Fargo, Dakota. It embraces some 40,000 acres, both government and railway land, and lies close to the Red river. Divided into four parts, it has dwellings, granaries, machine shops, elevators, stables for 200 horses, and room for storing 1,000,000 bushels of grain. Besides the wheat farm there is a stock farm of 20,000 acres. In seeding time 70 to 80 men are employed, and during harvest 250 to 300 men. Seeding begins about April 9th, and continues through the month, and is done very systematically, the machines following one another around the field, some four rods apart. Cutting begins about August 8th, and ends the fore part of September, succeeded by the thrashing, with eight steam thrashers. After thrashing the stubble ground is plowed with great plows drawn by three horses and cutting two furrows; and this goes on until the weather is cold enough to freeze, usually about November 1st. There are many other large farms in the territory and in the neighborhood, and they are tilled in much the same manner as the Grondin. The surface of the land generally is almost level and the soil rich and black. The product of one field of 2,315 acres is 57,285 bushels—elevator weight—some twenty-five bushels to the acre. The average yield of the Dakota wheat farm is from 20 to 25 bushels per acre, and the concurrent testimony is that it is unequaled as a wheat region in the world.

The First Employment of Guano.

In an interesting paper on this subject which has recently appeared from the pen of Prof. Kohl, the author takes occasion to point out the fact that the employment of guano in agricultural operations is

by no means of such modern origin as many are disposed to believe. So long ago as the twelfth century the Arabian geographer Edresi called attention to the existence of cliffs covered with the excrement of birds in the Persian Gulf, not far from the famous pearl fisheries of the Bahrein Island, and relates how this dung was collected, sent to Bassora and up the Euphrates to be used for the orchards, vine yards and date groves, &c., on its banks. So, too, from the earlier ages, the semi-civilized Peruvians made use of the deposits of guano on their coasts for the improvement of their husbandry, and so well was its value in this respect recognized that their white Incas decreed severe punishment for any one killing the birds that produced it. According to our author it was Humboldt who first drew the attention of Europe to the rich deposits of the Chinca Islands in the early part of the present century, but his voice remained long unheeded. It was not until the year 1840 that a shipload of guano was despatched from Peru to England at the risk of the enterprising firm of Quiros, Allick & Co., of Lima. Experiments were instituted as to its effects on wheat, potatoes and oat crops, on fruit trees and on flowers, with such wonderfully favorable results that a general demand for the new manure soon arose in England, France, Belgium and Germany. Hundreds of ships set sail for the Chinca, in search of guano, and for many years the Peruvian Government derived an annual income of $16,000,000 from its sale.

The Future of American Farming.

It is probable that in the near future the approach of storms of rain or wind will be announced by our Signal Service everywhere throughout the country. A forewarning of this kind would serve, even with our present conveniences, to greatly diminish the heavy losses entailed on the farming community by the unexpected advent of stormy weather. Approaching discoveries in science and the useful arts will doubtless enable farmers to turn such warnings to still greater advantage. The use of the field electric light shows one method by which the farmers of the future can hurry up farming operations on the approach of unfavorable weather. Nor will this be the only benefit derived from such a convenience; for whenever it shall be widely introduced, many labors in the fields, which are now wearily performed during the torrid heat of our midsummer days, can then be pleasantly done in the cool summer nights. Then, again, such heavy and expensive machinery as threshers, etc., can be utilized all the time in the busy season, by means of relays of men; and thus a considerably larger profit will be realized from the capital invested in them. Favorable spells of weather, too, can be utilized to the utmost, and the evil consequences of paucity of labor will be reduced to a minimum. There is no class for whom the future holds so much social and intellectual advancement; so much assured prosperity, and to much rational happiness, as for those engaged in the various departments of agriculture, and in no country in the world are the farmers so well prepared as in this, by intelligence, energy, enterprise and political, as well as natural conditions, to pluck the earliest benefits from the treasures of the future.—*Rural New Yorker.*

Home-Made Fertilizers.

A correspondent of the *Maine Farmer*, in discussing the question of fertilizers, makes the following valuable suggestions:

"It is but fair to add a word respecting bone meal, slate and plaster. For the decomposition of the first considerable lime is required, so that its good effect is not all immediately apparent; providing that it can be obtained at a fair cost the use of it for certain kinds of soil, perhaps, pays tolerably well. The ground slate is of benefit in a dry season to put around plants, as it draws and holds the moisture. The third profits nothing on many farms; upon others it temporarily improves the crops. In conclusion, I would suggest to my brother farmers that we save all the bones about our premises, putting them into old water-tight casks, mixed with good ashes. Let the barrels or casks, with the upper head out, stand in the open air; the mixture usually will be fit for application to the land in a year. A barrel of phosphate will cost here ten dollars; for that sum you can hire a man with a horse and cart ten days. Set him at work to clear out ditches, corners of fields, or into the woods gathering leaves and scurf, or at the muck bed, if you have one, or by the sides of the highways; direct him to dump into the barnyard, barn cellar, hog yard, and to the barn, to be used during the winter to litter the cattle and horses, and just see what piles he would make in ten days; you would not sell this the next spring for four casks of phosphate, for it will help the crops for years."

The Wheat Crop—Favorable Reports of the Prospects in the Northwest.

It is stated that despatches received at St. Paul, Minn., from points along the line of three principal railroads in that State, the Northern Pacific, St. Paul and Pacific, and St. Paul and Sioux City, give almost uniformly favorable reports of the condition of the wheat crop. Only one despatch mentions need of rain, the remainder reporting the weather as cool, moist, cloudy, and favorable. North Pacific points report a large increase of acreage, especially in Dakota, and a large amount of new land-breaking is in preparation for seeding to wheat next year. Grain (June 1st) is from 8 to 15 inches high, of good color, and vigorous. Reports from the great Dalrymple farms in Cass county, Dakota, say that wheat could not look better. Hermann, on St. Paul and Pacific, reports the acreage doubled. Other points say the weather is favorable, and wheat making the best progress possible, except Edna, which needs rain. On the St. Paul and Sioux City there have been abundant rains, and the weather is now clear and warm, with the crop making rapid progress.

Waste in New England Farming.

A writer in the *Country Gentleman* says: "A great waste in New England farming is waste in fencing. We have too many small fields which it is impossible to cultivate as they ought to be. There are too many fence corners in which brush and weeds are allowed to grow, as they cannot be got at to advantage unless the fences are moved. It is much cheaper to remove the inside fences than to keep the farm divided into small fields."

A friend who has a farm below Lancaster on which was a weedy fence row, allowed his farmer to remove the fence and cultivated the ground it occupied, allowing him the proceeds for his services. A crop of tobacco was raised on it which brought the farmer upwards of $80.00. The fence row could not have been long, as the farm contains only about sixty acres.—*Herald.*

HORTICULTURE.

About Potatoes.

From all we can learn, we have come to the conclusion that farmers, generally, are going to plant more potatoes than usual this spring. This is a natural result of the high prices that have ruled for potatoes since the last crop was harvested. But it should be kept in mind that a heavy crop makes low prices and a light crop high prices—the yield governing the price very largely. We have always found it to pay to take special pains with any crop, and raise as large a yield as possible to the acre. This pays better than enlarging the area if the same care cannot be bestowed upon the cultivation. One man, last year, made $600 from five acres of potatoes, while the crop was a failure in all that section besides. We are assured that he did this by careful, thorough work. Another man reported a large crop of potatoes, and attributed it to a liberal dressing of bone-dust which the land had received the year before. We once published an account of an excellent crop of potatoes raised by means of a species of irrigation—turning the water of a spring run over the ground occasionally during a drouth that ruined the potato crop generally in all that section.

Such experiments, conducted with a view to learn what methods and treatment will secure the best crops under different unfavorable conditions, are always worth what they cost and often a hundredfold more. If a man, during a season of general failure of any crop, succeeds in finding out a plan that will counteract, to any extent, the bad influences which affect the crop under ordinary culture, he will be well paid for his experiment, perhaps in a single crop. It is our privilege to command all the forces of nature to our aid in the production of crops, and he who does this most effectually is always most successful. The skill of the farmer is only exhibited in unfavorable seasons.—*Practical Farmer.*

Fruit-Growing in England

Now that the export of American apples is becoming an important business for fruit-growers in this country, everything connected with the subject becomes a matter of interest to them. A discussion on the growing of fruit for market in England has recently taken place in the columns of the London *Garden*, from which we gather the following statements, which naturally have some bearing on the character of the foreign market.

A correspondent of that journal says that the demand for fruit in England has increased during the past few years "to an enormous extent." It always finds a ready sale. Notwithstanding the cheap and quick transit from the continent, and the excellence of the apples from America, the extension of fruit culture is on the increase. We are told by one writer that $ 50,000,000 are annually paid to other countries for imported fruits. Another correspondent of the same journal says that $50,000,000 were expended last year for fruits and vegetables imported into that kingdom. It is supposed that the city of London consumes about a million and a half. We are informed that England receives fifty times as much as fifty years ago, the prices varying but little at the two periods. It appears that the same trouble occurs there as in this country, namely, low prices and a want of demand in abundant seasons, and large quantities rot when the market is overstocked, and the prices do not pay for gathering. The mode of preserving by canning, so extensively adopted here, is recommended in that country in such cases.

One of these correspondents states that in Kent first-class Keswick codlings brought only fifty cents per bushel, and of this sum one-half was paid for conveyance to market and expenses. Another correspondent says that many of the market gardeners near London left tons of plums to fall and rot on the ground in 1875, the market being overstocked with fruit from the continent. The same writer mistakenly asserts: "The American fruit-grower, who obtains 400 bushels of apples every year from his rich, cheap soil, without manure, and with a minimum of labor and cost, can easily compete with the English grower, who pays an annual rent equal to the whole purchase money of his competitor's land, and has to spend fully as much more in manure and labor; but if the western grower should, by fertilizing his land, double its yield, the extra 400 would not be grown at a profit." American orchardists who have adopted the same opinion as this writer are the very men who make growing a failure. Their second rate, scrubby, knotty apples find a slow sale at a low price. Those who with good culture, manuring, thinning, assorting and careful packing, place the finest specimens before purchasers, obtain good prices and ready sales, and as soon as their products become known they are eagerly sought on account of their excellent quality, even in abundant seasons. In looking toward a European market, it would be extreme folly to attempt to send bad fruit that long distance, with the expectation that it would pay expenses, and the damage to the reputation of American fruit, caused by such shabby attempts to thrust poor fruit on purchasers, would be many times greater than any possible gain.—*Country Gentleman.*

Treatment of Spring-Planted Trees.

In dry springs the orchard and garden usually exhibit a distressing mortality among the new introductions of the past-planting time. Yet there is no reason why many should die. A few simple suggestions may save the lives of many trees, as well as save a year of time to our own already short enough lives. Of course the ultimate reasons why transplanted trees die is the want of water. The roots are somewhat injured even by the best planting; and with much evaporation, these weakened roots are unable to supply the moisture required. If the season be dry, this trouble is heightened by the actual absence of moisture for the weakened roots to use. Under these circumstances many water the trees. But where there are many trees to water, this is no mean task, and besides watering has this disadvantage, that it solidities the soil, and every farmer's boy knows that a hard, cloddy piece of ground dries out faster than the soil in a well-pulverized condition.

Pruning is one of the simplest ways of saving or weakening a tree's life. We do not, of course, add any more moisture to the soil, or give any new capacity to the damaged roots to take up more moisture; but we cut off the demand for moisture with every branch cut away. When a tree does not push freely into leaves after transplanting, it is in most cases from this cause. If half the branches are cut away, it is astonishing how soon and how strong the balance will push.

The other point—the pulverization of the soil—is often misunderstood. A loose soil is not a well-pulverized soil. Simply hoeing or raking the surface is not what is required. If the ground is baked hard, as many clayey soils will do, this loosening is a little gain; but as a general thing a strong soil merely loosened will evaporate moisture largely. These soils require crushing, not only loosening; and the same principle which the *Telegraph* has so often explained as following the use of the roller in our grain-fields is to be carried out on a smaller scale around the transplanted tree. The more we hammer and beat a clod the firmer it becomes; and the firmer it is made the more able it is to absorb moisture from the atmosphere, and indeed from the harder surrounding soil. Thus in many cases the half-dried, cakey earth around a tree may be pulverized by merely beating it with a rammer, and very often this will serve the tree to much better purpose than even the most careful watering would do.—*Germantown Telegraph.*

Origin of the Apple.

There is evidence that the apple was employed as food in certain parts of Europe at a very ancient period, perhaps even before the period of written history. The carbonized seeds and fragments of apples and other fruits are found in the mud of certain lakes in Switzerland, where the pile builders or lake dwellers had their habitations. It might be supposed that these vestiges were wild or crab apples, the native product of the country, and such is probably the fact. But, according to Prof. Karl Koch, there are no species of apples truly indigenous in Europe; those which are found growing without cultivation, are the result of accidental sowings of common apple seeds. If this statement is correct,

the question arises, whence came the apples and fruits of the pile-builders? The same question might be propounded with respect to the wheat which is found in the debris of their dwellings, and the answer to the one question would probably be an answer for the other. It is not improbable that the distribution of grains and fruits among the nations of the earth has a much greater antiquity than has commonly been admitted. In attempting to determine the original specific character of our common apple, we have to deal with a difficult question. The apple of the present day is the product of centuries of cultivation and horticultural skill, and the transformations and modifications effected thereby are such that we need not be surprised if we are unable to recognize the original or parent stock. Linnæus named the common apple of cultivation *Pyrus Malus*, taking as the type the common seedling apple, which he appears to have considered a good species, and the same view has been generally entertained by successful botanists.

Pruning Evergreens.

We have been in the practice for many years of pruning evergreens as freely as deciduous trees, and have found great advantage in the practice, wherever a better or more systematic form is desirable. They may be cut freely if the growth of the tree is vigorous, but the same object may be reached with moderate growers by pinching off the shoots early in the season. Small, distorted trees, which are unfit for sale in the nursery, have been changed in a few years into objects of symmetry and beauty by both modes of treatment combined. Josiah Hoopes states, in a late number of the *Tribune*, that early in spring he cuts his evergreens freely into shape without regard to buds or anything else. Pines, with their scanty lateral buds, are easily made to produce regular conical heads. The fault with some of the pines is their thin growth; with a little attention we find that this fault may be corrected by early pinching back the new shoots. Take the Scotch or Austrian pine, for example, or such specimens as have long and slender shoots. When they have grown two or three inches early in the season, pinch off all the ends. They will form new buds, and an open head may be thus changed into a dense and compact one. The natural graceful form should be preserved to a certain extent, and the tree not be changed to mathematical stiffness.—*Country Gentleman*.

Poisoned by Mushrooms.

Mr. J. A. Palmer has a paper on poisoning by mushrooms in the *Moniteur Scientifique*. He states that there are three different ways in which mushrooms may act as a poison. First, they may produce the effects of indigestible matter, as when the hard coriaceous species is eaten, and even the edible mushroom may cause a similar result, for when it is decomposing it gives off sulphuretted hydrogen gas in quantity sufficient to induce vomiting. Second, a subtle alkaloid, without smell or taste, is contained in some mushrooms, as, for instance, in the group of the *Amanita*, and is called amanitin. No antidote has yet been discovered for this poison, and to it most of the cases of death following the eating of mushrooms is due. It is at first slow in its action. But after the lapse of eight to fifteen hours the patient experiences stupefaction, nausea, and diarrhœa. Delirium follows, and then death. Mushrooms containing amanitin will impart poisonous properties to wholesome varieties, if both happen to be placed in the same vessel. The poison can be absorbed by the pores of the skin. Mr. Palmer carried in his hand some *amanita* wrapped up in a paper, and, notwithstanding the protection which the wrapper should have afforded, he was seized with alarming symptoms.

Wood Ashes for Peach Trees.

I have never known a person who would dispute the assertion with which the chapter on peaches in *Thomas' Fruit Culturist* opens. "The peach, when in perfection, is the most delicious fruit of our climate." Unfortunately the disease known as yellows, and the enemy known as the peach borer, make it, in many localities, one of the most difficult of fruits to grow. For several years I have used wood ashes about my peach trees with marked success in obviating these two evils. About a peck of fresh ashes is applied each spring and fall about the stem of the tree in a little conical mound, that previously so placed being spread upon the soil when a new application is made. The conical mound prevents the attack of the borer, and the dressing of ashes upon the soil stimulates the vigor of the tree so that it is enabled to resist the disease. But this must be accompanied by regular shortening-in of the last year's growth, and by thinning of the fruit, to prevent overbearing, which exhausts the tree and leaves it an easy prey to disease. A case of yellows occasionally, though rarely, appears in my orchard, as must be expected where a disease is constitutional, but by this treatment peaches are now successfully grown where their cultivation was for a long time abandoned.—*Country Gentleman*.

Cord-Wood in an Acre.

To estimate the quantity of cord-wood in an acre of woodland requires experience. A person who has been engaged in clearing land and cutting wood could give a very close estimate at a general glance, but other persons would make the wildest guesses. An experienced person may proceed as follows: Measure out four square rods of ground; that is, thirty three feet each way, and count the trees, averaging the cubic contents as near as possible of the trunks, and adding one fourth of this for the limbs. Then, as 128 cubic feet make a cord, and the plot is one-fourth of an acre, the result is easily reached. Fairly good timber land should yield a cord to every four square rods. A tree two feet in diameter and thirty feet high to the limbs will make a cord of wood, if it is growing in close timber, and the limbs are not heavy. If the limbs are large and spreading, such a tree will make 1½ to 1¾ cords. A tree one foot in diameter will make a fourth as much as one twice the diameter. In estimating it is necessary to remember this fact.—*American Agriculturist*.

Gooseberries and Currants.

There is no reason why both these very useful fruits should not be found abundantly in every garden. They are no trouble to raise. They grow readily from cuttings. Take the wood of last year from six to ten inches in length, prepare the bed or place where they are to stand permanently, force them into the ground not less than four inches, press the ground firmly around them, mulch them and let them alone. If a *bush* is desired let the buds on the cutting remain; but if a *tree* or single stem is preferred, remove all the buds that would go beneath the surface. Let them stand about three feet in the row, and if there is more than one row, let the rows be four feet apart.

In the spring the dead wood of both the gooseberries and currants should be cut out, and the new growth should be thinned where there are too many, as it will interfere with the product. The best red currant is the Dutch; and the best gooseberries are Downing's Prolific and Houghton's Seedling.

Mulching Newly Planted Trees.

We have found mulching to be of decided benefit to recently transplanted trees of all kinds, and especially to deciduous trees. It should be applied before the sun becomes hot and the ground dry and begins to bake—say in May. Various applications are used—some apply horse manure, fine shavings, saw dust, spent tan, grass, and even charcoal. We have used almost exclusively *grass*, and think it answers as well as any other. But it should be renewed two or three times a season and the soil stirred. It keeps the soil around the tree moist and cool, and prevents the growth of weeds. Evergreens can also be mulched with benefit, though we do not think they demand it to an equal extent, as their dense, low foliage answers pretty well as a substitute. The ground, however, should be frequently stirred beneath them. We never mulch any tree after the first season, unless it looks a little under the weather. —*Germantown Telegraph*.

DOMESTIC ECONOMY.

Some Interesting Facts Concerning Bread.

Of all articles of vegetable food bread must be considered as the most important. The mode of preparation of bread is essentially the same everywhere, though its constituents may vary with the different material conditions of the people of the earth. Wheat bread is everywhere recognized as the most nourishing and the most healthy. Medium wheat usually yields from 72 to 80 per cent. of good flour. The miller sometimes tries to increase the yield of flour by grinding with the stones set closely; but it is at the expense of the quality of the flour, for the starch granule becomes thereby bruised and damaged, and is found to be deteriorated for the purpose of bread-making. Bakers prefer a flour which feels a little harsh between the finger and thumb, instead of soft and smooth. The Israelites ate leavened bread, except on peculiar occasions. The Bedouin of the present day, as his ancestors did, cooks his unleavened bread in the embers, generally between layers of dried dung. The Egyptians, like the London bakers, kneaded bread with their feet. It is claimed that the art of making bread from wheat was first taught the Chinese 1998 B. C. The Hebrew bread was a flat cake, baked on the hearth or on a metallic plate. There were no professional bakers in Rome till more than 580 years after the building of the city, and the occupation formerly belonged to women. Vinegar to soak bread was a regular ration with the Roman soldiery. Bread was made with yeast by the English bakers in 1634.

Barley-meal is the chief food of a large number of people in the north of Europe and in the south of England, where the laborer is partly paid his wages in meal or grain. It is also used in Wales and Scotland, especially when wheaten bread is dear. It is employed by about ninety per cent. of the outdoor laboring population of England. Barley bread is heavy, coarse and rigid, though its taste is one of strength, and it quickly satisfies the hunger. The common way of making it into bread in Europe is by mixing it with an equal proportion of wheaten flour, and sometimes it is mixed with oatmeal and ryemeal, and baked into cakes. When used whole as food, barley is first roasted, as in many districts of India. In external appearance the grain of rye presents a closer resemblance to wheat than any of the other cereals. It is, however, darker in color and smaller in size. Rye bread is less nourishing and harder to digest than that made of wheat, yet it was once a common article of food in England. It forms the dark colored and sour tasting bread which is still extensively used in the north of Europe. It may be considered as filling the place of wheaten bread in the temperate countries where poverty prevails and agriculture is the least advanced. It is rarely eaten alone, but is frequently mixed with twice its bulk of wheaten flour.

Indian corn is one of the most extensively used grains in the world, though it is not well adapted for making bread, on account of its deficiency in gluten, without the admixture of wheaten or rye flour. Used alone, cornmeal, like oatmeal and barley meal, is made into a cake. The common brown bread of New England is made from a mixture of rye and Indian meal. Mixed with maple sugar, and baked into cakes, Indian meal formed at one time the chief article of diet of the Delaware Indians. The ration of a Kaffir servant is three pints of Indian cornmeal per day, and, although he rarely gets anything else to eat, he manages to keep in good health. Throughout Mexico, where corn is the staple article of food, it is cooked by baking it into flat cakes about six inches in diameter and a third of an inch in thickness. It is prepared by boiling the whole corn in water, with a little soda or lye of wood ashes, until it is perfectly soft to the core, but not broken up; it is then allowed to cool, and is taken from the pot in small portions at a time and crushed into a paste between stones. On account of the absence of gluten, oatmeal cannot be vesiculated and made into bread, like wheaten flour. It is, however, made into thin cakes by mixing into a paste with water, and then baking on an iron plate. Under this form it is a staple food in Scotland, Norway and some portions of Germany. Oatmeal is known as a strong food and one that requires much cooking in order to break its starch cells.

Surrounded by an abundance of wheat, corn, rye and barley, Americans scarcely realize the straits to which the teeming millions of the Old World are put for bread, nor the variety of substances in general use. Bread made of bran flour in the Black Forest regions is hard, dry, tasteless and indigestible. Bread made of moss and lichens is eaten in Iceland, as well as in other sections during famines; that made from Egyptian millet has a sour flavor. Potato bread remains fresh longer than rye bread, and when mixed with wheat or rye flour is quite satisfying; its nourishment is about one fifth that of wheat. In 1630, during a famine in England, very good, wholesome, white bread was made from boiled turnips. The moisture was pressed out of the turnips, and they were then kneaded with an equal quantity of wheaten flour. During the siege of Paris the bread served out constituted a very coarse and mixed article, and by analysis it was found to be composed of one-eighth wheat, four eighths potatoes, beans, peas, oats and rye, two-eighths water and the remaining eighth straw, hulls of grains and the skins of vegetable products. In Sweden and Norway beech sawdust is sometimes converted into bread. Rice bread, used in the East, is raised with difficulty unless the dough is mixed with acids. Bread is made of the roots of the water lily in Sweden, of peanuts mixed with white flour in Spain, of chestnuts roasted and ground in Southern France, of the bread-tree fruit, the sweet potato, the banana and the almond in Africa, of roots in parts of Brazil. In times of famine men have met the exigency by the use of bread made from acorns, pumpkins, roots, wood, hay, straw and nuts.—*Boston Cultivator*.

How to Make Sauce and Croquettes.

Mr. Delmonico, talking about entrees, says that Americans ought to copy "the French method of utilizing small bits of raw meats and fowls, and of re-cooking all kinds of cold joints and pieces of cooked meat which remain, day after day, from every dinner in almost every family." The success of such dishes depends mainly on the sauce, which is best made from broth. The following is his recipe for a favorite sauce: "Take an ounce of ham or bacon, cut it up in small pieces, and fry it in hot fat. Add an onion and carrot, cut up, thicken with flour, then add a pint or quart of broth, according to quantity desired, season with pepper and salt, and any spice or herb that is relished (better though without the spice), and let simmer for an hour, skim carefully and strain. A wineglass of any wine may be added, if liked." Cold roast or broiled beef or mutton may be cut into small squares, fried brown in butter, and then gently stewed in the sauce above described. Mr. Delmonico describes croquettes as the attractive

French substitute for American ha-h, and tells how to make them: "Veal, mutton, lamb, sweetbreads, almost any of the lighter meats, besides cold chicken and turkey, can be most deliciously turned into croquettes. Chop the meat very fine. Chop up an onion, fry it in an ounce of butter, add a tablespoonful of flour. Stir well, and then add the chopped meat and a little broth, salt, pepper, little nutmeg. Stir for two or three minutes, then add the yolks of two eggs, and turn the whole mixture into a dish to cool. When cool mix well together again. Divide up into parts for the croquettes, roll into the desired shape in bread crumbs. Dip in beaten eggs, then into bread crumbs again, and fry crisp, a bright golden color. Any of these croquettes may be served plain or with tomato sauce or garnniture of vegetables."

Cooking Potatoes.

To most of us the food we eat is valuable because we like it, and not so much because we consider ourselves a machine on which profit and loss are to be nicely calculated in regard to what we eat. But, as some of our readers are chemically or financially disposed, and have a desire to know to a penny what their bodies cost, and to the grain the material of which it is made, we give the following about cooking potatoes from an English agricultural magazine. As food, the potato is valuable on account of the potash and the phosphoric acid it contains, and it is of the first importance that the potash salts should not be lost in the process of cooking, for it is to these salts that potatoes owe their anti-scorbutic properties. Potatoes steamed with their skins on lose very little potash and scarcely any phosphoric acid; while, if steamed after peeling, they lose seven and five per cent. respectively. Similarly, potatoes, when boiled with their skin on, lose a little more than two per cent. of their potash, and about one per cent. of their phosphoric acid; but, if they are boiled after peeling, they lose as much as thirty-three per cent. of potash and twenty-three per cent. of phosphoric acid. Hence, if potatoes must be peeled, they should be steamed, not be boiled; and, if they must be boiled, they should at least be boiled with their jackets during the operation—the best way of all, from a scientific point of view, being to steam them before peeling, or to bake them in their skins.

Hints to Housekeepers.

The test of a housekeeper's taste and refinement is her table. The linen, though coarse in texture, can always be fresh and white; the silver and glass shining; the easter and table cloth neatly filled; the dishes uniform and orderly in their arrangement, and the snowy cloth protected from any chance soil or stain by mats of straw or crotchet-work. The atmosphere of the breakfast room should be cheery, and good temper and inspiring talk should wait upon appetite. The morning's food should be such as will leave the faculties at their best—light, nutritious and inviting; and its provisions should be abundant, but not disorderly. Have hot plates sent to the table with the hot meat, and cold plates placed upon the sideboard, or side table, with any cold meat which is to be used; this should be sliced as it is required for use. A box of mould in a kitchen window makes a nice garden for raising the herbs which give such variety and flavor to any dish into which they enter. Hot rolls and biscuits should be served well covered with a napkin. Dry toast should be sent to the table the instant it is made. Buttered toast should be set into the oven about five minutes to render it crisp. A small piece of sponge tied upon a rod, or a flat brush, will serve nicely to grease pans or plates with. Rub your griddle with salt before you grease it, and your cakes will not stick.

HOUSEHOLD RECIPES.

Pleasing the Palate.

During Miss Dods' lectures on Cooking, in Philadelphia, within the past month, she has demonstrated her manner of rendering palatable and digestible many well-known dishes. Subjoined will be found some of her receipts:

IRISH STEW.

Material required: 2 pounds of potatoes, 1 pound of neck mutton, ½ pound of onions, salt, pepper and ½ pint of water. Cut the potatoes in pieces, boil them and throw away the water. Soak the onions in water, slice them up and put them with the potatoes in a saucepan, and cook slowly for an hour and a half, seasoning with pepper and salt.

APPLE DUMPLING.

Ingredients used: 5 apples, ½ pound of flour, 2 ounces of lard, 1 ounce of sugar, ½ pint of cold water, ½ teaspoonful of baking powder, and a pinch of salt. Pare and core the apples. Mix the lard, yeast, powder and salt. Add water, knead lightly together and cut into five pieces. Put the core both in the apple with sugar, wrap the apple with dough, put into a lightly-floured tin, and bake for an hour and a half.

MILK SOUP.

Stock required: 2 raw potatoes, 1 ounce of lard, 1 pint of milk, 1½ ounces of fine sage, 1 quart of cold water, pepper and salt. Cover potatoes with water, keep over until the water boils; then replace the water with a quart of fresh, adding the lard at the same time. Boil the potatoes until they are tender; pour the materials through a colander and return to a saucepan; add milk, sago and seasoning.

MACCARONI AND CHEESE.

Ingredients necessary: ½ pound of maccaroni, 3 ounces of dry cheese, ½ pint of milk, and a small quantity of pepper and salt. Boil the maccaroni fifteen minutes in water; then replace the water with milk, and boil for half hour longer. Spread a layer of maccaroni on a flat dish; add a layer of dry cheese; sprinkle slightly with pepper and salt. Continue alternate layers of maccaroni and cheese until the required amount is obtained. Then place in the oven and brown for from 8½ to 10 minutes.

TO BOIL POTATOES.

The only method to boil potatoes properly, says Miss Dodds, is to boil them until half-done, then pour off all the water, cover the pot closely and permit them to steam until quite done. Just before removing them from the stove take off the lid of the pot that the steam may escape, and the potatoes will be found to be very dry and very mealy. Young potatoes should be placed in boiling water; old potatoes in cold and boiled.

TO MAKE PUFF PASTE.

To make this pastry she used one-quarter of a pound of flour, same quantity of butter, the yolk of one egg, a pinch of salt, several drops of lemon juice and a gill of cold water. The yolk of the egg, salt, lemon juice and water are mixed and then worked into the flour, thus forming a stiff dough. When this has been kneaded quite firmly, roll the dough on a well-floured board until it is quite thin. It is necessary to be particular to use the exact weight of flour and butter. The butter should then be squeezed through a towel to extract the water and milk. Having been strained, it is placed in the centre of the dough, which is folded carefully upon it and again rolled out as thin as possible. It is then folded in three layers and rolled, and folded for seven times; the first three times very carefully, that the butter may not run out. Having rolled and folded it the first time, it should be laid aside for a time to cool. After awhile, it is rolled again and folded again. Between the second and third and fifth and sixth rollings it should be allowed to stand in a cool place. When it is rolled for the seventh and last time, the paste should be about a half an inch in thickness. It is then cut in circular pieces about the size of a cup. In the centre of these cakes a small, round indention is made half through. These pieces are removed after the paste is cooked, which requires ten minutes.

TURKISH SOUP.

For this soup the ingredients required are one quart of second stock, one-half teaspoonful of rice, the yolks of two eggs, one tablespoonful of cream, and a little pepper and salt. The second stock is made by simply covering the meat and bones with water and fresh vegetables, and boiling the whole for a long time. Wash the rice well by placing it in a strainer and pouring water over it. This washes off all the starch and flour on the outside, so that when it is cooked each grain of the rice is separate from the others. Place the stock, the rice, pepper and salt in a saucepan and boil for twenty minutes. Then pour it through a wire sieve, rubbing the rice through, and pour the hot stock back into the saucepan. In a basin then mix the yolks of two eggs and the cream, and add a tablespoonful of hot stock. This gradually cools the stock and warms the cream and eggs. Then pour the stock in. Allow this to stand over the fire for two minutes, but do not let it boil or the eggs curdle.

AMBER PUDDING.

In preparing this there were used two pounds of raw apples, three ounces of sugar, a gill of cold water, several drops of lemon juice, four eggs, six ounces of flour, two ounces of butter, one-half teaspoonful of baking powder and a pinch of salt. The sugar and one-half gill of water are placed over the fire and allowed to come to a boil. At this point add the apples, which should be cut into lumps, and the lemon juice, and cook until the apples are quite soft. Weigh out six ounces of flour in a basin, and mix in well two ounces of butter; then add the baking powder, a pinch of salt and one-half gill of water, and work the whole into a firm dough, and roll out to thickness of one-third of an inch. Then dampen the sides of a pie dish with cold water and line it with narrow strips of the dough. After trimming the edge nicely, brush them lightly with cold water, and garnish the outer edge with small circular pieces of pastry laid close together. The apples, when soft, are removed and strained through a sieve into a clean dish. The yolks of four eggs are then mixed in, and in this condition it is placed into the pie plate that has been prepared. In order to cook the newly introduced eggs and the dough the dish is put in the oven for ten minutes. The whites of the eggs, to which salt has been added, are beaten stiff, and when the pudding is done this is piled high up in the centre, and is then well sprinkled with sugar. After smoothing the white of the egg into a cone shape, it can be neatly garnished with pieces of Angelica or dried berries. It is again placed in the oven to brown for two minutes, and is then ready for the table. Miss Dods stated that it was never necessary to beat the yolks of the eggs. The whites always beat quicker and softer separate. She used the sharp edge of a table knife, and said the beating could be done quicker in a cool air.

FISH CAKES.

The receipt given for fish cakes included one pound of potatoes, one pound of codfish—boiled, pepper and salt, two eggs, one teaspoonful of cream, one-half ounce of butter, and a few tablespoonfuls of bread crumbs. After breaking the boiled fish into small pieces, grate the potatoes while hot upon it through a sieve; add one-half ounce of butter, the yolks of the eggs, the cream, and mix all well together; when seasoned with pepper and salt, divide the mass into small flat cakes on a well floured board; beat the whites of the eggs, and, having coated each of the cakes with it, roll them into the bread crumbs; fry in hot fat or lard for two minutes. As soon as the cakes are done grease them on a piece of paper that the superfluous grease may be absorbed from them.

DRESSED BOILED FISH.

Her mode of dressing any boiled fish was demonstrated with halibut. To one pound of fish she used two ounces of butter, two ounces of flour, one ounce of grated cheese, one-half pint of milk and one gill of cream. The butter and flour are placed over the fire and mixed while the butter melts. Milk is then mixed in and stirred until it boils. At the boiling point add the cream, pepper and salt and cook two minutes. The bones and skin having been removed from the fish, it is cut into small pieces and then mixed into the sauce, which should remain only long enough over the fire to heat the fish. Place the whole on a flat dish, sprinkle over grated cheese or bread crumbs, add pepper and brown quickly in the oven. To boil halibut properly, she said it should be placed in boiling water, to which a tablespoonful of vinegar has been added. It should cook only twenty minutes, unless the fish is of unusual size.

FILLET OF BEEF AND DUTCH SAUCE.

The beef should be cut in slices about an inch in thickness. It is then placed in the broiler, which should be lightly greased, and then subjected to the action of the fire for seven minutes, turning it but once in that time. The Dutch sauce was prepared with half a tablespoonful of cream, half a tablespoonful of water, the yolks of two eggs, a little pepper and salt, one ounce of butter, and the juice of half a lemon. The water and egg yolks are beaten well together, and the lemon juice, cream and butter, with salt and pepper, are then introduced, and the whole is whisked over a slow fire until it thickens. This, however, must be allowed to come to a boil. When finished, pour hot over the fillets of beef and serve.

CHARLOTTE RUSSE.

In making Charlotte Russe she required a quarter pound of lady finger cake (sponge finger biscuits), one pint cream, half ounce of gelatine, the yolks of two eggs, one teaspoonful of essence of vanilla, one ounce of sugar, a few dried cherries—preserved cherries with stones out—and a half gill of cold water. The gelatine was put in cold water to soak. The lady fingers, in the meantime, were cut lengthwise, so that they would fit together, and were then placed side by side within a small pan. The gelatine was then carefully melted over the fire so as to not get too hot. A pint of cream was whipped, to which was added one ounce of granulated sugar. Take the whites of two eggs and whip them until they are very stiff, adding a little dry salt. When the whites are whipped to a very stiff froth add to the cream the vanilla and the gelatine. Pour gently into this, stirring all the time the melted gelatine, and then mix very lightly the whites of egg. When well mixed stand to one side until it begins to set, then pour into the mould in which the cake has been arranged, and allow it to stand until well set. A few dried cherries were first dropped into the bottom of the pan for flavor.

WELCOME-GUEST PUDDING.

In the preparation of this dessert she required 4 ounces of bread crumbs, 1 gill of boiling milk, 2 ounces suet, 2 ounces sugar, 1½ ounces citron, 1½ ounces sweet almonds, 2 eggs and a few preserved cherries. First put on to boil 1 gill of milk; put two ounces of the bread crumbs in a basin; pour over them the boiling milk; allow this this to soak for a minute or two; chop finely the suet, beef suet is always used except in the sick room; here mutton suet is used because it is more easily digested; chop finely the almonds, which are first blanched; cut the citron in very thin pieces, having removed the hard sugar from the surface. The bread crumb and milk having soaked, two ounces more of crumbs are poured into it, together with the suet, citron and almonds. In a basin put the yolks of two eggs and two ounces of sugar, the sugar is mixed with the yolks to make the latter lighter. To the whites of the eggs add a pinch of salt and beat to a stiff froth; mix the froth with the yolks and sugar; all the ingredients are mixed together, grease a mould, garnish

with a few preserved cherries. Put the mixture in the mould carefully, so as not to disturb the cherries, and steam the pudding for an hour and a half. Leave it in the mould a second before turning it out.

POTATO CROQUETS.

In preparing this tasty side dish Miss Dods required one pound of mashed potatoes, one egg, one tablespoonful of milk, a little pepper and salt, and a cup or two of bread crumbs or cracker dust. The best utensil for mashing potatoes is a fork, but a good method is to grate them through a sieve. When the potatoes are mashed the salt and pepper are added. The milk and the yolk of one egg are then mixed in, and the whole stirred over the fire until the egg is dry; this requires about one minute. The kneading board is well floured, and, while warm, the mass is separated into small balls or rolled into any shape desired. The white of the egg is then beaten slightly, and each ball covered with a light coating. The bread crumbs or cracker dust is then placed in a piece of paper and the balls separately placed upon it, and by rolling them from side to side are completely covered. This, she said, was the best method of coating fish. To cook anything in fat, such as oysters, croquets or fish, the grease should be heated to 375 degrees. This heat could easily be determined, for at that degree the fat began to smoke. At this heat they would be done in about one minute. In order to keep it from burning when not in use, a raw potato or a large crust of bread should be placed in the fat, to be removed again when ready for use. Fat can be used over and over again. When its properties are exhausted it can be readily renewed by adding fresh material. This rule applied to lard as well as drippings. When anything is cooked in fat or lard, it should be removed from the pot and placed at once on a piece of brown paper. This would absorb the remaining grease. The croquets were placed in a pot of smoking drips, and in a few moments were removed, and were found to be beautifully browned. Incidentally, she stated that it was never well to boil meats quickly. By permitting them to simmer over the fire the juices were brought out better, and the flavor was therefore much richer.

TRUSSED FOWL.

Her directions for trussing a fowl were given as follows: Pass a needle, threaded with a strong cord, through the under part of the wing, pass it next straight through the top part of the leg and under part of the wing. Then pass the needle straight through the body of the fowl, bring it out through the top part of the other leg, then pass it through the under part of the other wing, turn the fowl on its breast, pass the needle through the top part of the wing, through the skin that folds over the neck, through the top part of the other wing. This brings the two ends of the string together. Draw them as tight as possible, in order to give the fowl a plump appearance. Then take another string and pass the needle close to the backbone, then over one leg, through the skin at the foot of the breast, pass it next over the other leg and tie it as tight as possible. In trussing for roasting the process is just the same, except that the claws are chopped off and the legs dipped into boiling water, a moment, so that the skin can be taken off easily. To boil the fowl a piece of greased paper should first be tied over the breast. This softens the meat and gives it a good color. The fowl is then placed in a pan of boiling water, to which salt is added. If it is young, it is allowed to cook slowly for an hour; if old, more time is required. The dressing for fowls was then made. For this she used two ounces of butter, one pint of milk, a little pepper and salt and two hard-boiled eggs. The butter was melted in a small pan, and the flour at once added and mixed. A pint of milk was then poured into the pan, and the ingredients stirred until the milk boiled. At boiling point pepper and salt were added, and the compound was allowed to boil two minutes longer. The whites of two hard-boiled eggs were then chopped and added to the dressing. The fowl was then removed from the fire and placed on a dish, the strings removed, and the dressing poured over the breast. A closely-woven sieve was then placed over the chicken, and the hard yolks of the eggs grated through it upon the fowl.

TERRAPIN.

Terrapin ought never to be bought unless it is six inches long. To kill, plunge in boiling water, and boil for three quarters of an hour, or until the claws will pull away. In the water put a good quantity of salt. To open the terrapin draw away the claws or feet, and remove the thick skin and slip out the claws and the meat, and lay the terrapin on its back. Take the shell at the head and slip it off carefully, as you don't want to break the meat. Be also careful not to break the bag holding the eggs. Taking the towel, draw away the head, and be very careful not to break the gall. Cut away the liver carefully from both sides, only a small part of the head can be used. All the meat that can be used is grated up. For each terrapin is required 7 oz. butter, 3/4 oz. flour, 4 tablespoonfuls cream, and nearly 1/2 pint Madeira, a little pepper and salt, and a very little cayenne. Melt in a small saucepan the butter, and add to it flour and cream. Stir carefully until it boils, and then add the pieces of terrapin and eggs and let it boil for two minutes. A little grated nutmeg may be added to this according to taste. Take from the fire when it has cooked two minutes and pour over the Madeira.

LIVE STOCK.

The Chillingham Wild Cattle.

We take the following extract from the Newcastle (England) *Courant* of April 4th:

At the let of the Chillingham grass parks, last week, the company, by the kind permission of the Earl of Tankerville, had the pleasure of inspecting a fine young bull, half breed, from the celebrated white cattle of Chillingham. This being the first attempt to cross this "untamed, unmixed and unstained stock," great interest was manifested in the animal, in which the old wild nature could be easily detected by the bold, defiant head and sharp, fierce eye. It appears that two heifers of the pure short-horn breed were put into an enclosure with one of the wild bulls of Chillingham park, which had been trapped for the purpose. At the first meeting the bull would have nothing to do with the heifers, but showed fight. The beasts were then separated, it being feared that mischief might result from leaving the untamed bull and the heifers together. Three weeks after this another trial was made, and the result was the same. It was accordingly decided to leave the heifer with the bull, and let her take her chance. The consequence was that they became friendly, as she went into the same place to lie at times. The second heifer was then passed into the enclosure, and they all agreed very well together. The last heifer put in gave birth on the 10th of June, 1877, to a very fine heifer calf, pure white, with a grand coat of hair, white muzzle and red-tipped ears. On the 17th of the same month, seven days later, the other heifer produced the fine bull calf already mentioned, and which is more of the wild type. It has a brown muzzle and spotted nose, black eyes and black eye lashes, and red-tipped ears; also a white and splendid coat of hair, and is not always safe to approach. The two animals are named respectively Eve and Adam, this being the first cross from the wild native cattle. They were permitted to suck their dams for nearly twelve months. The bull crossed his dam when ten months old, and she has a bull calf—a perfect beauty, being pure white, white nose, and red-tipped ears, a beautiful coat of hair, and is well shaped. Of course the heifers were a white strain for a long way back. There are now two wild heifers trapped into the enclosure in the park, and it is intended to try the cross the other way on. Lord Tankerville is anxious to try experiments, with a view of putting fresh blood and constitution into the short-horn breed, and, judging from appearances, is going to succeed. The heifers, we understand, will not be allowed to go out to the park again to breed, as it is possible the impress might be left—his lordship having determined not to tamper with the breeding of the wild cattle; but to keep them strictly pure.

Watering Horses.

There is a great diversity of opinion as to how often horses should be watered during a day, whether in summer or in winter. We have an article now before us of a writer of some distinction as an agriculturist, who advocates frequent watering of work horses, as a renewer of the vigor of the animals. We cannot agree with him. We think both man and beast are generally watered too much. Men and horses at hard work in warm weather perspire just in proportion to the quantity of fluids taken into the stomach. Frequent drinking in hot weather, according to our experience, emasculates instead of refreshes. Some years ago, being at Cape May, in driving out in one of the stand coaches of the place, on a very hot day, we asked the driver how it was that his horses perspired so little, while the horses of private carriages, going at a slower speed, were covered with foam. He replied that he watered his horses three times a day only, though he sponged their mouths frequently; while the private drivers watered their horses whenever they stopped. He said, and it seemed to us very sensible, that the frequent watering of horses effected no good purpose, while it made them very uncomfortable and lethargic. Horses, no matter what their work was, did not need watering oftener than three times a day. Our own experience with horses all our life is to the same effect.

Sale of Short Horns.

Mr. Samuel Rutter, of Manchester, sold at the Fair Grounds, through W. H. Miller, auctioneer, a very fine lot of short horns, cows and heifers. They were sold to the following parties: No. 1, $151; No. 7, $100; No. 10, $141; No. 11, $125; and No. 17, $100, to J. H. Small; No. 2, $76, to John Dukehart, of Emmittsburg, Md.; No. 3, $1_0; No. 15, $64; and No. 18, $60, to S. W. Tholenberger, of Cumberland county; No. 4, $131, J. H. Wogen; No. 5, $56; No. 8, $187, S. G. Erwin; No. 6, $78, Samuel Lichtenberger; No. 9, $74, George Kunkel; No. 12, $64, and No. 16, $75, D. A. Rupp; No. 1_, $65, Adam Hoke; No. 14, $62, Michael Schall. Total, $1,589.

The following calf bulls and yearlings were also sold: No. 1, to D. A. Rupp, for $_60; No. 2, S. Roop, $1_6; No. 3, J. Dukehart, $113; No. 4, Geo. Gross, $81; No. 5, S. G. Irvin, $67. Total, $607. The average price of cows was something over $88 per cow, and that of the bulls and yearlings $121.40.

APIARY.

Swarming of Bees.

When one concludes, which as a rule he better do, to let his bees swarm naturally, it becomes him to ask what are the reasonable rules to be observed for success. Let me lay down a few.

First. Provide, during the leisure of the winter previous to swarming, all the hives necessary. Don't wait until they begin to swarm before you provide the hives. I make it a rule to have double the number of hives I need on hand. That is, if I have forty swarms, I have eighty empty hives on hand. Hence I have so far ever had a surplus, and this year when I took them out of my house-garret, where I keep them stored, they were marked 1866, 1871, 1858, and other years, showing that some of them had been on hand a long time unused. Now, this is not absolutely necessary, but is better than to have hurry and confusion at the time of swarming. At least provide for your aipary one and a-half hives to every hive you expect to winter. That is, if you winter twelve hives, then by May 1st have eighteen well made and nicely-painted hives on hand ready for your swarms.

Second. Using old hives. This can be readily done; but prepare them carefully. Scrape them clean with an old knife or tool made on purpose, and then scald them out thoroughly with plenty of boiling water. Stop all holes and cracks and thoroughly repaint them. Hives, if thoroughly nailed when first made, will be found in better order when they are refitted for second or subsequent use. So I recommend sound lumber, tight joints, close and what seems to be over-nailing of the parts of the hive together, puttying and painting thoroughly. A hive ought to be made to last forty years. Say six or eight years for the first swarm put in it; then cleaned, repainted and used from four to ten years for the second swarm, and so on at least forty years. Paint hives of different colors; green is a good color, as is yellow, white and brown. The so-called railroad, mineral and other colors are excellent in shades of coloring, but not as durable as white lead. But white lead, colored by green and other colors, is apt to become dingy in a few years by the color washing out by rains.

Third. Having said this much on making hives and using them repeatedly, let me say as thirdly, use nothing in any hive when you put your swarm into it. Now all clean, nice, experienced bee keepers know the reason of this. It is because just as the bees are about to swarm they swallow all the honey, bee-bread, or other supplies of food they can possibly eat, and stuffed with about a week's food they do not want any more to eat. I have had a rainy, cold time to come, with no harm to the swarms, of three, six, and in one instance eight days, so wet and cold that hardly a bee came out of the hive holding the new swarm. Hence I say the supply of food taken by a new swarm is about a week's supply. So if you now rub honey, molasses, mint, or anything in your hives, you only insult your bees. As well might you ask a stuffed boy to eat his supper on top of his Thanksgiving dinner, as to ask an overgorged bee to lick up your supposed nice things put in your hive. You ought to know better than to do such a silly thing, reader, yet whisky and molasses, bee-mint, honey and water, vinegar and sugar, salt and alum, and I know not what are put into hives by thoughtless, silly bee-keepers, who want to "do something" they know not what. Now all I say is, that since 1857 I have kept bees, and I never yet had a swarm leave a hive and go off to the woods; and I believe one reason of success to this absolute extent is that I never soil and make my hives foul with honey, salt, molasses or anything. I give the hives clean and sweet, and the bees never yet told me that they wanted anything more. You farmers raise pork, wheat, eggs, oats and beef. Now suppose you move out of your old house into your new house, and your neighbors have gone the night before and mixed up eggs, wheat, lard, tallow, oats and beef, and daubed your floors, walls and windows with the mixture, just to please you. How would you like it? So you, for the neatest of all insects, a bee, put honey to walk on, mint to smell of, and molasses to clean up, on the walls of the new hive for bees! It must be as pleasant to them as to you to find a lot of eggs and lard and wheat on the floors of your new house. No! All you ask and the bees ask is a clean house to go into.

Fourth. Supplies of swarming implements. These are the hive, clean and neatly made, clean and neat inside, dry and cool; next a piece of cheap, stout linen cloth, large enough to tie over the top of the hive so closely that not a bee can get out when tied; a ladder as tall as are the apple or

other trees near your apiary, a few pieces of stick or lumber one and a-half inches wide, and one or one and a-quarter inches thick; a few pieces of board four feet long and half an inch thick, and ten inches or so wide, and perhaps a few pieces, triangular in shape, to put under your hive. Then add a bee-veil of common black lace, a rope 20 feet long and a neat, clean half-bushel round basket. If your apiary is large you may want two hiving-cloths, and a second set of boards and sticks. The use of the hive needs no explanation; but the boards and long sticks are to build a platform in the top of any tree, or to lay on the ground to hive there. If your swarm lights on the top of a tree, as mine often do, twenty-five feet from the ground, it is in vain to shake them off in your half-bushel basket and bring them down and hive on the ground; or at least it will take half an hour longer to do it than on the ground. Hence I prefer to run the ends of the long sticks among the branches, rest the ends on the ladder, lay on the sticks the boards, hiving-cloth and hive, and proceed to hive them in the top of the tall tree. Thus I can hive them in twenty minutes, instead of the hour's time of reluctant change to the ground that I often encounter. One soon learns that eight to ten minutes is all the time it takes a swarm to come out and light. That in five minutes more he can build his platform, even in the tall tree; shake the bees off, without cutting a limb, and in fifteen minutes more have the bees so far in that he can take the hive with the new swarm in it down the ladder and put it on its permanent stand. Away with your letting the hive be until sundown and dark. The man who cannot have the swarm come out and be hived and put in its permanent place in from thirty to forty minutes, has not learned how to hive bees. So neatness, quiet dispatch, and a clear plan are necessary to hiving a swarm well. And provide your tools to do it with beforehand. I have named all I generally use.—*J. S. Parker, M.D., Tompkins county, N. Y.*

[Like causes produce like effects in all ages of the world, therefore the foregoing from the *Germantown Telegraph* is not the less valuable because it happened to be published four years ago. People are apt to mislay or forget.—Ed. Farmer.]

Honey in the Boston Market.

The *American Bee Journal* says: The settled aversion of Bostonians to all kinds of dark honey has long been known to those producers and dealers who have marketed honey there. While they willingly pay the highest prices for a fancy white article, they cannot be induced to buy, taste or handle the dark grades. We know a producer who took 8,000 pounds of honey to that market this year, 5,000 was light and 3,000 dark. He sold out the light to first-class advantage; the dark dragged. He intrusted his sale to a commission house and went home. After several months he learned that no progress was being made with its sale, and the lot was transferred to another commission house in Boston, and they had no luck in disposing of it, when it was sent to New York, and at forced sale brought from 8 to 10 cents per pound. We advise our readers to never send dark honey to Boston. Mr. David Geer, a regular "down easter," and the pioneer honey peddler of the United States, is located there. He is about 70 years of age, and is reputed to be worth over $100,000. He has made his entire fortune by peddling honey all through the New England States, not unfrequently having 8 to 10 wagons on the road.

Poultry.

To Break Up Sitting Hens,

At this time of the year, when for a month to come a majority of the flock have laid out their spring litters and have become naturally "broody," is a task to the poultry raiser who keeps large numbers of fowls.

There is frequently much unnecessary trouble caused at this period, and under these circumstances, yet through the inattention of the fowl keeper himself, who neglects to watch for this natural inclination of his hens and pullets, after they have so laid out their early litters of eggs. And there are also many cruel methods resorted to by inexperienced persons, to put a stop to this, in attempts to compel hens to go to laying again.

The broody or "hatching fever" is a natural thing. All hens and pullets (that are not what are termed "non-sitters") incline to go to nest at some time in the year, with a desire to rear young ones. As a general method, we have no doubt it is quite as well if all hens thus inclined are permitted to sit once in the season. They are better off for this indulgence in the end.

But if for any reason we prefer to break them up, let it be done humanely and effectively. And this may be accomplished without abuse, or by plunging them in a cold-water bath, tying them to stakes, half smothering them in a darkened barrel—and that kind of nonsense—which is rarely of any avail.

Watch your laying fowls every day now. The first indication invariably that you will observe—when a fowl is *beginning* to get broody—is, that she remains upon her laying nest after her companions have, as usual, gone to roost at night.

Non-Hatching.

Dear Sir: I desire to write a few lines upon non-hatching eggs, as I have had considerable sad experience in that line. About for years ago I had a fine flock of White Leghorn hens. Wishing to increase the size I purchased a ten-pound Plymouth Rock cock and put him with my flock. After waiting proper time I set about 100 eggs, and not a chicken made its appearance. The eggs were all infertile, as can be easily told after being set upon a few days. Not wishing to give it up, I obtained a Black Spanish cock, and nearly every egg hatched. I then came to the conclusion that the Plymouth Rock cock was too large. Not liking the looks of mongrel stock, I built a hennery with six apartments. The size of each was 4x8 feet with yard 4x12 feet. I obtained a trio each of six leading varieties, and put them in, each kind by themselves. I got a fair quantity of eggs, and set from each coop, but the chicks did not come out. I did not raise half a dozen. This was owing to close confinement. Now I have abandoned all but Plymouth Rocks and Brahmas, and give them one-quarter of an acre, and have no more trouble about non-hatching of eggs.—*A. M. in American Poultry Yard.*

An Economical Feed-Trough.

In view of the fact that "economy is wealth," we append herewith a description of what we have used for some time, and consider it a very economical feed-trough. Its construction is very simple. For a trough of medium size, take a soap box, and placing it upon one of its sides, remove the top, with the exception of four inches from the side on which the box stands; then saw the ends diagonally from this point to the upper point of the box. Now stretch some wire at 2½@2 inches apart from each other—from the front to the back of the box—and while fowls will be fully able to get their food through these wires, they will be unable on account of the slope, to perch upon them. If soft food is to be placed in the trough, a slip can be easily arranged at the end, which will admit a pan of moderate size, but for grain this will not be needed.

A Cheap Poultry-House,

Dear Sir: I thought that perhaps it might not do any harm to give you my experience in building a cheap poultry-house. We are much pleased with it, although it cost only about six dollars, besides the labor and windows (any old sash will do). I procured four posts, ten feet long, set them eight feet apart one way and twelve the other, leaving seven feet above ground. The sides and ends I covered with inch boards (pine), lapping them over about one inch, in order to keep out the rain and snow. The roof is made of long prairie-grass, and projects over about two feet all around. If you think that any part of this may be of use to any of your readers, you are at liberty to publish it.—*G. H. N., in American Poultry Yard.*

Vermin.

Dear Sir: This is the way I took to rid my poultry and poultry-house of lice. It is the best way to destroy them that I ever practiced, and it is very effectual. In the summer my fowl-house has sometimes been alive with the pest. I went to work and white-washed every crack and corner in and about my house, and then made a box four feet square and one foot deep; I filled it with coal-ashes, bought five pounds of sulphur and mixed it with the ashes and let the fowls dust in it, and in a month after I had no more lice in and about my place, and have not found any to this day. My fowls are always clean and lively.—*W. H. in Poultry Yard.*

Literary and Personal.

Department of Agriculture, Special Report No. 13. Upon the condition of crops and live stocks, April, 1879; 26 pp., 8 vo. Washington, D. C.

Official Bulletin of the International Exhibition, Fairmount Park, Philadelphia, 1879. "International Exhibition Company." 36 pp., 8 vo., with a superb illustration.

Pospectus of the American Workers' Alliance, for the advancement of educational, industrial, co-operative and social reform. 3 p., 8 vo. Washington, D. C., 1879.

Dewey's Crystal Fruit Jars.—Made expressly for nurserymen and tree dealers' use in keeping and exhibiting fruit. Rochester, New York. D. M. Dewey, 1879. 1 p., 4to.

The Plant Patent.—1 p., 4to. Jacob Moore. The question discussed is, "Whether men who originate new fruits and plants ought not to be protected the same as other patentees are?"

Catalogue of Natural History Store. Established in 1850. No. 168 Tremont street, Boston. Deals in birds, minerals, fossils, shells and objects of Natural History from all parts of the world. Also, artificial eyes and all articles required by taxidermists. 33 pp., 8 vo. W. J. Knowlton, proprietor. 1879.

The Daily Chronicle, Leadville, Col., April 30, 1879. It is simply astonishing; a little more than a year ago there was no such place as Leadville, to-day there is a city of 12,000 inhabitants, and at least one daily paper, containing more advertisements than all the dailies in Lancaster put together. Larger than the *Evening Daily* of York, and published at five cents a number.

The Farmers' Monthly and Agricultural Review.—Devoted to agriculture, horticulture, the farm and the garden. Vol. I., No. 2. Toronto, Canada, May 15th, 1879. Office, No. 96 King street, East. Fifty cents a year, in advance. An eight-page demi-quarto. Good and cheap, and largely devoted to the advertisement of good and desirable farming lands within the territory of the Dominion. We cordially greet it, wishing it that success which we think it richly deserves.

The Kansas Monthly—An illustrated journal, published in the interest of those who are seeking homes in Kansas, is on our table. It is not published in the interest of *land sharks*, but gives a truthful exhibit of the situation in Kansas. Every immigrant should have it. Sent free of postage for fifteen cents a number, or $1.50 per year. A copy of the Kansas Hand-Book, by the same publisher, is sent free to every yearly subscriber. Address J. S. Boughton, Publisher, Lawrence, Kansas.

The Meteorologist.—Published monthly in the interest of the science of meteorology, in Greensburg, Pa., at 50 cents per annum. Edited by I. M. L. Stump, No. 4, Vol. I, (June, 1879,) of which has reached our table. We can hardly decide whether it is a large 12mo. or a small 8vo. of twelve pages. No matter about that, however, but it does seem to strike us that there is, or ought to be, a *vacuum* for just this kind of a publication and this kind of a price. Practical or experimental meteorology is the most universal—and sometimes the only—theme of conversation in this lower world; and any medium through which the masses may be instructed to talk and act intelligently, scientifically and rationally on this subject ought to be welcomed as a mental and moral benefactor. We mean no flattery when we say that this little unpretending publication will be interesting and beneficial to those who *are*, as well as those who only *assume* to be "weatherwise." The very recent great "Kansas Cyclone" ought to find a detailed exemplification in these columns, and no doubt in due time it *will*, even if the *real* why and wherefore, together with the means to avoid such catastrophes, never can be demonstrated. The present number is well filled with papers on such subjects as evaporation, freezing, cometary phenomena, humidity, simoons, meteors, sand-waves, water-spouts, ventilation and other allied phenomenal subjects.

Moore's Rural Life.—Before we say anything *more* on the subject of this literary candidate for public favor, we would most respectfully admonish the *Scientific American* and the *American Agriculturist* to "look to their laurels." It is true that the first named occupies a ground so purely, so distinctly, and so peculiarly its own, that it need not fear rivalry, in the present or prospective, yet it might be different with the last named, occupying a similar ground. Moore's Rural Life, a demi-folio of twenty-four pages, with illustrated tinted covers; No. 1, Vol. I., for June, 1879, which is now before us, is "an illustrated journal for suburban, village and country homes," and is gotten up in the highest style of mechanical execution, artistic elaboration and literary ability, and may well dispute the field with any other similar journal in the country. In size of page it is a trifle larger than the *Scientific American*, with a finer quality of paper, as finely illustrated, and a newer and distincter typography. The contents of the number before us relate to the subjects of rural and suburban homes; landscape gardening; floriculture; fruit culture; arboriculture; entomology; the vegetable garden; poultry and pet stock; sketches of life; literary miscellany; natural science; fancy work and fashion; domestic and hygienic affairs; outdoor amusements; life in the country; young folks; editorial gossip and book notices; but from the absence of any specific mention of agriculture it might be inferred that it does not intend to canvass that field as a specialty, except as the foregoing subjects may relate to it incidentally. This journal starts out in life at a point which the other two journals have attained after long years of enterprise, energy and experience, and if it continues as it has begun, if it does not take a leading position, it may in time divide the honors equally with them. Published monthly by The Rural Life Company, No. 34 Park Row, New York; and dealers supplied by the American News Company, Nos. 39 and 41 Chambers street, N. Y., and the International News Company, No. 11 Bouverie street (Fleet street), London, England, at $1.50 per annum to subscribers.

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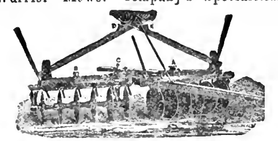

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BAUGH'S RAW BONE PHOSPHATE

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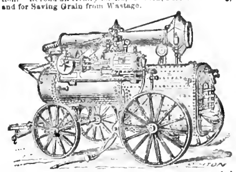

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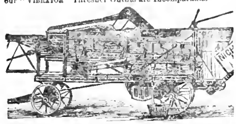

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the following analysis, which will be printed on every bag:

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79-2m 4

THE

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THE

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JOHN A. HIESTAND, Proprietor,

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79-1

A HOME ORGAN FOR FARMERS.

THE LANCASTER FARMER,

A MONTHLY JOURNAL,

Devoted to Agriculture, Horticulture, Domestic Economy and Miscellany.

Founded Under the Auspices of the Lancaster County Agricultural and Horticultural Society.

EDITED BY DR. S. S. RATHVON.

TERMS OF SUBSCRIPTION:

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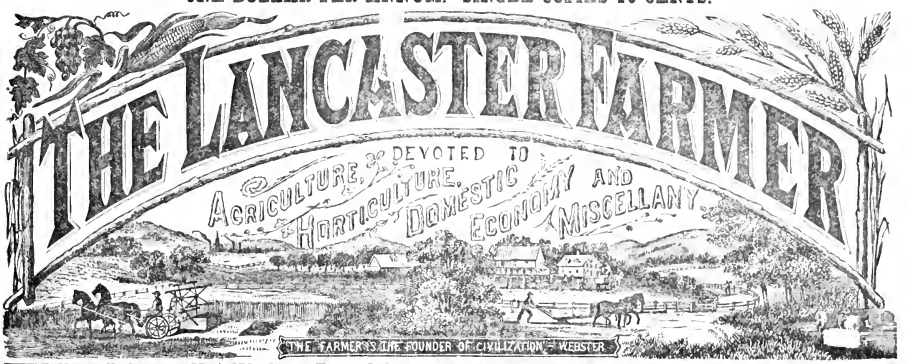


Dr. S. S. RATHVON, Editor. LANCASTER, PA., JULY, 1879. JOHN A. HIESTAND, Publisher.

CONTENTS OF THIS NUMBER.

PENNSYLVANIA RAILROAD SCHEDULE.

Trains LEAVE the Depot in this city, as follows:

WESTWARD.	Leave Lancaster.	Arrive Harrisburg.
Pacific Express*.....	2:40 a. m.	4:05 a. m.
Way Passenger†	5:00 a. m.	7:50 a. m.
Niagara Express.....	9:30 a. m.	10:40 a. m.
Hanover Accommodation..	9:25 p. m.	
Mail train via Mt. Joy.....	11:15 a. m.	1:00 p. m.
No. 2 via Columbia.....	11:20 a. m.	1:30 p. m.
Sunday Mail.....	11:20 a. m.	1:30 p. m.
Fast Line*.	2:10 p. m	3:45 p. m.
Frederick Accommodation.	2:15 p. m.	Col. 2:45 p. m.
Harrisburg Accom.....	5:45 p. m.	7:40 p. m.
Columbia Accommodation..	7:20 p. m.	Col. 8:00 p. m.
Harrisburg Express	7:25 p. m.	8:40 p. m.
Pittsburg Express.	9:25 p. m.	10:50 p. m.
Cincinnati Express*.....	11:30 p. m.	12:45 a. m.

EASTWARD.	Lancaster.	Philadelphia.
Atlantic Express*.....	12:30 a. m.	3:00 a. m.
Philadelphia Express†.....	4:10 a. m.	7:00 a. m.
Fast Line*.	5:20 a. m.	7:40 a. m.
Harrisburg Express.....	7:35 a. m.	10:00 a. m.
Columbia Accommodation..	9:28 p. m.	12:50 p. m.
Pacific Express*.....	1:20 p. m.	3:40 p. m.
Sunday Mail.....	2:00 p. m.	5:00 p. m.
Johnstown Express.....	3:05 p. m.	6:00 p. m.
Day Express*.....	5:18 p. m.	7:40 p. m.
Harrisburg Accom.....	5:50 p. m.	9:00 p. m.

The Hanover Accommodation, west, connects at Lancaster with Niagara Express, west, at 9:35 a. m., and will run through to Hanover.

The Frederick Accommodation, west, connects at Lancaster with Fast Line, west, at 2:10 p. m., and runs to Frederick.

The Pacific Express, east, on Sunday, when flagged, will stop at Middletown, Elizabethtown, Mount Joy and Landisville.

*The only trains which run daily.

†Runs daily, except Monday.

The Lancaster Farmer.

Dr. S. S. RATHVON, Editor. LANCASTER, PA., JULY, 1879. Vol. XI. No. 7.

EDITORIAL.

LANCASTER COUNTY TOBACCO.

The tobacco trade of Lancaster county is rapidly becoming one of the largest and most important factors in the material constitution of its commerce, and its financial influence upon the agricultural prosperity of the county is becoming very manifest. If any evidence were needed in regard to the appreciation of our nicotine product, and the preference exhibited for it by extensive and experienced tobacco dealers, it might be found in the large, substantial and costly tobacco warehouses which have been erected in different parts of the county—and notably in Lancaster city—where large invoices of tobacco are purchased, stored, prepared, packed and sent off to the different seaboard markets, both on the Atlantic and Pacific coasts. It is true, there is a bare *possibility* that the tobacco trade may be ultimately overdone by competition and a redundant production, but it is not at all *probable*. The tobacco trade is contemporary with the settlement of the country, and in the early history of the colonies, in many instances it was equivalent to, and in fact performed the functions of a currency—was receivable for fines, penalties and taxes. Its consumption has been increasing not only in America, but "all the world over," from its first discovery down to the present time. We are not discussing the usefulness or uselessness of tobacco—its good or evil effects upon the moral or physical condition of the human family—we merely have reference to the facts of its culture and traffic in it; and particularly to the quality of the weed raised in Lancaster county, and incidentally to the permanence of the tobacco trade.

We have just had a conversation with a friend, who, on a recent visit to a relative in York county, was assured by Mr. F. A. Uhl, (now a farmer at Tell's Station, near Hanover) who had been a tobacco manufacturer for a quarter of a century, that the Lancaster county tobacco, in his estimation, on the whole, is superior to any raised in the country. Years ago it was only inferior in quality, and could hardly find a purchaser out of the county. But all this is changed now. Its cultivation and curing is better understood than it was. Better seeds and better qualities of tobacco are planted, and the fact that *quality* is of a higher consideration than *quantity*, has become more appreciated than it was in the infancy of tobacco culture among us. Of course tobacco cannot be cultivated, and properly housed and cured without a good deal of care and labor, but this care and labor is better understood, and hence more effectually exercised than it was in times past. But above all its financial bearings and the facilities it affords to small operators is an important item in its culture. If a poor man has a small enclosure, or can lease one, he can realize more out of it in tobacco than in any other crop.

HONEY PRODUCT.

"There are 2,000,000 bee-hives in the United States. Every hive yields on an average a little over twenty pounds of honey. The price at which honey is sold averages 25 cents a pound, so that after paying for their own board, our bees present us with a revenue of over $8,000,000. Or reckon it another way—they make a clear gift of one pound of pure honey to every man, woman and child in the vast domain of the United States."

The foregoing is "going the rounds" of the press in general, and doubtless the reckoning is as correct as such calculations usually are, but that has nothing to do with our cogitations. We take it for granted, and if there are any who doubt it, it is for them to disprove it. Statistics made from absolute data, always fall below the reality, for the reason that so many keep no record, others are reticent, and others forgetful, careless or indifferent, and hence the true data cannot be obtained. Estimated statistics, however, are sometimes wide of the mark. If we have only time and opportunity to examine one tree in an orchard that contains a thousand trees, and we are accurate in our computation that there are fifty bushels of apples on that tree, we have no right from such a basis to conclude that the whole orchard contains 50,000 bushels. Still, the honey product, above quoted, is as likely to be underestimated as overestimated, for the reasons already stated. There is an immense number of bee-keepers, on a small scale, who probably never keep an account of the amount of honey their bees produce, the amount consumed by their owners, or the bees themselves, or what amount is sold. Let any one go to market and buy a pound of honey, and he will be astonished at the small bulk there is in a pound. Or let him attempt to purchase that beautiful box of honey, and he will be amazed at its weight, and what it amounts to at 25 cents per pound. Great is the honey product of our country, and it is yearly increasing.

THE ELM TREE BEETLE.

How it Destroys some of our most Beautiful Shade Trees, and how it may be Exterminated.

This pernicious foreigner is again making its appearance in and about Lancaster, and is the cause of more or less anxiety amongst those who have elm trees on their premises. Its destructiveness depends entirely upon numbers. A few, perhaps, would not materially injure the foliage of these beautiful trees, but, unfortunately, if a combined effort is not made to circumvent them, they do not long remain only a "few." They possess extraordinary abilities to multiply, and there are at least two broods, in this latitude, during the vegetating season; therefore they are apt to "multiply and replenish" *ad infinitum*. They do not spread very rapidly, but wherever they have become localized and multiplied, they have inflicted serious damage upon the elm trees, both in Europe, from whence they came, and also in the United States. Dr. Harris has recorded that on one occasion all the elm trees in a public park in Baltimore had to be removed in order to circumvent these insects; it was also the case at several places in Massachusetts. They were noticed in this county about three years ago in limited numbers, and two years ago they were conspicuously present within the city limits of Lancaster—indeed in the very heart of the city—notably on a tree in front of the Episcopal Church, corner of North Duke and East Orange streets, and from thence on all the elm trees on the north side of Orange street, at least as far as Lime street. Also in Duke str et, near the English Reformed Church.

It will be difficult to compass these insects by any single remedy. Some knowledge must be had of their history, habits and transformations; and especially should the people be able to recognize the mature beetles when they see them, for these are the prolific parents of the larvæ, or "worms" that are now on the trees, fully grown, or passing into the pupa state. The mature beetles hibernate during the winter season under any cover that comes most convenient, and they are able to endure a very low degree of cold, provided there is not too much moisture present. Alternate freezings and thawings, under such circumstances, would be detrimental to their continued existence.

Last February, a year ago, Mrs. P. E. Gibbons brought to the meeting of the Linnæan Society a dozen or two of these beetles, part o' a colony which had been hibernating behind a fireboard in her house. The loose bark on trees and timbers, chinks in old walls, large flat stones, cracks or seams in fences, in barns, outhouses, and sheds, etc., often furnish convenient places for the winter hibernation of these beetles, as well as for the *curculio*, the "Squash-bug," and very frequently also the "Colorado Beetle." It seems very reasonable that if these insects are recognized and destroyed during the winter or early spring—almost any time before the first of May—the possibilities of a large brood are also diminished or destroyed. If a gravid female is destroyed before oviposition, that simple act may destroy from three hundred to a thousand insects in embryo, but after that period, would only be killing a single individual, which if let alone, would soon have died of its own accord.

When these beetles come from their winter quarters, they have a nuptial season of a week or more, according to the temperature of the weather, after which the females commence depositing their eggs on the foliage of the elm trees, to which they are exceedingly partial.

But, the larvæ of the Elm Beetle are now on the trees and are full grown. The people have not availed themselves of the preventive measures suggested in the foregoing. What is to be done now? It might be easy enough to say what, but it might not be so easy to do, especially if there were many infested trees, and those trees very large ones. If sheets were spread beneath the trees, and the limbs were severely jarred, or persistently shaken, many of these larvæ would fall, and could be gathered up and scalded or burned, or killed by any other means the operator might choose to adopt. A solution of whale oil soap, carbolic soap, a decoction of tobacco, or common lye thrown upon the trees by means of a garden syringe or pump, would destroy as many as were reached by these liquids. But from the observations which we have made during the past two years we should depend more upon destroying them when they come down from the trees to pupate. This takes place during the month of July. A few will pupate in the crevices of the bark on the trunks and larger limbs of the trees, but by far the larger number descend to the base of the tree, and if the trees have grass, rubbish or loose earth around them, they will pupate under cover of these; but here in the city of Lancaster, where the bases of the trees are surrounded by pavements, they pupated above ground in any little corner or crevice they could find, and they could have thus been swept up by quarts and destroyed, but no one seemed to think it was any of his business. This should suggest the contrivance of some sort of trap to catch them under these circumstances. As all do not generally reach the ground, by the washing of the trunks with the above liquids applied with a sort of mop, manipulated with a stiff hickory "scrub"—such as are used to clean out gutters—those stragglers which locate themselves there might be dislodged and destroyed. If this course was pursued towards the first brood, it might prevent a second brood. It is the second brood that goes into winter hibernation and perpetuates the species: and possibly some of this brood remain in the ground all winter in the pupa state, when they can have access to a favorable situation.

As we intimated before, this insect was introduced into this country about five and forty years ago, and first demonstrated its

destructive presence at Baltimore, Md. It was a long time in reaching Lancaster county, and it will soon show what it can do, if human means, or some inexplicable counteraction in nature—to which the insect world is sometimes liable—does not intervene to prevent it.

In warring against insects, however, the efforts should be simultaneous and continuous, or else after you have destroyed those on your own premises, you may be invaded by those from the premises of your neighbors.

This insect has been noticed by various writers as the *Galeruca calmariensis*, but this is a mistake. That species feeds on the leaves of aquatic plants, and differs from it in other respects. It is the *Galeruca xanthomelena* of Schon; but no particular matter about its name, it is its acts with which people have now to do, and how to circumvent it.

For a description of the insect, see THE LANCASTER FARMER, vol. 8, page 131; and if the reader has not the volume to refer to, that may be his own fault; but by the expenditure of a single dollar he may still obtain that which in after years he will not be able to procure for three times that amount.

The *pupa* is a pale yellow in color. If a few of these are collected and put into a small box containing a little earth, in a week or more the perfect insects will be evolved, and such a sight is better than a description.

THE ENGLISH SPARROW

It is wonderful how rapidly this bird is becoming discredited, in an economic sense, in our country. It is true that there may still linger a little rustic or romantic sentiment in his behalf, but as a greedy gobbler up of insects, as he was thought to be, people are generally losing confidence in him. If ever there was an opportunity for these birds to establish a character as efficient insect scavengers, or to redeem a tarnished one, that opportunity is just now. All over the city the larva of the "elm-tree beetle" is present in countless millions. The leaves are full of them; the branches are full; the trunks are full; the pavements in the city, wherever there is an elm tree, are full of them; and yet we have not observed a single sparrow where these noxious insects are found. This may seem strange, especially since the larva of the elm beetles seems to be just such a tender little morsel, as one would think ought to attract any insectivorous bird. The sparrows are everywhere, it appears, except where these worms are. There are always plenty of them in our streets, picking up any little morsels of food that may be found there, but they do not molest the elm-worms—not a bit of it. It is therefore not to be wondered at, that people are becoming impatient with them.

On the western gable of Col. Fordney's residence, in East Orange street, is a large climbing ivy, covering a large portion of the gable from the ground to the roof, and in that ivy there are a large number of sparrows' nests—there may be fifty or more—and these birds are fitting in and out of their nests "the whole of the livelong day." We have frequently taken a stand and watched them for half an hour at a time. The elm trees are in the neighborhood of their nests; and although when they sally forth they take various directions (presumably in search of food for their young), yet we have never noticed them taking their course towards the elm trees. They readily take to the streets, people's yards and gardens, where food seems to be scarce, but the banquet of elm worms which they might enjoy, they appear to utterly discard.

We indulge in no special prejudices against the English sparrows—indeed, we have heretofore defended them, when we thought them indiscriminately condemned. What we state now are facts—deductions from personal observation. There are the elm-beetles, and elsewhere are the sparrows, but not where the beetles are. This is unfortunate, especially at this time, when the beetles are so abundant and possess the possibilities of becoming more so. Nothing but a sparrow or other insect-eating bird could successfully reach them while they are on the leaves of the trees, and if these won't, then we fear we will have to bear the effects of a severe infestation, before there is an end of the beetles.

Theoretically considered, we have often wondered who was instrumental in first bringing these birds into the country, and upon what particular characteristics. It is true, during the breeding season the softer insects, such as caterpillars and other insect-larvæ, may constitute at least a portion of the food they feed to their young, but under no rule of classification have they ever been assigned a place among insectivorous birds. They belong to the great "Finch" family (Fringillidæ), and are therefore classed among the *Granivora* or seed-eating birds. What are they constantly doing in our streets? and why do they seem to prefer the streets? Not at all because they are attracted there by insects, but because of the seeds or grains and fragments thereof, which they find among the animal droppings, sweepings, etc., etc.

The fault is not with the sparrows, for they are but acting in obedience to the instincts of their natures. As well might you persuade a duck to roost in a henhouse high up among the gallinaceous fowls, or a hen to habitually "go in swimming" along with her ducklings, as to change the character of a granivorous or frugivorous bird, to that of an insectivorous one. There may be temporary departures from their normal habits under stress of circumstances, but when left in freedom they will ultimately revert to their first estate.

These birds must have existed before there were such places as streets, and gardens, and kitchen yards, but with the progress of human improvement they have so far departed from their normal habits as to prefer such places; not on account of the insects found there, but because of the more abundant supply of vegetable food; and their further demoralization has been brought about by human indulgence. People are in the habit of feeding them constantly, especially during the winter, and hence they concentrate in towns and villages rather than in the open country. People admire them for their pugnacity, or for their confidential and social characters. Many families have cherished them and fed them all winter, and the birds have repaid them in the spring, not by destroying the insects that infest their premises, but by picking the fruit-buds off their fruit trees. We have alluded to their pugnacity, which they have carried to the exclusion of our native sparrows and other birds from localities where they once abounded, if not abundantly, at least more plentifully than they are found now. Our native birds have almost entirely retired from their old haunts, and have resigned the field to these impudent "carpetbaggers," in disgust. Some time ago, we noticed a poor lone little native sparrow sitting on a high post mournfully overlooking Lancaster, something like a lone Indian overlooking the innovations of the white man. How similar their fates.

THE COW BUNTING AND ITS HABITS.

Mr. Casper Weaver, of North Queen street, on Wednesday morning, July 2nd, captured a full fledged "cow bunting" (*Molothrus pecoris*) in his garden, and has it now in a cage hanging under the tree whereon was the parent nest of the foster mother of the bird.

Its Name and Habitat.

This bird is known in various localities by different names; such, for instance, as cow-bird, cow-pen-bird, cow-blackbird, &c. It is by no means a rare bird, for there is perhaps not a State or Territory in our whole Union in which it is not found; but wherever it is localized, it has the same peculiar, selfish and unpaternal character.

Its Peculiar Habit.

Like the cuckoo of Europe, the female never builds a nest, never incubates her eggs, and never takes any part in rearing her young, leaving that entirely to their foster parents. The male is a selfish polygamist, and after their nuptials the females clandestinely deposit from one to three eggs (generally only one) in the nest of some other small bird, such as the Song Sparrow, the Ground Robin, or the "Summer Yellow Bird." When the young are hatched out, which is usually a day or two before the bird's own brood, these selfish little creatures proceed to heave their foster mother's own eggs or young over the edge of the nest, when of course they perish, and the little intruder is fed by the unsophisticated foster-mother, without a seeming suspicion that anything has gone wrong, and she transfers to it all the provident affection that she would have bestowed upon her own brood.

The Present Case.

In the special case to which we refer, the female cow-bunting chose the nest of the little warbler familiarly known as the "summer yellow bird." (*Dendroica æstiva*) which is hardly half the size of the greedy young "carpet-bagger" she is so anxiously and industriously feeding. All day she is assiduously engaged in gathering worms and other soft insects, which she feeds to her lubberly step-child through the wire bars of the cage, and she seems not to know anything else than that it is her own offspring, or, if she knows to the contrary, it does not abate her affection for it. How much like a hard-worked mother among the human species, toiling to support a set of selfish family loafers, who may be no nearer related to her by filial sympathy than this bird is to its foster mother.

How a Cow Bunting Looks.

The cow-bird or cow-bunting belongs to the order INSESSORS, or perching birds, and to the family ICTERIDÆ, or black birds. In the adult male, the head, neck and anterior half of the breast is a chocolate brown, and the rest is a lustrous black. The female is tinged with olive brown all over, but the young are a mottled greyish.

One of Its Foster Mothers.

The little summer yellow-bird, or yellow warbler, belongs also to the perching birds, and to the family SYLVICOLA—a very large family, containing a large number of pretty little warblers. They build their nests in bushes or small trees, and very frequently in apple trees, near houses.

When they once become domiciled they repose the utmost confidence in the human family, and often rear broods of young a few feet from the ground, near human habitations, and will allow persons to approach them during incubation without leaving the nest, and perhaps more than any other species they suffer the impositions of the stealthy and impudent cow-bird.

Where They Got Their Name.

These birds have derived this name from their familiar associations with the cows, often following them into the barnyards and perching upon their backs. We distinctly remember these birds as sitting on the backs of the cows and other kine since the days of our early boyhood—long before we knew of their peculiar nesting habits. The blue bird, the chipping sparrow and the golden-crowned thrush are also occasionally imposed upon by the cow bird, and instances are on record where these birds, on discovering the egg or eggs of this arch-intruder in their nests, have quietly proceeded in building another nest immediately over the first nest, thus defeating their adversary by enclosing its eggs in a prison, from which there is no escape, and which results in its ultimate destruction.

Not the First Time.

We are informed by Mr. Weaver that he observed the same kind of a bird in his apple tree a year ago, being fed by the little yellow bird, and he could not understand what particular relation existed between the two birds. He tried then, but did not succeed in capturing it. This summer he succeeded, but instead of the old bird abandoning it, it only the more industriously attended to the wants of its "bogus" charge.

THE CATALPA TREE.

This tree is becoming the subject of extensive cogitation in our country with reference to its cultivation; and Mr. E. E. Barney, of Dayton, Ohio—and, perhaps, also others—has been laboring for years to test its adaptability to rapid culture and growth, as well as the quality of its wood and the uses that can be made of it. Bless us, how very long it is since we saw the first catalpa tree—three-score years at least. *There* it stood before the door of the "apothecary" in our native town, solitary and alone; and O, how beautiful it looked in its summer bloom. We then knew no other name for it than the "cigar" tree. No very favorable opinion of the quality of its wood was then entertained, and next to nothing was known about its cultivation. It was a long time before a second tree appeared in the town—not during our boyhood, anyhow—and we are not clear as to how it was produced; but we think the base of a scion was surrounded with earth and bandaged, and kept wet until it threw out roots, when it was sawed off and planted. There are, or were, plenty of them, apparently, growing wild, on each side of the Pennsylvania Railroad near Philadelphia. A forest of catalpas would be a "thing of beauty and a joy forever," especially in their blooming season.

Mr. Barney, during the past season, has placed examples of the wood in the hands of Prof. C. S. Sargent, the distinguished arborist, of Harvard University, at Cambridge, Massachusetts, in order to bring the qualities of the Catalpa to the notice of the public; and after a careful investigation, the Professor submits, in part, the following as his report thereon, which we copy from the *Journal of Forestry*, London, England:

"I find that the specific gravity of the wood of the common *Catalpa bignonioides* is, when perfectly dry, .405; and that the specific gravity of the wood of the early blooming variety, *C. B. speciosa*, also perfectly dry, is .462. The ratio of the weight of any wood to the weight of an equal body of water, that is its specific gravity, gives in many respects the surest indication of its value for construction and fuel. But to show the relative value of Catalpa it will be well to compare its specific gravity with that of some better known or standard woods.

Specific gravity of	common Catalpa,	.405
" "	early blooming Catalpa,	.462
" "	Wild Cherry,	.488
" "	Canoe Birch,	.539
" "	Black Walnut,	.577
" "	Ailanthus,	.614
" "	American Elm,	.649
" "	White Oak,	.662
" "	Rock Elm, *Ulmus racemosa*, (Thomas.)	.832
" "	Eastern Hickory,	.838

"By this comparison it will be seen that Catalpa is inferior in weight, and consequently in strength and heat-giving qualities, to even such soft woods as the black walnut, the canoe birch, or even the wild cherry, which up to this time is the lightest of American hard woods which I have examined critically. It is remarkable that so soft and light a wood as the Catalpa should possess the power of resisting decay to a degree almost unknown in the hardest and heaviest woods. It is unnecessary for me to dwell at this time on the indestructible nature of this wood, for so many examples of its wonderful durability have of late been brought to public notice that the fact is now established beyond question. But why the soft wood of this fast-growing tree, which is traversed with large open ducts, nearly as broad as those of red oak, a wood which notoriously rots very quickly, should be able to resist decay to such a degree, is not clear; and this fact presents an interesting problem, which the chemist or the vegetable physiologist may perhaps be able to solve.

"The Catalpa can be safely planted in strong, rich soil, in any portion of the United States south of the 42nd parallel. Farther north it often suffers in severe winters, especially when young; and in the New England States, unless in a few favorable situations, the soil is not rich enough to make the planting of this tree as profitable as that of many others better suited to reach maturity in this section of the country. For that portion of the treeless region of the west, south of the 42nd parallel, especially for Kansas and Southern Nebraska, I am satisfied that no tree which has yet been suggested for general planting there will at all equal the Catalpa, either in the rapidity of its growth or the value of its wood, with the single exception, perhaps, of the Ailanthus.

"The growth of the Catalpa in the rich prairie soil is simply astounding. I have now before me a specimen cut from a tree which grew at Brownsville, Nebraska, and which shows but four annual layers of growth from the seed. It is 9¾ inches in circumference, and the growth of the first two years, 1¼ inch in diameter, is already changed into heartwood.

"During the autumn of 1877 the Missouri River, Fort Scott and Gulf Railway Company commenced experimental plantations of various trees on their land near Fort Scott, in Kansas. The Superintendent of the railway, in his report to the President on the condition of these plantations, at the end of their first year, says: 'The Catalpa has certainly proved to be the strongest grower, and most tenacious, standing the dry weather better than the other varieties, and at present rate will come to maturity years before other varieties are of sufficient size to be of any utility.'"

"Professor Sargent considers that the speciosa variety of the common Catalpa, *Catalpa bignonioides*, is the one to be preferred by the planter. This variety is distinguished from the common type by its earlier flowering habit and larger white flowers; larger and much flattened seed pods, often 16 to 18 inches in length, and much thicker walls; shorter and broader seeds, with wings of equal width to their rounded ends, which are terminated by a copious fringe of stouter hairs; and by its darker and thicker furrowed bark. The wood of this variety is considerably heavier and much superior to that of the ordinary type."

FORESTRY.

In appropriate association with the foregoing, in relation to the Catalpa tree, we adduce the following from a speech delivered by Hon. A. S. Paddock, of Nebraska, in the United States Senate, in February last, illustrating the close connection existing between forestry and the agricultural interests of the country. It will, no doubt, seem absurd to many land owners when they are admonished to foster or make an economical use of the forests now in existence, and still more absurd when they are advised to replenish, or plant new ones; and, perhaps, still more absurd when they are reminded that forests exercise a perceptible influence over the meteorological conditions of the weather, and hence both mediately and immediately affect the agriculture of the country, to say nothing about its domestic and commercial condition. There are, no doubt, many so situated that the dissipation of the forests and the displacement of the surplus wood are matters involving years of hard labor, and are therefore the objects of their chiefest concern. But this only relates to the smallest portion of the country, and even in those parts most densely wooded it is becoming manifest that the supply of good timber is on the wane, and that somehow the country has undergone a meteorological change; and when the absence of timber entirely, in vast tracts of country now opened up to agricultural enterprise, is considered, the importance of the subject increases vastly in its proportions. The masses of the people may be slow in apprehending this, but posterity will surely be sensibly impressed with our improvident folly if the present waste is not arrested and a system of sylvan economy is not initiated. Mr. Paddock very appropriately says:

"I will formulate my proposition thus: Agriculture cannot prove enduringly successful, and populations cannot be largely multiplied, although the conditions of both our soil and climate are highly favorable to such results, unless the forest areas are increased proportionately, at least, with the increase of the area of agricultural cultivation. Trees are the dominating members of the vegetable kingdom. They are necessary factors in the sum total of those influences which constitute the environment of animal life. Trees, by absorbing carbonic acid gas and emitting oxygen, act as agents in rendering the atmosphere life-sustaining. By interposing their foliage between the sun and the earth they serve a useful purpose in sheltering the soil from heat, and, as conductors of heat, in equalizing the temperature of the earth and the air. By covering the surface of the ground with a layer of leaves and mould, they greatly assist in preventing the escape of the heat from the soil, this layer of dead matter being still more useful in absorbing the fructifying rains and allowing the water to percolate steadily into the thirsty earth, instead of sweeping over the surface, disintegrating and washing it away. As a mechanical shelter trees play an important part in protecting both the ground and human habitations from cold and destructive winds. By their power of absorption the roots of trees take up from the soil and give off through their leaves an amount of moisture which, deducting therefrom the quantity absorbed in turn by the leaves from the air, is sufficient to exercise an important influence in increasing the general humidity of the atmosphere. As an agent in cooling the atmosphere about and above it, and thus increasing the frequency of rains, and the amount of precipitation of both rain and dew, the forest subserves a most beneficent purpose."

"By the protection afforded the soil against the escape of moisture, it preserves and tends to make regular and permanent the natural springs which are necessary to the maintenance of vegetable life. In protecting the ground on its surface from rapid evaporation of the rains which fall upon it, and providing a spongy covering which rapidly absorbs and distributes these rains, it prevents the disastrous inundations of rivers which too often occur when the surface of the ground offers no obstructions to the onward flow of rivulets that suddenly feed the main stream with their accumulated waters. The forest, too, guards the soil against abrasion and displacement from torrents and overflows, and thus, again, asserts its conservative influence for man's good. Moreover, we need trees for the delight they afford, as at once the most majestic, imposing and beautiful of nature's vegetable forms."

In this connection, and as a forcible illustration of the influence forest trees exercise upon water streams, and especially upon springs, we may educe the following experience of our own. When we were a boy of about fifteen years of age, we worked upon a farm on which the entire supply of drinking and cooking water was obtained from a free flowing spring at the base of a hill, then, as well as the narrow plain at its base, covered with trees. This spring had thus been used ever since the farm had been opened up to cultivation, was the only source of water for family purposes, and had never failed. Fifty years afterwards we visited the scene of our boyhood, and found the hill and plain denuded of their trees, and the spring entirely dry. There had been no water in the spring for twenty-five years, because all the trees and shrubbery had been removed twenty-five years ago, and but a single huge stump remained.

LIME AND LIMESTONES.

"Lime and lime without manure
Will make both land and farmer poor."

In the May and June numbers of the *Journal of Forestry* is a very elaborate paper on "Lime and limestones, their uses in structural works and in agriculture," which nothing but want of space prevents us from

transferring to our columns entire. It is written by Alfred J. Burrows, of Pluckley, Kent county, England, and discusses the subject analytically, scientifically and practically in detail. Of course, the *use* of lime is one thing, and the *abuse* of it is quite another thing, and it is this abuse that has given rise the adage we quote above; and also to its equivalent, that although it may enrich the father it may impoverish the son; because its tendency is to bring rapidly into use all the vegetable matter in the soil, and therefore the application of lime renders it necessary that manure be also unsparingly applied, for where the soil is primarily poor, lime alone can do but little good. A few even in our own county have indulged in disparaging statements in regard to the effects of lime on the crops, and a few others again have freely indulged in extreme counter opinions. The most intelligent and advanced views, however, are to the effect that lime is not absolutely in itself a *manure*, but that it acts an intermediate part in assimilating the soil and other species of manure; hence, lime alone—and especially where it is already in sufficient quantity—without manure, might be as barren of the desired results as millstones and hopper without corn in their relations to a grist. When this is seen, and intelligently acted upon, farmers will not "pin their faith" to lime alone, neither will they discard its use any more than they would the handles of their hammers or their hoes, those very essential intermediates between "will and way." Mr. B. says:

"The avantages of the use of lime are so many and so great that it is almost impossible to enumerate the whole of them. Their effects may be described as being both chemical and mechanical, and as being exercised both upon the organic and inorganic constituents of the soil. The following may be taken as a summary of the principal benefits:

"1. A larger produce of cereal crops of superior quality. This is especially the case with wheat, which becomes thinner skinned, and yields more flour. The peas grown upon limed lands are better boilers.

"2. Upon deep alluvial and clay soils it increases the crop of potatoes and renders them less waxy. Sprinkled over potatoes in the store heap it preserves them, and when riddled over the cut sets it wonderfully increases their fertility.

"3. Lime eradicates the finger and toe disease in turnips, and gives greater soundness and more nutritive qualities to the bulbs.

"4. It gives, when applied to meadow lands, a larger produce of nutritious grasses, and checks the foot-rot in sheep depastured upon them. It also exterminates bent*, as well as coarse and sour grasses, destroys couch grass, and acts powerfully upon the rye grasses.

"5. Upon arable land it destroys the corn-marigold, and weeds of various kinds.

"6. It rapidly decomposes vegetable matter, producing a large amount of food for plants in the form of carbonic acid gas.

"7. It destroys or neutralizes the acids in the soils, hence its adaptability to our soils.

"8. It acts powerfully upon some of the inorganic parts of soils, especially on the sulphate of iron found in peaty soils, and the sulphates of magnesia and alumina.

"9. It proves fatal to worms and slugs, and the larvæ of injurious insects, though favorable to the growth of shell-bearers.

"10. It destroys the germ of smut upon the seed of wheat, barley and oats, and is especially acceptable to the barley crop, which is generally of good quality upon chalky soils.

"11. Slacked lime added to vegetable matter causes it to give off its nitrogen in the form of ammonia. Upon soils in which the ammonia is combined with acids it sets free the ammonia, which is directly seized upon by the plants.

"12. Its solubility in water causes it to sink into and ameliorate the subsoil. When the soil contains fragments of granite or trap rocks, lime hastens their decomposition and liberates the silicates.

"13. Its combination with the acids in the soil produces saline compounds, such as potash, soda, &c.

"14. It exerts a marvelous effect upon rape, though it is said to injure flax, which in Belgium is not grown for seven years after liming.

"15. Strewed over the young plants, it destroys or drives away the turnip fly.

"16. Worked in with grass seeds, the beneficial effects of lime, chalk, marl and shell sand have been visible for a period of thirty years.

"17. It has a powerful pulverizing effect upon the wealden clay, on the sandstone formations, and on the granite and slate rocks.

"18. It is generally supposed to hasten the ripening of corn crops.

"19. It promotes the formation in the soil of what are called the double silicates. This process starts with the clay, or silicate of alumina, and is afterwards continued through the S. of alumina and lime, the S. of A. and soda, A. and potash, and A. and ammonia.

"20. Applied to the rot-heap lime effectually destroys the seed of weeds.

"To sum up its advantages—when properly applied to the soil—it purifies and stimulates its action, thereby promoting the growth of healthy vegetation of all kinds."

*Bent-Grass. A species of *Agrostis*, very common in pasture grounds, the bent or creeping stems of which are difficult to eradicate.

THE CURCULIO.

Dr. Kauffman of Iowa City gives the following method for extinguishing or driving off the Curculio as something new. Whether old or new, it is inexpensive and ought to be tried. He says:

"During the summer of 1847, I procured from the gas-house several gallons of coal or gas tar. I put about a quart in a long handled stew pan, and with a few shavings and a match soon had a dense black smoke. This I carried under my plum tree, so that the dense smoke pervaded all parts of the tree. My first efforts were very gratifying, in seeing insects of all sorts hurrying out of the tree. Ants came running down the tree, various kinds of worms and spiders let themselves down by their webs, and all winged insects flew out, leaving the tree deserted of all insect life. I spent about half an hour in smoking 42 trees, and this I repeated three or four times a week, unless a rain had washed off the smudge, when I again repeated the smoking. After my first effort I tried the shaking process, but invariably failed to catch or see a single specimen of the curculio. I continued this process until near the time of ripening, and got my first crop of plums, over 30 bushels. The whole cost of coal tar for those 42 trees during the summer was less than $2. I began the smoking a little too late, after I had tried for sometime the jarring into the sheet: therefore some of the fruit had been stung: and had it not been for this, my crop of ripe plums would have been still greater. During 1875 the plum crop was an entire failure, and I had no opportunity to continue this experiment: but the summer of 1876 brought a large plum crop, and I at once resorted to my favorite remedy. I commenced smoking my trees as soon as the plums were the size of a hazel nut, and continued up to the time of ripening, and not a single Curculio sting was to be seen on my fruit, the trees of which were treated to the coal-tar smoke. I purposely left trees of different varieties unsmoked, and all the plums, excepting one sort, were stung and dropped off before ripening." *Moore's Rural Life.*

[We would begin earlier—when the plums were the size of a narrow-fat pea.

It would be worth knowing also, what the "excepted" variety was: even if it were only of medium or inferior quality. There might be some compensation in quantity for the lack of quality, or no plums at all.]

Send in your back subscriptions.

HOW TO RAISE A BULL.

The following *poem* is from a work called the "Farmer's Friend," written by C. Macpherson, Dundee, Scotland, and published by the author. Without intending to criticise its literary quality we content ourselves with considering it from a *practical* standpoint; and viewing it thus, there probably would be a great waste of time saved if all poems (of which there are now so many published) were imbued with some practical and useful theme. Who would have thought, however, that there was so much poetry in a bull? (We do not mean an *Irish bull*, for some of them are brim full of poetry, but an Alderney, a Jersey, or a Durham, if you please.) But listen to Mac. and be instructed and edified:

"He of who's fame I would sing
Must *early* calved be in the spring,
And who should nurse the calf!—its mother—
Its mother only, and no other.
By no means mar their tranquil joy
By yelping dog or heedless boy;
Affright them not, or make them run,
Nor strike them with a club or stone ("stun.")
When young, ne'er let him touch your quoys,
Nor soon excite his sexual joys;
But keep him chaste in field or fold
Until he's fully three years old.
Then let him woo the chastest kine,
Yet in each season *serve* but nine.
Among your cows then he may stray,
And freely let their passions play,
And woo each other while they may;
Yet rigid keep this virtuous rule:
In one year, nine cows to one bull;
No more, if high breeds be your aim,
Unless you would your herds defame.
From four years unto five, six, seven,
He's in his prime; old at eleven,
And useless as a worthy sire,
As then declines his vital fire.
Work makes him docile, kind and strong,
Yet do not task his strength too long,
Tho' well he can endure the toil,
And make for man, to till the soil;
Then when you choose to make him fat,
He'll feed the better all for that.
Surfeit him not, nor feed him mean,
But just these two extremes between;
For food let his appetite be keen,
This keeps his blood and system clean."

—*Live Stock Journal.*

[That's the way he tells the story; and our readers can draw their own conclusions as to how far the story is a practical one.]

PACKING EGGS—WHICH END DOWN?

How doctors do disagree; and if it were not that there are opinions differing from both the following, we might be induced to conclude that both were right.

In the "Kitchen" department of the current number of *The Housekeeper*, we find the annexed items on "packing eggs."

"In whatever position an egg lies the yolk will always be gradually settling to the lower side, and the moment it rests on the shell it begins to spoil. In fresh eggs the yolk is nearer to the large end; moreover, the white in the small end is firmer, more solid, consequently the yolk has farther to go, and meets with more resistance before reaching the shell when set on the *small* end."

In the adjoining column a different writer speaks in this wise:

"There has always existed a great difference of opinion as to which end down eggs should be packed for winter use. W. H. Todd, the well-known Ohio breeder of poultry, writes us as follows, giving, as it seems to us, sound reasons for packing them larger end down. He says: 'The air chamber is in the *larger* end, and if that is placed down the yolk will not break through and touch the shell, and thereby spoil. Another thing, if the air chamber is down the egg is not as liable to shrink away.'"

Both these plans insist on preventing the yolk from touching the shell, in order to prevent "spoiling." In that they agree, but seem to disagree as to the manner in which that result can best be secured.

Mr. W. J. Pyle, of West Chester, says: Eggs will keep for one month, and hatch well if they are laid on their sides, instead of standing on either end, but not air-tight.

When standing on one end the "spiral cord" attached to each end is on a strain. This cord is attached to the yolk and suspends it in the centre, and keeps the same side of the yolk uppermost all the time, each one being twisted the contrary way. You can turn the shell but not the yolk; therefore, on the *side* is the proper way to keep them.

It is true Mr. P.'s system relates to *breeding* and the others to *packing* for market; yet, inasmuch as it covers nearly two months, it might just be as good a way to *keep* eggs as any other, because the production and consumption of eggs is so rapid and continuous that there is hardly a two months' supply on hand at any one time, except in special cases.

We have given these views thinking our readers may be able to gather something from each of them.

HOW TO PRESERVE GRAPES.

Will some of our patrons try the following remedy to preserve grapes in a fresh and luscious state beyond the usual grape season. We find it in the columns of an esteemed contemporary, but we are not able to vouch for its practicability. The remedy is simple and may be easily tried:

"Travelers say that the Chinese have a method of preserving grapes so as to have them at command during the entire year by cutting a circular piece out of a ripe pumpkin or gourd, making an aperture large enough to admit the hand. The interior is then completely cleaned out, the ripe grapes are placed inside, and the cover replaced and pressed in firmly. The pumpkins are then kept in a cool place, and the grapes will be found to retain their freshness for a very long time." We would gratuitously suggest, that the pumpkin be thoroughly ripe—else a rot might follow—and that the "plug" be so cut as to be self-wedging when it is replaced—that is, the knife should be inserted obliquely so as to make the plug or stopper widest at the outer part; so shaped, that it could not be pushed through.

MONTHLY REMINDERS.

In the Middle States, this, like June, is a month of labor, in the garden. Weeds are in rapid growth, plants are to set out, seeds saved, and various matters require attention. Beans plant for succession. Beets, the Long Blood and Sugar; also Mangold Wurzel may be planted for stock, as late as first of July. June is, however, much better. Beets, for late Winter and Spring use, may now be sown. Cabbage plant. The Winter sorts of Cabbage should now be planted out; where many are to be transplanted it is proper to await a suitable time—a heavy rain or showery weather; but in a small garden Cabbages may be transplanted almost at any season, by careful watering, and, if need be, shading. Celery plant. Endive sow. Peas, a few may be sown; they seldom do well at this season. Turnips sow.

Drumhead Savoy Cabbage.

An excellent Winter and Spring family Cabbage, partaking partially of the size of the Drumhead and the curled leaves of the Savoy. Market-gardeners usually find it profitable to provide a limited quantity for discriminating customers; for family use, it is only equaled by the Curled Savoy. It may readily be kept until late in Spring, and appears to improve by the process of ripening—becoming marrow-like and free from the rank flavor which sometimes attaches to the Cabbage. It really seems incredible that with such a variety as this attainable that people should be found cultivating the "Mammoth Drumhead," except for pigs; and is poor food for them in comparison with Beets, Parsnips, Carrots and other Roots which may be provided at moderate cost.

With progress in every art, and improving taste in all which interests us, it is curious to observe the persistence with which some people stick to old and obsolete varieties of vegetables—satisfied with what was familiar to them in their youth—apparently unconscious the world is moving onward, and satisfied to pick up their garden-seeds at the cross-roads store, where they may have been deposited for sale by an itinerant seed-seller—the remnant, perchance, of a box exposed elsewhere the preceding year.

It is not agreeable to make such comments, but this publication is designed for public benefit, and it becomes a duty to point out error.—*Loudreth's Rural Register.*

CONTRIBUTIONS.

For The Lancaster Farmer.

SUMMER TIME.

Summer time is coming now,
Summer time is here;
And we sit beneath the bough,
When the sky is clear.

For the sun is burning hot,
And we love the shade;
And the sweet forget-me-not
Hides within the glade.

And we love the cooling breeze,
As it fans our brow;
Coming through the leafy trees,
Ah! that sound is now.

Out upon the harvest field,
Where the men do reap;
Gather in the golden yield,
Pile it up on heap.

Some do rake and bind the sheaves,
Others load the wain;
Some do hear the rustling leaves,
Soon it will give rain.

Some do haul it to the barn,
There to store away;
We can lessons from them learn
For a future day.

Hark! I hear the dinner bell,
Pealing out so clear;
As it echoes through the dell,
Giving them fresh cheer.

Now we hear the farmer's votee,
Calling to the men;
"Till this evening we'll rejoice,
For the grain is in."

Gather all the precious gold,
Every sheaf but one;
And at eve we'll raise the pole,
When the work is done.

For the little feathered tribe
Cannot live on air;
And we ought, while it is ripe,
Give at least a share."

Hark! we hear the thunder roll,
See the lightning flash;
And anon descends the bolt
With a deafening crash.

And the rain comes pouring down,
Filling all our springs,
And the dry and parching ground,
Now the farmer sings.

For he thinks of shriveled corn
That does need the rain,
And of weary limbs so worn,
That can rest again.

Farmers with their busy hands,
Work with iron will;
And they want no idle hands,
They cannot stand still.

For the summer slips apast,
Ere we think it near;
But the wealth we have amassed,
Sometimes costs us dear. —*Leoline.*

For The Lancaster Farmer.

LARGE CATFISH.

Dear Editor: As promised in a former letter, I will give a little sketch of our big fish that dwell in this big, muddy stream.

There are two varieties of the cat tribe. The one called the Black or Channel cat. This one is usually found in the swift currents, and seems to follow in the wake of the steamboats, as they are often caught with food in their stomachs that is thrown overboard. Nothing seems to come amiss; from a dish of potatoes to the shin-bone of an ox. They also prey upon their own species, as they are frequently taken with one of their own sort, nearly half their own length, inside of them. One instance, close here, three fish were taken on one snood; one of about two pounds took the bait, another of about ten pounds swallowed this one, when a thirty pounder gobbled this one, and was taken in; the hook still remaining in the small one's mouth. Remember this is not a fish *story*, but a fact.

I have never caught any of these big fish, but have witnessed with great satisfaction the operations. Some years ago I helped to skin one that measured five feet eight inches in length, measured fourteen inches between the eyes, and weighed one hundred and eighty-five pounds. When the head was cut off a little three year old boy present might easily have crawled through its mouth. The manner in which this fellow was caught may be new to some of your readers and therefore I will give it. Large hooks are used, fastened to the lines about three feet long, baited with old bacon, dead birds, chicken entrails, or in fact almost any kind of meat. This short line is tied to the handle of a jug tightly corked; a block of light wood will also answer. Thus provided, a skiff is rowed up the river as far as it is intended to fish down. These blocks or jugs are cast afloat, considerably scattered, and as they float down the stream the fishermen let their craft follow. It is a pretty sight to look at ten to twenty of these afloat, and when one begins to bob there is excitement; but now is the time to keep cool, for it is well to let the fish tire himself before taking it in. At the proper time they approach quickly but quietly; one takes the jug or block in hand and raises the fish, while another stands with a sharp hook, with which he strikes the fish and helps the other to lift it into the skiff. This latter is no small task when a very large one. Another plan is similar to the mode in the eastern streams called outlines, here trot lines; which I think should be *taut*, as they are stretched pretty tightly.

The Yellow or Mud Catfish are heavier in proportion to their length, and dwell in still water, where there is plenty of mud.

This is very different fishing from what I did years ago in the Pequea creek, six miles southeast of your city.—*S. Miller, Bluffton, Missouri.*

For The Lancaster Farmer.

A GLIMPSE OF THE WEST.

Editor Lancaster Farmer: In these days of unusual migration, when almost every one has a friend or relative in the West, those in the East usually feel an interest in their welfare; and especially while so many reports are circulated of the privations they have to endure, and the homesickness they suffer on the rainless, treeless and shelterless prairies of Kansas, Nebraska and othe. States.

A few weeks' travel in Kansas, where I came in contact with a large percentage of Pennsylvanians, not a few of which were former residents of our own garden county, I think justifies me to make a brief report of what I saw and heard.

The colony from this and neighboring counties, which settled in Dickinson county this spring, have nearly all located, and seem quite at home; no complaints were heard, and homesickness is emphatically denied. And, although they are obliged to put up with some inconveniences to which they were unused in the East, they have no doubt already imbibed some of the go-ahead spirit so characteristic to western people, that a few years hence they will be pretty well fixed, unless some unusual or unexpected reverses should befall them.

To the eastern explorer who has never before seen a prairie, this reputed rainless desert presents attractions of which, "in his philosophy," he had never dreamed. The broad, living green expanse of level and rolling prairie, interspersed with bluffs 20 to 50 feet in height, presents landscapes truly enchanting to the beholder. The rivers, as also the smaller streams, are lined with timber, which adds charm to the scenery.

The many beautiful and fragrant flowers,

amid the songs of the meadow lark, prairie hen, and many other feathered songsters, make travel by no means monotonous.

The social character of the citizens of Kansas is a feature which will attract newcomers and cause them to feel quite at home. The stiff formality, so prevalent in the East, is almost unknown here. The honest, industrious comer is heartily welcomed, and receives all the necessary encouragement to become a permanent citizen. But woe to the tramp, the liquor guzzler and the thief. In all my travels through the State I met none of these characters, knowing them to be such. The latter, of course, can move in disguise, but I met an officer, with a span of fast horses, in hot pursuit of law-breakers, and was then confident of capturing his game, having traveled 140 miles.

Society is as good as in any other State. The progressive spirit of the people of Kansas has carried innovation upon the customs of the older States, and instead of following in the old ruts they are leading many of the older States. For example, the State Board of Agriculture was organized years before that of our State; and their museum, in the Capitol at Topeka, would be a credit to the old Keystone State. There are displayed cereals and grasses in great variety; some from other countries.

The botanical, entomological and ornithological departments are well filled, as also that of native wild animals and reptiles. Textiles and textile fabrics, fossils and minerals, besides many other objects of interest, all make up a display which much older States might envy. The remarkable fertility of the soil, with so small a percentage that is not tillable, justifies its claim to become the leading agricultural State in the Union.

In fact, it is already established in wheat culture, as the crops in 1878 was 32,000,000 bushels, which was above the yield of any other State. The present crop, however, will be a partial failure, evidently in consequence of so large a proportion having been plowed and sowed too late, amid extreme drouth, followed by a severe winter and dry spring. In corn products it will be first, as soon as there is sufficient live stock raised to make the crop marketable in less bulk. The condition of the present crop appears better than that of any other State through which I passed westward.

In pomology, the State will soon stand among the first. At an altitude of 800 feet above the sea level in the eastern, to 3,000 in the western part of the State, with soils well adapted, its horticultural resources justify these predictions, and especially when we consider the results already attained in the eas ern section of the State. The larger portion of the State lying south of the 39th parallel, makes the season three to four weeks longer than with us, and the winters generally less rigid. An abundance of water is obtained at a depth generally averaging less than thirty feet. Excellent building stone is easily obtained in many parts of the State. The question will then naturally arise, are there then no drawbacks there to the actual settler? Certainly there are, but not so many as are generally reported. Lack of timber (except in the eastern part) is probably the most prominent, but at the present rate of planting it may become a well-timbered State. In short, where we find permanent settlers of six to ten years or more, the appearances are quite homelike, and by no means so uninviting as some writers would have us believe.—*H. M. E.*

For The Lancaster Farmer.

THE MOON'S INFLUENCE.

Editor Lancaster Farmer: In my communication, published in the May number of your valuable journal, in reply to J. G., while giving some reasons for doubting that the changes or signs of the moon have any appreciable influence on the weather or the growth of vegetation, I admitted that it is by facts and experience, rather than by abstract reasoning or theory, that the question in dispute must be settled; and added:

"If, however, J. G. can show by a series of carefully conducted experiments, by himself or others, extending over a considerable space of time, that the signs or changes of the moon have the effects attributed to them, or any sensible effect on the crops, then we will have to admit that he is justified in his belief. Until that is done it cannot be expected that intelligent agriculturists will generally adopt his theory."

To this call, or challenge, J. G. has not yet made any response; but another writer who signs himself "*A Seeker after Truth*," comes to the rescue in the June number of The Farmer. Instead, however, of favoring your readers with the "series of experiments" I asked for, he contents himself with giving two or three isolated cases, where, as he says, the facts corresponded with the theory he upholds. The first case he mentions is that of two post fences he had erected, some thirty-five years ago, on the opposite sides of a lane. One of these fences was set when the *sign was up* and the other, about two weeks later, when the *sign was down*. A year or so afterwards he noticed that the bottom rails in the former remained up so high as to permit small pigs to creep under, while in the latter the fence settled down so that the bottom rails touched the ground.

This is the only fact "A Seeker" adduces to prove that the changing signs of the moon have the particular influence he here attributes to them. Suppose he had ascertained a year or so after the fences were built that one of them was set in the morning and the other in the evening, would it not be quite as reasonable to conclude that it was the sun's *ascension* and *descension* as the moon's, that held one fence up and forced the other down? He does not tell us whether they were both set at the same time of day, or whether rains or frosts had intervened, or whether the nature of the soil was precisely the same on the two sides of the lane; yet from one single coincidence he would have us to infer infallibly that the moon and the moon alone was accountable for the difference in the level of the fences. It may be said that many others have had similar experience of the moon's influence on fences, &c., and no doubt such is the fact. But all such testimony is utterly worthless so long as each or all of the witnesses have only to offer one or a few isolated or selected experiments which make in favor of their theory. In that way any theory, however groundless, can be made to appear plausible to those whose range of knowledge and reasoning powers are confined within very narrow limits. Give me leave to select my experiments, and I could prove to the satisfaction of one-half of the people that exactly the opposite effects follow the changes of the signs from those now attributed to them.

But look at the absurdity of the belief, in this case of "Seeker's" two fences. Did the moon's influence cease to operate on them after the first two weeks? If the posts being set when the sign was up were thereby prevented from settling in the ground while the sign continued up, what was to prevent it from being forced down as soon as the sign changed, so that after it had the full effects of an alternate up sign and a down sign, the force in one direction would neutralize that in the other, and leave the fence just where it would have been if the moon had had nothing to do with the matter; and the same with the other fence, that was set in the down sign? I hope "A Seeker after Truth" will show us how this is, if he can.

When this writer assumes that an "amateur farmer" must have plenty of leisure, he is not altogether logical. Horace Greeley was an amateur farmer, yet he led one of the busiest lives of any man of his day. The respected editor of The Lancaster Farmer is another instance. And for my part I have generally been kept quite as busy, at one thing and another, as the average of *practical* farmers. Nevertheless I found time to adopt "A Seeker's" advice to some extent, even before he gave it. I have "honestly" tried quite a number of experiments, at different times, and made some observations in regard to the effect of the moon's changes on the weather, the crops, &c., and I am compelled to say that I have not been able to discover that there is anything in the sign theory whatever. During this very spring and summer I made a test which a believer in the signs recommended to me, by laying down bricks on a grass plot, first when the sign was down and afterwards when the sign was up, leaving them on each occasion the same length of time and until the sign changed. I repeated the experiment several times, and I declare that I was entirely unable to perceive any difference in the settling down of the bricks or the deadness of the grass under them, between those placed during the up sign and those in the down sign.

Another of "A Seeker's" cases is that of his killing briers in a fence row by digging them up on a particular day in August. As he does not say it was in any particular sign of the moon, I don't see what this has to do with the question in hand. But I have been told by practical farmers that briers will always be killed by cutting them off in August, without reference to the "sign."

The case of the lady who *always* transplanted her flowers when the moon was passing through the sign of Libra, and thereby kept them clear of insects (aphids), is the last and only remaining one "A Seeker" adduces; and it may be allowed to pass with the remark that as she never tried transplanting in any other sign, her opinion cannot be regarded as very conclusive, especially when it is considered that plenty of ladies may be found that are never troubled with aphids on their flowers, who pay no attention to the signs when they transplant them.

Now, a word about "A Seeker's" slur on Dr. Lardner. This eminent scientist, it appears, once *predicted* that steam power could not be used *profitably* as a motor to cross the ocean. And because he is proved to have been mistaken in that opinion, our "Seeker after Truth" would whistle him down the wind as though he were a man of no account and not worthy of belief when he relates facts that have already transpired! If a man is ever so mistaken in opinion as to what may happen in the future, does that destroy his credibility as a witness when he tells us what has taken place in the past? I beg leave to differ with the illiberal critic who thinks so. But aside from the conclusions of Dr. Lardner, what has this writer, who so much despises his opinions, to say of the fact related by him, and which I believe has not been disputed, that complete registers of the weather kept throughout Europe for fifty to a hundred years show that there has been no correspondence between the changes of the moon and the changes of the weather. Also that a long course of experiments have proved that there is no foundation for the belief that trees should be grafted, or timber felled, or vegetables planted, in one sign or phase of the moon rather than in another. And such appears to be the unanimous opinion of all persons of whom we have any knowledge, that have investigated the subject carefully, thoroughly and scientifically. Can the believers in the potency of the signs point to a single man, within the last hundred years, with enough astronomical knowledge to calculate an eclipse or the times of the moon's rising and setting, who has any belief in their theory? If not, how do they account for the remarkable fact, that it is only those who are confessedly ignorant of planetary laws and motions that have correct notions of planetary influences?

Chambers's Encyclopedia, a work of very high authority, in its article on the "Moon," speaks of the belief in the influence of the moon's changes or age in respect to killing animals for food, sowing seeds of various kinds, &c., &c., as "a *superstition*" that prevailed among the common people in England *in the seventeenth century;* from which expression it appears that the belief in question is no longer held by any class of people in Eng-

land; and I do not think we ought to feel proud if this old, discarded English superstition has emigrated to these shores and found a final cherished home among the honest but too credulous farmers of Lancaster county.—*Amateur Farmer, Lancaster, July* 1, 1879.

SELECTIONS.

THE CROPS OF THE COUNTRY.

Government Reports of Cotton and Wheat Prospects.

The returns to the Department of Agriculture indicate an increase in the area planted in cotton of somewhat over 2 per cent. The percentage, as compared with the acreage of 1878, is as follows: North Carolina, 47 counties reporting, 106; South Carolina, 18 counties, 100; Georgia, 71 counties, 102; Florida, 12 counties, 97; Alabama, 28 counties, 103; Mississippi, 39 counties, 100; Louisiana, 18 counties, 98; Texas 58 counties, 107; Arkansas, 40 counties, 101; Tennessee, 18 counties, 103. The average condition is not so high as last year, being 96, while in 1878 it was 99. The stand is generally good, but about two weeks late.

Winter Wheat—The June returns show that the average condition of winter wheat is 90, against 98 last year. The Pacific coast is considerably over the average, Oregon rising to 104. The South Atlantic States average 96, South Carolina reporting 108 and Georgia 112. The States north of the Ohio river average 95, Indiana reaching 103. New England averages 94, the Southern inland States, 88, the Middle States 86, the Gulf States 83, and the trans-Mississippi States, 79. Drought has been felt more or less severely in all parts of the country. From the South come some complaints of Winter-killing, and from the North and West, of the Hessian fly. Grasshoppers have also been heard of beyond the Mississippi.

Spring Wheat—The acreage sown this spring is about 4 per cent. increase over last spring. On the Pacific coast, California reports over 10 per cent. increase, while Oregon falls off 1 per cent. The trans-Mississippi States and New England States increase 5 per cent. Texas retains her previous acreage. Of the States north of the Ohio river, Ohio and Indiana make no reports of Spring wheat, the other three States fall off 3 per cent. Minnesota increases 9 per cent, while Iowa decreases 1 per cent. The Middle States fall off 10 per cent. The condition of Spring wheat is about the same as Winter wheat—90, all the States being below the average. The crop has been subject to the same climatic influences as Winter wheat.

In the Territories wheat-raising has advanced westward more rapidly than statistical inquiries have been able to reach. There is a vast increase here, which must be left to subsequent inquiry. The department has information that one county in Dakota, which last year sowed only 50 acres, has this year under vigorous growth over 4,000 acres. Many other cases of very large increase are reported.

THE USE OF THE FEET IN SOWING AND PLANTING.*

It may be useless to throw out any suggestions relative to horticultural operations to such a body of practical men as is now before me. Yet I candidly admit that although I have been extensively engaged in gardening operations for over a quarter of a century, I did not fully realize until a few years ago the full importance of how indispensable it was to use the feet in the operations of sowing and planting.

Particularly in the sowing of seeds, I consider the matter of such vast importance that it cannot be too often or too strongly told, for the loss to the agricultural and horticultural community by the neglect of the simple operation of firming the soil around seed must amount to many millions annually. From the middle of April to nearly the end of May of this year, in many sections of the country there was little or no rain; such was particularly the case in the vicinity of New York, where we have hundreds of market gardeners who cultivate thousands of acres of cabbage, cauliflower and celery, but the "dry spring" has played sad havoc with their seed beds. Celery is not one-fourth of a crop, and cabbage and cauliflower hardly half, and this failure is due to no other cause than that they persist in sowing their seeds without ever taking the precaution to firm the soil by rolling. We sow annually about four acres of celery, cabbage and cauliflower plants, which produces probably five millions in number, and which we never fail to sell mostly in our immediate neighborhood to the market gardeners, who have many of them even better facilities than we have for raising these plants, if they would only do as we do, firm the seed after sowing, which is done thus: After ploughing, harrowing and leveling the land smoothly, lines are drawn by the "marker" which makes a furrow about two inches deep and a foot apart; after the man who sows the seed follows another, who with the ball of the right foot presses down his full weight on every inch of soil in the drill where the seed has been sown; the rows are then lightly leveled longitudinally with the rake; a light roller is then passed over it, and the operation is done.

By this method our crop has never once failed, and what is true of celery and cabbage seed is nearly true of all other seeds requiring to be sown during the late spring or summer months.

On July 2d, of 1874, as an experiment, I sowed twelve rows of sweet corn and twelve rows of beets, treading in after sowing every alternate row of each. In both cases those trod in came up in four days, while those unfirmed remained twelve days before starting, and would not then have germinated had rain not fallen, for the soil was dry as dust when planted.

The result was that the seeds that had been trodden in grew freely from the start and matured their crops to a marketable condition by Fall, while the rows unfirmed did not mature, as they were not only eight days later in germinating, but the plants were also to some extent enfeebled by being partially dried in the loose, dry soil.

This experiment was a most useful one, for it proved that a corn crop, sown in the vicinity of New York, as late as July 2d, could be made to produce "roasting ears" in October, when they never fail to sell freely at high rates, but the crop would not mature unless the seed germinated at once, and which would never be certain, at that dry and hot season, unless by this method.

The same season in August, I treated seeds of turnip and spinach in the same way; those trod in germinated at once and made an excellent crop, while those unfirmed germinated feebly and were eventually nearly all burned out by a continuance of dry, hot air penetrating through the loose soil to the tender rootlets.

Of course this rule of treading in or firming seeds after sowing must not be blindly followed. Very early in spring or late in fall when the soil is damp and no danger from heated, dry air, there is no necessity to do so, or even at other seasons the soil may be in a suitable condition to sow, and yet to be too damp to be trodden upon or rolled; in such cases these operations may not be necessary at all, for if rainy weather ensue the seeds will germinate of course; but if there is any likelihood of continued drouth the treading or rolling may be done a week or so after sowing, if it is at such a season as there is reason to believe that it may suffer from the dry, hot air.

Now, if firming the soil around seed to protect it from the influence of a dry and hot atmosphere is a necessity, it is obvious that it is even more so in the case of plants, whose rootlets are even more sensitive to such influence than the dormant seed.

Experienced professional horticulturists, however, are less likely to neglect this than to neglect in the case of seeds, for the damage from such neglect is easier to be seen, and hence better understood by the practical nurseryman, but with the inexperienced amateur the case is different; when he receives his package of trees or plants from the nurseryman, he handles them as if they were glass, every broken twig or root calls forth a complaint, and he proceeds to plant them gingerly, straightening out each root and sifting the soil around them, but he would no more stamp down that soil than he would stamp on the soil of his mother's grave. So the plant in nine cases out of ten is left loose and waggling, the dry air penetrates through the soil to its roots, the winds shake it and it shrivels up and fails to grow; then comes the anathemas on the head of the unfortunate nurseryman who is charged with selling him dead trees or plants.

About a month ago I sent a package of a dozen roses by mail to a lady in Savannah; she wrote me a woeful story last week saying that though the roses had arrived seemingly all right, they had all died but one, and what was very singular, she said, the one that lived was the one that Mr. Jones had stepped on, and which she had thought sure was crushed to death, for Mr. Jones weighs 200 lbs. Now though we do not advise any gentleman of 200 lbs. putting his brogans on the top of a tender rose plant as a practice conducive to its health, yet if Mrs. Jones could have allowed her weighty lord to press the soil against the root of each of her dozen roses I much doubt if she would now have had to mourn their loss.

It has often been a wonder to many of us who have been workers in the soil for a generation, how some of the simplest methods of culture have not been practiced until we were nearly done with life's work. There are few of us but have had such experience; personally, I must say that I never pass through a year but I am confounded to find that some operation cannot only be quicker done, but better done than we have been in the habit of doing it. These improvements loom up from various causes, but mainly from suggestions thrown out by our employees in charge of special departments, a system which we do all in our power to encourage. As a proof of the value of such improvements which have led to simplifying our operations, I will state the fact that though my area of green-house surface is now more than double that which it was in 1870, and the land used in our florist business one-third more, yet the number of hands employed is less now than in 1870, and yet at the same time the quality of our stock is infinitely better now than then. Whether it is the higher price of labor in this country that forces us into labor-saving expedients, or the interchange of opinions from the greater number of nationalities centering here that gives us broader views of culture, I am not prepared to state, but that America is now selling nearly all the products of the green-house, garden, nursery and farm, lower than is done in Europe, admits of no question, and if my homely suggestions in this matter of firming the soil around newly-planted seeds and plants will in any degree assist us in still holding to the front, I will be gratified.

*Read before the American Association of Nurserymen at Cleveland, Ohio, June 18th, 1879, by Peter Henderson, of Jersey City, N. J.

DISINFECTION.

The State Board of Health of Massachusetts have lately given to the public the following useful information on the above subject:

Recent experiments made under the direction of the International Cholera Commission have shown that the ordinary methods of disinfection are inefficient, and in practice they have often failed to arrest the spread of infectious diseases.

As it is impossible to experiment directly

upon the unknown low organisms, which are thought to be the means of trausporting the various infectious diseases, the effects of chlorine and sulphurous acid were studied upon known living organisms; the probabilities being thought to be in favor of the theory that complete disinfection should destroy at least all known forms of life, although it may be true that the tenacity of life of the infective matter of various diseases differs, just as the degree of cold necessary to put a stop to yellow fever is much less than that required to arrest the spread of cholera.

Chlorine and sulphur fumes, in sufficient quantity, were found to be efficient in killing insects, fungi, bacteria and infusoria; the objections to chlorine in houses being that it is more costly, that its use is more difficult, and that it destroys metals, textile fabrics and colors.

The burning of ten grammes of sulphur for each cubic meter of air space, tightly closed, was found not to kill bacteria, infusoria, or all insects; twenty grammes, however, were proved to be sufficient for that purpose. One volume of water, when saturated at 59° Fah., absorbs thirty-seven volumes of sulphurous acid—enough to kill all the low organisms found in putrid water.

The following articles were found uninjured after several hours' exposure to an atmosphere in which twenty grammes of sluphur had been burned to every cubic meter of air space: A clock of steel and brass, rusty and clean nails, gold and silver money, a military epaulet, various colored silk articles, a colored rug, calico, down pillows, a gilt-framed looking-glass, books, water in an uncorked bottle, flour, meat, salt, bread, apples, cinnamon, vanilla, cigars, wall-paper, oil-paintings, varnished articles, gas fixtures, water fixtures; a highly polished razor had a slightly clouded appearance on its upper side, but that was easily rubbed off. The flour and meat were cooked and eaten, and the cigars were smoked, without any abnormal taste or smell being observed; in the bread some of the observers noticed a slightly acid taste, the inside portion of the apples was unchanged, the skin was slightly sour; the water, after standing, had an acid reaction, but no decided taste or smell. Litmus paper placed between the leaves of books and under the carpet was turned bright red. Many of the articles exposed had a decided smell of sulphur at first, but that soon disappeared.

Experiments seem to show that clothing, bedding and other articles may be disinfected without being changed chemically or injured; and it should be added that practically this method has apparently accomplished perfect disinfection, as tested in Berlin.

If we may judge from these results, effective disinfection, by burning sulphur, requires eighteen ounces to each space of one thousand cubit feet. The sulphur should be broken in small pieces, burned ever a vessel of water or sand, so as to avoid danger from fire, and, if the room is large, it should be put in se arate vessels in different places. The room should be tightly closed for six hours and then aired it is better that the room should be warm than cold. Of course, efficiently disinfected air is, during the process of disinfection, irrespirable. Most articles may be disinfected in this way, if hung up loosely in the fumigated chamber, although it would be an additional safeguard to expose anything thick, like a bed-mattress, to prolonged heat at a temperature of about 240° Fah., and, indeed, heat must, with our present knowledge, be considered the best disinfectant. With this end in view, local boards of health are advised to procure furnaces and laundries, as is commonly done in other countries, to be used for the sole purpose of disinfecting articles which have been exposed to infectious diseases,as recommended in the Ninth Annual Report of the State Board of Health, and described by Dr. A. H. Johnson, in an exhaustive paper on scarlet fever (pp. 225 *et seq.*), in that report. Of course, a much simpler disinfecting furnace than that described will answer every purpose. For ordinary use, in disinfecting houses, the sulphur process is the best.

A solution of chloride of zinc (one part of Burnett's disinfecting fluid to two hundred of water) very quickly kills bacteria which have been placed in it, and arrests putrefaction. Caustic lime serves equally as well (1 to 100), but leaves a sediment not always easy to remove. Carbolic acid in sufficient strength to be effective (1 to 100) is more expensive and of dis igreeable odor.

It is needless to add that "disinfectants" used in sufficient quantities to destroy bad smells do not necessarily kill microscopic living orgauisms; and it is not supposed that they directly influence the so called "germs" of the infectious diseases, unless concentrated to the extent which has been mentioned.

Finally, fresh, pure air acts as one of the best "disinfectants" by enormously diluting the infectious matter, and, under certain conditions, including time, must render it inert to all effect, even it not quickly destroying it, as many think is the case.

SUGAR FROM INDIAN CORN AND SORGHUM.

An Important Statement Before the State Board of Agriculture.

One of the most important papers presented during the late session of the Board was that submitted by Mr. F. L. Stewart, of Murraysville, Westmoreland county, Pa., and read by Mr. Florence J. Smith. Samples of the sugar were submitted for the inspection of the delegates.

In presenting at this time a brief account of the new process of sugar manufacture, with which my name is associated, it will be necessary for me to allude particularly to the history of my researches in this line of work, inasmuch as all the facts of that sort which the general public cares to inquire about have been published. But it affords me great satisfaction, as a Pennsylvanian, to be able to say that my first systematic experiments directed to the extraction of sugar from the juice of the green stems of Indian corn were made in Philadelphia, where I went the Centennial year, and that the fruits of that work were exhibited at the International Exhibition a few days before it closed. I have responded to an invitation to exhibit the process now perfected in practical operation in the hall of the Permanent Exhibition, during the continuance of the approaching State Fair.

Briefly described, the process deals with saccharine juices containing in their normal condition both cane and fruit sugars, the former largely preponderating.

I recognize three distinct classes of saccharine juices, viz:

First. Those like the tropical sugar cane and the beet, which, when their juices are mature, contain in association with other substances true crystallizable sugar only.

Second. Those like most fruits, such as the apple and the grape, which, whatever their composition otherwise, contain no true sugar, but only glucose, etc.

Third. Those like maize and sorghum, which have not heretofore been generally recognized as distinct, containing, in their best condition, both cane sugar and uncrystallizable sugar, but which, by reason of the defective modes of treatment heretofore resorted to, have proved practically uncrystallizable.

The difficulties are now entirely removed. It is now clearly shown that the juices of maize and sorghum grown in the United States are richer in sugar of the true cane type than any other plants that can be grown intemperate latitudes; that nine-tenths of their saccharine matter is such sugar, and that the impediments to crystallization are such as are peculiar to these plants.

Accordingly, I find that neither the processes adapted to the extraction of sugar from the Southern cane, nor the much more elaborate or costly methods of the beet-sugar manufactureres in Europe, are appropriate to the successful extraction of sugar from these plants, which in this case involves entirely new conditions and requires radical changes in the mode of chemical treatment.

Entirely aside and from its advantages as an antiseptic and a decolorizer, I have discovered a peculiar property in the dioxide of sulphur when employed upon these juices under certain conditions, which, heretofore unknown and unused, now perfectly solves the problem of the separation and crystallization of the sugar. This is done *expeditiously, cheaply* and *certainly*.

Practically, then, the value of these new sugar-producing plants may be concisely stated as follows:

First. The stems of Indian corn, in any of its many varieties, if taken at the proper stage of development, as well as those of the different varieties of sorghum, contain in great abundance a saccharine juice scarcely excelled in richness by the sugar cane of Louisiana. The sugar produced by this process is true crystallized cane sugar. Maize sugar, it need hardly be said, it is not the so-called and comparatively worthless "corn-sugar" sometimes made from the starch of the ripened grain by a well-known chemical transformation, but it is a natural product of the immature plant. One hundred pounds of the stems of these plants at the proper period of their growth, (when the grain is in the milk in the case of corn and shortly after the flowering period to perfect ripeness in the case of sorghum) about 87½ parts of juice and 12½ parts of woody fibre and insoluble substances. 12 to 15 per cent. of the juice is crystallized cane sugar,nearly all of which can be extracted.

Second. The impurities which hinder crystallization, as already said, are of a peculiar kiud, and resist every other known mode of treatment except that known in this process. The sugar so made is of as good quality as that made from the Southern cane or the beet, and is produced far more easily and cheaply.

Third. Like the sugar cane and unlike the beet, these plants possess a saccharine quality of the juice which is little affected by the presence of nitrogenous substances in the soil. Hence they are adapted to a wide range of soils, notably those of the Western prairies, where the beet is a failure.

Fourth. All varieties of Indian corn and sorghum yield this saccharine juice, and naturai hybridization does not greatly affect its quality,and hence but little care, comparatively, is needed to prevent intermixture of varieties, although by careful selection, richer varieties than those now existing will, no doubt, be produced.

Fifth. The immature corn plant only being used for this purpose, the sugar may be produced within a little over three months from the time of planting the seed. Hence all danger of frost may be avoided in our extreme Northern States, and generally the ground can be used for producing two crops in a season—a sugar crop, followed by turnips, etc. In these respects, as well as in many others, these plants have a great advantage over both the Southern cane and the beet. Some of the most prolific varieties of sorghum require but a little longer period to mature their juice than Indian corn.

Sixth. The yield of sugar per acre from a single crop will range from 2,000 to 3,000 pounds, or equal to the average from the sugar cane and the beet at their best, *and at one-half of the cost*. The total cost of production, including the cultivation of the ground, the harvesting of the crop, manufacture, interest on machinery employed, chemicals, royalty, etc., should not exceed 2½ to 3 cents per pound. The yield of sugar from each gallon of dense syrup produced will vary from 9 to 11 pounds, averaging 10 pounds. The yield per acre of ground planted may therefore be roughly estimated by the known capacity of the land in any given locality to produce crude sorghum syrup in former years; 200 gallons of dense sorghum syrup, crystal-

lizing 2,00 pounds or a ton of sugar per acre, is an easily attainable yield on good soil with good cultivation and proper crushing mills for expressing the juice. Of course, where a crop of corn is planted for the sugar alone it must be grown much more densely on the ground than when the ripened grain is the object. For example, common field corn sown in drills, so that the corn stems will stand four to six inches apart—the rows 3½ feet apart—yields on soil of medium quality an average of 250 pounds of trimmed stems to each 100 feet in length of the rows, yielding to a properly-constructed mill at least 66 per cent. (165 pounds) of juice of specific gravity, 1.057, of which ten per cent. (or 16½ pounds) of sugar is by this process easily extracted, or at the rate of over a ton of sugar to the acre of ground. In comparison with this, the same kind of corn, planted in rows the same distance apart, but in hills averaging three feet apart and three stems to the hill, so that the grain may be fully developed in the "roasting-ear" state, the yield of sugar will be only about one-half of that in the former case or about 1,000 pounds per acre.

Seventh. The hot summer climate of this portion of North America is unequaled for the growth of these plants, as the exhibits at the late International Exhibition at Philadelphia fully manifested, and the improved agricultural implements and methods now in use in maize culture will simplify and cheapen immeasurable its production.

Eighth. If a combined sugar and grain crop is desired the largest-stemmed varieties of sweet corn should be grown. The grain may be cured by drying when it is in the proper condition; but the ears of field corn may be removed before they harden and fed to stock, either fresh or dried. There is scarcely any difference in the saccharine strength of the juice of "sweet" and field corn. Sorghum, however, yields more sugar than most varieties of sweet corn on account of its much larger stems.

Ninth. Great advantage is afforded in the manufacture of the new sugars, from the circumstance that the period of cutting and working the crop into dense syrup occurs at a time when the season for out-door work is the most favorable and when the days are long. No loss is likely to result from inclemency of the weather. Futhermore, the process of manufacture, when carried on by this system, may safely be arrested at a point where it may be completed during the winter, when labor is cheap.

Tenth. A large crop of blades and tops for fodder, equal to hay—the ripened seed of the cane—which, when crushed, is equal to oats, and the offal of the sugar factory for manure, are supplementary to the sugar crop and very valuable.

Eleventh. By judicious treatment of the soil, returning to it regularly all that has been removed from it except the saccharine product, a sugar crop is the least exhaustive of all crops that can be grown, and improvement of the land is easy and certain. New lands are equally adapted to it.

Twelfth. The force of the various natural advantages possessed by these plants in the United States will be found to be greatly augmented by the circumstance that the departures from the old processes of manufacture now necessary to be adopted are all in the direction of greater simplicity, cheapness, and ease of management in accomplishing the result—the reverse of what the more complex nature of these juices would seem to indicate. It will be found, for example, that the cost of the manufacture of corn or sorghum sugar in this country can easily be *reduced to less than one-half the cost of the best sugar manufactured in Europe, the carbonaceous process and the use of animal charcoal being entirely dispensed with and the use of the vacuum pan being made unnecessary*, and not even desirable, except in the case of the largest central factories.

In concluding this brief summary of the main facts of this subject, I cannot but express the surprise which I have felt during the whole course of these researches that during the century which has elapsed since our birth as a nation no adequate conception has been reached of the true value of one of the commonest products of our soil—our native Indian corn.

The value of the process itself for the practical manufacture of sugar, independent of my own work, has been fully determined by the series of test experiments made with it at the Department of Agriculture last summer, under the direction of the Commissioner, by Professor Collins and by intelligent farmers in the western country, who were furnished by me with the chemicals and necessary information. In no case has there been a single failure. The experiments already made with the process at Washington can fully demonstrate, in the language of the Commissioner, "that there exists in these two plants a large amount of sugar, which may be readily obtained, and that the aggregate amount possible from this source would be practically unlimited;" and in the emphatic statement with which Professor Collins completes his special report, "that the experiments have at least established the fact that there is no trouble in making sugar from corn and sorghum, and that the sugars obtained were in a most satisfactory condition, in every respect comparing most favorably with the best raw sugar of the market."

If the results already reached are accepted in their full significance, there can be no question that we are on the eve of a revolution in sugar manufacture, and of the rise of a new and permanent industry in this country.

A DUTCH DAIRY FARM.

Mr. J. Howlett, of Syracuse, N. Y., says the *Massachusetts Ploughman*, writes from Europe: "After feeding the horses and resting a little while, we drove about eight miles farther on to one of the best stock and dairy farms in Holland. They used the very same stable at the farm that they did in the fourteenth century. They have little rings in the ceiling with cords passing through them, by which the cows' tails are held up to keep them from getting dirty. The stable was carpeted and had plants and flowers in it. The floor of the stables was of small bricks. At the back of the stalls was a trough of masonry about eight inches wide and nine inches deep, with a ditch or reservoir of water at one end. As soon as the trench was dirtied they turned on the water and all the manure, etc., was carried out to a covered vat, whence it could be removed to the fields or wherever they wanted it moved to. The cows were as clean, if not cleaner, than your horses. All the fastening they have is a little cord around their necks, and they are so gentle and quiet that they do not require anything stronger.

They use brass milk pails instead of wood or tin ones. We saw the way they make the round cheeses that are sent to America. They have wooden molds in the shape of two hemispheres or half balls. These are hollow and fit together. The cheese curd is roughly pressed into shape and then placed in the molds. The lower half of the mold is stationary, while the upper part is fastened to a kind of screw working in a beam overhead. The upper half is screwed down tight, and the cheese is left for a week. At the end of a week it is screwed down tighter and left another week. At the end of a third week the cheese is exposed to the air and the curing begins. It takes three months for a cheese to be cured, and a year before it is fit for the market. Everything was as sweet and neat as any parlor I ever saw.

The stables and stall for the horses were covered with matting. You have no idea how clean everything was, without seeing how it is done.

They use the same kind of churns, the same kind of cheese presses, and the same kind of pails, etc., that they did five hundred years ago. They think it is showing disrespect to their ancestors to make any improvements in the implements that their forefathers used.

I inquired the price of the cattle, and found that the cows cost from 200 to 350 guilders, and the bulls from 300 to 450 guilders, or in our money cows from $80 to $140, and bulls from $120 to $180 or $200 each.

FIGHTING AGAINST TRESPASSING.

We are told that it is a very common impression with people that "by law" they can shoot trespassing dogs, chickens, pigeons, etc., if they only leave them on the ground where they fall, and do not take them away. And farther, that some justices of the peace have the same views, and freely give this advice to people who complain of this trespassing nuisance. Even were this the law, it is never wise policy to take this means of destroying the troublesome property of a neighbor. It always breeds animosity and hard feelings, which generally result in greater losses than the damage done. The friendly remonstrance will generally prevail, but where this is unheeded, a dignified and firm resort to the nuisance-law, by which one is compelled to obey the law, he can fall back on as a last resort. The quarrel is then between the law and its violator, and is not likely to take so personal a turn as when one is suspected of "poisoning my chickens," or "shooting my dog."

We very much doubt, however, whether there be any such law as that tradition reports there is. If so, many judges and juries do not seem to know of it, and some destroyers of trespassing animals do not always get any benefit from it. We noticed lately a trial in a neighboring county, of a man for poisoning a trespassing dog which annoyed him. He confessed that he did, and thought he was justified; but judge and jury thought otherwise, and he was sentenced to three months' imprisonment. Peaceable resorts in all such cases are the best. It must be a very obstinate and unneighborly man who will not abate any nuisance of the kind complained of, if requested in the proper spirit. There is nothing that makes a proper person feel so uncomfortable, especially in the country, as having a bad and unfriendly resident close by him; hence trouble should always be avoided if possible.

HOW CIVILIZATION BENEFITS OUR BIRDS.

The result of all this is that the aggregate army of singing birds east of the Mississippi has been very considerably enlarged during the last two centuries, and is still on the increase. This can only be owing to the fact that by cutting down the forests, etc., man has tempered the rigor of the winter, has multiplied the sources of their food, has appended many additional places suitable for rearing their young, and has enabled them to bring more fledglings to maturity by reducing the ranks of their enemies. This has not only augmented their numbers and modified very appreciably their habits of nesting and migration, their physical natures and mental characteristics, but probably has even changed their voices. There is little doubt in my mind that in making their lives less laborious, apprehensive and solitary, man has left the birds time and opportunity for far more singing than their hard worked, scantily-fed and timorous ancestors ever enjoyed: a privilege a bird is not slow to make use of.

But on the other hand it seems equally certain that the music of our more domestic birds, though greater in volume, is not so sweet in tone as that of their wilder brethren. Our street sparrows are naturally, I suppose, rather harsh voiced; but whatever they might have been a thousand years ago, they could hardly be otherwise now, when the rattle-tebang of the city pavements has been their only teacher for many centuries. The mocking bird has learned to imitate the creak of the farmer's wheelbarrow—no dulcet sound—and the scream of the farmer's boy. Many of the sounds constantly uttered by men and evoked by their work are anything but melodious, and young birds born and bred in their midst must surely turn out less sweet and accomplished singers than if reared among the gentle whisperings of leafy woods, and learning music only from the golden-mouthed minstrels of the sylvan choir.—*Sunday Afternoon for June.*

OUR LOCAL ORGANIZATIONS.

AGRICULTURAL AND HORTICULTURAL SOCIETY.

The Lancaster County Agricultural and Horticultural Society met Monday afternoon, July 14th, in their rooms in the City Hall.

The meeting was called to order by the President, Calvin Cooper.

The following members and visitors were present: Joseph F. Witmer, Paradise; Levi W. Groff, West Earl; Dr. S. S. Rathvon, city; M. D. Kendig, Manor; Simon P. Eby, city; J. M. Johnston, city; F. R. Diffenderfler, city; C. A. Gast, city; W. W. Griest, city; J. C. Linville, Gap; Ambrose Pownall, Sadsbury; L. S. Reist, Manheim; A. P. McIlvaine, Paradise; Charles Hershey, Leaman Place; W. Johnson, Paradise; Henry Shiffler, Bird-in-Hand; A. F. Hostetter, city; Peter S. Reist, Lititz; W. H. Brosius, Drumore; C. H. Hostetter, Eden; Johnson Miller, Warwick; John H. Landis, Manor; Israel L. Landis, Manheim; Henry Kurtz, Mount Joy; Jacob B. Garber, Columbia.

The minutes of the preceding meeting were read and approved.

Dr. S. S. Rathvon, chairman of the committee appointed at the last meeting to draft a constitution and by-laws, made his report, which embodied the new constitution and by-laws submitted by the committee for adoption.

Mr. Witmer moved the adoption of the constitution and by-laws as a whole, which motion was seconded by Mr. S. P. Eby.

The constitution and by-laws were then unanimously adopted.

Mr. Witmer said that since the society has been organized it has been customary to take the minutes from the newspaper reports, and asked whether, since the society has been incorporated, it would be necessary for the Secretary to write the report

Mr. Eby said that the only lawful record of the society will be the report of the Secretary himself.

Mr. Hostetter agreed with Mr. Eby, and suggested that the secretary might write his own report. He might then place in another book the newspaper reports.

Mr. J. M. Johnston thought it was the duty of the secretary to put down all the business of the meetings, omitting all speeches, debates, essays, etc. He thought it unsafe to take newspaper reports, as no two would be found alike.

Mr. Reist reported the hay crop good, with about three-fourths; wheat crop would average about three-fourths; oats is also about three-fourths, and good; the rye crop is about one-half; apple crop about one-half; pear crop will be full; peaches will also have a full crop.

Mr. Linville reported the crops in Salisbury to be very good. Wheat and oats would be very short. The fruit crop is very poor. Tobacco is very slow in coming. The pasture is literally burnt up.

Mr. Kendig, of Manor, reported the growing crops to be looking very good. The wheat and hay crops will be about three-fourths. Oats will be very light. The fruit crop will be very poor. The rain fall for the present month so far was 1 2-10 inches. The tobacco crop is good.

Mr. Brosius, of Drumore, reported the crops in that section to be very poor, but thought there would be gathered about three-fourths.

Mr. Miller, of Warwick, said the reports so far would suit his section. The prospects for a good corn crop are fair. The wheat crop is not so good.

Mr. Hostetter, from Eden, reported the grass and hay to be fair, although the crop was light. The kernels of the wheat were larger than last year, although the quantity was smaller. The apple crop would be very good. The season has been a remarkably dry one so far. Corn looks very well. He reported good prospects for a fair crop in his section.

Mr. Reist, of Manheim, said he had about 300 peach trees, and did not expect half a crop. He has about 500 grape vines and they are promising.

Mr. Cooper said, in answer to a question, that he had experimented with Mould's winter wheat, and it turned out pretty well, and he thought with early sowing it would do well.

Mr. Groff thought it would be a good wheat to introduce; he tried it last year and the heads are very large.

Mr. Witmer sowed one package of the wheat, and it has not yet ripened. It looks very promising, however. In regard to crops he would report a poor crop. The wheat is poor, although the quality is better. The corn crop is very promising. Potatoes are good. Tobacco is backward.

Mr. Reist said he got one bushel of Clausen wheat, and it turned out be ter than the Foltz wheat, and asked for information as to where it came from.

Mr. Groff said he did not know where it came from. He sowed some for two years and it turned out pretty well. He tried a small sample of white wheat which did so well as to be almost remarkable. It proved so satisfactory to some persons that some one came in the night and cut a number of the heads.

Mr. Hostetter thought the question of wheat was of importance at the present time. He thought it was coming to be generally adopted that the Foltz wheat should be discouraged as a milling wheat. Lancaster county does not hold a high place in the flour market, on account of this wheat. There was a tendency among the millers to remodeling their mills so as to more successfully compete with the western millers.

Mr. Brosius thought if the Foltz wheat was tried for some years longer, it might become acclimated, and thought it would be unjust to condemn the wheat at the present time. He said we should build up the wheat and make it better.

Mr. Reist endorsed Mr. Brosius and said Foltz wheat required very strong soil. He thought in a few years it would become acclimated and prove as good as any variety.

Mr. Groff thought farmers should try to get the kind of wheat which will produce the greatest number of bushels to the acre.

Mr. Cooper thought the Foltz wheat was the best wheat for this county. He thought it generally turned out well, and if the millers could not make good flour it was probably the fault of the machinery.

Mr. J. L. Landis said he thought the defect in Lancaster flour did not come so much from the wheat as from the machinery for milling it.

Mr. Witmer said the one great objection which the millers had to the wheat was the small grain. The miller could not get the same amount of flour out of the Foltz wheat as from any other, on account of containing more bran.

Mr. Brosius always found the wheat to turn out very well.

Mr. Linville said the wheat did not contain enough gluten. It was also too hard and brittle. He said it was the most productive variety we have. It always turned out better than the Mediterranean variety. It is a hard wheat to thresh and hard to clean when the season was dry.

Mr. Reist said in reference to the Mediterranean wheat, when it was first sowed it did not turn out very well, but it afterwards did better, until now there is none better in the country.

Mr. Miller tried an expriment last year. He mixed Foltz and common red varieties together, and found it to turn out remarkably well.

Mr. Kurtz said the Foltz wheat was very productive, but it is not a good flour wheat. He thought the farmers could raise more Amber wheat from the acre than the Foltz variety. He said the Amber wheat brings better prices than the white wheat.

Mr. Hostetter said that although he was opposed to the Foltz wheat, he would not be in favor of abolishing it without a fair trial. He thought the millers should prepare the different qualities of flour manufactured, and send them among the farmers, with a description of the circumstances under which the wheat was grown. They could then make their selections.

Mr. Witmer offered the following resolution, which was adopted:

WHEREAS, The Millers' Association condemns the Foltz wheat and propose to discriminate in the price paid to farmers; therefore,

Resolved, That the millers of Lancaster county be requested to contribute to this society for distribution samples for experiment of such wheat as they desire to have cultivated.

On motion, the discussion of the wheat question closed.

On motion, the regular order of business was dispensed with, and the society took up the discussion of a county fair.

Mr. Johnson Miller said he was opposed to holding a fair at the Park Grounds on account of the expense, and thought the society should try and procure the Northern Market House.

Mr Linville thought the time was not a good one to hold the fair, as the crops were not good, and it should therefore be abandoned.

The question was discussed pro and con by a number of the members, at the conclusion of which Mr. Landis made a motion to reconsider the vote by which the resolution authoizing the holding of a fair had passed Carried.

The question recurring on the original resolution, it was carried to hold a fair at the Northen Market House, if it can be obtained.

A bill was presented by Dr. Rathvon for $2.50 for binding the *Lancaster Farmer*. On motion it was orderd paid.

Mr. S. P. Eby presented a copy of an act passed by the Legislature in reference to the planting of trees along the roadside.

Mr. Levi S. Reist presented some very fine specimens of Earl Wilson blackberries, also Brandywine, Philadelphia, Herstine, and Reliance raspberries. He also presented a prolific red berry, more valuable than any other, for a name.

The following questions were presented:

"Is high farming a remedy for low prices?" Referred to Mr. Brosius.

"What is the best method of sowing wheat or corn stubbles?" For general discussion.

"Should the partridge be domesticated?" Referred to S. P. Eby, Esq.

On motion, adjourned.

POULTRY ASSOCIATION.

The Lancaster County Poultry Association met in the rooms of the Agricultural and Horticultural Society at half-past ten o'clock, Monday morning, July 7th.

The following members were present: William Schoenberger, city; John F. Reed, city; J. B. Lichty, city; D. C. Tobias, Lititz; Amos Ringwalt, city; Henry Wissler, Columbia; Frank R. Diffenderffer, city; J. M. Johnston, city; C. A. Gast, city; Charles E. Long, city; H. H. Tshudy, Litiz.

The minutes of the preceding meeting were read and approved.

The following questions were offered for discussion at the next meeting of the society: "Are some varieties of fowls more subject to disease than others, and if so, why?" "What is the best variety of ducks for the farmer's purpose.

Messrs. Miller Fraim and J. Hay Brown, Lancaster, were proposed for membership, and they were elected.

On the question, "Is it advisable to hold a poultry show next winter?" Mr. Ringwalt thought such an exhibition would help the society along. He would go into the movement heart and hand.

Mr. Reed thought such a show would give the members an opportunity of comparing their birds, and be the means of improving their stock. It would be expensive, but he thought it would pay in the end.

Mr. Ringwalt thought the expense would not be very great.

Mr. Lichty said the only question before the society was the discussion of the advisability of holding an exhibition, and thought a resolution should be offered to that effect.

Mr. Long thought, as the meeting was very small, it would be advisable to postpone the question until there was a larger attendance. The expense would be much greater than the members had any idea of.

Mr Tshudy was in favor of holding an exhibition at the proper time, but did not think it would be advisable to take any steps in the matter at such a small meeting. He thought it would be beneficial to hold such an exhibition, but thought the matter should be postponed until the next meeting.

Mr. Lichty did not agree with the gentlemen, but thought a resolution to hold an exhibition could be rescinded, if the cost would be found to be too great.

Mr. Reed offered a resolution to the effect that the society hold a poultry exhibition during the next winter, and ordering the Executive Committee to inquire into the cost and report at the next meeting.

The advisability of the step was further discussed by Messrs. Long, Lichty and Reed, after which the resolution was carried.

Mr. Lichty said the Executive Committee had never been regularly organized, and thought it advisable for the committee to hold an early meeting and elect officers, and thought it would be better to hold the meeting at Litiz, as most of the committee resided in and about that place.

"Should fowl fanciers breed more than one variety?" The discussion on this question was opened by Mr. Ringwalt, who did not see the harm in breeding many varieties. He thought they could be bred to advantage by colonizing the different varieties, but thought he could do better by keeping only three varieties. He thought by having a few varieties more care could be given them than if he had many.

Mr. Tshudy thought the question depends greatly on the amount of room a man has for them. He thought there was no doubt that a number of varieties would not receive the same attention that one or two would. The most successful breeders have confined their attention to only one breed.

Mr. Lichty thought it would be advisable to make an amendment to the by-laws, imposing a fine upon those members to whom were referred questions for discussion, and who did not attend to open the debate, and offered the following:

"*Resolved*, That the following section be added to the by-laws of the association:

"If any member to whom has been referred any subject for discussion, and who accepts the same, fails to be present at the meeting when the question is to be discussed, or in case of his absence fails to send a written essay on the subject, he shall be fined one dollar."

The question, "Are some varieties of fowls more subject to disease than others, and if so, why?" was referred to Mr. H. H. Tshudy for discussion next meeting.

On motion, the society adjourned to meet the first Monday in August.

LINNÆAN SOCIETY.

The Linnæan Society held their stated meeting on Saturday, June 28, President Rev. J. S. Stahr in the chair. After the opening, the donations to the museum were found to consist of a fine specimen of a "rattlesnake," the *Crotalus durissus* of Linnæus, also called *C. horridus*. This reptile came via express, alive, in a box covered with a wire screen, to the address of Mr. Joseph Barnetts, the genial host of the Cadwell House. It seems he is not partial to such customers and declined to accommodate his

snakeship. Dr. Rathvon, our enterprising naturalist, took the waif into keeping, and desiring a fine specimen of this in our museum, he tried to soak the venom out of the beast by a long continuous bath under the hydrant, with perfect success. It became not only thoroughly clean, but perfectly docile, and allowed itself to be neatly coiled in a jar and covered with proof spirits, without the least motion of objection. The colors are well defined and can be inspected from the rattles to the snout with perfect clearness in its embalmed condition. This was captured near the New York State line and sent by Mr. Edward Sheaff, formerly of this city, now of Lawrence township, McKean county, Pennsylvania. The combined upper and lower shell of a "wood tortoise," (the *glyptemys insculpta* of Aga), the inside having all been eaten out, leaving a perfect shell-work only. The backbone and caudal vertebra, with a few other detached bones, of some animal, dug up in a garden of this city. No Cuvier being present, the genus of the animal could not be defined ; in may have been a mink.

A fine specimen of an extract from coal tar, manufactured in Philadelphia, and sold at London at $100 per ton, for the manufacture of aniline dyes, per Mr. Joseph Spillinger.

Proceedings of the Academy of Natural Sciences, Philadelphia, Part 1st, January, February, March, 1879 ; Proceedings of the American Philosophical Society, Philadelphia, vol. XVIII. No. 103, January, to June, 1879 ; United States Patent Office *Gazette*, up to June 24, 1879 ; Lancaster county FARMER for June, 1879 ; two pamphlets—M. W. Dickeson on "Ancient Alabaster in Virginia," and another by him and P. A. Brown on the hair of mammals, per Mrs. Zell ; sundry pamphlets and catalogues of books, both European and American, such as the Book-Buyer, Book-Seller, Book Worm, and also historical tracts, and No. 7 of vol. 2 of the *Scientific Observer*, March, 1879.

Mr. Rathvon read three interesting papers, Nos. 521, 522 and 523—the first giving a full account of the reptiles called rattlesnakes and affinities, with their various localities and names, in connection with the one deposited. The second, on the tortoise family, and detailed notes on the one the shell of which only was deposited. The third paper, on the larvæ discovered by Prof. J. S. Stahr and his class on their late excursion to the river. These maggot-like worms travel in a rope-like cluster, which gives them a snake-like appearance, and they are called "snake worms," etc. A species of *Diptera*—Sciara—larvæ of several species of Tipulidæ, since it is found the worms or larvæ differ in different localities and seasons. Professor J. S. Stahr read a highly interesting account of the excursion to York Furnace and a few days' encampment on the Susquehanna river, with the class of '81, from Franklin and Marshall College, giving a list of botanical specimens collected, their visit to the blowing cave, with his remarks as to the cause, and also the geological surroundings. Students in the open air and field meet with much that is of practical utility, and the recreation is healthy. No doubt the students will long remember "Camp '81." It would be desirable to publish the whole paper, although not so intended by the author. Filed as No. 524.

Under new business, bills were reported for expenses in shelving, binding books, alcohol, etc., to the amount of $28.64. On motion, ordered to be paid. Under scientific miscellany Mr. J. Stauffer referred to a publication in the *Pioneer Press* (St. Paul Minn.) of a remarkable cave on the farm of David Samuels, ten miles from La Crosse, lately examined. The rock, a rather coarse, soft sandstone, forming the interior walls of the cave, is filled with engraved figures of buffalo, deer, rabbits, moose, and among them a mastodon and hippopotamus; and by other hieroglyphic figures; is supposed to have been the work of the mound builders. This led to sundry remarks. Adjourned to the last Saturday in July.

ENTOMOLOGICAL.

Cassida Guttata.

PROF. RATHVON.—"Enclosed is a bug, destructive to the sweet potato leaf. Its habit is to eat holes in the leaf, which seems to poison the leaf very soon, and cause the whole leaf to turn yellow. These bugs are quite numerous on land of Samuel R. Hess at Ephrata. Mr. H. is anxious to know what is its name and other history, and would be pleased to find a reference and history of it in THE LANCASTER FARMER."—*A. Konigmacher, July* 10, 1879.

Your insect has been received and examined. It is the larva of a beetle belonging to the family CASSIDIDÆ, all of which feed on vegetation, especially winding plants, such as the sweet potato, the mederie, the morning glory, and the convolvulus generally. The different species may have a special liking for a particular plant, but the same species has been detected on different plants, and different species have been found on the same plant. It is not always a sure way to determine the species from the larva alone, unless we are well acquainted with it. This is doubtless *Cassida guttata*, sometimes called the "Tortoise," or "Tortoise shell Beetle," and is somewhat allied to the "Lady-birds." The females deposit their eggs on the leaves of the plant, and the young are hatched out there, and also undergo all their transformations there. Therefore, they may be destroyed by hand picking, or giving them a sprinkling of powdered *White Helebore*, a decoction of tobacco, or a solution of carbolic soap. They have the singular habit of throwing their cast off skins and their excretions, on their backs, but other insects have this same habit much more disgustingly manifested. In this respect these insects show their affinities to the *Lema Trivittata*, or "three-lined-potato-beetle." By a little vigilance they may be all destroyed, for they move slowly and are very accessible.

Thomissus Celer.

Mr. P. W. A. Your pale spider, faintly tinged with green, found on the blossoms of the Heliotrope, is the *Thomissus Celer*, or nearly allied to it. When fully developed they have a pale yellowish tinge. They visit different flowering plants on which the blossoms are bunched together in clusters, and lie in wait for flies, moths, and other small insects, upon which they feed. We have seen them capture insects twice the bulk of themselves. I would hardly know what vulgar name to give it. It might, perhaps, be properly called the "White Blossom Spider." It moves backward and sideways better than forward.

Goniaphea Cœrulea.

Mr. C. L., Lancaster, Pa. The young and old birds we saw at the houses of both Messrs. Beitle and Keener on the 10th inst., are the "Blue-Grossbeak" of popular fame, but the *Goniaphea Cœrulea* of ornithologists. *Dr. Coues* says that it is essentially a Southern bird, but being somewhat desultory in its geographical range, it is occasionally found from the Atlantic to the Pacific. It nests low and inartistically, lays four or five plain pale blue eggs, and feeds on hemp seeds, grass seeds, grain, and the kernels of small fruits. It winters in Mexico and Central America.

Spined Soldier Bug.

Prof. B. F. S.—The insect found in Elizabethtown borough, by Dr. A. C. T., and submitted to me by you for examination, is an immature specimen of the "Spined Soldier Bug" (*Arma spinosa*), a species of carniverous *hemiptera* (half-winged), and a special enemy to the larvæ of the "Colorado Potato Beetle." These insects have been in Lancaster county for many years, and have always preyed upon other soft skinned insects ; but since the advent of the Colorado beetles, they have greatly increased, and appear to have a preference for the luxurious feast which their bodies afford ; and therefore they ought to be left undisturbed, as one of the co-operative means by which Potato Beetles may be held in check if not ultimately exterminated.

A Harmful Insect.

A friend having sent to this office a sassafras twig punctured by some insect, asked for some information concerning it. We referred the case to Dr. S. S. Rathvon, and our correspondent may read what he says below:

"Your sassafras branch contains the ova, or the exuded larvæ, of an insect variously called the "climbing-cricket," "tree-cricket," or "snow-cricket" (*Œcanthus nivens*). The fully developed male is of an ivory white color, and, exclusive of the wings, about half an inch in length, but the wings extend nearly half an inch beyond the hind end of the body. The antennæ are very long and filiform. The hind legs are also very long, but the femur is sufficiently developed to show the insect's alliance with the cricket family (*Achetadæ*). The wings are narrow at the base, and broad and obtusely rounded at the apex (shaped like a battledore), and one laps horizontally over the other on the back. At the nuptial season (August) the male utters a shrill stridulation, which he sometimes continues all night, and when they happen to enter a house the loud and shrill notes of this insect become monotonous and exceedingly annoying to would-be sleepers.

More than twenty-five years ago Dr. Harris, of Boston, Mass., recorded this insect (on the representations of a Connecticut tobacco grower) as exceedingly injurious to the tobacco plant. Prior to the introduction of tobacco culture in Lancaster county, this insect was by no means common or abundant, but now many complaints are filed against it. Last year several fine, large leaves were sent to me, having holes in them (caused by this insect) large enough to run my fist through. They commence their operations on the young and tender leaves on the top of the plant, and eat in them small holes. They do not pierce or puncture, but being masticating insects, they bite the piece entirely out, and inject no poison. The leaf is not retarded in its growth by this bite, but usually grows on until it is fully developed.

But as the leaves increase in size, the holes increase correspondently in size, so that by the time the leaves are fully grown the holes are so large that the usefulness of the leaves for wrappers are in many instances entirely destroyed. During the early morning or late in the evening, especially if the weather is a little cool, they become somewhat sluggish, and may be captured by hand ; but at mid-day, or in a warm sun, they are very quick in getting out of harm's way, either by leaping, hiding on the under side of the leaf, or dropping to the ground ; or when fully matured, by flight.

This branch is suggestive. These insects always deposit their eggs in branches of one inch to one and a-half inches in circumference, but not always in sassafras, but also blackberry, raspberry and other soft woods. Therefore, it what has been written above does not suggest the cutting off of all branches bearing them early in the season and burning them, as the best remedy, then it is not true that "an ounce of prevention is worth a pound of cure."—*New Era.*

Injurious Insects.

It is now the season when the insects which prey on fruit trees are most destructive, and require the closest attention. "Eternal vigilance" will be the "price" of succesful contention with these tiny foes. The tent caterpillar and the canker worm prey on the foilage of apple and cherry trees. The apple-worm moth lays its eggs in the calyx of the young fruit, and the grub, as soon as it is hatched, cuts its way to the core, causing the fruit to ripen prematurely. In some instances the worm continues in the fruit without causing any apparent damage, and it is only when the apple is being eaten or cut up that the unwelcome tenant makes its appearance. The Spitzenberg seems to be a particular favorite with this destructive insect, for we find a great deal of this fruit wormy. A great many of the moths may be got rid of by building fires in the orchard at night. They will be attracted by the light, fly into the blaze and be destroyed. Some persons place a lamp in the centre of a tub of water ; the light attracts the moths, they fly against the lamp, fall into the water and are drowned.

The gooseberry and currant caterpillars begin their work of destruction as soon as the leaves are fully developed. The gooseberry caterpillar is the larva of a species of saw-fly which lays its eggs on the ribs on the back of the leaves, and as soon as the young worms are hatched they commence preying on the leaves, eating their way into them. Their presence may be detected by the appearance of numerous small holes, like pin-holes in the leaf, and as a whole brood are, at this early stage, confined to one leaf, they can be easily destroyed by picking off the leaf and tramping on it.

Bark lice are very injurious to fruit trees, as they find shelter under the bark, through the crevices of which they prey on the sap, and injure the vigor of the trees. They may be destroyed by a wash of whale-oil soapsuds, or a solution of potash. Common soapsuds have been used against them with success. The stems of all fruit trees cannot be too frequently washed, as by this means old dead bark, which affords a hiding place to many noxious insects, will be removed, as well as moss and fungi which absorb the juices and consequently haten the decay of the tree.

The flea-beetle, better known as the black-bug or turnip-fly, is very destructive to the seed leaves of turnips, cabbages, cauliflower, radishes, melons, cucumbers, etc. It is identical, or nearly so, with the turnip-fly, (*Haltica memorum*) of Europe, which commits such depredations on the turnip fields of Great Britain and Ireland, France and Germany. These flee-beetles lie torpid during the winter in heaps of rubbish, under stones, and clefts of the bark of trees, and in chinks of walls. They lay their eggs in the spring, on the leaves of the plants on which they feed, and as soon as they are hatched the young grubs burrow into the leaves, feeding on them, and forming in them little cells, in which they undergo their transformations. Several broods are produced during the summer, so there is a constant succession of these pests all through the season. A solution of lime has been found very useful in preventing the ravages of these insects, but a better plan is the pulverization of the soil, in order to close up all chinks where they can hide, and the application of abundance of well rotted manure, to force the plants into the rough leaves, as, when they reach this stage of growth, the bugs leave them to seek tenderer food. Chickens are very efficient destroyers of these insects.—*Western Rural.*

Squash Bugs.

During the winter these bugs, full grown, remain in a torpid state, secluded in nooks and crevices, whence they issue during the first warm days of spring. As soon as the vines of the squash have put forth a few leaves, the female bug begins to lay her eggs, which she does chiefly at night, depositing them in little patches on the underside, the eggs being glued to the surface. There, in a few days, they hatch into young bugs, which at once begin to suck the sap from the leaves by means of their proboscis, which is thrust into the leaf for this purpose.

The young are short and plump, of a pale ash color, and emit the same disagreeable odor as that which characterizes the parent. During their growth they shed their skins several times, gradually developing wings and retaining their activity throughout until they attain to the perfect winged state. At first they live together in little swarms on the underside of the leaves, which, in consequence of the numerous punctures of the insects, and the quantity of sap imbibed by them, soon wither and appear as if scorched by fire. When the leaves have been exhausted in this way, they are deserted for fresh ones, and thus the work of destruction goes rapidly on.

The eggs are not all laid at one time, but like the Colorado potato beetle, the eggs and young may be found in their various stages of development throughout the summer.

The perfect bug measures six-tenths of an inch in length, is of a blackish color above, and a dirty ochre-yellow beneath, while the sharp lateral edges of the abdomen which project beyond the closed wing cover is black, the wings transparent, but dusky at their tips.

To prevent the ravages of these insects they should be sought for early in the season and destroyed before they have an opportunity of laying their eggs. To this end they may be looked for about the last of June or beginning of July, when the dusky creatures may be found under the leaves on the ground, or on the stems of the vines close to the ground. If eggs have been laid they should be sought out and destroyed. A short time spent in this way early in the season will save much disappointment afterward.

White Thrips in Graperies.

Having seen several articles in the papers complaining of white thrips in graperies, I thought I would give a little of my experience with this pest. I say pest, because there is none greater, at least none has given me so much trouble. Three years ago I noticed there were a good many thrips in the old grapery I have charge of, but paid little attention to them, having more work on my hands at the time than one man ought to do, and as they seemed to do little harm I thought best to let them alone that year, and give the vines a chance to rest in the fall. But the next year they were thicker than ever; the remedy had done no good. I did dot think of tobacco smoke until the season was pretty well advanced, and the consequence was the fruit was literally spoiled by their excrescence falling from the leaves. The fruit ripened well (at which I was somewhat surprised), but it was not fit to eat until it was washed. I tried the tobacco smoke as soon as I thought of it, but it did no good. You might as well try to smoke out a lot of rummies from a corner groggery. They had got too long heads to be fooled by tobacco smoke that year; it seemed to agree with them. Last year I thought I would be even with them, so, as soon as the buds began to swell, I gave the grapery a good dose of tobacco smoke, and continued once a week through the season with good results, having never seen a thrip. Now, I think this goes to show very plainly that if the grapery is treated as above the thrips are killed as soon as the eggs are hatched, and if it is done when they are young and tender there will be no further trouble. I think it would be best to use the remedy in time rather than run the risk of the thrips getting the start, because if this is not done, there will be no use to try and smoke them out after they once get full grown.—*G. Hooter, Jr. Berks Co., Mass.*

Capturing Curculio.

Mr. Benjamin F. May made a raid upon the curculio that infested a plum tree in his son's garden, recently, and captured a large number of them. He arose in the early dawning of the day, and spreading a sheet under the tree and providing himself with a piece of board and an axe, proceeded to jar the tree by placing the board against it and striking it repeatedly with the axe; this caused many of the peaches that the curculio had wounded to fall upon the sheet, and the ill-conditioned "varmints" being, as most insects are at that time in the morning, in a semi-torpid state, fell with the fruit and were captured as stated. These "varmints" are injuring the stone peaches badly in the upper part of the peninsula, and have destroyed most of the fruit that escaped the other disasters.—*Cecil County Whig.*

Value of Earth-Worms.

The common earth-worm, though apt to be despised and trodden on, is a really useful creature in its way. Mr. Knapp describes it as the natural manurer of the soil, consuming on the surface the softer part of decayed vegetable matters, and conveying downward the more woody fibres, which there moider and fertilize. They perforate the earth in all directions, thus rendering it permeable by air and water—both indispensable to vegetable life. According to Mr. Darwin's mode of expression, they give a kind of under tillage to the land, performing the same below ground that the spade does above for the garden, and the plow for arable soil. It is, in consequence, chiefly of the natural operations of worms that fields which have been overspread with lime, burnt marl, or cinders, become in process of time covered by a finely-divided soil, fitted for the support of vegetation. This result, though usually attributed by farmers to the "working down" of these materials, is really due to the action of earth-worms, as may be seen in the innumerable casts of which the initial soil consists. These are obviously produced by the digestive proceedings of the worm, which take into their intestinal canal a large quantity of the soil in which they feed and burrow, and then reject it in form of the so-called casts. "In this manner," says Mr. Darwin, "a field, manured with marl, has been covered, in the course of eighty years, with a bed of earth averaging thirteen inches in thickness."

Curious Facts About Insects.

Nature prints a letter certifying that wasps and bees, and by inference other insects of the same class, when chloroformed and at the point of death protrude their stings, and, bending the body until the tail approaches the mouth, seemingly absorb a drop of clear fluid that exudes from the point of the sting, and at once become motionless and apparently dead. They may, however, subsequently recover, so that the act cannot be regarded as suicidal. The inference is that the poison is a narcotic of which the insect partakes when an extremity arrives from which he thinks there is no escape. If this be so it is singular that these well-armed and pain-giving creatures should be provided with a recourse that may secure a blissful unconsciousness of pain in any crisis of danger, and yet does not prove fatal should the danger pass.

Borer's Eggs

Are laid on the bark near the roots of peach trees in early summer, when they soon hatch, and the worms find their way into the bark. At this time, say in June, July or August, they are easily found, and as easily removed. Coal ashes, or anything else thrown around the trunk that will tend to protect it from the borers, may do some good, but it is much easier to destroy the insects when first hatched than to build mounds for keeping them away.

AGRICULTURE.

Lancaster Farming in Virginia.

Samuel Brookman, formerly of Lancaster county, now of Manchester, Chesterfield county, Virginia, writes:

"I sold my little home in Lancaster county, Pa., for which I was more than one-half in debt. I desired to have a home of my own for myself and family—which, by the way, is quite a large one, ten in number—and I knew very well it was useless to try and get a free home in Lancaster county with my means. I came to Virginia with my family, without ever having seen this part of the state. I bought a small farm of forty acres, four miles from Manchester, settled on it on the 26th day of April, late for spring work. Now I am harvesting as large ears of corn as we did in Pequea Valley, Lancaster county. Nearly everything we planted has yielded better than we expected. We put new buildings. My place now stands me about $500—less than $1,000 would not buy it. We all like the country; have good neighbors, good water, fine climate and are all enjoying good health. I have really never met with kinder people than the Virginians. We, as Yanks, and they, as Jonnys, often talk over old war times, and neither ever wishing to see another war. I would say again to all who are seeking cheap homes, come; you will be welcomed by the Virginians and the many Northerners already settled here. With a little money, patience and industry, you can in a few years have a home here that I feel confident will be worth double the money it cost you. What this country needs the most is men of enterprise, men of muscle and good farmers, that will clean up their waste lands, build fences, grub out every bush, and in a short time our country will be second to none. The most of the land lies beautifully and is very easily improved. If any of my friends North wish any further information from me, write, and I will gladly answer."

Varieties of Wheat.

Joseph Galbraith, White House, Pa., an extensive farmer in that rich wheat-growing valley of the Cumberland, experimented last year with the following varieties:

Canada Club, a white wheat, smooth; Bohemian red wheat, smooth; Shoemaker red wheat, smooth; Boyton white wheat, smooth; Arnold's victor white wheat, smooth; Russian spring wheat, smooth; Clawson white wheat, smooth; Zeller Valley wheat, smooth; Diehl white wheat, smooth; Fultz red wheat, smooth; Gold Dust wheat, white, smooth; Arnold's Gold Medal white wheat, smooth; Lancaster red wheat, bearded; Rodger's amber white wheat, bearded; Big Seed wheat, red, bearded; Russian white wheat, bearded; Sanford white wheat, bearded; Early Ripe white wheat, bearded; Egyptian Seven-headed red wheat, bearded; Mediterranean spring, red wheat, bearded; Oregon White rye. A few weeks ago we received from Mr. Galbraith samples of Washington Glass wheat, white, smooth, and Coffee wheat, white, bearded—making in all twenty-one kinds of winter wheat, one of spring wheat, and one of rye. Mr. Galbraith experimented with all these varieties last season, and says in a letter accompanying the samples, "I cannot give you the aggregate amount raised per acre, as the samples were too small; have the majority of them under cultivation this season on a larger scale, and think I will be able to tell more about them the coming season. Should they yield as they did last season I can report some heavy yields." We hope Mr. Galbraith will favor us with a full report of his experiments this season.—*Practical Farmer.*

Fultz Wheat.

Messrs. Best & Sparks have mills both at Litchfield and Alton, Ill., the latter an extensive concern and the former a smaller one, but making and shipping 140 barrels daily. Inquiring the name of the wheat most grown and prized by millers and farmers both, in that section, the unexpected reply was the Fultz. But the Fultz had a bad reputation in some sections. Did not the Millers' Convention at Indianapolis discriminate against it? To be sure, but that action was perhaps the work of patent process men, which we do not use. We find the Fultz, under the old processes, will make a barrel of first-class, though not the highest priced flour, to every four bushels and two-thirds, or 240 pounds. The flour we sell in large, round lots delivered on track, at $4.25 to $4.34, and it is quoted in New York and Boston at $5.75 to $6. In common with other millers, we have reduced the speed of our burrs very much—to 150 revolutions a minute. We use one cast iron crusher to four burrs, and have all the modern appliances of the patent process but do not use them. In this section there are nine bushels of Fultz grown to one of any other kind. We have the Blue Stem, the Lima, the Goldcoast and others; and have never seen or grown the Clawson. We want hard red wheats, because they make not only the strongest but the whitest flour. We can tell at a glance the wheat produced on the prairie. The timber-grown wheat is plumper, harder, heavier, has thinner pellets, and makes the better and whiter flour.—*Country Gentleman.*

Sowing Wheat.

I wish to ask, through the columns of your valuable paper, which is the best method of sowing wheat—broad-casting or drilling in narrow rows? Will the same amount of seed produce as much in narrow furrows as it would if it was spread over ground and covered with a harrow? It is nearly the universal result that drilling wheat affords heavier crops than sowing broadcast. The chief reason is that it may be drilled at a uniform depth, and every grain will have a good and equal chance. When sowed broadcast and harrowed in, the seed is covered at all depths from one inch to three or four inches, and the growth is not uniform. In a few instances, drilling has not done so well as broadcasting, but in these the depth of the tubes was not properly adjusted, and the seed was buried too deep. When wheat-drills were first introduced, so uniform was the benefit from their use that manufacturers offered to perform all the labor of sowing for the increase in product. The practice has now become so universal, that in riding over twenty miles in a wagon through a wheat region of Western New York, we were unable to find a single wheat field that was not drilled.]—*Country Gentleman.*

Soot as a Manure.

To strong-growing greenhouse plants, such as pelargoniums, fuchsias, roses, carnations, chrysanthemums, azaleas solanums, and many others, soot is a valuable and easy obtained stimulant. A handful of it tied in a bag and stirred in a three-gallon can of water has a marvelous effect on all the plants just named, and on many others besides. It induces vigorous growth, and adds freshness and substance to both leaf and flower. It is better to use it in small quantities and often rather than charge the compost with more carbon than the plants can readily assimilate. For the most robust growers, especially if if grown in small pots, mixture with fresh manure from the cowshed is desirable, but this should be allowed to settle before using, otherwise the grassy particles will remain on the surface of the pots, and while giving them an unsightly appearance, exclude that free aeration which all healthy roots require.—*Montreal Gazette.*

Charcoal on Land.

The absorptive power of charcoal is well known in the arts. Its capacity in this direction is remarkable. Accurate experiment has proved that in twenty-four hours it would absorb ninety times its own volume

of ammoniacal gas, eighty-five times its volume of muriatic acid gas, and sixty-five times its volume of sulphurous acid gas. It is this remarkable quality that makes it so valuable in destroying odor, color, taste in many substances, and preserving meats, vegetables and fruit from rapid decay. Its use as a fiterer in cisterns is well known, and its value here depends on the same quality. It separates and appropriates to itself the decaying matter and other impurities in water, rendering it pure and sweet. If placed on the surface of the soil, it will gather from the air moisture and gases and impart them to the growing plants. On the same principle its vslne in the barnyard, stable and hog pens, as an absorptive agent, is incalculable. When used for this purpose to form a basis of manure, it should be in the powdered state.—*Ohio Farmer*.

Cutting Cornstalks.

We observe in some of our exchanges a discussion of the subject of cutting cornstalks before feeding to cattle. One writer states that by cutting about an inch long the hard ends cause soreness in the mouth among his cattle. To avoid this another recommends length of three in hes. It will at once be perceived that such coarsely chopped feed cannot be all eaten. The best success we ever witnessed was in the practice of an old farmer many years ago, who gauged his machine only a fourth of an inch long, and then putting on his six horses, the whole of the cornstalks was rapidly reduced to a condition of fine chaff. The hardest stubs were thus made eatable, and the cattle consumed the whole. He could thus cut in half a day enough to last a week. Meal or ground feed was easily mixed with it. It will be observed as an important advantage in cutting corn fodder, that it greatly improves the texture of manure, by preventing the long, fibrous masses which are almost impossible to pitch, draw, spread and plow under.

Corn-Cobs.

Feeders differ in their opinions about grinding cobs with the meal for hogs; some attach great value to the method, while others reject it altogether. Analysis of the corn-cob shows that there is six to ten per cent. of matter which may be rendered, with breaking up and boiling, capable of assimilation by the animal in question. The general belief seems to be that while there is not enough nutriment in the cob to pay for the trouble of getting it out, an occasional feeding of cobmeal is an advantage, especially in the fattening process, when a certain amount of inert matter is required by the animal. This necessity induces hogs to eat coal, clay and dirt when the instinctive want is not otherwise supplied.

HORTICULTURE.

Rosewood.

Rosewood has always been considered an aristocratic wood. It is used for fine furniture and pianos in all civilized nations. We have no record of its first introduction into use, but it is fair to presume that it was soon after the discovery of South America, as old writers speak of rosewood cabinets and other articles of furniture. It is found only in South America, although a very near approach to it is used by the Chinese, of which and bamboo they construct all their furniture. The French call it *palaisandre*. *Bois de rose*, or wood of the rose, is an African wood, and is red, with yellow streaks. It seldom grows over eight inches in diameter, and is cut into veneers and used bias for borders in inlaid or marquetry work. Rosewood, or *palaisandre*, is found of superior quality in Brazil. Rio de Janeiro exports all of the fine quality of wood. Large quantities of inferior quality are sent from Bahia, but this wood is only used by cheap manufacturers, as the grain is a dull brown, and posseses but little beauty of figure. Honduras also exports a heavy, dull looking rosewood, which is mostly consumed for drumsticks and canes. Rio Janeiro wood grows large, and the grain is beautifully variegated. The most desirable wood, that which is the most mottled, is selected for veneers, and the plain straight-grained logs, when brought to market, are very rough and gnarled. It has latterly been sold by weight only. Some years ago it was sold by the log, and the purchaser relied on his acuteness for bargains. It contains an acrid oil, which must be extracted by steaming, or by long exposure to the air, before it can be relied on to hold with glue. It has a pungent smell, and the men who work in it seem to imbibe the odor into their system, as no ablution will eradicate the smell, by which the worker is distinguished from the worker of other woods. The dust arising from sand-papering is not poisonous, although it gives a peculiarly ghastly expression to the workman's countenance. Rosewood, if well worked, is the most durable of all furniture wood, and after a century's use it can be polished to look as well as new. It is exceedingly strong and hard, and becomes more solid from age. —*American Cabinet Maker*.

Apple Orchards.

In the report of the discussions at the Western New York Farmers' Club, furnished by the *Rural Home*, we find the following statements, which we glean from that account: Mr. Holton bought a six acre orchard which was about six years old, but for fifteen years afterward obtained no fruit. He then spread a wagon-load of manure around each tree, thinned the top so as to favor low branches, and can now pick three fourths of the crop from the ground. He allows no grass to grow on the ground, but does not plow, and now obtains heavy crops. It is becoming well established that no treatment tends more to promote productiveness in rather feeble trees of some age, than the application of manure.

Mr. Newman, five years ago, became the owner of an orchard of 300 trees, some twenty years old, which for several years past had been in grass. One-half were Baldwins, the rest Greenings, Russets, Spys, etc. Small crops were produced; about one barrel on an average to six trees. Another orchard adjoined it, which gave large returns for many years. This orchard was constantly tilled and manured. This induced Mr. Newman to plow his orchard, which cut off thousands of small roots. It was manured at the rate of twelve or fifteen loads per acre. The result was a heavy crop last year (the scarce year), and nearly no crop this year. The bearing year seems to have been changed—a result which we have known in other instances by manuring at the proper time. We do not know in what part of the season he performed the plowing, but we supposed he knew enough to do it early in spring, before the buds opened.—*Country Gentleman*.

Pear Blight.

There is no subject discussed at fruit growers' meetings more elaborately than the pear blight and so little apparently understood about it. Until within four and five years we did not suffer in the least from it upon our premises. But within that time we have lost a number of fine trees, to all appearance perfectly healthy only a day or two before. We had an unusually vigorous Belle Lucrative tree, which annually bore well; in fact it bore too well and obliged us to remove a large portion of the fruit, first when they were not as large as marbles, and again when they were nearly half grown. The last year that it bore before yielding up its life to blight, at least three-fourths of all the fruit was removed, and yet in twenty-four hours the life was out of it. The variety most subject to this disease has been Glout Morceau. In a single night they have died. And in all the losses we have met with we could discern no cause. The trees have blighted in dry and moist soil, in cultivated and in grass. Last *winter* we lost four trees, some ten to twelve years set out. Two of them bore good crops, and two none at all. We have arrived at the conclusion that after soaping and washing pear trees, and carefully pruning, and keeping the ground in good heart, we must take our chances. For fifteen or twenty years we do not remember to have lost a single tree from any cause; and as diseases of trees and the visitation of insects come and go without letting us into the secret of their movements, we had better do one's duty towards all our crops and then await another cycle of freedom and success.—*Germantown Telegraph*.

A Hint on Lawns and Hedges.

Any one who has taste in that direction cannot but observe, within a dozen miles around Philadelphia, where fine lawns are cultivated, how much damage is done to the beautiful hedges and evergreens by allowing the silver maple and other ugly and useless trees to be mixed up with them, overshadowing them to such an extent as must lead to their early defoliation and destruction. The exhaustion of the soil also by these worthless trees, does more, however, to injure the evergreens, than even the shade. Once let the evergreen be damaged and they never recover. What the object is in permitting such trees to remain in these lawns and along hedge-lines, we cannot imagine. Either the gardener is incompetent for not suggesting their removal, or the proprietor is obstinate in refusing to exterminate trees which he has not knowledge enough to see are ruining his place.

If any one has a liking for silver maple and other deciduous trees in their lawns, let him enjoy his taste and not mix them up with evergreens. In large lawns, it is true, there may be varieties of trees without injury to one another; but it is folly to mix them on small lawns, or plant them close together.

Hedges, even the hemlock, which stands shade better than any other, will show its dwarfing influence, and cannot resist the exhausting of the soil by the roots of large trees standing near; while no arbor vitæs will long survive from either of these causes.

Curiosities in Pomology.

Some years ago one of citizens bought and set out thirty young apple trees. On one of them he neglected to remove the wooden label which was attached to one of the limbs by a copper wire. Two years later he found that the copper wire was entirely imbedded and out of sight, in the bark of the tree, and that year the limb was so heavily loaded with apples that he was obliged to prop it up, while there was not a blossom or apple on any other limb. Last year one of our neighbors, when his young apple trees were in full blossom, carefully girdled some limbs on several trees, and the blossoms produced no fruit on the limbs thus treated, but this year those limbs have blossomed full and no blossoms on the limbs that bore last year. Pomologists may profit by further experiments in that direction.—*Hartford Evening Post*.

Many farmers have an impression that their apple, peach and pear orchards can take care of themselves. The roots can stretch themselves a little, but their foraging ground is limited, and to suppose that within this limited space food can be found to sustain growth and bear fruit for decades of years, without any re-supply of the raw material, is unreasonable. No wonder that so many of our orchards show moss-grown trunks, decayed branches and stunted fruit.

To keep lawn fresh and green put on frequently a slight sprinkling of salt or bone dust, or superphosphate, or any good fertilizer. When the soil is soft, run the roller over; it helps the appearance greatly. The application of a little ground gypsum will also freshen up the grass. But above all never neglect to run the mowing machine over frequently.

Domestic Economy.

Barns and Barnyards.

Nothing so plainly shows the good farmer as large, well-filled barns, and compact, sheltered barnyards for protection of stock in winter. A great improvement is taking place in these respects, and more is needed and will be had as its importance is better understood. Riding recently through an excellent farming town I was surprised to notice how carefully, shrewd and prosperous farmers had utilized easterly exposed knolls as sites for barns and barnyards. Our coldest winds are from the west, and riding on a north and south road I noticed for several miles that every barnyard was located on the easterly side of a hill, so as to give a basement underneath, and a level, or a nearly level drive away from the west on the barn floor above. In many places a corn-house and carriage-barn was placed on the north and south sides of the yard, leaving only one side exposed, which would be protected by a high and tight board fence, and the basements under the barn would be further protected by straw stacks and board partitions, leaving only doorways for the passage of cattle. In such yards horses and even cows can be wintered with the smallest possible amount of labor, and horses not used during the winter will keep better and come out better and stronger in spring, if allowed to run loose in the barn-yard, than if carefully stabled on wooden floors during the winter. Take off the shoes and let them run loose till the middle of March or 1st of April. Much of their winter keep will be got from the straw-stack, to the great saving of the hay mow, and when you begin to feed for spring work, the horses will soon be in better condition than ever to resume spring work. This is particularly true of old animals that have apparently ceased to be valuable. Many a man has turned his old mare in the barnyard to pick her living as best she could with the cattle, and found the following summer that she was better for work than in several seasons previous. Stabling under ground may not be good policy, but I am satisfied that letting animals run loose in barn basements is advisable, tying them only at night where they would otherwise be too crowded, or the stronger would drive the weaker out of doors.—*Country Gentleman*.

Tne Best Yeast Known.

Vienna bread is said to be the best in the world. It owes its superiority to the yeast used, which is prepared in the following manner: Indian corn, barley and rye (all sprouting) are powdered and mixed, and then macerated in water at a temperature of from 149 deg. to 167 deg. Fah. Saccharification takes place in a few hours, when the liquor is racked off and allowed to clear, and fermentation is set up by the help of a minute quantity of any ordinary yeast. Carbonic acid is disengaged during the process with so much rapidity that the globules of yeast are thrown up by the gas, and remain floating on the surface, where they form a thick scum. The latter is carefully removed, and constitutes the best and purest yeast, which when drained and compressed, can be kept from eight to fifteen days, according to the season.

Butter Making.

We note by the Western papers, and other sources of information, that butter making is receiving an increased share of attention over former years. In some places they are indeed talking about the business being overdone. This is almost always the

case when any great industry is taken hold of earnestly, and is a trouble which soon rights itself by the weaker brethren falling out of the track. From the same sources we note that it is believed the quality has somewhat degenerated in the main, and this also is a general result of over-production. Many have an idea, when the market is poor, that it does not pay to do things well. The sharp witted take advantage of this. It is their golden opportunity. Most people who make money by farming or gardening do it by always having a first-rate article. The more poor stuff in market the better theirs sells. Whatever is in general and steady demand will always have an open market for the good article. We do not expect butter-making of the right sort will ever be overdone.

Ways to Use Stale Bread.

First dry all fragments of bread before they get mouldy, in the open oven. When well dried, pound the bread and put it away in a covered vessel, where it will be free from dust and moisture.

A delicious, wholesome and cheap dish for breakfast or tea can be made of half a codfish and this bread. Chop the fish when well freshened, and place it in a pudding-dish in alternate layers with the pounded bread. Upon each layer place small bits of butter, and a little pepper. Nearly cover with milk, and bake brown.

Bread and Apple Pudding.—One cup of pounded bread and two cups of raw chopped apple. Mix slightly, and add small bits of butter, nearly cover with water and bake. Eat with liquid sweet sauce, flavored with lemon. This pudding is very simple, and easily made. The "knack" is in baking so that the bread shall neither be hard, nor soft as mush.

Pounded bread is nearly as good as cracker for stuffing a turkey or other meat to roast, and if always kept prepared, the labor of getting the meat ready for the oven is much lessened.

Hints on Cooking Poultry.

Steaming is preferable to boiling for tough fowls. Remove the *threads* before sending roast fowls to the table.

In winter kill the poultry three days to a week before cooking.

Poultry and game are less nutritious, but more digestible than other meats.

Singe with alcohol instead of paper—a teaspoonful is sufficient for either a turkey or chicken.

Remember, much of the skill of roasting poultry in the best manner depends upon basting faithfully.

To give roast birds a frothy appearance, dredge, just before they are done, with flour and baste liberally with melted butter.

When onions are added to stuffing, chop them so fine that in eating the mixture one does not detect their presence by biting into a piece.

Ladies doing their marketing will do well to remember that young chickens may be told by the tip of the breast bone being soft, and easily bent between the fingers, and when fresh by its bright full eye, pliant feet and soft moist skin.

Farmers, Keep Accounts.

A very successful farmer says: "Farmers who never keep accounts are, of course, always in debt, at least, most of the year, and have enormous store bills to surprise them. They doubt the honesty of merchants and families are berated for extravagance. Receipts and expenditures are never noted; the profits and losses in any branch of farming are unknown. Unconsciously debts multiply, for it requires much less time and ability to dispose of than to acquire it. Accounts properly kept would admonish them when to spend and to check up. Carelessness in one particular is apt to foster or beget careless in others; consequently such farmers have little system in the buildin of residences, barns, or out-houses. Fences are poorly kept up, and a systematic rotation of crops is seldom practiced.

HOUSEHOLD RECIPES.

Macaroni with Tomato Sauce.—Melt two tablespoonfuls of butter in a saucepan, put to it one medium-sized onion chopped fine, a small piece of celery and a little parsley. Let it cook slowly, but carefully, lest it scorch, which would spoil all. When the onion is delicately brown put it in a pint of canned tomatoes, if in winter, or a quart of fresh tomatoes in their season and boil for an hour; then strain through a fine sieve into a clean sauce-pan, cook until as thick as catsup; season with salt, pepper and butter. This should be all ready before cooking the macaroni, but keep gently simmering to keep hot till the macaroni is done.

Put half a pound of well-washed macaroni into boiling salt water, cook twenty minutes, then drain it in a colander. Place a layer of macaroni in a hot dish then place over it a layer of the tomato sauce, then another layer of macaroni, then a layer of sauce, having the sauce on the last thing. Set in the oven for five minutes and then serve very hot.

Potato Puff.—Take cold roast meat—beef or mutton, or veal and ham together—clear from gristle, cut small and season with pepper and salt, and cut pickles, if liked. Boil and mash some potatoes, make them into a paste with an egg, and roll out, dredging with flour. Cut round with a saucer; put some of the seasoned meat upon one-half and fold the other like a puff; pinch neatly round and fry a light brown. This is a good method of warming up meat which has been cooked.

Walnut Catsup—As this is the time to make Walnut Catsup, I will give you my receipt. Gather the Walnuts when they are so young that you can run a pin through them; pour boiling salt and water on; change every third day, for nine days, then pound them fine; to every dozen walnuts, put one quart of good vinegar; stir them well every day for at least a week; put them through a bag; to each quart of liquor put one teaspoonful of ground cloves, one of mace, half a nutmeg ground or grated; garlick if you like it; boil it twenty minutes, and bottle it.

Leoline.

To Make Good Cottage Cheese.—Take 12 quarts thick milk, scald it; stir it well while it is scalding, so that every part is done, now press it through a bag, put it in a pan while it is still warm; make it apart, and now sprinkle over it 1 teaspoonful of fine salt, 2 of baking soda heaped, have your hands clean and work it with your hands, till it gets all soft; now pour over it a cupfull of sweet milk and cream mixed, put it on the fire, and stir it till it becomes stringy, which it will do in 10 or 15 minutes, pour it in cups or deep dishes to get cold. It will be stiff when cold, and is very good, if the directions are followed. Leoline.

Fruit Pudding.—One bowlful of nice thick cream, 2 eggs, teaspoon saleratus; mix and roll nearly an inch thick, then spread with fruit and roll up and boil or steam in a sack for two hours. Eat with cream and sugar.

Cottage Pudding.—Two eggs, half cup sugar well-beaten together, add five tablespoons melted butter, stir well, then add cup of sweet milk, teaspoon of soda, two of cream tartar, 2½ cups of flour; bake in square tins, and serve with sauce made as follows, which is nice for almost any pudding: teacup of sugar, teacup of vinegar; teacup of water; set over the fire and when it boils add a tablespoon of flour and butter rubbed together.

Tapioca Pudding.—Put eight large spoonsful of tapioca to soak in three pints of milk and let it become milk warm and soak till it becomes soft, then mix with it two spoonsful of butter, three eggs, well-beaten, half cup of sugar, half a nutmeg and bake immediately. Excellent, hot or cold.

Steamed Pudding.—Take about a quart of buttermilk, add one teaspoonful of salt, one of soda, and if in the season of berries I add nearly a teacupful, if not I slice up pare and core apples into my dish, then thicken with either flour or corn meal as thick as it will stir easily with a spoon; then I put it in a dish and set in the steamer over my boiling dinner to cook; it wants to cook from one to two hours; eat with sweetened cream or butter and sugar, which never is preferred.

To Cook Pumpkin.—Pare and cut up the same as for stewing; put it in a steamer and set it over a kettle of boiling water until it is soft, then empty into a pan, take a potato masher, mash it fine; if too juicy let it stand in the stove-oven for a short time and it will soon be ready for use. I think it is much less trouble than the old way.

Potato Cutlets with Tomatoes.—Cut some small slices of cold mutton; spread some mashed potatoes nicely flavored with pepper and salt on each side of them, and fry a nice light brown. Then take some ripe tomatoes; remove their skins by plunging into boiling water, when the skins will become loose and peel off easily; stew the tomatoes in a small saucepan, and break into them one or two raw eggs to four large tomatoes—stirring the mixture well round until it is of the consistency of scrambled eggs. Pile up the tomatoes in the centre of the dish, arranging the potato cutlets round it. These should be of a golden brown color, and the tomatoes of a bright pink.

Potato Curry.—(1) Mash cold potatoes with minced onion, salt, pepper, and curry powder to taste; form into small balls with egg and bread-crumbs, fry crisp, and serve with rich gravy flavored with curry powder in mashed potatoes, allowing rather more butter and milk than usual. This last is a nice accompaniment to cutlets.

Tarragon Vinegar.—Take some tarragon; dry it in the sun, and then put it into a jar, which fill with vinegar. Let it infuse for a fortnight, then draw it off, express all the liquid from the dregs, and filter the whole; bottle it, cork tightly, and keep in a cool place.

Stewed Pears.—Cut a number of pears in halves, peel them and trim them so as to get them all of a size; put them in an enameled saucepan, with just enough water to cover them, and a good allowance of loaf-sugar, the thin rind of a lemon, a few cloves, and sufficient prepared cochineal to give them a good color. Let them stew gently till quite done. Arrange them neatly on a dish, strain the syrup, let it reduce on the fire, and then pour it over the pears.

Pudding-pies.—To make pudding-pies, boil for fifteen minutes five ounces of ground rice in one quart of new milk; when taken from the fire, stir in an ounce and a half of butter, four ounces of sugar, add four well-beaten eggs, a pinch of salt, and half a small nutmeg. When nearly cold, line some saucers with thin puff paste, fill three parts full, strew thickly with currants, and bake gently from fifteen to twenty minutes.

Coffee Cake.—One and one-half cups sugar; one-half cup butter; two eggs; one half cup strong coffee; one teaspoonful saleratus, dissolved in the coffee; two cups flour; fruit if you like. Bake in *very slow* oven.

Omelette Souffle.—One cup flour; one pint milk; one spoonful sugar; small piece of butter, size of a walnut. Scald the milk, flour, and butter together. After the batter is cold stir in the yolks of five eggs, and stir in the beaten whites just before baking. Bake in a quick oven. Eat with butter and sugar, or sugar and cream.

Little Puddings.—Beat four eggs very light; make a batter of two teacups flour, one teacup of cream, and three teacups milk, add the beaten eggs to the batter, beat well together, put in a spoonful of melted butter; bake in cups twenty minutes, in a quick oven.

In-growing Nails, Again.—It seems to be the unanimous opinion that the nail must be filed down. Now, poor sufferer, don't do any such thing. Take the advice of one who "has been there," and do this: With a sharp knife, commence at the root of the nail, about the sixteenth of an inch from the side that is growing down, and cut gently to the point. Care must be taken not to go too deep, to touch the flesh. Work the point of the knife under the piece, as much as you can, to loosen it. Take a pair of tweezers or small pincers, get a firm hold of the piece, shut your eyes, grit your teeth, and *give a good strong, quick, jerk.* You will have to do all your groaning immediately, for that nail will trouble you none afterward. I used to be a sufferer, and tried the filing until I was sick of it. I have never troubled me in the least since I dealt with it as above described. A. I. Powers.

Sponge Gingerbread.—Melt a piece of butter the size of a hen's egg; mix it with a pint of nice molasses, one tablespoonful of ginger, and a quart of flour. Dissolve a heaping tablespoonful of soda in half a pint of milk and mix it with the rest of the ingredients. The above makes a soft gingerbread—but if you wish a dough, add sufficient flour to enable you to roll out easily; roll about half an inch thick. Bake in a quick oven. We have found this recipe very convenient.

Puff Pudding.—Three eggs well beaten, nine tablespoonfuls of flour, one pint of sweet milk; bake in cups in a quick oven; serve with sauce.

Sponge Cream Cake.—*Editors Farmer:* As I have seen so many sending receipts, I thought I would send one I know to be good; it is a sponge cream cake: One and one-half cups of sugar, three eggs, one-third cup of water, two tablespoonfuls of cream, one tablespoonful of baking powder. Bake in jelly cake tins. Dressing: One pint of milk, one egg, two tablespoonsfuls of corn starch, one-half cup of butter, one cup of sugar; boil until thick enough to spread. Millie.

New Way of Cooking Oysters.—Take mashed potatoes, mix a canful of oysters with the potatoes, and with a knife cut the mass up fine; add one-half pound of powdered crackers; fix off with butter, pepper and salt, and moisten the whole with oyster juice; take little pats of this, roll them into powdered cracker crumbs, and fry till brown in butter, and the result when served warm is delicious.

Oil for Sewing Machines.—Do not use any animal or vegetable oil, such as lard oil, whale oil, or sweet oil; they all become rancid and gummy, and if you do not use your machine for a few months it will stick fast, and you will have to take it apart to clean it. The best cleanser, by the way, is benzine. The best lubricating oil for sewing machines, and all kinds of small machinery, is crude filtered petroleum of the heavy and thick kind, such as is found in Western Virginia. The heavy petroleum obtained by high temperature distillation, after the kerosene has been driven off, is not so good.

LIVE STOCK.

The Value of Sheep.

Farmers as a rule, eat too much salted meat both in summer and winter. There is certainly no reason whatever why this should be the case during six months of the year, and no valid reason, except prejudice, why fresh meat should not be used in summer to a far greater extent than it is.

The real reason is a groundless prejudice against the use of mutton, the most nutritious, economical and healthful of meats. It is true there is a single disability connected with the raising of sheep either as wool or mutton, and that is, the number of worthless curs with which our villages, and, indeed many of our farms abound; but this would be easily cured, if more or less sheep were bred on every farm, since it would then be to the interest of every farmer, not only either to kill or educate the farm dogs, but also wage unrelenting war against those not educated to understand the rights of property.

One of the principal objections to the use of mutton among farmers, we believe, is the taste the meat will contract from the wool, if not properly dressed. This is easily avoided. All that is needed is to bleed, skin and disembowel as quickly as possible, keeping the wool from contact with the flesh; wash thoroughly by dashing water inside the carcass, and cool as soon as may be. A small sheep, fat, weighing from sixty to eighty pounds, may easily be consumed by an ordinary sized family before it gets tainted, except in the hottest weather; if larger, it may be divided with a neighbor, to be returned in kind, or sold if the neighbor does not keep sheep. A small flock of sheep may easily be taught to heed and be driven to and from the pasture with milch cows. The wool will fully pay for the care bestowed, and the mutton may be considered clear gain; and, certainly, no one will deny, once having eaten a meal of well fed mutton, that it is infinitely superior to salted pork or bacon. Even when placed in competition with ham, either sliced or broiled whole, mutton will undoubtedly compare favorably with it, at least for a change.—*Western Rural.*

Milk and Beef.

Food is the support of the cow—that is, her system, and the calf she carries, of the milk afterward as a substitute. She can digest and use only a certain amount—no more. Now, if there is much milk, the food eaten and digested will mostly go to form this—and it requires good feeding to produce and keep up this large flow of milk, as with the Ayrshire, the Jersey, and, in many instances, the native cow. This is evidence against the idea, entertained by some, that both milk and flesh (including fat) can be secured at their maximum in the same animal. To divide equally what is digested, so that the milk gets half, and the flesh, fat, &c., the other half, could not possibly, it seems to me, afford a maximum quantity of milk, and, at the same time, a full development of beef.

It is true some animals, like some of the short-horns, afford a good carcass, and, in addition, a large flow of milk, when they are vigorous digestors. At the same time these animals never get fat while producing largely of milk. It is a rule—is it not universally the case?—that the milk must be stopped when the animal is to be fattened—stops itself, indeed, when fattening. Besides, there is an aptitude for milk or fat which is bred. We breed the one in the Ayrshire, the other in the short-horn. This aptitude must consist in applying the food for the purpose intended, either to produce fat or milk.

The stomach is the means for carrying out one or the other of these purposes, to convert all the food it can, and the quantity cannot be made sufficient to carry both purposes to their highest extent unless the digestive capacity is increased sufficiently. This then, it strikes me, is the point. Increase digestion and the two may be carried, aided by breeding for the two. Or either may be correspondingly extended —the milk increased in the milking strain, or increase of flesh and fat in the other, as now.

Horses Lying Down.

I do not know why a horse should not be as much rested and benefited by lying down as any other four-footed beast. A horse often sleeps standing up, and so does an ox. I know that it was claimed for a gray horse once, as a special merit, that he would not lie down unless his stall was well littered; consequently all expense of bedding might be saved, as no doubt it had been. Horses are peculiar about lying down. It seems as if they knew their helplessness when in this position, and were bound never to expose themselves to danger.

Although many may be lying down, every horse in a stable is on his feet at the slightest noise. It is, besides, almost universally regarded, and usually true, as a sign of ill-health, if a horse is found lying down in the day time. I have recently come to the conclusion, however, that if horses are perfectly easy in their minds, they will take as much comfort in lying down as cattle do, and I can point to one stable, not my own, where spirited, well-fed horses may be seen lying down at almost any hour of the day or night, and it comes from the perfect confidence they have in their groom.—*Southern Planter.*

Balky Horses.

The Society for the Prevention of Cruelty to Animals recommends the following rules for the treatment of balky horses:

1. Pat the horse upon the neck, examine the harness carefully, first on one side then on the other, speaking encouragingly while doing so; then jump into the wagon and give the word; generally he will obey.

2. A teamster in Maine says he can start the worst balky horse by taking him out of the shafts and making him go round the circle. If the first dance of this kind doesn't cure him, the second will be sure to do it.

3. To cure a balky horse, simply place your hand over the horse's nose and shut off the wind till he wants to go, and then let him go.

4. The brains of horses seem to entertain but one idea at a time; thus continued whipping only confirms his stubborn resolve; if you can by any means give him a new subject to think of, you will have no trouble in starting him. A simple remedy is to take a couple of turns of stout twine around the foreleg, just below the knee, and tie in a bow knot. At the first check he will go dancing off, and, after going a short distance, you can get out and remove the string to prevent injury to the tendon in your further drive.

Cows.

Treat them generous and kindly, but do not keep them fat, unless they are to be turned off into beef. A cow is a machine, a laboratory for converting raw materials into milk. If little be given, little will be received. All animals should have exercise, especially those kept for breeding. Some of them are naturally lazy, but they will be better for stirring about in the open air. It is cruel to keep animals tied up or shut up for days at a time. They need light too. Direct sunshine exerts a powerful influence for good on animals as well as on plants. Do not overlook a good supply of pure water two or three times a day; or good ventilation and proper cleaning of stables. When the ground is frozen and covered with snow, it may be well enough, on pleasant days, to scatter the fodder and allow the stock plenty of room to pick it up; but when it is muddy, no one but a sloven will fodder on the ground. Good racks should be made for the sake of convenience and economy.

A Remedy.

To avoid the ugly marks of broken knees, it is recommended, that when the horse falls the wound should be washed, by throwing a bucket of water upon it, and never irritating it by any friction; dry the wound then with a very soft cloth, and place over it a layer of dry cotton, a finger length in thickness, covering with a band of flannel, and the latter with the usual leather knee-cap not too tightly strapped. Let the horse repose three or four days and without touching the bandage; at the expiration of this period, take off the bandage very delicately and without touching the crust or the sore, and walk the horse for a little, but very slow, then replace the bandage as before. In thirteen days the crust will fall, the wound will not only have a new skin, but will be re-covered with hair, and no change of color will be perceptible.—*Paris Letter.*

Calves.

A calf that is infested with vermin, may be known by its rough coat covered with ticks. The young animals should be freed from these pests at once. A mixture of lard and sulphur rubbed along the spine and on the brisket will be effective; and a dose of a tablespoonful of sulphur and molasses, once a day for a week, will help greatly to drive away lice and prevent disease.

POULTRY.

Perches—How they should be made for Fowls.

Perches are generally placed too high. Probably because it was noticed that fowls in their natural state, or when at large, usually roost upon high branches; but it should be observed that in descending from lofty branches they have considerable distance to fly, and therefore alight on the ground gently, while in a confined fowl-house the bird flutters down almost perpendicularly, coming into contact with the floor forcibly, by which the keel of the breastbone is often broken, and bumble-foot and corns are caused. Some writers do not object to lofty perches, provided the fowls have a board with cross-pieces of wood fastened on to it reaching from the ground to the perch; but this does not obviate the evil, for they will use it only for ascent and not for descent. The air, too, at the upper part of any dwelling room or house for animals is much more impure than nearer the floor, because the air that has been breathed and vapors from the body are lighter than pure air, and consequently ascend to the top. The perches should, therefore, not be more than eighteen inches from the ground, unless the breed is very small and light. Perches are also generally made too small and round. When they are too small in proportion to the size of the birds, they are apt to cause the breastbone of the heavy fowls to grow crooked, which is a great defect and very unsightly in a table fowl. Those for heavy fowls should not be less than three inches in diameter. Capital perches may be formed of fir or larch poles, about three inches in diameter, split into two, the round side being placed uppermost; the birds' claws cling to it easily, and the bark is not as hard as planed wood. The perches, if made of timber, should be nearly square, with only the corners rounded off, as the feet of fowls are not formed for clasping smooth round poles. Those for chickens should not be thicker than their claws can easily grasp, and neither too sharp nor too round. When more than one row of perches is required they should be ranged obliquely—that is, one above and behind the other. They should be placed two feet apart, and supported on bars of wood fixed to the walls at each end; and in order that they may be taken out to be cleaned, they should not be nailed to the supporter, but securely placed in niches cut in the bar, or by pieces of wood nailed to it like the rowlocks of a boat. If the wall space at the sides is required for laying-boxes, the perches must be shorter than the house, and the oblique bars which support them must be securely fastened to the back of the house, and if necessary, have an upright placed beneath the upper end of each. Some breeders prefer a movable frame for roosting, formed of two poles of the required lengths, joined at each end by two narrow pieces, the frame being supported on four or more legs according to its length and weight of the fowls. If necessary, it should be lengthened by rails—connecting the bottoms of the legs and by pieces crossing from each angle of the sides and ends. These frames can conveniently be moved out of the house when they require cleansing. Or it may be made of one pole, supported at each end by two legs spread out widely apart, like two sides of an equilateral or equal-sided triangle. The perch may be made more secure for heavy fowls by a nail at each side fastened to each leg, about three inches from the foot.

The Dominique Fowl.

This truly valuable and meritorious fowl, as it name implies, is the oldest of the distinctive American species, being mentioned in the earliest poultry-books as an indigenous and valued variety. In the "New Standard of Excellence" they are described as follows: "The cock, comb, double, square in front, fitting close upon the head, top covered with small points, with a peak behind turning slightly upwards; wattles broad and full, well-rounded on the lower edge; beak bright yellow, short, stout at base, tapering to the point; eye large, bright and clear; head medium size, carried well up; deaf ear red, neck medium length, finely tapered, well speckled; breast very broad, deep and full; body large, very square, compactly built; wings medium size, carried up, bow and tips covered with breast and saddle feathers; tail full, expanded, sickle feathers carried medium height and well curved; thighs large and strong; legs rather short, stout, well-spread apart, free from feathers, and bright yellow in color; color of plumage light, slaty blue ground shade, each feather barred or pencilled across with bands of dark, slaty blue, free from white, black or red feathers; carriage and appearance very upright, noble and grand. The hen, comb the same as cock, but much smaller; wattles small and well-rounded; beak bright yellow, short and stout; eye large, bright and clear; head small and very neat; deaf ear red; breast round and full; tail full, well-carried, expanded; legs short and bright yellow, and free from feathers; color of plumage same as in cock."

Wright, in his "Illustrated Book of Poultry," says of them: "The Dominique is an excellent layer, very hardy, and good for the table. It grows fast and feathers quickly, while its plain homespun suit makes it very suitable for countless localities where more showy or 'valuable looking' fowls would be imprudent as out of place. It is to be regretted that in its native home it has been of late comparatively neglected, owing to the preference for imported stock of all kinds. However this may be, we have no hesitation in recommending the Dominique as one of the most generally useful 'all round' fowls we know."

It is the farmer's breed for profit, and I feel confident that whoever gives them a fair trial will not discard them for "Shanghais," "Cochins" or "Brahmas." In conclusion, permit me to say that the above must not be misconstrued into an advertisement, as I have "nary an egg nor the shadow of a hen" for sale, neither am I interested in the sale of any.—*W. E. Flower, in Germantown Telegraph.*

Feeding and Treatment.

Dear Sir: On reading "how 'F. J. W.' makes his hens lay," I could not resist the temptation of "scribbling" a few lines about my hens and how I do it. I also feed a warm mush every morning, through cold weather, and add all the curdled milk I can get. I heat the milk and turn off the whey, and use the curd. And twice a week I add to this chopped vegetables—cabbage, beets, onions, turnips, etc., just which I happen to have the handiest. And in the afternoon feed whole grain, of any kind I can buy the cheapest. And I do not fail to have plenty of eggs through the winter. I have been

troubled with roup, but since I began to feed carbolic acid in their mush once a week I have had no cases of roup.

I take a quart bottle, put in it an ounce of the crystals at drug store, and then fill with water, put a gimlet hole through the cork of the bottle, and fit tightly a pine plug. Of this I feed, say a teaspoonful to one dozen fowls once or twice a week in their mush, and also use it freely around my house and nests and perches once a week through winter, and oftener in summer. The plug in the cork enables one to throw it from the bottle in small quantities. Any one who is troubled with roup, try it, and see how smart your chicks will act.

And if any sign of roup appears, and the owner of the sick chicks has not the German Roup Pill, and he lives away up near the north pole, as I do, and the chick is *sick*, *awful sick*, don't wait to send to New York or Hartford, but get a stick of gum licorice at your drug store, and put down its throat a large piece, and bathe its head and throat with kerosene; feed warm mush, and the next day do the same, and in three days your sick chick will be convalescing, and with careful handling may be made to do good service through the remainder of the season.

I have seen in *Poultry Yard* a number of ledger accounts with poultry; but in all, so far, some fancy prices are mixed in. Now, what I want to see is an account kept of actual market prices of eggs and chicks sold and feed bought. I am keeping such a ledger with my 32 White Leghorn chicks. I have a very fine lot of full-blooded chicks, and I sell the eggs at market price, and chicks ditto.

Will some one who has kept such a record, give us the result? My 30 chickens gave me a profit through the winter of $30. M. E. Brown.

Keep Pure-Bred Fowls.

Aside from the great pleasure which it affords, it *pays better* to keep and breed pure-bred fowls than to breed and feed a lot of mongrels, which latter many do for fear of the expense of buying a few pure-bred fowls to start with. In determining which breed of fowls to get, make up your mind at the start that no one breed can or does possess *all* the desirable qualities you are in search of. If you wish to breed for laying, get Leghorns or Hamburgs; if you wish a breed for weight, get some of the Brahmas or Cochins; and if you wish a breed principally for ornament, get the Polish; but give up the idea of getting a grand combination of all these qualities in one breed. Make up your mind what you wish in the way of fowls, and then select such breed as will answer those requirements best. Give them good, comfortable quarters, supply them liberally with water, giving them requisite care and attention, and you will never have cause to regret your investment in pure-bred fowls. When your neighbors see what fine birds you have, they will naturally want some of them, or a setting of the eggs, and thus will a demand be created which will amply repay your first outlay of cash and subsequent trouble and expense. If you had bred nothing but mongrels, there would have been little or no demand, and then merely at market prices. A good trio of pure-bred fowls, of almost any kind, can now be bought at fair figures from reliable breeders, in most sections of the country.

Parasites on Hens.

A hen was found so lame she could not walk. Parasites under the scales around the joint just at the edge of the feathers, were the cause. Two applications of turpentine effected a cure, followed by anointing with coal tar. The turpentine killed the insects, invisible to the naked eye, and the coal tar healed the soreness.

Literary and Personal.

Of course, no one who reads the communication on page 84 in our June number, or our editorial entitled "Southward Ho!" &c., will come to any other conclusion than that the lands offered in "Clover Hollow," Va., are anything else but virgin lands, land that is quite different from the worn out soils of Old Virginia. Mr. H.'s communication fully explains what they are. In our editorial, we were discussing the subject of immigration *per se*, and only alluded to the Houpt lands incidentally, by way of illustration. When we remarked that "one old, or partially worn out farm, renewed and restored to a productive condition, is of more value to the country than a dozen virgin farms that need no prolification," we had reference to the general subject, and not to the Houpt lands; just for the same reason that one reclaimed sinner causes more joy in heaven than ninety and nine just persons who need no repentance. In the possibility of restoring old lands there is future hope: because, the forcible abandoning of old lands and taking up new ones, in a far off locality, involves ultimately, a barren and deserted country, and human retrogression.

Bulletin of the "American Berkshire Association," vol. 1, No. 2, for July, 1879, Springfield, Illinois, 36 pp. 8vo. giving the proceedings of said association, with choice selections from the addresses of some of the most distinguished journals and speakers in Europe, Canada and the United States, and a list of its officers, embellished with three full page illustrations of favorite stock. A wonderful amount of information on the subject of stock-raising and kindred occupations.

Summer Pamphlet of pot-grown strawberry plants: for sale by I. T. Lovett, Monmouth Nursery, Little Silver, Monmouth county, N. J., an 8vo. pamphlet of 12 pp. with two beautiful illustrations of the "Sharpless" and the "Glendale" strawberries, the first named of which is beautifully colored. Giving price lists of some fourteen varieties, with full instructions for their cultivation; nature of soil, its preparation, and setting out plants under different systems, and other interesting matters in relation to their culture.

The Fancier's Weekly.—A super royal octavo of 12 pages, devoted to the rapidly increasing Poultry interest. No. 1, vol. 1, of this enterprising journal has been placed on our table, and it looks "for all the world" as if it was going to succeed; and if it don't, then for once, excellence in letter press, embellishments, paper and literary ability will go unappreciated and unrewarded. Live or die we extend our hand and friendly recognition. Welcome into our fellowship. $1 a year, Albany, New York.

Ward's Museum of Mineralogy, Geology and Zoology, No. 2, College Avenue, Rochester, N. Y. Prof. H. A. Ward. A quarto circular of 8 pages, giving lists of natural objects on hand and for sale, in Mineralogy, Geology, Paleontology, Archaeology, Ethnology, Zoology, both vertebrate and invertebrate; relief maps, charts, pictures, &c., &c., the details of which are exceedingly interesting to collectors. By sending to the above address, information through circulars or correspondence may be obtained. Prof. Ward purchases choice specimens of American minerals and fossils, &c.

Premium List of the York county Horticultural and Industrial Society. *First Exhibition* at York, Pa., September 17, 18 and 19, 1879. 20 pp. royal 12 mo., containing also Rules and Regulations of the Association, lists of officers, and an introductory address to the public. The premiums offered are very liberal, and are for the best grades of fruits, flowers, vegetables, dried fruits and grain, painting, penmanship, drawings, pantry and kitchen products, household manufactures, embroidery, crotchet and tatting work, cabinet ware, saddlery, musical instruments, sewing machines, new inventions and miscellany. This is an entirely different organization from the York county Agricultural Society, and exhibits an energy that *ought to be contagious.*

Premium List of the *Twenty-seventh Indiana State Fair*, to be held at Indianapolis, September 29th to October 4th, 1879. An 8 vo. of 40 pp. in paper covers, with an introductory; Lists of members of the State Board of Agriculture; Executive Committee; Superintendents; Rules and Regulation; Instructions to Judges: Forms of Protests; Programmes of Departments, and 48 "Books" of liberal premiums, diplomas, silver medals, &c.; General Regulations; and List of the District and County Fairs of Indiana, for the year 1879. Indiana seems to be far ahead of Pennsylvania, in this respect. In addition to the State Fair, *seventeen* District Fairs, in as many different places, and *fifty-five* County Fairs, in as many different counties, have been already announced for the year 1879.

Peck & Snyder's Illustrated Price List for 1879. Being a Guide for Sportsmen, and devoted to the advancement of all legitimate *Sports and Pastimes*, both out and indoor. Published annually for the benefit of their patrons and themselves. Price 10 cents. Manufacturers, importers and dealers in an immense variety of goods, almost literally—"from a needle to an anchor." "Now by Saint Paul," we like that. They publish it for the benefit of themselves, as well as that of the public. It is so common for advertisers to simperingly announce that they have no interest whatever in the matter, and that they are making the most extraordinary sacrifices for the interest of the public alone. 192 pages 12 mo. profusely illustrated, No. 124 Nassau Street, New York.

La Belle Letter-copying Book and Ink.—A quarto circular of eight pages, amply illustrating what is represented to be the best and most expeditious system of transferring copies of written letters to a book prepared for that purpose, extant, and from a practical test in our presence, so far as our experience is concerned, we believe it possesses all the merit it claims. This is eminently a Chicago invention; and, if the testimony of all the leading Chicago newspapers, merchants, Court officials, municipal officers, and county and city functionaries is of any value, it comes strongly recommended, and our testimony is certainly not adverse, but rather confirmatory. Dr. E. B. Herr is the Agent for Lancaster county; who will give all necessary information on application to him, at Creswell, Lancaster county, Pa.

Quarterly Report of the Pennsylvania Board of Agriculture, for March, April and May, 1879. With the valuable and interesting tabulated statistics, relating to farm wages; board; prices of farm products and stock; condition of stock; acreage in crops; and condition of crops; instituting a comparison between the years 1878 and 1879 during the same period. 40 pp. royal octavo, creditably gotten up as all its former publications. These reports contain much valuable information as a whole, and much that may be referred to with profit in the future; but, as reports of the growing crops, they are not of much practical account; simply because always a month or six weeks intervenes between the period to which they are estimated and their publication, and six weeks in a growing season, is capable, sometimes of working a wonderful revolution in the condition of vegetation, either beneficial or hurtful.

Associated Dairying; Creameries and Creamery Butter; Cheese and Cheese-making; Our Dairy House and the best Butter; 74 pages 16 m. Price, paper 20 cents. Limp cloth, 30 cents. S. H. Zahm & Co., Publishers, Lancaster, Pa. Not only farmers and dairymen, but all who may buy or eat butter, will find something of interest in this treatise. It tells how the celebrated *Creamery Butter* is made, and shows the workings of the now widely-extended system of associated dairying under which it is produced. Cheese too has some space devoted to it, but no odor of Limburger clings to its leaves. No other modern improvement in the practice of agriculture has proved more profitable and convenient than the creamery, nor has any other added more to the uniform excellence of its products; and the system of which the Creamery is a part, has of late attracted renewed attention.

The work is printed on good paper, and we think will meet the wants of those who are looking for information in regard to the subject treated. We commend the work to our readers as a worthy production.

The "Village Belle."—This is a beautiful *Chromo*, 14 by 18, printed on Cottrell & Babcock's "Four Roller Cylinder Press," of No. 8 Spruce Street, New York, and is as beautiful a specimen of this kind of picture printing as we have yet seen. Those desiring further information, as to quality and capacity, will do well to send for their Illustrated Catalogue of all their presses, which has just been published.

A pure, unsophisticated and artless village maiden, just blown into womanhood, seems to have been gleaning—like another Ruth—and, with sickle and canteen is returning from the field, bearing her sheaf on her shoulders. Crimson marigolds are twined low in her hair behind, and she seems absorbed in deep contemplation, or perhaps only in a "brown study," as to whether *he* will keep his promised tryst. What a pity that the airy castles of early life should be doomed to the undermining process of time, disintegrate, topple over and decay. But, perhaps after all, the picture is only a "make-believe." Those chubby hands don't look like the brawny and bony digits of one accustomed to "pot-wrestling" and the scullery; nor yet to the lacerated or callous "paws" of the professional reaper and gleaner.

So much for the sentiment of the piece. The mechanical contrivance that can throw off such pictures—perhaps as fast as they can be counted—is entitled to a prior consideration; just as a picture portrayed by the hand, is of almost infinitely less consideration than the hand that produces it, or the mind that guides that hand.

Farm, Field and Fireside, devoted to agriculture, markets, and home literature. A royal quarto of 16 pages; Thos. W. Herringshaw, proprietor: Fred. Haukohl, editor: Charles W. Cook, business manager: published semi-monthly (?) at $1.00 per year, in advance; single copies 5 cents. Professes to be "the best Agricultural and Literary paper published," and, under that binomial combination, we are not preared to say that it is not; notwithstanding the absence of a specific qualification may indicate the whole world. We are *too young* to know what is in the world, notwithstanding we have struggled through a decade or more. To make a long story short this journal is worthy the companionship of those excellent publications "The National Live Stock Journal," "The Prairie Farmer," and "The American Stockman," all domiciliated in that remarkable Gotham of the West—Chicago. The marked editorials, however, relating to the peculiar virtues of "revolvers" are *mal apropos*, so far as *we* are concerned. We are verging rapidly towards "three score and ten," and yet we never had occasion to use a weapon more formidable than a toothpick in our life, and we have been in our time at least 2,000 miles from home for months together. Modern, improved, and cheapened revolvers may be the visible outbirths of genius, but it is a genius that is not evolved from the regions above. Anyhow, what can genius be thinking about, when it ultimates a revolver that will "go off to a hair," and is "sure to kill" at forty paces or more? Nevertheless, the *Farm, Field and Fireside* is a capital journal within the sphere where it professes to labor. Spicy and witty, if it *is* "young." Heigho! we wish *we* were young.

A HOME ORGAN FOR FARMERS.

THE LANCASTER FARMER,

A MONTHLY JOURNAL,

Devoted to Agriculture, Horticulture, Domestic Economy and Miscellany.

Founded Under the Auspices of the Lancaster County Agricultural and Horticultural Society.

EDITED BY DR. S. S. RATHVON.

TERMS OF SUBSCRIPTION:

ONE DOLLAR PER ANNUM,

POSTAGE PREPAID BY THE PROPRIETOR.

All subscriptions will commence with the January number, unless otherwise ordered.

Dr. S. S. Rathvon, who has so ably managed the editorial department in the past, will continue in the position of editor. His contributions on subjects connected with the science of farming, and particularly that specialty of which he is so thoroughly a master—entomological science—some knowledge of which has become a necessity to the successful farmer, are alone worth much more than the price of this publication. He is determined to make "The Farmer" a necessity to all households.

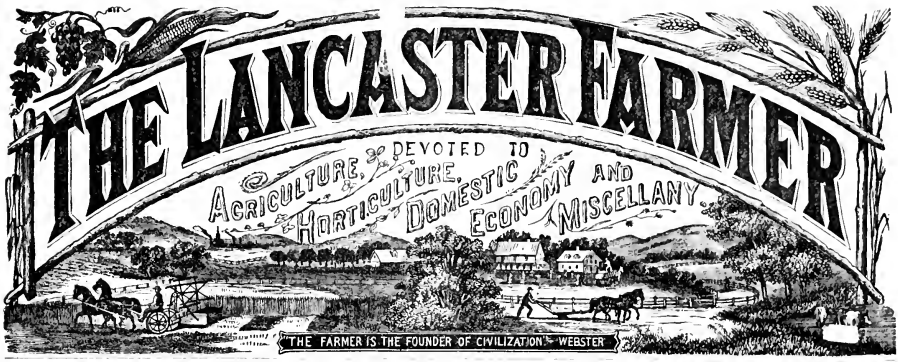
A county that has so wide a reputation as Lancaster county for its agricultural products, should certainly be able to support an agricultural paper of its own, for the exchange of the opinions of farmers interested in this matter. We ask the co-operation of all farmers interested in this matter. Work among your friends. The "Farmer" is only one dollar per year. Show them your copy. Try and induce them to subscribe. It is not much for each subscriber to do but it will greatly assist us.

All communications in regard to the editorial management should be addressed to Dr. S. S. Rathvon, Lancaster, Pa., and all business letters in regard to subscriptions and advertising should be addressed to the publisher. Rates of advertising can be had on application at the office.

JOHN A. HIESTAND,

No. 9 North Queen St., Lancaster, Pa.

ONE DOLLAR PER ANNUM.—SINGLE COPIES 10 CENTS.



Dr. S. S. RATHVON, Editor. LANCASTER, PA., AUGUST, 1879. JOHN A. HIESTAND, Publisher.

Entered at the Post Office at Lancaster as Second Class Matter.

CONTENTS OF THIS NUMBER.

PENNSYLVANIA RAILROAD SCHEDULE.
Trains LEAVE the Depot in this city, as follows:

WE TWARD.	Leave Lancaster.	Arrive Harrisburg.
Pacific Express*.....	2:40 a. m.	4:05 a. m.
Way Passenger†	5:00 a. m.	7:50 a. m.
Niagara Express.....	9:30 a. m.	10:40 a. m.
Hanover Accommodation,.	9:35 p. m.	
Mail train via Mt. Joy.....	11:15 a. m.	1:00 p. m.
No. 2 via Columbia.....	11:20 a. m.	1:30 p. m.
Sunday Mail.....	11:20 a. m.	1:30 p. m.
Fast Line*.....	2:10 p. m.	3:45 p. m.
Frederick Accomodation.	2:15 p. m.	Col. 2:35 p. m.
Harrisburg Accom.....	5:45 p. m.	7:40 p. m.
Columbia Accommodation,.	7:20 p. m.	Col. 8:00 p. m.
Harrisburg Express	7:25 p. m.	8:40 p. m.
Pittsburg Express.	9:25 p. m.	10:50 p. m.
Cincinnati Express*.....	11:30 p. m.	12:55 a. m.

EASTWARD.	Lancaster.	Philadelphia.
Atlantic Express*.....	12:20 a. m.	3:05 a. m.
Philadelphia Express*.....	4:10 a. m.	7:00 a. m.
Fast Line*.....	5:30 a. m.	7:40 a. m.
Harrisburg Express.....	7:35 a. m.	10:00 a. m.
Columbia Accommodation,.	9:25 p. m.	12:00 p. m.
Pacific Express*.....	1:20 p. m.	3:40 p. m.
Sunday Mail.....	2:20 p. m.	5:00 p. m.
Johnstown Express	2:20 p. m.	6:00 p. m.
Day Express*.....	8:18 p. m.	7:40 p. m.
Harrisburg Accom.....	5:50 p. m.	9:00 p. m.

The Hanover Accommodation, west, connects at Lancaster with Niagara Express, west, at 9:35 a. m., and will run through to Hanover.

The Frederick Accomodation, west, connects at Lancaster with Fast Line, west, at 2:10 p. m., and runs to Frederick.

The Pacific Express, east, on Sunday, when flagged, will stop at Middletown, Elizabethtown, Mount Joy and Landisville.

*The only trains which run daily.
†Runs daily, except Monday.

The Lancaster Farmer.

Dr. S. S. RATHVON, Editor. LANCASTER, PA., AUGUST, 1879. Vol. XI. No. 8.

EDITORIAL.

THE NEW DEPARTURE.

The incorporation of the Agricultural and Horticultural Society of Lancaster County, may be appropriately regarded as the starting point of a "new departure." But it will be borne in mind by the members of that organization that this only purports to be the *starting point*, and as a departure may be retrogressive as well as progressive, they should see to it that they do not move in the wrong direction. At the July meeting of the Society its final reorganization was completed by the adoption of a Constitution, By-laws, and Special Resolutions for its better government; under, and in conformity with the act of Incorporation. Below we publish the three documents above referred to, in order that the readers of our journal may know exactly the laws under which the Society is working; and if there are any members who are not subscribers to THE FARMER, if they take a living and working interest in the progress of the Society, that interest should so far influence them as to become subscribers without further delay. THE FARMER publishes monthly, and has published monthly, from its very first number in January, 1869, the proceedings of the Society, as well as all essays read before it, and a synopsis of all the discussions had before it. These, together with its organic laws, will enable the members at all times to act intelligently in all that relates to its welfare.

CONSTITUTION.

1. The name of the corporation shall be "The Lancaster County Agricultural and Horticultural Society."

2. The purpose for which it is formed shall be to encourage and improve agricultural, horticultural, domestic and household arts, and any other matters pertaining to the interests of agriculture and horticulture.

3. Its place of business shall be in the county of Lancaster.

4. The term of its existence shall be perpetual, subject to the power of the General Assembly, under the Constitution of the Commonwealth.

5. The officers of the Society shall be a President, two Vice Presidents, five Managers, a Recording Secretary, a Corresponding Secretary, and a Treasurer, to continue in office for one year, and until others are elected; all officers to be elected by ballot at the annual meeting.

6. The by-laws of this Society shall be made by the members in good standing, at a general meeting called for that purpose, and shall prescribe the time and place of meeting of the Society, the terms for the admission of members, the powers and duties of the officials, and such other matters as may be pertinent and necessary for the business to be transacted; *Provided* that such by-laws are not inconsistent with this charter, the constitution and laws of the Commonwealth, and of the United States.

7. This Society to have all the powers and authority, and be subject to the limitation and regulations of corporations of the "First Class" under act of Assembly entitled, an act "To provide for the incorporation and regulation of certain corporations;" approved the 29th of April, A. D. 1874, and its supplements.

BY-LAWS.

1. The Society shall consist of annual members, life members and honorary members; who shall be proposed at one meeting and balloted for at the next meeting, and a majority of the members present voting in the affirmative shall constitute an election.

2. Annual members shall pay *one dollar* initiation fee, which shall be considered their regular dues for the first year, or any fraction of the year; but they shall pay one dollar annually thereafter, beginning with the first annual meeting after their election, and a refusal or neglect to pay said annual contribution for six months after they have been notified by the Recording Secretary, shall sever their connection with the Society, if so determined by a majority of the members present at any stated meeting when a vote is taken thereon.

3. Life members shall pay a fee of *ten dollars* to constitute them such, but they shall not be required to pay any dues or fees thereafter.

4. Honorary members shall not be required to pay any fees or dues, and they shall be entitled to all the privileges of annual and life members, except that they shall not have a vote for officers, nor on any question involving the financial responsibility of the Society.

5. The stated meetings shall be held on the first Monday in each month, and the first meeting in each year shall be called the *annual meeting*, at which time all the elective officers shall be elected; *Provided*, that under certain contingencies it may be ordered otherwise by special resolution, so far as it relates to the *day* of meeting.

6. *Seven* members shall constitute a quorum, for the transaction of business, and the Society shall not be dissolved, or its property divided, so long as *ten* members wish to keep it in existence; *Provided*, that *five* members may have power to adjourn to any day before the next stated meeting.

7. The hour of meeting shall be at 1 o'clock p. m., and the place shall be specified from time to time by special resolution.

8. The *President* shall occupy the executive chair at all stated and special meetings; shall give the casting vote on questions in which the members are equally divided; sign all orders on the Treasury; and shall perform such other functions, and be entitled to such privileges as usually appertain to his office.

9. The Senior *Vice President* shall preside, during the absence of the President, unless those officers mutually agree otherwise; but as soon as the President enters the meeting room, the chair so occupied shall be vacated and accorded to him, except in cases of temporary inexpedience, or he requests it otherwise.

10. The *Secretary* shall record the proceedings of all stated and special meetings; attest the President's orders on the Treasury and shall receive all fees and dues, recording them in the proceedings, and pay them over to the Treasurer, taking his receipt for the same.

11. The *Treasurer* shall be the custodian of all the funds of the Society, and shall pay them out on the order of the *President*, attested by the *Secretary*; but no bill shall be paid unless it has received the sanction of the Society, or the Board of Managers.

12. The *Corresponding Secretary* shall conduct the correspondence of the Society, and shall notify all persons who have been elected members of the same, and also the quality of their membership.

13. The *Board of Managers*, of which the President shall be ex-officio the chairman, shall have the general control of such property, stocks, books or other values as the Society may from time to time possess; shall direct and supervise all public exhibitions, and under the sanction of the Society shall have power to borrow and lend; to make contracts and fulfill contracts; and shall designate three of their number to represent them in making contracts with others. They shall also appoint a *Librarian*, a *Chemist*, a *Botanist*, a *Mineralogist* and an *Entomologist*, who shall hold those offices during good behavior, or until they voluntarily resign said offices.

14. All officers shall submit an annual report on the condition and work of their respective offices, which shall be in writing; *Provided* that the report of the President may be in the form of an annual address, on such general topics as relate to the progress and advantage of the Society and its objects.

15. The *Librarian* shall have the custody of the books, pamphlets, periodicals, papers, manuscripts and such other literary property as the Society may from time to time possess, and shall label, number and catalogue the same for the use of the members.

16. These by-laws may be altered, amended or supplemented at any time by a majority of the members present at any stated or special meeting; *Provided* that a proposition has been submitted one month previous to the vote being taken thereon; and that such alterations do not contravene the charter or the laws of the Commonwealth.

SPECIAL RESOLUTIONS.

1. Should any person proposed and duly elected a member of this Society, refuse or neglect to pay his initiation fee, as provided by the By-Laws, for three months thereafter, his proposal and election may be considered null and void; but nothing herein shall be so construed as to prevent him from a subsequent proposal and election.

2. The meetings of the Society shall be held in the *West Room* on the third story of the *City Hall*, in the city of Lancaster: except in cases hereinafter designated, or as may be otherwise from time to time provided.

3. Two thirds of the members present concurring, at any stated meeting of the Society, it may be lawful to hold the next stated or special meeting anywhere within the county of Lancaster; *Provided*, that a resolution to that effect has been offered at a previous meeting; that such place shall be accessible by railroad or stage, and that two such meetings in succession shall not be held out of the city limits of Lancaster.

4. "*Good Standing*" shall be interpreted to mean, one who regularly pays the fees and dues, provided by the *By-Laws*, and is free from criminal offence.

5. When the first Monday in any month shall occur on the first of January, first of April, Easter Monday, Whitsuntide Monday, or on the fourth day of July, then the meetings in those months shall be held on the *Second* Mondays, and that fact shall be stated distinctly from the chair at the previous meeting, and shall be recorded in its proceedings.

6. The official year shall begin on the first day of January, and all official reports—either financial, statistical, meteorological or otherwise—shall be made and calculated as near as possible to that date.

7. When any meeting is held elsewhere than the city of Lancaster, as provided in the second and third special resolutions, the time and place shall be determined by a majority of the members present, and the chair shall distinctly announce the same before the meeting adjourns, and said meeting shall be in lieu of the one which would otherwise have been held in Lancaster.

8. If deemed necessary, the Secretary may be authorized to duly advertise such meetings as are contemplated by resolutions three and seven, as *Meetings Extraordinary*, at least one week in advance.

STATE AGRICULTURAL EXHIBITION.

The Fair of the Pennsylvania State Agricultural Society will be held this year in the Main Building, Fairmount Park, and on the grounds, opening on the 8th day of September, 1879, and, in connection with the Permanent Exhibition now held there, it promises to be second only to the World's Fair held there in 1876; and, it is hoped that the joint attraction will again crowd the structure and the grounds with an immense concourse of visitors. That every branch of American art and industry in its latest and most perfect develoement should be fully represented, is but a dictate alike of business interest and patriotic pride.

The dairy industry, with its herds of thoroughbred cattle, and its lately introduced processes and machinery for cheese and butter making; the wool industry, with its improved breeds of sheep; as well as the silk, cotton and flax industries, with the products of the loom; the finest breeds of swine and poultry, and the results of fish culture, all will be represented there. The State Society offers $9,000 in prizes for live stock alone. A ring for the display and exercise of horses and cattle will be provided, but all racing will be prohibited. Liberal premiums are also offered for all kinds of manufactured goods; heating lighting, ventilating and cooking apparatus; tools, implements and machinery, and the products of the fine arts. The Turkish, Tunisian and Scandinavian Courts in the east nave of the building have been allotted to fruits and flowers; and the products of vineyard, orchard, garden and conservatory have never had more elegant accommodations provided for them heretofore. Horses and cattle will be assigned to quarters within the main building.

Of course the best of its kind should be placed on exhibition there, but as it would be impossible for any one to determine beforehand which is best, let no one decline to be an exhibitor, merely because he may think his productions may not be the best—*that* can only be determined by comparison. On the whole, we think it a good move on the part of the State society to hold its annual exhibition on the classic ground it has selected this year, and, if it were to make them permanently there, and in future become less of a *tramp*, we believe it would be better for the Society, socially and financially, and it also would be more useful to the State at large. Let the interior exhibitions be in the hands of the counties or districts; because an itinerating State exhibition, nine times in ten, does not amount to as much as an ordinary county fair, if it does not prove a failure.

PALLISER'S AMERICAN COTTAGE HOMES.

This work is illustrated by forty plates, each of which is *nine inches by twelve* in size, containing fifty designs of modern low priced cottages and workingmen's homes, suitable for erection in city, suburb, village, or the country. There are *two hundred and sixty* separate drawings; giving plans, directions, perspective views, sections, details and specifications; also descriptive letter press on the back of plate, giving forms of contracts, and other matters relating thereto. This, to all intents and purposes, as well as utilities and values, is a $10.00 book, both in size and quality, and in style it is just the thing needed for such houses as are called for daily by the masses of the people. If a poor man desired to build but a single house in all his life, it might be more to his interest than the cost of a dozen copies of the book; which can now be obtained at the astonishingly low price of $5.00. It is in one Royal Quarto volume, printed on heavy tinted plate paper, handsomely bound in half leather, with side stamp in gold. It is eminently a book for the people, and it is difficult to comprehend how any *carpenter* or *builder* can afford to be without it. All the opinions of the press, whose commendations are of any value in regard to such a work, have given the highest testimonials of its character. If any of our patrons or the public desire a copy of the work, we will volunteer to be the medium through which they may obtain it without any trouble to themselves. The *Scientific American* says:

"This firm is doing valuable service in its frequent publication of copiously illustrated works containing designs for dwellings which are not only moderate in price but in accordance with a constantly improving popular artistic taste. American village architecture has long been remarkable for lack of beauty, chiefly perhaps on account of the rapidity with which new towns spring up in this country, and the necessity of building at low cost. Now that the best architects do not think the planning of a workman's cottage unworthy of their skill, we may look for the application of better principles both in construction and exterior appearance. The present work is a notable instance of what may be done toward adapting really tasteful and new designs to the exigencies of moderate outlay. Here are fifty designs, each giving the necessary plans, elevations, and perspectives of cottages, none costing more than $4,000 to erect complete, and ranging from that figure down to as low as $325 for a very neat two-room one and a half story dwelling. All are tasteful, many picturesque and elegant. They are intended for the country and look rural, which is much more than can be said of the ineffectual attempts to imitate French city architecture on a reduced scale, which of late years many architects have made in planning country homes. Full forms of specifications and agreements are given, so that the reader has only to select his design and make a contract with a builder to have it constructed."

THE TOBACCO FLY.

When the flies come to the top of the earth they are very full of eggs, before they are fully developed or their wings are formed. Its body is thick and plump, and it will crawl up on any bush, weed, grass, fence, or anything it can get to, remaining there until its wings are strong enough to carry the body. As soon as they can fly they commence laying eggs. They deposit their eggs the first night of their winged existence. I have confined them in a room, and give it as my opinion that nine-tenths of all their eggs are deposited the first night after they begin to fly. Of course, they are likely to be killed by sucking the flowers, and are likely, also, to leave the tobacco and go to the flowers before depositing all their eggs; but, according to my observation, they are too busy depositing their eggs to pay much attention to blossoms. After they have deposited all, or a great portion of their eggs, then they are busy sucking flowers; their bodies have become more sharp and elongated; they can fly with greater ease and rapidity, and have nothing to do but suck the blossoms for two or three nights and die. And it is during this time, when they have deposited the greater portion of their eggs, the largest number of flies are killed. I have confined in a room, and provided for it everything to sustain life, and find that it lives only two or three nights after depositing its eggs. My opinion is that the fly impregnates the worm while it is on the tobacco. And with all due deference and respect to the opinions of others, in my humble opinion I do not think the killing of the fly while sucking the blossoms will lessen the number of hornworms to any very great extent.

Now, you ask just here what I propose in the premises. Let the farmers throughout the tobacco districts put in a fewer number of acres—to lessen the crop one-half would not be too much. Let what ground you do cultivate be of the best quality and well-manured. We believe it possible to produce, with proper manuring and cultivation, 1,500 pounds of good tobacco per acre. Let no worms arrive at maturity or become large enough to be impregnated by the fly. Let the tobacco you do cultivate be a better quality than has heretofore been cultivated, and the results will be that farmers will realize more money for what tobacco they do cultivate than at present.—*Exchange.*

We publish the above—although its author, and the journal in which it was first published are both unknown to us—simply because among its glaring errors there may be some grains of truth, and we give our readers an opportunity to receive them in a practical, off-hand way.

It is just possible, that those who may depend upon destroying these "Tobacco-flies" (*Sphinx carolina, et 5-maculata*) by poisoning the flowers they visit in the evenings, or by striking them down with paddles, or by catching them in nets, may attach too much importance to those remedies, or may kill the flies after they have deposited all, or nearly all their eggs; and then, supposing they may have circumvented the enemy, may relax their vigilance, to the detriment of their crop. It may also be true that in the earlier life of the fly it deposits the greater portion of its eggs, although not before the females become fertilized: but to assert that the fly "impregnates the worm," is a most preposterous assumption. True, the author does not say that he witnessed the act, but he gives it as his "opinion," an opinion, than which nothing could be more absurd. As well might he give it as his opinion that a cock impregnates a chick when it is a day old, or a bull impregnates a sucking calf. Even if we had never found the male and female tobacco flies in the very act of coition, we could not believe such a monstrosity as he refers to, reasoning on analogy alone. The *worm* is the infant of the *fly*, and in it the sexual organs are as little developed as they are in a chick or a calf, and are beyond the power of reproduction.

Nothing could more clearly illustrate that editors of agricultural journals should have sufficient knowledge of entomology to prevent them from publishing such articles without note or comment, no matter from whom they may come. It is singular, too, that out of the great body of tobacco growers in the country, there are so few among them who seem capable of making and recording accurate observations upon the transformations and habits of the enemies that so conspicuously infest their crops. This *opinion* only excels in absurdity the one we refuted and ridiculed about a year ago, to the effect that tobacco worms changed into grasshoppers, and in that form deposited the eggs upon the plants. And then one paper after another copies these articles as standard agricultural literature—sometimes enhancing their absurdity—but never adding a word as to the impossibility of such wonder-working tales. It is true, there are many wonderful phenomena in the transformations of the insect world, but they are all orderly in their development, and in conformity with pre-established law, clearly seen and understood when those laws are known.

OUR LOCAL EXHIBITION.

By reference to the proceedings of our local Agricultural and Horticultural Society, it will be seen that a resolution was carried to hold an exhibition the present season in the Northern Market House, if the building can be obtained for that purpose. This in our opinion would be a very appropriate place, and although we do not attempt to speak with authority, yet we do not entertain a doubt about its use being readily granted for that purpose. The exhibition might be opened there on Wednesday morning and continued to Friday evening, without at all interfering with the market hours. The stalls and tables are ready at hand, and no expense would be incurred in fitting up, and everything would be protected from sun or rain; besides, the building is spacious and the ventilation perfect. All that is required is for the Board of Managers, who, under the new by-laws have the superintending control of all fairs, to be energetic, and the members to earnestly sec-

ond their efforts, by a resonably active support.

The state of agriculture, horticulture and floriculture has never been so unpropitious in Lancaster county but what a creditable display of its productions could be made in any season, if only the people were honestly to will it. People should exhibit what they have, no matter how favorable or unfavorable the season may have been. If the season has been unpropitious in any districts of the county, or in the whole country, it may be as interesting to witness the evil effects upon the productions of the soil, as to witness the good effects of a favorable season.

We would therefore admonish the members of the Society to earnestly go to work, and get up such an exhibition as will do honor to our "garden county," and we believe that they can accomplish it in a far greater degree than they may now suppose. We ought to accept, appreciate and reflect the bounties of nature, just as she has furnished them to us, in order to show that we are worthy recipients of her gifts. The man or woman who will not exhibit their productions of the soil unless they can have the pre-assurance that they are the very best among a display, may be influenced by more self-pride and ambition than is absolutely necessary to constitute them good farmers, or farmers' wives. In our view of the matter, a display that exhibits the average products of a county or a State, is far more satisfactory both to home residents and strangers, than a few extraordinary agricultural achievements that have been the mere results of chance, and the production of which it would be impossible to communicate to another.

In a favorable season anybody or everybody may produce handsome and thrifty specimens of vegetation, without having exercised any more than ordinary skill or vigilance; but, if under adverse circumstance, one man can produce better crops than another, it is of interest to the whole public—the consumer as well as the producer—to know from ocular demonstration that such an effect has been produced, and the manner in which it was accomplished. The agricultural, horticultural, and floricultural products of the country lie at the very base of our physical, social and financial structure, and through these exercises a corresponding influence upon our mental and moral being, and instead of being merely subordinates in the body politic, they are absolutely primitives.

There has hardly ever been an exhibition of the agricultural, horticultural, and floricultural produce of Lancaster, that scores of those who visited them, have not remarked: "Oh, had I known it beforehand I could have exhibited"—this, that or the other thing—"superior to anything I see here." Doubtless they have felt gratified, on the whole, but still have been compelled to make the confession that they could have contributed something that would have been equally gratifying to some other person had they been willing to do it. Now, these are the people who should compose the company of an agricultural display. Of course there are hundreds who are so situated that it would be impossible for them to be anything else but auditors, but as an exhibition without auditors would practically render the whole thing void, therefore their presence in goodly numbers is also necessary, in order to make it a success, and to diffuse its benefits among society. Through these channels also those social streams flow which are the medium of friendly intercourse between the different elements of society. "Freely ye have received, freely give," is an inculcation that cannot be ignored with profit in an era of humanizing progress.

By reference to page 124 of this number of THE FARMER, it will be seen that the Society has obtained the Northern Market House, and have adopted Wednesday, Thursday and Friday, the 10th, 11th and 12th of September next, as the time on which to hold the exhibition.

QUERIES AND ANSWERS.

PEACH BEETLE.

LANCASTER, July 23, 1879.

Dear Sir: These beetles were found on a peach tree on the farm of Isaac L. Landis, in Manheim township. They puncture the bark and enter into it endways, and then work cavities underneath and between the wood and outside bark. The tree was full of them at the trunk or stem up to the limbs.

Is there anything new or not in their appearance as peach tree borers. I never saw them before.—*Yours truly, Israel L. Landis.*

Your insects are not new, although so far as my knowledge of them extends, they are not very frequent. During the last six years small infested branches of the peach tree have been sent me, on two occasions from the Southern part of Lancaster county, and once from Cecil county, Md. In this last case the branch was over an inch in diameter, and three inches long, in which were at least a dozen of the insects developed, besides those that had escaped before I had received it. It is a small, black, roughly punctured and striated insect, and belongs to the order COLEOPTERA, and family SCOLYTIDÆ, and catalogued by Dr. Harris as *Tomicus liminaris*. Dr. Leconte, in a footnote, p. 88 of "Harris' Treatise" of 1862 says: This species differs from the others known in this country, by having the last three joints of the antennæ dilated laterally, forming a lamellate club like that of the SCARABIDÆ, it therefore belongs to the genus *Phloiotribus*. I notice that these specimens possess this characteristic very distinctly.

Miss Morris, late of Germantown, Pa., I believe was the first to bring the notice of this insect to the public as a depredator upon peach trees, and as the trees were affected with the *yellows*, she hence attributed the malady to this cause. Dr. Harris found the same insect under the bark of a diseased elm. As I have never found the insect on peach trees, I am unable to say whether the trees from which my specimens came were healthy or diseased.

This whole family of beetles make excavations under the bark of various trees, including apple, pear, plum, quince, cherry, peach elms, oaks &c., &c., and from the many eccentric channels they cut, they have been called "*Typographer Beetles.*"

They are so small, both in the larvæ, the pupa and the mature state, and are so completely domiciliated in the tissues of the bark, that it would be impossible to apply a remedy, other than than that of cutting off the infested limbs, or the whole tree, before the development of the beetle, and submitting it or them to a heating or charring process; or if the wood is no object, burning it at once. Of course as forest trees become fewer, these wood and barkboring insects will be trying their hand on the cultivated trees, whether fruit or ornamental. Like the Colorado Potato Beetle, the Curculio, the Striped Apple-tree Borer (*Saperda*), they are partial to the cultivated objects of the vegetable world—in short as the human species profess to be, they are *progressive*, and "that's what's the matter."

CULTIVATED vs. UNCULTIVATED WHEAT.

BAREVILLE, P. O., July 17th, 1879.

PROF. S. S. RATHVON—*Dear Sir:* This season the contrast between the cultivated and uncultivated wheat was much larger in favor of the cultivated (side by side, in the same field, the same quantity of grain to the acre, and sowed the same time), than any time heretofore. I was sorry that A. B. Groff, the patentee, had been in the West all summer, and I had been so very busy that I neglected to invite interested persons to come and see the great difference before them, in the growing of larger and better crops. But I am happy and well pleased to state that quite a number of gentlemen, some that saw it last year, and were so well pleased with the improvement that they were anxious to see it again; and others that had heard the many favorable reports last year, came this season to see and judge for themselves. Among said parties was a committee of four gentlemen appointed from the Grangers of East and North Coventry twps., Chester co. These gentlemen are very much interested in the many improvements concerning farming. I enclose you the *Montgomery Ledger* containing their report, and if you think it proper to copy it into THE FARMER, all right, if not I hope there is no harm, and beg to remain.—*Yours truly, Levi W. Groff.*

We cheerfully comply with our correspondent's request; not only because he requests it, but because we are in sympathy with anything that tends to agricultural progress, and promotes the welfare of the people, no matter whether it culminates in our own personal interests or not. We also feel a natural pride in the progressive modes, systems, and general institutions of our native county, and imagine that if it has no light to shed upon agriculture—occupying the financial, social, and geographical position it does—then we are at a loss to know where we might reasonably look for such light. We are confident that our own county possesses many resources within itself that it may be vainly looking abroad for a realization of; and many people may also discredit things purely because they originate at home.

The following is the report alluded to in Mr. Groff's communication:

Coventry Farmers in Lancaster County.

One day last week four prominent farmers of North and East Coventry, Chester county, Messrs John B. Reiff, David W. Jones, John Ellis and William Davis drove to Bareville, Lancaster county, to examine the process of cultivating wheat, practiced by Mr. Levi Groff of that place. One of their number has written for the *Ledger* the subjoined interesting account of what was seen by the party at Bareville:

"Mr. Groff has two fields of wheat, lying side by side, each having half the grain put in by the ordinary drilling plan, and the other half drilled in, leaving a sufficient distance between the rows to allow cultivation with a cultivator gotten up expressly for the purpose.

Though the wheat planted by the old method is in a very promising condition, and may yield 30 bushels per acre, the cultivated portion of the fields will exceed this yield at least 50 per cent. In the opinion of our party 45 bushels is a low estimate per acre for the production of the cultivated wheat.

The observer is especially impressed with the marked contrast between the two halves of each of the two fields. The cultivated portion stands upon strong straw, at least six inches above the uncultivated wheat, presenting a very luxuriant mass of uniform heads, well filled, and from four to six inches long.

In the drilled portion we saw many small heads upon short straw, striving among the growing crop for equality, as it were, and so common in ordinary wheat fields.

Mr. Groff's plan of cultivation is to pass between the rows of wheat with a cultivator as soon as the ground is in condition to work in spring, and continue to do so until about the 10th of May, at which time, and after the last cultivation, he sows the grass seed (clover and timothy), and owing to the mellow condition of the ground it grows quickly and surely, as was demonstrated by the two fields shown us, in which he had wheat last year, and cultivated as described.

We left for home after having spent about three hours more than we intended, and having enjoyed the cordial hospitality of our host, and feeling, too, that we had gained not only in pleasure and satisfaction, but had acquired by our visit to Mr. Groff's farm what an industrious and intelligent farmer can do to promote his own interest, and that of agriculture generally. Mr. Groff's son has invented a drill with cultivator attachment, suitable for his method of raising wheat, which is patented, for which every farmer should obtain a farm right, to raise wheat in the same way, as we feel confident it will pay to do."—*Montgomery Ledger, June 24, 1879.*

WHITE GRUB WORMS.

DR. S. S. RATHVON—*Dear Sir:* Will you please give a description of the worm which I have to-day sent to your address.

You will notice that it feasted upon a potato, having eaten out and lodged itself in a hollow in the potato. There was another worm of the same shape, and probably of the same variety, but of a brown tinge, feasting upon potatoes. This inclines me to think that the one I sent you has not yet reached its maturity. Please answer through the columns of *The New Era.*—*Yours, etc., J. A. Shaar, Rothsville, Pa., July 31, 1879.*

Your "worm" came to hand, dead, and partially crushed. Things sent through the mail should be inclosed in a stout paper, tin

or wooden box. The object seems to be the immature larva of one of three prominent beetles, belonging to the coleopterous section *Lamellicornia*, or "Book-horn Beetles;" because the ends of their antennæ are laminated like the leaves of a book. It is probably a larva of the second year, as it takes these insects from three to four years to complete their larval condition; but this subject was too young, and too much injured to determine its species. There are a great number of these insects, and their larva are generally known under the name of "White Grub Worms."

They all live upon the roots of vegetation, and a few of them are usually found in very much decayed, moist wood. The most common and the most numerous in this locality is the "May-Beetle" (*Lacnosterna quercina*) also called the "June-bug." This species is about an inch in length, smooth, and of a deep chestnut brown color, and when very numerous they are very destructive to the foliage of different kinds of trees.

I have found the larva of these eating their way into the potato on several occasions. The next of these insects in numbers is the larva of our common "Goldsmith Beetle" (*Gymnetes nytidis*), which has also been detected excavating the potatoes, and the beetle is often found hovering over potato fields in June and July.

This insect is about the same length as the first named, but much thicker; of a velvety surface, and from a deep green to a yellowish green in color. Nearly every boy knows what a goldsmith is, and some of them cruelly tie a thread to one of their legs and fly them like a kite. The third species to which I allude is the "Eastern Gold Beetle" (*Cotalpa lanigera*), and although this beetle is often found abundantly in the eastern tier of the counties of our State, it occurs but rarely in Lancaster county. Its generic name is derived from its shining golden appearance, and the specific name from the sparse covering of wool, or hair, on the legs and under parts of the body. Should these insects become sufficiently numerous, at any time or place, to be injurious to the crops, it would be difficult to exterminate them, especially as they usually are hidden among the foliage and fly abroad during the evening or at night. The life of the beetle is short. We have seen hundreds of the May beetles lying around dead in the month of July.

There are some species of them that in the larva state are destructive to the roots of the grass, especially in meadows. In England and France the governments sometimes offer a premium for them, and they are plowed up by the bushel. They are so fat that they have been used to make soap. None of them have been very destructive in our country.

RED RUST.

Mr. McG., West Orange street, Lanc., Pa.—Your quinces are infested by an orange colored fungus commonly called "Red Rust;" it is the *Uredo roborum var cydoniæ* of mycologists. It belongs to the same family of *fungi* that usually infest the raspberry, the hawthorn the ash, wheat, oats, rye, barley, and many other trees and plants, and is usually known under the names of rust, smut, mildew, &c. It generally succeeds a long, warm, dry spell, followed by a close, warm, damp spell, and is difficult to eradicate. The immediate removal of the infected parts before the fungus matures and discharges its spores, is the best remedy, where that can be effected. If the tree and fruit are otherwise healthy, a wash of weak lye or soap-suds, applied by hand, will remove it and save the fruit, if the disease has not progressed too far. Please see *The Lancaster Farmer* for June, 1879, page 82 and 83.

LARVÆ OF SATURNIA IO.

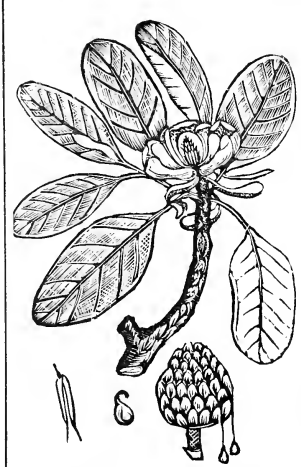
Mrs. P. E. G., Enterprise, Lanc. co., Pa.—The insects on your raspberry stalks, feeding on the foliage, are the young *larvæ of Saturnia Io*, the "American Peacock Moth." They do not long remain thus congregated together, but scatter and become of a deeper green, with a bright orange and light brown stripe along each side, which is only slightly visible now, and at full maturity they attain over two inches in length. They then spin a close spherical cocoon, partially covered with leaves, and mixed with sufficient mucilage to become pretty hard. They remain thus until the following year, and the moth evolves about the 1st of June, producing only one brood a year, but never sufficiently numerous to be very injurious. The male is yellow and slightly mottled with light brown. The female is much larger, her aler expansion being 2½ or 3 inches, and is of a much darker color, almost brown; both sexes have the peacock eye or disk on the posterior wings. They are not peculiarly a raspberry insect, but are also found on the blackberry and other shrubbery, as well as on trees.

CONTRIBUTIONS.

For The Lancaster Farmer.

MAGNOLIA GLAUCA—SMALL MAGNOLIA.

This belongs to a class of trees distinguished for their elegant forms, rich, smooth foliage, large fragrant flowers, and aromatic bark, some becoming trees of great altitude. The



present species is more humble in its growth, but not the less interesting.

This glauca is common in the Middle and Southern States, very abundant in the morasses of Florida and Lower Louisiana. About 30 miles north of Boston, where it attains but small size, it is frequently killed to the ground, by severe winters.

This is also known by the names of *Swamp Sassafras* and *Beaver Trees* North; in the South as *Sweet Bay* and *White Bay*. It is usually found in swamps or boggy soil. It is somewhat difficult to raise in upland soil, but it acquires more symmetry of form when successfully cultivated.

The species native to the United States are the following, viz:

1. *M. Grandiflora*. L. N., Carolina to Florida, west to the Mississippi; fls. large 7 to 8 in broad, trees 60 to 70 feet high. Leaves 6 to 8 inches long.

2. *M. Glauca*. L. lvs. oblong, oval obtuse, white beneath; flowers of 9-12 petals. May and June very fragrant; 2 to 3 inches broad. White flowers.

3. *M. Umbrella*, (*Lam.*) (M. tripetala, L.) Southern and Western States, New York and Pennsylvania; the *umbrella tree;* trees 30 to 40 feet high. Leaves crowded; 1 to 2 feet long.

4. *M. Acuminata*, L. New York to Georgia. Tree 60 to 80 feet; flowers 3 to 4 inches in diameter. This is the *cucumber tree*. The cylindrical fruit is three inches long when green, resembles a cucumber.

5. *M. Cordata*, (*Michx.*) Carolina and Georgia. Trees 20 to 40 feet high; leaves 4 to 6 inches long. Flowers yellow, faintly streaked with red.

6. *M. Fraseri*, (*Walt.*) On the Alleghany Mountains. Pennsylvania to Florida. Trees 30 to 40 feet high. Leaves 8 to 12 inches long, somewhat auricled below; flowers white; 2 to 3 inches long.

7. *M. Macrophylla* (*Michx*). Leaves whitish beneath. Southern. Trees 30 to 40 feet; leaves crowded on end of branches; 1 to 3 feet long.

Our *tulip tree*, *white wood*, or white poplar. the *Liriodendron tulipifera*, (*L.*) belongs to this order—"Magnoliaceæ."

This genus of trees was named by Plumier, in honor of Peter Magnol, Botanical Professor at Montpelier, who published several works on botany. Magnol died in 1715, at the age of 77. With respect to the M. Glauca, figured above, I may add that it begins to flower in different parts of the United States in May, June and July. The flowers are highly fragrant. A few of them shut up in a room over night gives the air a heavy and almost insupportable odor, so as not to be advisable in a sleeping room. The bark of the young twigs is smooth and of a bright green color, with rings at the intersection of and scars of the leaves. The leaves are scattered. The whitish color of the under side of the leaves will distinguish the trees at a distance. The bark is rather bitter and has an aromatic pungency, somewhat like sassafras or calamus. The aroma resides in a volatile portion and may contain an essential oil, or a variety of camphor. When dry and kept for some time it loses this property. There is not much astringency in the bark, yet as a medical article the Magnolia is considered an aromatic tonic, approaching in its character to cascarilla, canella and articles of their class.

It has attained some reputation in the cure of chronic rheumatism. The bark, seeds and cones are used in tincture. In intermittent and remittent fevers the Magnolia is one of the many tonics which have been resorted to for cure by inhabitants of the marshy countries where they prevail. Sufficient testimony has been given in favor of the bark of this tree to warrant a belief that it is fully adequate to the removal of fever and ague, when administered like the cinchona (Peruvian Bark), in like quantities, between the paroxysms. In the more continuous forms of fever of the typhoid type it has also received the commendations of eminent physicians.

Many of our eminent physicians, who would rather use mineral preparations or matters from the vegetable kingdom that come from afar, may tune up their dose at such domestic home remedies, but I do not write for their edification. It is supposed that they know all about it and, of course, pay no attention to such newspaper articles. I am writing as an old botanist, as well as an experienced druggist, and simply wish the merits of our herbs and trees to be known, whether appreciated, tested or not. I know what I am writing about, and as I do it voluntarily, for the benefit of the readers of The Lancaster Farmer, and am not a vender or collector of the drug, I simply give a hint to those who may see fit to do so.

J. Stauffer.

For The Lancaster Farmer.

MORE MOONSHINE.

Mr. Editor:—I did not expect or intend to be drawn into a controversy on solar influences, but solely to draw out more light on this dark subject, as I believed there were some "hints" yet in embryo, that might enlighten our understanding more clearly than heretofore.

But it appears your "Amateur Farmer" (?) takes especial pains to deny that of which he is evidently quite as ignorant as myself. How can we judge of that of which we know nothing? He denies in toto the moon's effect on terrestial matter, without knowing any more of those planetary orbs than the rest of us "ignorant farmers."

He tells us he made some experiments, by placing bricks on the ground, when the sign was up, and again when the sign was down—but the moon would neither raise them up nor press them down: but as the moon did not notice them, of course he concluded, did'nt do more than confirm him in his unbelief. He might as well have placed his bricks on solid rocks.

It is useless to try and explain such mysterious influences, at least to "Amateur," who of course, "if convinced against his will, would be of the same opinion still."

However, with the editor's permission, I will try and give some further remarks of those whom he stigmatizes as the "ignorant, as being" the only ones whose ignorance of planetary laws, are believers in planetary influence. And asks, "can the believers in the potency of the signs point to a single man within the last hundred years, with enough astronomical knowledge to calculate an eclipse, or the rising or setting of the moon, who has any belief in their theory?"

In my last article I mentioned Prof. Mansill of Rock Island, Ill., who is not only a believer in planetary influence, but also publishes full explanations "of the faith that is in him."

This gentleman is undoubtedly the peer of any living astronomer. We judge him by his abstruse calculations of the positions and configurations of the various planets, and his predictions of their influences on our earth, by their many aspects of conjunctions, oppositions, &c., each month in the year. But to give only a brief statement of his predictions, would fill our *Lancaster Farmer*. Another celebrated astronomer, now no more, we may refer to, Sir John Herschell, Astronomer Royal of England, who during the present century gave us a formula, which I have frequently found to come true—that if the moon changes at certain hours of the day or night, we may look for rain or dry weather. Though its an old saying, "all signs fail in dry weather."

I myself do not pretend to much astronomical knowledge, and may probably be conered by "amateur," as among the "ignorant." However, I have calculated the rising and setting of the moon, and its place among the planets—with *all* lunar and solar eclipses thirty years ahead, from 1821, and found the elements of all others some twenty years further; but had not the time to make the calculations of the latter.

Amateur asks for "a series of experiments," to prove the planetary influences. My dear sir, could we be assured of a life as long as is attributed to Methuselah, or even of others who did not think of getting married until they were over one hundred years of age, then we might no doubt make "experiments" to astonish even the *skeptic!* But life is too short at the present time for such experiments.

The lame argument of "Amateur,"—that I did not say of those two fences set on opposite sides of the lane, as the one staying up and the other settling down—"that I did not say if these fences were set in the morning or in the evening." Now we farmers don't do such jobs of setting 50 or a 100 panels of fences either in the morning or evening; but it takes several days work to do it—all day, and the ground did not differ 12 feet apart!

A majority of astronomers admit that the tides in the ocean are caused by lunar and solar attraction and repulsion and driving the water up stream against the current many miles.

There are "skeptics" on this subject as on every other, but they do not attempt to give any other theory that is at all plausible; even our "amateur" fails to give us a reason why or what causes this powerful *force*, to drive the water miles into the interior of the country, but he simply tells us that, because this "force" does not raise the water in his "little frog pond" knee-high, the moon can not raise the water in the sea! However, all calculations for the ebb and flow of the tides are based on the theory of the moon and sun's influence. When these planets are in conjunction, there is high tide, and when in opposition, low tide; thus the truth of the planet's "force" is verified.

Then may we not justly infer that this power or "force," acting on the water, *through* the atmosphere, may also act, or cause tides, or some "influence or in the atmosphere," and as a consequence on *all* animal and vegetable matter. Thus all animals and vegetables "live and have their being" constantly *in* this air or atmosphere. Is it not a positive proof, that all creation on the earth, vegetable and animal, are more or less affected by this all-pervading air or element "force," or planetary influence, probably electricity.

As our friend "Amateur" lays such great stress on Dr. Lardner's scientific attainments, I will not pass him by, but fully acknowledge that he was a well posted scientist.

Some thirty years ago I heard him deliver a lecture on "sound," in Philadelphia, and I gained more information from that lecture than I had known before as to the "waves" of sound. But notwithstanding his great acquirement in science, he made two grand mistakes. One I noticed before, when he was predicting "that steam could never be used profitably to cross the ocean; and the other mistake was, "that he ran away from London to Paris in company with another man's wife, and for which he got a severe cowhiding from the woman's husband and her son. Thus it appears scientists are human and may make "mistakes" as well as the ignorant. "Nuf ced."

I might give many other instances of planetary influence, but leave this ocenlt subject for the present, only adding that from my youth up to the present times have always been "*A seeker after truth.*"

SELECTIONS.

ARTIFICIAL FERTILIZERS.

The New Law Regulating Their Sale—License Required to Sell Them—Costs of Analyzing to be Paid by the Manufacturers.

§ 1. *Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania in General Assembly met, and it is hereby enacted by the authority of the same,* That every package of commercial fertilizer sold, offered, or exposed for sale, for manurial purposes within this Commonwealth, shall have plainly stamped thereon the name of the manufacturer, the net weight of its contents, and an analysis stating the percentage therein contained of nitrogen, or its equivalent in ammonia in an available form, of potash soluble in water, of soluble and reverted phosphoric acid, and of insoluble phosphoric acid: *Provided,* That any commercial fertilizer sold, offered, or exposed for sale, which shall contain none of the above named constituents, shall be exempt from the provisions of this act.

Amount of License to be Paid by Manufacturers.

§ 2. Every manufacturer or importer of commercial fertilizers, as specified in section one of this act, shall, on or before the first day of August next ensuing, or before offering the same for sale in this Commonwealth, file annually in the office of the Secretary of the Commonwealth an affidavit stating the amount of said fertilizer or fertilizers sold within the State during the last preceding year, and if said amount be one hundred tons or less, he or they shall pay to the Treasurer of the State the sum of ten dollars for each and every such article of such commercial fertilizer sold within the State during the last preceding year, and if said amount shall exceed one hundred tons, and be less than five hundred tons, he or they shall pay the sum of twenty dollars as aforesaid: and if said amount shall be five hundred tons or more, he or they shall pay the sum of fifty dollars as aforesaid. If such manufacturer or manufacturers or importers shall not have made any sales within the Commonwealth during the preceding year, he or they shall pay the sum of ten dollars as aforesaid. Every such manufacturer or importer shall at the same time file with the Secretary of the Board of Agriculture a copy of the analysis required by section one of this act, and shall be entitled to receive from the Secretary of the Commonwealth a certificate, which shall be countersigned by the Secretary of the Board of Agriculture, showing that the provisions of this act have been complied with.

Penalties for Non-Compliance.

§ 3. Any persons selling, offering, or exposing for sale any commercial fertilizer without the analysis required by section one of this act, or with an analysis stating that it contains a larger percentage of any one or more of the above named constituents than is contained therein, or for the sale of which all the provisions of section two have not been complied with, shall be deemed guilty of a misdemeanor, and on conviction shall forfeit a sum not less than twenty-five and not exceeding one hundred dollars for the first offence, and not less than two hundred dollars for each subsequent offence, one-half of which shall be for the use of the informer and the remainder for the county in which the conviction is secured: *Provided,* Said informer be the purchaser and the goods be for his own use.

Who Shall Make the Analysis.

§ 4. It shall be the duty of the Board of Agriculture to analyze such specimens of commercial fertilizers as may be furnished by its agents, said samples to be accompanied with proper proof, under oath or affirmation, that they were fairly drawn; the fee for such analysis shall be determined by the executive committee of the board, and be based upon a fixed rate for each determination, shall in no case exceed seventy-five per centum of the usual price paid for such services, and shall be payable from the Treasury of the Commonwealth in the manner as now provided by law.

What is to be Done with the Money.

§ 5. The money paid into the treasury under the provisions of this act shall constitute a special fund from which the cost of such analyses shall be paid: *Provided,* That the total amount thus expended in any one year shall in no case exceed the amount paid into the treasury during the same year, and that any moneys remaining in this special fund at the end of the year shall be passed into the general fund for the use of the State.

What is Meant by "Commercial Fertilizers."

§ 6. The term "commercial fertilizers," as used in this act, shall be taken to mean any and every substance imported, manufactured, prepared or sold for fertilizing or manuring purposes, except barnyard manure, marl, lime, and wood ashes, and not exempt by the provisions of section one of this act.

When the Law becomes Operative.

§ 7. This act shall go into effect on and after the first day of August, one thousand eight hundred and seventy-nine.

Approved—June 28, 1879, by Governor Hoyt.

TOBACCO CULTURE IN LANCASTER COUNTY.

Less than four hundred years ago tobacco was unknown to the people of the Old World. During this period no less than 800,000,000 of people have learned to use it, and the annual production has reached the enormous amount of 2,000,000,000 pounds. No other narcotic is so universally used, and its production is yearly increased to meet the growing consumption. That an agricultural product not

a necessity to the human race should in such a comparatively brief period increase to such vast proportions is little less than marvelous. It almost seems to imply the absolute necessity of man's nature for mild stimulants of some sort.

Its Culture in the Olden Time.

Tobacco-growing in Pennsylvania is not an affair of recent years. There was not a colony of the original thirteen that did not begin the business at an early day, and in this State the culture soon reached considerable proportions. In 1689 fourteen vessels sailed from the colony of Penn laden with this commodity. In the year 1729, the time Lancaster county was erected, the tobacco product of the colonies, South and North, gave employment to 300 sailing crafts of various kinds, representing a tonnage of 24,000 tons and amounting in value to $3,000,000. The price then was fixed by the Government; in 1617 it was three shillings per pound, but thirty years later it had fallen as low as sixpence.

The Tobacco Country of the World.

The United States may be regarded as the great tobacco-growing country of the world. It can be grown in every one of the States. From the beginning in Virginia, this country has now reached a production of four hundred million pounds, worth about $33,000,000 in its manufactured state. Fully fifty thousand persons are employed in its manufacture, earning $14,000,000 in wages and turning out a product worth $72,000,000. Tobacco ranks sixth on the list of our exports, and last year we sent abroad about $50,000,000 worth. Germany is our best customer, but Great Britain follows closely.

Qualities of the Weed.

While tobacco can be grown in almost every country, there are some especially adapted to it. Climate, soil, and skillful manipulation are the chief factors in its successful growth; the latter two are of paramount importance. The *Vuelta Abajo* of Cuba is everywhere known for its flavor, while Pennsylvania and Connecticut are noted for certain qualities possessed by the tobaccos grown by them. The tobacco of the Northern States is called seedleaf, and is almost exclusively used in the manufacture of segars. That of the great tobacco growing States of the South is far different in quality and chiefly used in the manufacture of chewing tobaccos. The former is softer and silkier in texture, while the latter is stronger in flavor, thicker, and as a rule contains more gum, and so is better adapted to the purpose for which it is employed.

What Fashion Has Done.

The growing of tobacco in Lancaster county has been going on in a desultory sort of a way for thirty-five or forty years. In early days the rural population lived in blissful ignorance of internal revenue laws, and the tobacco was generally converted into segars by the local segarmaker for home consumption, and if there was a surplus, sold outright to him. There is no way of arriving at an estimate of the production twenty-five years ago, but the amount was insignificant alongside the crops of the present day. It was not until about twenty years ago that our farmers entered upon its cultivation on a large scale. The war contributed its share towards this end, and fashion did fully as much. Connecticut had long been famous for the quality of the tobacco grown in the Valley of the Housatonic. Its fine, large leaves of admirable color and texture often commanded as much as seventy-five cents per pound, while forty and fifty cents were no unusal prices. The demand in those days by smokers was generally for light-colored segars, and this condition the Connecticut tobacco filled to perfection. But the inexorable law of fashion stepped forward and demanded segars of a rich brown. The Lancaster tobacco met this want, and fashion has for once been stable; dark-colored segars still command the readiest sale, and the production of this class of tobacco has progressed steadily. Color is not all that renders this tobacco desirable. The segar manufacturer requires a leaf of good size, soft, tough and elastic, but not leathery in quality, of which the veins shall be small and not light in color, and that shall when consumed yield a clear white ash. These conditions Lancaster county leaf supplies in a favorable season.

Preparing the Plant Beds.

The beds for planting out the seed are prepared towards the latter end of February or early in March, if the season will allow. An early plant is generally considered desirable. A warm spot with an eastern and southern exposure is best. Generally, but not always, weeds, brush, cornstalks, or similar substances are burnt over it and the ashes raked over the bed. It is deeply spaded, twelve inches or more, and enriched by a liberal application of barnyard manure. A warm, mellow soil is indispensable to the growth of fine, strong plants. Being very minute, a heaped teaspoonful of seed is sufficient to sow a bed covering one hundred square feet. Care must be taken not to get the seed too deep or it will not germinate. If the weather is warm, with soft, frequent showers, the plants come on rapidly. Some are raised under cold frames, which secure them against frosts and have other advantages, but in most cases the beds are open; these latter yield the hardiest plants.

Setting Out the Plants.

The tobacco field must be thoroughly prepared; sometimes the ground is ploughed in the fall, but generally not until spring, and it is heavily manured. This manure is not lost, for when wheat is sown—the crop that always follows tobacco—the yield is commonly excellent. Barnyard manure is preferred to all other. Rye turned down also makes an excellent fertilizer. Too much care cannot be used in putting the ground into fine condition. As the roots of tobacco go down deeply the ploughing must be deep, and the finer and more friable the soil the better.

Requires Constant Attention.

If the weather has been favorable the plants will be ready to set out by the latter end of May or the first of June, while the planting season continues until the 25th of the latter month. With the setting out of the young plants the farmer's troubles begin. The plants are set in rows twenty-four or thirty inches apart, the rows being from three to four feet asunder. Advantage is taken of a warm, soaking rain to set out plants. They require moisture, and if dry weather sets in must be watered. The cut worms at once begin their depredations. Some seasons they necessitate two or even more replantings. The ground must be continually cultivated to destroy weeds and give the roots air. This is continued until the leaves attain such a size as to prevent the passage of horse and cultivator between the rows, and then the hoe must be employed until the crop is cut. Meanwhile the hawk-moth has not been idle; when evening comes it sails over the fields depositing its eggs on the leaves, which in a brief time develop into the tobacco worms. Two or three times a week—daily would still be better—boys go through the rows, carefully examine every leaf, and when the worm is found kill him. A few holes in a fine leaf destroy its value as a "wrapper," and consigu it to a lower grade. Turkeys are good destroyers of these worms. The hunt for worms must not be relaxed until the tobacco becomes ripe. The worms continues their ravages while it remains standing in the field.

Time of Ripening.

Suckers also make their appearance. If left, they crowd the leaves and appropriate the vitality of the stalk. Towards the latter part of July or the first of August, a plume or shoot appears at the top of the plant, known as the seed bud. This is pinched off, as the stalk would bleed too much if it were cut. How low to top the plant is a very important matter. Low topping results in a larger development of leaf. From twelve to fourteen leaves are generally left on the stalk; they are enough, if fine leaves are desired. Tobacco matures in from one hundred to one hundred and twenty days from the time of planting.

Cutting and Housing.

In September the greater portion of the crop is harvested, but last year I saw some cut on July 11 that had been planted on April 10. The more rapidly it attains maturity the better the crop; slow growth makes it thick and leathery. Certain indications, well known to the planter, tell when it is ripe. The plants are cut off at the ground; sometimes they are hung up in the field several days to wilt, but more commonly they are at once taken to the tobacco-barns, to be hung up and undergo a curing process. If hung too closely together they will mould and rot; if hung too wide apart valuable space is lost.

The Tobacco Barns.

The tobacco barn is a high, commodious building of timber, closely put together, with either a perpeudicular or horizontal method of ventilation, the latter being preferable. Twenty years ago, stables, wagon-sheds and even the dwelling were used to hang up the tobacco in. In 1868 upwards of two hundred tobacco barns were built, at an estimated cost of from $150,000 to $200,000. In these barns the stalks hang until the moisture is dried out and the process of curing is complete. Damp weather is selected for taking them down and stripping the leaves. They are then tied up into "hands" and these into larger bundles, and are then ready for the buyer.

Who Buys the Product.

Buyers come from New York, Philadelphia, Baltimore, St. Louis, New Orleans and San Francisco. The leaf is generally assorted into two kinds or qualities, wrappers and fillers, although some planters make three and four classes. A careful assortment is always to a grower's advantage. During the past season fillers sold from two to eight cents, and wrappers from eight to thirty-five. The price has fluctuated much in different years. In 1861 it was five and six cents; in '64 and '65, from twenty to thirty-five cents, and was again in '66 down to five and six. Good tobacco may be spoiled in the handling, while a poor crop may be vastly improved by careful manipulation.

Extent of the Crop.

It is packed into cases by the purchaser, each case containing about four hundred pounds. The crop of this county is usually put in cases, not hogsheads, as is the custom in the South. The crop of the county in 1878 was about 30,000 cases, and for the whole State 38,750 cases. In 1877 we grew about 41,000 cases in this county alone, and even exceeded that figure in previous years. A crop of 40,000 cases represents 16,000,000 pounds, far surpassing any other single county in the United States. Christian county, Kentucky, in 1875, grew 9,313,950 pounds, the nearest approach that has ever been made to this county's production.

The Yield in Pounds and Dollars.

The average yield per acre in 1877 was 1,380 pounds, but under favorable circumstances as many as 2,500 pounds have been grown. As much as five hundred dollars have been realized from a single acre, while three hundred dollars and four hundred dollars are not unusual figures. Still, the average is not the half of that, after the great cost of plantiug, manuring, and preparing the crop for market is considered. The growth of fine tobacco, however, is still in its infancy among us, and we will improve our product and prices as the years roll away. The value of our crop in 1876 was $2,400,000, and in 1877 $1,760,000, a sum perhaps double that produced by any county in the Union, and approaching those realized from wheat and corn themselves. Yet this large sum was derived from the comparatively small number of 9,565 acres. If the entire surface of the county were planted in tobacco, our yield

would be equal to that of the whole United States at the present day.

Amount Consumed at Home.

The entire production of seed leaf in the country is about 130,000 cases, of which we supply at least 30 per cent. Of the above, about 42,000 cases are sent to foreign countries, and 88,000 cases are consumed at home. As was to be expected, this large production of tobacco in Lancaster county has stimulated the growth of the segar manufacturing industry to an unusual degree. A large number of establishments are in operation and their production was, for the fiscal year ending June 30th, 1878, 103,264,300 segars. No less than 6,500 cases, or nearly 3,000,000 of pounds of the weed, were used in making them. The revenue derived from this source alone by the Government, in this, the Ninth Internal Revenue District, during the last year, was $619,585.80, the amount from all other sources being only one-third of that sum.

Lancaster County's Segar Industry.

The following are the figures showing the Internal Revenue collections in the Ninth District of Pennsylvania, for the fiscal year ending June 30th, 1879. Particular attention is directed to the item of segars, as showing the immense proportion of that industry in this district :

Whisky	$ 93,527 94
Tobacco and Segars	729,271 53
Beer	24,094 48
Banks	18,257 97
Penalties	5,113 03
Total collections	$870,264 95
Tax collected on 116,811,000 cigars amounting to	$700,866 00
Excess of collections over last fiscal year	$ 66,458 02

Is the Crop Exhausting?

There has been much said about the exhausting nature of the crop, but opinions are pretty evenly divided on the point. Little danger, I think, need be apprehended from this source. The average put out by each farmer is generally small, and they understand the character of their soil too well to let it run down through tobacco planting. If it shall be found, after a series of years, that their lands are becoming less productive, they will assuredly grow less tobacco or buy more fertilizers. It has made a rich county still richer, and I do not believe the influx of wealth from this source will soon come to an end, any more than will her overwhelming Republican majorities.—*F. R. Diffenderffer, in Progress.*

THE BLACK BASS.

Practical Hints on Fish and Fishing.

The black bass is called by plenty of hard names by the scientists. *Centrarchus fasciatus, Gristes nigricans, Micropterus nigricans,* are some of them, while the common people call him more familiary, but no less variously, Black Bass, Green Bass, Oswego Bass, Swago, Yellow Perch, and Black Perch, and in some parts of the country even Trout; yet he has lived through it all, and is a Black Bass still; fish most desirable on hook or plate, and of deserved and growing popularity.

When the salmon had been caught and driven from almost their last river in the Eastern States, and the trout had become scarce in all but the least accessible ponds and streams of the wilderness, the black bass awoke one spring from his deep water hibernation to find himself famous. Heretofore he had been thought a good fellow enough, worth fishing for when the noble Salmonides were not to be had, and when caught, well worth dressing and bringing to the table, where he was held to be at his best. Now, he ranks

Second Only to the Salmon and Larger Trout

for game qualities; and column after column of sporting journals, and page on page of sporting books, are devoted to his praise, description, habits, and the methods of his capture. It may be stated, as a measure of the growth of his popularity, that Frank Forrester, in his "Fish and Fishing," published twenty-five or thirty years ago, gives him less than two pages and a faulty portrait; while Hallock devotes to him sixteen pages of his *Sportsman's Gazetteer*, published in 1877, wherein he gives a careful comparative description of the two varieties, *Micropterus salmoides* and *Micropterus nigricans.*

These fish are also favorites with fish culturists, because of the rapidity with which they multiply in almost all waters when introduced, which is done, not by planting the fry, as with most other artificially propagated fishes, but by letting loose in the pond or stream to be stocked some adults abundantly able to take care of themselves, and at once ready to give birth to and assume the care of a numerous progeny. The spiny dorsal fin is a defensive armor which insures the young fish, for the most part, from the attacks of other predatory fishes, and they soon grow to an ability to hold their own with many, in more than mere defense. The rapid increase of the black bass in many ponds where they have been introduced, especially where small, soft-finned fishes abound, is almost marvelous. I cannot find or give a better

Description of Black Bass

than that furnished by Thompson in the Natural History Department of his "Vermont:" "Form, somewhat elliptical, a little convex on the sides and pointed forwards. Color, dark greenish above, lighter and grayish white beneath; sides of the head fine, light green. Scales firm, moderate on the sides and operculum. Properculum, with its upper limb nearly vertical and nearly at right angles with the lower, without spines or serratures. Interopereulum and subopereulum scaly on the upper side and smooth below. Operculum triangular, with a membranous prolongation posteriorly, and the bony part terminating posteriorly in two thin lobes, with a deep notch between them, the lower lobe, which is largest, ending in several short spines. Teeth small, sharp and numerous in both jaws, on the lower anterior edges of the palatine and on the vomer, with a small cluster near the base of the triangular tongue, all standing like the pile on velvet, but hooking a little inward, those on the jaws largest. Fins small, brownish, and their soft parts covered with a rather thick mucous skin; the dorsal rounded behind, low at the junction of the spinous and soft parts, and the spinous rays capable of being reclined, imbricated and concealed in a longitudinal groove along the back; ventrals a little behind the pectorals; the anal under the posterior portion of the dorsal, and extending a little further back; tail slightly emarginate with the lobes rounded. Vent a trifle nearest the posterior extremity. Eyes moderately large. Lower jaw a trifle longer than the upper, with several visible pores along its margin. Length, nineteen inches; the greatest depth equals one-third of the length, exclusive of the tail."

The Spawning Season.

These fish begin to spawn here, in Lake Champlain and its tributaries, about the middle of May (sometimes a little earlier), and I am sure all have not finished this labor before the middle of June. Of three black bass which I examined on the 20th of May, the ova of one were ripe; of another they lacked a week or more of being so; and those of the third had the appearance of being at least three weeks short of maturity. A few days later I heard of beds in the same stream where they were caught, that were black with newly-hatched fry. The eggs from which they came must have been laid at least ten days before. It is the opinion of some that the fish which have come to their first season of maturity spawn considerably later, say up to the middle of July; and what I saw in three individuals above mentioned would go to strengthen this opinion; for the eggs in the smallest spawner were least developed, but would certainly have been ripe this season.

Bass leave deep water to spawn, and come into the shallow water of the lake, and into such streams as suit them for that purpose. They desert sluggish water with a muddy bottom, but are not unfrequently caught therein on their way to a more congenial nursery.

Protecting their Progeny.

They scoop a shallow basin for their spawning bed about twice the length of the fish in diameter, and in this the spawn is deposited, attaching itself to the bottom; and till hatching, is carefully guarded by the female, who fights off all intruders, and carefully removes everything which, by chance or design, is cast upon it. This habit is turned to evil account by pot fishermen, who, finding a bed, drop into it a hook, lightly baited with a worm, or even naked, which the fish at once seizes, to carry off to the sacred precincts; but before she has time to drop it, is hooked and hauled, while the eggs or newly-hatched fry are left to be devoured by the first predatory fish that chances to come upon them.

Inside of twelve days the eggs are hatched, and for a time the female vigilantly guards her young, continually swimming about her swarming brood, little fellows as black as a fresh hatching of pollywogs. It is said that in a few days they scatter into deep water and are seen no more until September; but I have seen young ones, not more than two inches long, in the middle of soft-finned minnows as large as themselves.

Proper Bait and Tackle.

Bass are much fished for as soon as they come on their spawning grounds, and many are taken then; but bass fishing should not properly or lawfully begin till the spawning season is over, say the 1st of July, or certainly not earlier than the middle of June. The baits used are various; worms, grasshoppers, frogs, minnows, the villanous, looking dobson or helgramite, and for artifical lures, a rubber imitation of the last-named, spoons, and flies of various colors. The spoon is used only for trolling from a boat with a hand line or rod and reel, or walking along the shore or bank, when a rod must of course be used. Of all baits, the minnow is probably the most killing.

For bait fishing, a light rod and tackle must be used if sport is the object. The pot-fisherman may attain his end with a sapling and a line half as big as a pipestem. The common practice of our anglers is to hook the minnow through lightly from side to side just forward of the first dorsal, in which way he will live longest and swim most naturally—a cruel business; but there is more or less cruelty in all sports of the rod and gun, and where shall we draw the line?

How to Hook Them.

Now cast line gently alongside a shelving bank, or where the drooping branches of a willow ripple the smooth current, or in the eddy that swirls below a tree-root or half-submerged log. The bass sees an easy victim, dallies with it a little, sets his teeth therein, and then starts off to enjoy his easily-gotten morsel in some chosen nook. Give him a little time, and then take your own. You have him hooked; and if you deal gently with him, giving way to no rash impulse, he is yours to have and to hold in creel and in pan. In trolling for him a small spoon is best. When a bass will take the fly, he affords a sport almost as noble as do the salmon and trout. A large fly is used, of a dark color for clear water, but more showy for turbid water. In whatever way taken with the hook, he is a hard fighter, throwing himself now two or three feet out of water, now running up the line at topmost speed, full of devices, and game to the last gasp, and it needs a cool head and a skillful hand to bring him to basket; and he who brings him there safely, and surely, and scientifically, may rightly feel a thrill of pride and satisfaction.—*R. E. Robinson in Moore's Rural Life.*

THE BRITISH WHEAT FIELDS OF THE NORTHWEST.

The greatest wheat-growing region in the world is now being opened to settlement. The largest and most productive portion lies within the British province of Manitoba, in North America. It is sufficiently prolific when fairly cultivated to make England independent of the United States for breadstuffs, and to create a powerful rivalry with us elsewhere. On both banks of the Red river of the North, from its source to its entrance into Lake Winnipeg, and on both sides of the international boundary between Canada and the United States exists this territory. Thence the fertile belt, of which it is the western extremity, sweeps in a northwestern direction some 300 miles along the course of the two Saskatchewan rivers, and forward to the Rocky mountains of the West, embracing an area, says a writer in *The Nineteenth Century*, of at least 200,000,000 acres, nearly the whole of which is to-day an untouched prairie of the richest description. Since the construction of the Northern Pacific railway has been resumed this region has been made accessible by the trunk line and lateral roads to immigrants. Within a few years the city of Winnipeg, at the junction of the Red river and the Assiniboine, has sprung up from an Indian post of the Hudson's Bay Company to be a well-built town of 8,000 inhabitants; steamers have been introduced into the two rivers that unite at her wharves, and a continuous railway 460 miles long connects this Canadian city with St. Paul, the capital of Minnesota. In seven month ending March 31, 1878, there were sold by the United States Government and the railways in Minnesota and Northern Dakotah 2,550,000 acres for actual and immediate settlement. In Manitoba, across the Canadian boundary, 3,000,000 acres of wheat land were allotted last year to actual settlers in this province alone. The settlers in the Red river region are of the most substantial character—well-to-do farmers from the older States, from Iowa, Wisconsin, from Canada and especially from the best parts of Ontario. The dominant nationalities settling on the Minnesota farms are Americans, Scandinavians and Canadians in about equal proportions.

They have been attracted to this remote part of the Northwest by the peculiar advantages of its soil for wheat-growing. Thirty bushels to the acre is the average, while it often yields forty and fifty bushels. Thirty bushels to the acre of the first crop clears all outlay up to that time, returns the capital invested and leaves a first-rate fenced farm in a high state of cultivatiou for succeeding agricultural employment. "Where else," says the writer to whom we have referred, "is there a business that in twelve months repays all advances of its purchase and establishment, and leaves as a profit a money return and plant worth four times the original outlay? It is this enormous profit that is bringing so many heavy capitalists into the ranks of this novel immigration, and inducing men who have already worked themselves into a good position to abandon for a time the amenities of a settled life and embark once more in pioneer farming." A Mr. Dalrymple, in 1877, had 8,000 acres under cultivation. They yielded him twenty-five bushels to the acre, or over 200,000 bushels. His total outlay for seed, cultivation, harvesting and threshing was under $10 per acre, leaving him a margin of over $15, or $120,000 on his 8,000 acres. This was in Minnesota; but north of the Canadian line they get a much larger yield than this, and in twenty-seven miles along the Assiniboine river in 1877 over 400,000 bushels were harvested that averaged considerably over thirty bushels to the acre. In the Northwestern Provinces of Canada wheat often produces forty and fifty bushels to the acre, while in South Minnesota twenty bushels is the average crop, in Wisconsin only fourteen, in Pennsylvania and Ohio fifteen. Cultivated plants yield the greatest products near the northernmost limits at which they grow. In Prince Albert and other new settlements on the Saskatchewan forty bushels of spring wheat to the acre, averaging sixty-three pounds to the bushel, have been raised. In the Southern latitudes the warm spring develops the juices of the plants too rapidly. They run into stalk and leaf, to the detriment of the seed.

The extent of this enormous and rich British territory is comparatively unknown in the United States. It is estimated at 2,984,000 square miles, whilst the whole of the United States south of the international boundary contains 2,933,600 square miles. In its centre is Lake Winnipeg, three hundred miles long, fifty to sixty miles wide—the future Black sea of Canada. At three of its four corners it receives the water of a large river, the main trunk of a hundred smaller ones; at the remaining northeast angle a fourth and larger river, the Dardanelles of the system, conveys the accumulated waters of nearly a million square miles into Hudson's bay. This Lake Winipeg receives the drainage of the future wheat field of the world. The Saskatchewan from its debouchure into the lake eastward from the Rocky mountains by one branch runs over a course of 1,054 miles and by the other 1,092. One of the branches has been navigated by steam over 1,000 miles and the other nearly the same distance. The two Saskatchewans drain what is especially known as the "fertile belt," containing not less than 90,000,000 acres of as fine wheat land as can be found in any country. Through their whole length they run through prairie land. The united length of the three main rivers, with their most important affluents, that pour their accumulated waters into Lake Winnipeg is not less than 10,000 miles. The outlet of this magnificent water-system is the large river Nelson, which discharges the surplus waters of the lake into Hudson's Bay, and which can be rendered navigable for steamers to Port Nelson, a point eighty miles nearer to Liverpool than New York is. All this magnificent region of prairie, river and lake is British territory. Within five years it is calculated that 4,000,000 acres of this fertile prairie land will be under wheat cultivation. This means an addition to the wheat products of the world of 100,000,000 bushels. The exports of all America to the United Kingdom from the 11th of September, 1877 to May 11, 1878—the eight shipping months—was about 100,000,000 bushels. This amount, large as it is, is not more than may be expected within the next few years to be the annual production of this new wheat field of the Winnipeg watershed. The influence of the opening up of this new district cannot but have a most important effect on the supply of the English market. "*It will make the mother country entirely independent of foreign supply.*" It is evident that our superiority as a grain-growing country is likely to be seriously threatened by the rich prairie wheat lands in Northwestern British America.

BUTTER FACTORY ORGANIZED.

Some farmers living in the vicinity of Quakertown, Bucks county, are tired of sending milk to Philadelphia. Absence of springs has militated against butter making. Thus a large quantity of milk has been sent from that locality. In December last a movement was inaugurated to organize a butter factory. Stock was subscribed at $5 per cow, each dairyman being entitled to subscribe to shares equaling in number the cows kept by him. The total amount of stock subscribed is 300 shares, or $1,500. It is estimated that the buildings and fixtures will cost $3,000. The buildings are under roof, and the inside work will soon be completed. Size of buildings, 40 x50 feet. The ice house, 20x35 feet is under the same roof. One room on the first floor, and three on the second, will serve as the residence of the superintendent. The buildings, with the exception of the engine house, are frame. Floors are all cemented. The site selected is the best that could be found in Quakertown. Close to the property is an old mill dam, which has had no water in it for a number of years. This spot will be used as an ice pond. A strong spring will feed the dam. Only a few feet divides the mill dam from the ice house. The receiving room, 10x 20 feet, is approached by a drive way. All the milk received will be weighed and receipted for. The receiving room has a scale with seven beams, and the milk of seven parties can be weighed all at the same time. The plan adopted for the raising of the cream is known as the J. B. Marquis system. In adopting this system the association believes it to be the best of the many examined. The milk is conducted through pipes from the receiving rooms into the pans placed in position in the milk room. The size of this room is 20x30 feet. In order to understand the Marquis system it is necessary to explain the construction of the pans. The pans are made of tin, and encased in wood. Size of pans—10 feet long, three feet wide, and eighteen inches deep. Each pan has a rounded bottom, and is divided into two compartments; a four-inch pipe passing through each division of the pan, at a depth that will bring it immediately under the cream. The pipe is also extended to all the other pans, and is connected with a large ice-water tank, capable of holding two hundred and thirty-nine gallons. The tank is to be kept filled with ice and water. A steam pump forces the ice water through the pipe, and after passing through all the line of piping connected with the milk pans, it is forced back again into the tank. Cream, by this system, is made to rise in four hours. When the cream is risen the milk is run off by means of cocks at the bottom of the pans and the cream is left in the pan, One man is expected to have charge of 2000 pounds of milk. The milk run off is pumped into a tank, and the farmer the next moring takes back his proportion of milk, to be used in fattening pork. The same disposition is made of the buttermilk. The churning room 10x20 feet, is located west of the milk room, and is next the engine house. Two churns have been purchased, of Burrel's patent. The dasher of this churn remains stationary and the churn makes the revolutions. The capacity of these churns is 200 pounds of butter per day. The size of the refrigerator is 10x20 feet. In this room the butter is worked and stored. The room is arched and a supply of ice is kept overhead. The butter, after being churned, is placed on a table and salted. After standing awhile it is worked by means of a lever and then moulded into one pound squares and stamped with the monogram of the creamery. It will be shipped in coolers, and is expected to reach New York and Philadelphia markets in as good condition as when it left the refrigerator. It will be the aim of the association to reach the best custom. To secure trade, samples will be sent for inspection to leading hotels and establishments. The managers expect to secure the milk of six hundred cows, but operations will be commenced on the milk of a smaller number. The expected daily receipts of milk for the present is set down at 2000 pounds. Ten pounds of milk are counted on to make one pound of gilt-edged butter. The motive power of the creamery is furnished by a four-horse-power engine. The establishment will be in full operation by July 1st.

JULY REPORT OF THE DEPARTMENT OF AGRICULTURE—CORN, POTATOES, AND TOBACCO.

The July report upon the condition of crops has been issued by the Department of Agriculture and all the products are reviewed. It says that for corn the middle states report a fair condition, except some complaint of drought in Pennsylvania. In this State the only county adjoining this reported is Berks, and there the crop is very promising. Of tobaeco it says:

The acreage of this crop compared with that of 1878 is placed, in Kentucky, at 89 per cent.; in Virginia, at 90; Missouri, 76; Tennessee, 95; Ohio, 75; Maryland, 96;

Indiana, 70; North Carolina, 103; Pennsylvania, 112; Connecticut, 119; Massachusetts, 110; New York, 110; West Virginia, 73; Wisconsin, 123; South Carolina, 100; Georgia, 92; Alabama, 95; Mississippi, 100; Texas,, 98; Arkansas, 80. The six last named States, and all others, as well as the Territories, grow so little tobacco as to still remain an unimportant factor in estimating the total product of the country.

The four States in which the bulk of the seed-leaf tobacco is grown (although Ohio and one or two other States north of the Ohio are increasing their product)—the four States of Connecticut, Massachusetts, New York, and Pennsylvania—show an increase of acreage of from 10 per cent. in Massachusetts and New York, each, to 19 per cent. in Connecticut. Pennsylvania planting largely in excess of the three other States combined, we have for the four an increase of about 13 per cent., or a larger acreage than that of 1877.

The condition at this date for the whole country is slightly below that of July 1, 1878. Massachusetts alone of the States bordering on the Atlantic shows an improved condition over last year. Tennessee in the West places her condition at 94 against 89 last year.

There has been a decided increase in the area planted in potatoes, amounting to three per cent. for the whole country. The increase was the largest in Pennsylvania, and was 9 per cent.; in New York it was 4 per cent. Maine, which is a large producer, shows no change from last year. The Southern States from Maryland to Texas, show some decline, Alabama alone making an increase of 4 per cent; Tennessee and Kentucky each fell off from 5 to 3 per cent. Of the States north of the Ohio river, none show a decline, and almost all make an increase. Michigan reports as compared with last last year, 107; Illinois, 104; Wisconsin, 104. In the West, Iowa reports 105; Missouri, 105; California and Oregon each make large increases.

The condition on July 1 was very favorable; much better than last year. The drought was severe on the early-planted varieties, but the rains of June were very favorable in those States where the bulk of the crop is grown. In the New England States the Colorado beetle is reported as very destructive, and it is only by an incessant warfare that it is kept under. New York and Pennsylvania each report high condition and few insects. In all the States south of Delaware the drought is beginning to tell on the condition. North of the Ohio river and west of the Mississippi, all the reports are very favorable. Iowa reports 105.

VALUABLE HINTS TO FARMERS.

For the last five years I have not lost a cucumber or melon vine or cabbage plant. Get a barrel with a few gallons of gas tar in it; pour water on the tar: always have it ready when needed, and when the bugs appear, give them a liberal drink of the tar water from a garden sprinkler or otherwise, and if the rain washes it off and they return, repeat the dose. It will also destroy the Colorado potato beetle, and frighten the old long potato bug worse than a thrashing with a brush. Five years ago this summer both kinds appeared on my late potatoes, and I watered with the tar-water. The next day all Colorados that had not been well protected from the sprinkling were dead, and the others, though their name is legion, were all gone, and I have never seen one of them on the farm since. I am aware that many will look upon this with indifference, because it is so cheap and simple a remedy. Such should always feed both their own and their neighbors' bugs, as they frequently do.—*Chicago Tribune.*

Many of the old farmers about us use the leaves of the red cedar (Juniperus Virginiana) in place of sulphur and kerosene for ridding nests and henneries of lice. They say the remedy is very effective. Perhaps perches made of the wood would serve the same purpose.

A German authority says that, when lettuce shows signs of running to seed, if a knife be passed through one-half of the stem of the shooting head, the plant may be preserved good for an additional week. The best plan we have ever known for preserving lettuce late is to transplant twice—once from the seed bed, pricking the plants out four inches apart, and then transplanting in the open ground six by twelve inches apart; as the rows begin to fill cut out one-half the plants, and the balance will form large, fine heads, if the ground be rich and moist, and they will remain well into the summer.—*Prairie Farmer.*

Mr. J. Hapgood, Shrewsbury, Mass., favors shallow setting of asparagus roots; if placed, as some advise, eight inches below the surface, it "makes the crop one or two weeks later." He further maintains, in the *American Cultivator*, that he has also "found that the idea that salt is useful to this plant is mere theory, like the trenching system."

A correspondent of the *Indiana Farmer* tried four different fertilizers for melons—for poultry droppings, well-rotted cow manure, barnyard manure and old bones (gathered upon the farm and reduced by placing them in alternate layers with ashes the previous year), mixing all liberally in the different hills; which were eight feet apart each way, and he says: "Such a crop of melons as came from the hills that had bone-dust I never saw before."

The *Indiana Farmer* says: Water made almost as thick as ordinary cream by the addition of fresh cow manure, and poured on young melon vines, is the only effectual remedy I have ever found to prevent the ravages of the striped beetle. Should one application not be sufficient it should be followed by another until the enemy becomes nauseated and retires in disgust. Such a liquid is a great stimulant to young plants. To retain it about plants in sufficient quantity the melon hills should be made with a slight cavity in the centre. Phinney's melon is a variety more easily grown and more prolific than many others, but the flavor cannot compare with white seeded, ice cream or peerless. At least that is my experience with the three varieties on my soil. In cultivating melons I have noticed that the purest and most delicious sorts are not as robust growers nor as productive as those in which an infusion of the squash or pumpkin is perceptible, and that the striped beetle is much more fond of younger plants of the former than of the latter. The striped beetle has a most discriminating taste, never disturbing a pumpkin plant while a melon or Hubbard squash plant is obtainable.

The following preparation for destroying bugs on squash and on cucumber vines has been successiully tried for years. Dissolve a tablespoonful of saltpetre in a pailful of water. Put one pint of this around each hill, shaping the earth so that it will not spread much, and the thing is done. Use more saltpetre, if you can afford it. It is good for vegetables, but death to animal life. The bugs burrow in the earth at night, and fail to rise in the morning. It is also good to kill the grub in peach trees; only use twice as much—say a quart or two to each tree. There was not a yellow or blistered leaf on twelve or fifteen trees to which it was applied last season. No danger of killing vegetables with it. A concentrated solution applied to young beans makes them grow wonderfully.

The best preventive for worms in celery is to mix plenty of salt, soot, and fine lime with the manure that is to be employed in trenches. This should be added to the manure some weeks before it is used, during which time it should be turned now and then. The mixture above named also benefits the growth of the celery, which will lift clean and spotless compared with that grown in the ordinary way.

CUTTING AWAY OUR FORESTS.

The current number of *Harper's Magazine* contains an article on the "Destruction of our Forests," which is not only of more than usual interest but very timely, and well worthy of the careful attention of land owners everywhere throughout this broad land. There was a time when the man who swung the axe in the heart of the primeval forest was regarded as a public benefactor, and he who felled most of the ancient monarchs was the greatest hero. To a certain extent this homage was well deserved; to enlarge the bounds of civilization and make two blades of grass grow where only one grew before, was certainly a most praiseworthy deed. But the day has long since arrived in this country, just as it has in Europe, when the work of denuding a land of its forests brings in its train a host of evils that will continue to bear harmful fruit through all time unless means, effective and permanent, are instituted to check the danger.

Nowhere in the world was there two centuries ago such a wealth of noble forests as on the territory now embraced by the United States. From the Sabine to the Aroostook, and from the Mississippi to the Atlantic, such dense forests of valuable woods have never elsewhere existed in the world during the historic period. Pine, oak and hickory, the most valuable woods known among men, were the most abundant of all. Even a hundred years ago it seemed impossible for these timber-covered lands to become exhausted.

In truth, if the proper care had been observed, and the timber applied to legitimate uses only, this country would to-day still exceed all civilized lands in its magnificent wealth of the timber resources. But this course has not been pursed. The energy of our people, their strivings after wealth and their indifference to all but immediate consequences have led to results whose harmful influences are not only felt hourly to-day, but will continue to affect mankind until the remotest generation, unless we retrace our course and endeavor to build where we have heretofore only torn down.

Some of the evils we have brought upon ourselves are beginning to be admitted. They press upon our attention in so many forms that we can no longer ignore their all pervading presence. The tornado, the flood and the whirlwind are the direct results of our thoughtless work. The high waters in our rivers, our flooded valleys and devastated fields are all to be laid to this one primal cause. When yet the shade of our virgin forests was cast over the land, these terrible forces of nature were comparatively unknown among us. Occassionally, it is true, they visited us, but their visitations were infrequent compared with our experiences to-day. While the majestic oak and the lordly pine still held their proud crests erect and their myriad leaves exhaled moisture, filling the atmosphere and establishing a mutual relation between earth and air that resulted in frequent gentle rains, the forces of nature seem to have been held in control. Under their spreading limbs, the cooling spring and the merry rivulet found an abundant and never-failing supply of water to make green the land and turn the miller's wheel. The fallen leaves afforded a covering for the soil that enabled it to retain its moist condition, and throw off into the upper air such supplies as were required to preserve the necessary circulation.

The result was moderate rains at frequent intervals, feeding the arterial system of the land and preserving those material relations in the physical world, rendering floods and tornadoes a rarity, and in a thousand ways rendering life more pleasurable and secure. But the woodman's axe, wielded heedlessly and ignorantly of consequences, has changed the then existing order of things. As the lands of whole districts have become deforested all this has been changed. The ground once protected by the friendly shade now lies exposed to the rays of a burning sun. The soil, unable longer to retain its accustomed moisture, has lost in part its ability to produce continuous crops. The rivulets and smaller streams are no longer maintained at a regular, unvarying stage, but are either

half-dried up or converted into roaring torrents that spread devastation far and wide, where they once were sources of unnumbered blessings. Instead of the gentle rains of the earlier era, we have violent storms not only of rain but of winds and hail that are terrible in their severity and the damage they inflict. Even these violent rains fail, notwithstanding the volume of water that falls, of giving the soil the requisite amount of moisture. Unsheltered as it is, the sun and winds speedily extract the water, leaving it as parched as before.

We need only point to a few examples of the workings of this system. There was once no more fertile country in the world than Spain. That was in the early days when the land still boasted of its forest of oak. These have been cut away and the Spain of to-day in great part is almost a synonym for sterility, while her once famous streams exist only in name. In Western Asia a like state of things prevails. The old Roman historians tell us that this was once the granary of the world. To-day those plains and valleys are sun-scorched and barren, sustaining but a tithe of the countless populations that once flourished in those favored countries.

Unless we shall adopt remedial measures, the same fate awaits us. It will not come in a year, nor a score of years, nor even in a century, but its arrival is none the less certain. Most European nations have given timely attention to this subject, Germany, especially, has studied forestry with the utmost attention, and may hope to derive valuable benefits from her enlightened course. We cannot too soon follow in her footsteps. We are already experiencing the results of our folly in storms and floods, and these will increase in number and violence as the process of cutting down our forest goes on. Let there be speedy governmental action, for in that way alone can we hope for a better state of things. If the matter is left to the people, it is idle to look for remedial action; the present course will be continued and troubles from this cause be increased.

THE COMMON ELDER.

This shrub, so common in all the Atlantic States of our union, has commonly been considered a worthless plant, fitted only to mark the abode of the thriftless farmer and to annoy the neat one. But it has valuable redeeming qualities, some of which we will endeavor to point out.

It has long been observed, that if permitted to grow in fence corners its long roots take such hold of the ground that it requires much effort and time to eradicate it. This tenacity to life can be utilized; planted in regions of drifting sands, it becomes, in connection with certain grasses, an important means of arresting the movements of the sands.

The inner bark has no odor, to the taste is at first sweetish, then bitter, acrid and nauseous, contains a resin, valerianic acid, and other principles, and taken in moderate doses is a purgative; in large doses acts as an emetic. This inner bark boiled with lard makes a salve good for old sores.

The flowers are abundantly used in domestc medicine, for making a tea, (elder blow tea), which is a harmless, efficient and pleasant medicine, tending to produce abundant perspiration. A popular and pleasant drink is made by boiling the blossoms in eider. The flowers are also used in poultices, and boiled with lard make a cooling and valuable ointment. The flower buds may be pickled, for which purpose they answer well. When distilled, the blossoms yield what is known as "elder flower water," formerly used in perfumery and confectionery. Flowers gathered and dried can be used at any time during the winter.

The *berries* furnish a rich juice, which makes a very fair wine, and in portions of Kent, England, there are large plantations of elder bush to supply the London market with berries for wine making. When the expressed juice, before fermentation, is boiled down to the consistence of honey, it makes an excellent medicine for children, being purgative, diuretic and sudorific. The berries are also used in making pies.

The hollowed stem can be applied to several purposes. Anciently it was used as a musical instrument, which its name (*sambucus*) in Greek indicates. Boys now use them in making popguns and whistles, while the active t acher can utilize them for many purposes, as in the making of pumps in place of glass tubes, &c.

The light pith has long been used in electrical experiments, to exhibit attractive and repulsive forces, and it is also cut into small toys.

It has been a superstition that the elder-bush exhales narcotic gases and that to sleep in its shade is a dangerous experiment. The American aborigines used the hollow stem filled with sand and twirled between the fingers as a drilling machine.—*West Chester Local News.*

OUR LOCAL ORGANIZATIONS.

AGRICULTURAL AND HORTICULTURAL SOCIETY.

The Lancaster County Agricultural and Horticultural Society met statedly in the Athenæum rooms August 4 at two o'clock. Present, Messrs. H. M. Engle, Calvin Cooper, S. S. Rathvon, M. D. Kendig, Chrn. Hostetter, S. P. Eby, J. F. Witmer, Peter Hiller, W. J. Kafroth, J. M. Johnston, Chrn. Gast, Walter Kieffer, A. F. Hostetter, William McComsey, and Wm. W. Griest.

The minutes were read and approved.

The Coming Fair.

In reference to the proposed fair or fall exhibition, Mr. Cooper stated that the officers of the Northern Market had been consulted, and consent to use the market house for the exhibition had been gained. The only expense attendant upon it will be the janitor's pay, and also the payment of whatever gas may be consumed.

According to the by-laws, the oficers of the society are constituted managers of all exhibitions, and in their hands this matter rests.

Crop Reports.

H. M. Engle, of Marietta, reported small fruits in a flourishing condition; grapes will be especially fine. Corn will give a poor yield; pasture is not good, but potatoes will do right well.

W. J. Kafroth, of West Earl, reported corn in poor condition, pasture short, potatoes good, tobacco good, and fruits promising.

J. F. Witmer, of Paradise, stated that the corn in his district had done better than was expected. Early potatoes are doing very well and the tobacco was good. Clover was reasonably good, but the straw of wheat was very thin on the ground.

M. D. Kendig, of Manor, had cheering news for the tobacco crop, which had been greatly benefited by recent rains. The rain fall for July had been 2¼ inches. The other crops were about as they had been reported in other districts.

Calvin Cooper, East Lampeter, brought cheering news of the corn crop in his district. He had never seen a finer crop, and its growth had been wonderfully accelerated by the rains of Saturday, which one of his neighbors had declared to be a rainfall of 5¼ inches. The speaker, out of curiosity, had measured his corn on Saturday at six o'clock in the evening, and by Monday at six o'clock it had grown 6½ inches; by Tuesday, 7 inches more; by Wednesday, 7 inches more; and the measurement this morning showed that it had gained 3 feet 10½ inches since Saturday.

"Should the Partridge be Domesticated?"

This was the subject of an interesting essay by Simon P. Eby, esq., and as it contained many useful, practical hints, we produce it in full, as follows:

I answer this question in the affirmative. There seems to be a vacancy for this bird in, or rather at, the foot of the list of our domestic animals. We need some bird that can be turned into our grass and grain fields to hunt for insects without the liability of doing the injury to the crops that the common fowl will necessarily do by its larger size and scratching propensities—some smaller creature to fill the place between our barn fowl and the wild bird, whose usefulness can be controlled and directed to the points where most needed.

The partridge, I believe, if tamed, would supply this want. Their natural haunts are the grass and grain fields, and up to the time of harvest, live mostly on insects. A flock of tame partridges would be a valuable help upon the farm to get rid of the numerous destructive insects.

The bird is unobjectionable in all respects. In addition to its usefulness, it is beautiful in appearance, harmless in its habits, and of pleasant voice. Why should it not be domesticated or tamed? Its natural tendencies are strongly in that direction, and it would of itself become tame if only an opportunity would be offered. A little kindness shown; a little protection given to convince the bird that man is no longer its enemy, persecutor and destroyer, but a friend instead, would bring about the desired result.

The whistling flock would before long draw nearer to man and his habitation to escape other enemies, of which it has many; and in winter season learn to feed with the poultry. This much gained, the following season the nest in all probability would not be very far removed. Some of the eggs could be taken out and given to bantam or other small-sized fowls, while the partridge hen would still have enough to hatch and take care of. In the following autumn the home-raised and field-raised young could be let run together and learned to roost in some open shed, provided for that purpose in the orchard, or other suitable corner of the farm. In this way, with patience and prudence, much might be accomplished. In the following spring the surplus males might be taken out for table or other use; and the flock left to pair about the farm, when the process of the previous year might be repeated.

It is a fact somewhat remarkable that among our domesticated animals there is but a single native one, and that one, much to our reproach, gobbles about our farm yards and graces our Christmas and Thanksgiving tables under the foreign and most outlandish name of "Turkey." And yet our continent is not wanting in other animals now left to roam in their wild state which if domesticated, might rival in usefulness the descendants of other countries that form our flocks and herds.

The reason for this, I suppose, was that our ancestors found less trouble in accepting the natives of Asia and Europe, already domesticated, and improving on them, than to supply themselves from natives of the American continent by a long course of subjection and training.

The period, however, I think has arrived when we may, to some extent, turn our attention in a new direction and experiment by adding from our native wild animals to the domestic group, as we have already profitably done by reclaiming and adding from our native stock to our fruits and vegetables.

I think, at least, the subject is worthy of serious consideration and trial, so far as the partridge is concerned, and I would only feel too proud hereafter that the trial was made in our county, and by one or more of the members of our own society.

The difficulties to be encountered in this, like in all other new enterprises, or experiments, would be mainly in the beginning.

You would have to contend against the usual enemies of the poultry yard, with perhaps a few added. The hunters and neighbors' boys, looking upon your partially tamed flocks as still in its wild state, might undertake to shoot or trap them. The law regarding this species of property, as it now stands, does not extend your ownership or protection over them when they leave your premises; but while upon your own land it gives you ample authority to protect them against everybody.

You can put up notices against gunners and order off trespassers, and if they disregard either your notice or command, you can punish them.

By a number of neighboring farmers joining, as is now sometimes done, the ground over which your flock could safely forage, would be easily enlarged.

Some writers on the subject have questioned the capabilities of the partridge to become domesticated—but even these are compelled to admit such capacity to a certain extent. The thing has never been fairly tried.

On the other hand, with all the persecution to which they are annually subjected, "they become," as Wilson says, "almost half domesticated, approach the barn, particularly in winter, and sometimes in that severe season mix with the poultry to glean up a subsistence."

They are not migratory, and remain with us the whole year, only shifting their quarters when driven by severe weather or when too much hunted. This is much in their favor.

The turkey in its wild state is much less susceptible of being tamed, and the original of our common barn fowl can yet be found in the jungles of Java as wild as our pheasants.

They have been domesticated, why not the partridge?

Mr. Engle, although he would not say that Mr. Eby's ideas were impracticable, did not believe our farmers would ever attempt, to any great extent, the domestication of the partridge. The matter of domesticating them would not be found so easy, either; they are a very wild bird. He remembered, when a boy, to have placed a chicken on partridge eggs, and after the birds were hatched out they wandered off and were never seen again—utterly disowning their step-mother.

General Discussion.

"What is the best method of sowing wheat on corn stubs?" was announced as the subject for general

discussion, when Mr. Kendig arose and said that he had tried the experiment one time, but it had proved a failure. This was probably his own fault. He believed that if the corn were kept clear of weeds and the soil properly cultivated, a good crop might be raised.

Mr. Witmer said sowing wheat on corn stubs was a common practice in his vicinity. The corn stubble was ploughed down, and while, of course, it did not make as smooth a crop as oats stubble ploughed down, the yield was generally very good and paid for the trouble. He gave different processes of cultivating wheat on corn stubble

Mr. Engle thought the best plan was not to plow. Of course the ground should be well manured in the spring. The stubble should be cut down, and a cultivator, if not too heavy, could be used. If there was clean culture a good yield might result—provided that wheat was not plowed too deep; and by the way, that is the great trouble in cultivating wheat in this county, the farmers plow too deep. For his part he had better luck from wheat planted in corn than in potato ground.

Social Intercourse.

The chair now announced social intercourse, when Mr. Engle said that he looked with regret upon the small number present to-day. It had been resolved to hold a fall fair, and he had supposed that the committees would be appointed and that the affair would go right on; but it looked to him now as though some of the members were going to shirk the work. We must either hold a fair or not hold it, and one thing or the other must be determined quickly. After announcing a fair, it would be a great shame for a society like this to back out of it. He hoped to hear the opinions of some other members.

Messrs. Witmer, Kendig and Cooper were in favor of the exhibition and thought it should be held; but they all agreed that they did not like to assume the whole responsibility themselves, and the present meeting gave them little encouragement. Mr. Cooper felt confident that if premiums were offered, a fine display might be made.

Mr. Engle was convinced that something was wrong. The attendance to-day was unusually small, and he could think of no other reason for it than that they wanted to shirk the responsibility of putting their shoulders to the wheel in pushing forward this important work. He referred to York's energy in matters of this kind, and thought the example of Lancaster county's neighbors ought to incite our people to some exertion. He was so much discouraged that he felt like going to Kansas.

The discussion ended here, with the understanding that those present would do all in their power to make the contemplated exhibition a success.

Miscellaneous.

Two or three small bills were presented and ordered to be paid, and Mr. Eby handed over a small amount of money from the Poultry Association.

On motion of Mr. Engle, five hundred copies of the by-laws, (now in type), were ordered to be printed in pamphlet form, and Dr. Rathvon was entrusted with the supervision of the work.

On Exhibition.

E. Burkholder, West Earl, pears for name; H. M. Engle, Marietta, Garretson's Early, All-Summer and Primate apples, and Hosenshenk, Bloodgood and Osband's Summer pears.

A specimen of "Quince Rust," by Mr. McGrann, of West Orange street, city.

Larva of "American Peacock Moth," (Saturnia Io), by Mrs. Gibbons, Enterprise Lancaster county, found on a raspberry stem.

After testing the fruits the society adjourned.

THE LANCASTER COUNTY POULTRY ASSOCIATION.

The August meeting of the Lancaster County Poultry Association was held on Monday morning, August 4th, at 10:30, in the old Athenæum rooms, City Hall. Present, Messrs. D. C. Tobias, President; Jacob B. Lichty, Secretary; W. J. Kafroth, John F. Reed, Charles Lippold, J. M. Johnston, Christian Gast, Walter Kieffer, Silas N. Warfel, S. P. Eby, David M. Brosey, Frank B. Buch, T. F. Evans, Jacob A. Buch, G. A. Geyer, J. H. Habecker, and Joseph F. Witmer.

The minutes of the previous meeting were read and approved.

Reports of officers being in order, the treasurer, Mr. T. F. Evans read his report, showing that the receipts of the association to date had been $41.75; expenditures, $11.45; balance on hand, $30.30.

Two small bills—one from *The New Era* and one from Chas. H. Barr, were approved, and then the society proceeded to the consideration of

Unfinished Business.

Under this head, a resolution offered at the previous meeting to amend the by-laws by imposing a fine of $1 upon any member who failed, after accepting the appointment, to serve on a committee or prepare a paper, came up for action.

Mr. Kafroth thought the amendment carried with it a punishment that was too severe and oppressive; he had never known such a law in any other association, and he would oppose it.

Mr. Reed thought it would act as an incentive to members, making them more prompt in rendering the service which they might voluntarily accept, and he therefore favored the amendment.

Mr. Evans rather opposed the amendment, and Messrs. Warfel and Winters also entered their protests, regarding the measure as quite too arbitrary.

Mr. Lichty explained the object of the resolution. Questions had frequently been referred to persons who afterward paid not the slightest attention to them, although they were invariably present and accepted the task when it was imposed upon them; the member who had offered the amendment doubtless thought the fear of this fine would stimulate them to greater exertion.

The question was now called, resulting in the defeat of the resolution "by a large majority."

Referred Questions.

"What breed of fowls is most profitable?" Referred to Mr. Witmer to answer at next meeting.

"Are some breeds of fowls more subject to disease than others, and if so, why? This had been referred to Mr. H. H. Tshudy, but as he was not present, Mr. Warfel was called on to answer. He said that he made a specialty of one breed of fowls, and was therefore hardly prepared to discuss other breeds; but he might have something to say further on in the discussion.

Mr. Kafroth had observed that disease was most likely to attack heavy fowls. He had sad experience in this matter, and in his neighborhood the disease was most manifest, as he before stated, among heavy fowls.

Mr. Evans had observed, in his neighborhood, that disease was most common among the mongrels or "dung-hills," his mother having lost more than sixty chickens of the common breed in two weeks' time. He believed the cause of disease to be the neglect of introducing new breeds at proper times. There ought to be a change of blood, he thought, every year or two.

Mr. Eby's experience, in the last few years, had been principally with game chickens; but when a boy he had charge of his father's chickens, commonly known as mongrels, and they never had disease among them, although they frequently roosted in places so exposed that their feet and combs were frozen. He believed that the chicken cholera among our fowls dated from the introduction of the Asiatic fowls, and he gave instances confirming this belief, although he did not assert it to be a fact, but merely an opinion, based on the results of close observation. A chicken that is too closely confined is more liable to the disease than another; but he did not believe the disease was confined to any particular breed.

Mr. Geyer first noticed cholera among his dark Brahmas, then among his Cochins; but after he bought Leghorns he was not troubled with cholera.

Mr. Warfel believed that thorough-bred chickens were more exempt from disease than others. He had been breeding light Brahmas for ten years, and had never had a case of cholera in his yard Whether this was because of the breed or owing to especial care on his part he was unable to say; but his experience and his observation and correspondence led him to believe that thorough-bred chickens were peculiarly exempt from disease.

Mr. Witmer corroborated Mr. Warfel's opinion, and he believed the light Brahmas were among the most healthy and profitable breeds.

Mr. Tobias, retinquishing the chair, took the floor and gave his experience—by request; or rather he gave the experience of Mr. Tshudy, of Lititz, with whose successes and misfortunes in chicken-raising he was familiar. After explaining the difference between chicken cholera and diarrhœa, he said that he doubted whether Mr. Tshudy would like to tell how many light Brahmas and Partridge Cochins he had lost; but the speaker did not believe it was all owing to the breed, but thought—with no intention whatever to do injury to Mr. Tshudy—that his "run" was not kept as clean as it might be. He did not believe one variety was more prone to disease than another, and there was no record to this effect. What is wanted is pure blood—a good, solid fowl—and this can only be attained by great cleanliness. He advocated cleanliness, therefore, as the best preventive of disease, and he also favored the building of coops on high, dry ground.

Mr. Evans made a habit of feeding salt to his chickens, almost daily, and Mr. Eaby said he was glad to hear it, because the popular idea was that they must not have salt—not even salt bread.

Mr. Warfel said that for years the generally accepted rule had been to keep hot only salt, but all salty substances from chickens, and Mr. Evan's plan was a new revelation to him. He, too, was glad to learn that the chickens could be fed with salt, not only without injury, but with positive benefit, according to Mr. E.'s experience.

Mr. Reed described a disease among chickens, the name of which he could not give, but the symptoms of which were very peculiar. No one present had experienced the same disease among his poultry, and no explanation of the disease or remedy for it was given.

Chairman Tobias had come to the conclusion that, as chicken diseases were most prevalent in the hot season, they were attributable in a large measure to drinking too much water. No creature of its size, to his knowledge, would drink one-half the quantity of water on a hot day that a chicken would. He believed that if chickens were given water in the morning, at noon and in the evening, instead of having it constantly around them, the diseases now so prevalent would be greatly reduced.

Mr. Evans related his experience on the matter of giving chickens water, and the discussion then closed.

Mr. Witmer, to whom a question had been refered for next meeting, declined on the plea of being too much occupied, as secretary of the Agricultural Society, in getting up an exhibition for the near future.

In the matter of holding a poultry show, the chairman explained that through a misunderstanding, the committee had not yet held a meeting, but would meet before the next stated meeting.

Mr. Lippold proposed William Klump and Obadiah Kendig of Lancaster, for membership; Mr. Evans proposed Franklin Carpenter, of Brunnerville; the three were elected.

Adjourned.

WARWICK FARMERS' CLUB.

The Warwick Farmers' Club met on the small farm of John Grossman, jr., near Millway Station, C. & R.R., on Saturday, August 2, 1879, the President, Uriah Carpenter, in the chair. In the absence of the Secretary, John Grossman was appointed secretary *pro tem.*

As there was no particular question before the meeting Mr. Grossman proposed one, which was agreed to:

"What is the best way to prepare the soil for sowing wheat, and how and when to sow?"

Mr. Grossman said: Haul manure on the land and spread it evenly; plow early and then roll it; let it remain in that condition till near seed time, then harrow it; when it is lumpy shovel, roll and harrow until it becomes fine. Sow about the 20th of September; the quantity of the seed varies from 1½ to 2 bushels per acre, according to the quality of the lands.

H. Huber said he once plowed early and rolled a part of a field early, and the balance of it later, and then it was dry and hard. After it was sowed a difference was seen until winter. The early plowed was the greenest, but in harvest he noticed no difference. In average he agreed with Messrs. Grossman and Carpenter, and the most of the meeting.

Messrs. Huber and Carpenter, however, differed from Mr. G. as to rolling. They thought it ought not to be rolled until the weeds grow, and then harrow first and roll afterwards.

Much was said on the subject of deep and shallow plowing, but no conclusion was reached which was best.

On wheat: Some of the members liked the Foltz wheat best, because it yields more to the acre than other kinds; but the millers don't like it so well; but if it yields most grain farmers ought to raise it.

This question is open for discussion at the next meeting of the club.

A New Question.

How best to keep milk cows and other stock. Adjourned to meet August 30, at 1 o'clock P. M., at the house of John Grossman, near New Haven (Kissel Hill).

LINNÆAN SOCIETY.

Nearly the whole of the working force of the Linnæan Society being at Ocean Grove on Saturday, July 26th, the July meeting was informally organized, in a pavilion, on the beach, in front of Joseph Ross's restaurant, with the president, Prof. Stahr, in the chair. The reading of the minutes of the last meeting was dispensed with. Fine coralline specimens of **Madrepora calycularis* and *Tubipora musica*, were donated to the museum by S. S. Rathvon, and specimens of quartz pebbles, and *Algæ* from the beach, by Mr. Stauffer.

The prevailing rains prevented any explorations along the beach or inland, and hence the paucity of the donations, which would have been far otherwise, had the weather been more favorable. The novelty of the occasion, however, which was entirely *impromptu*, with the foaming ocean in front and the beautiful town of Ocean Grove in the background, rendered the meeting peculiarly interesting, although brief. After some further social intercourse, on motion of Prof. Dubbs the society adjourned to meet at the usual place on the last Saturday in August.

Mr. Stauffer reports that on his return home he found quite a variety of snakes, lizards, fish and insects, as well as a variety of finely-pressed plants, collected by William B. Fahnestock, M. D., on his late visit to Georgia. They have not yet been examined fully.

*This species is now referred to the genus *Astroides*, family EUPSAMMIDÆ, and sub-order MADREPORACEA.

THE BEEKEEPERS' ASSOCIATION.

The Lancaster County Beekeepers' Society met Monday afternoon, August 11, at 2 o'clock in the parlor of the Black Horse Hotel. The following members were present: Elias Hershey, Paradise; J. H. Deaner, Churchtown; I. G. Martin, Earl; John Eitemiller, Strasburg; H. G. Shirk, Cærnarvon; D. H. Lintner, Millersville; J. F. Hershey, Mt. Joy; Levan Weigle, Earl; A. K. Deaner, Cærnarvon; Abraham Mellinger, West Earl; L. S. Fleckenstein, Manor, and P. S. Reist, President, Litiz.

The meeting was opened by the President, P. S. Reist. As the Secretary was absent, J. M. Johnston, of the *Intelligencer*, was elected Secretary *pro tem.*

The President, Mr. Reist, reported the honey crop of the United States to be about 8,800,000 pounds. The amount of wax was about 6,000,000 pounds. The total value of crop—wax and honey—was about $1,200,000. The highest award at the honey show in England was given to Americans. He reported an increase of about 75 per cent. in his swarms. All of his colonies were robbed, and they evidently had no queens. His honey product would be comparatively small, on account of the drought. The crop, however, is in a tolerably fair condition.

J. F. Hershey, Mt. Joy, stated that his bees were doing well. He obtained 600 pounds of honey. His bees were doing little or nothing now. They are in good condition so far.

Mr. D. H. Lintner, Millersville, said his bees did very well during the months of April, May and June. He started with fourteen hives, but swarmed twelve more, making 26 hives. In June he commenced transferring to twelve-form hives. His bees are all in good condition. He took 250 pounds honey. His bees paid 250 per cent. on money invested. Sold his honey at 20 and 25 cents per pound. They have not done much since July.

Mr. I. G. Martin, Earl, said he had twenty colonies started in the spring. Tried to stop swarming, and only had one natural swarm. Afterwards he made artificial swarms, increasing the number of colonies to thirty-one. He has taken 540 pounds of honey, but since the harvest the season is very poor. The best crop is always over for the year.

Eli Hershey, Paradise, said his bees had increased about 35 per cent. He had twenty-six hives; and obtained on an average 25 pounds per hive.

Mr. Fleckenstein, Manor, said he had started twelve hives, and could depend on one-half of them for honey. Only had one natural swarm as he tried to prevent them as much as possible. His object is to get more honey with less bees. He obtained on an average 15 to 20 pounds to a hive. The season is not over yet in his neighborhood. He lives near the Susquehanna river, and his bees fly over to the York county side and gather honey from the buckwheat fields.

Mr. John Eitemiller, Strasburg, said he started with eighteen swarms, and now has twenty-seven. He obtained 300 pounds of honey in the comb. His bees are in good wintering condition.

Mr. J. F. Hershey answered the question, "What is the best method of preventing swarming?" as follows:

As this question was referred to P. S. Reist and be referred it to me, I will say a few words on the subject of preventing bees from swarming. I find that there are four points that must be made use of, and those are shade, air, putting empty combs between brood and getting the bees to work in honey boxes. To prevent swarming commence as soon as the nights are getting warm to keep the hives well shaded; but have them so arranged that the air can pass all around under them. If a hive is ever so well shaded and stands in a warm place where the air cannot pass over and around it, shade will not help to prevent swarming. Shade and air must both be made use of at the same time. If shade is made with a roof, keep the roof one or two feet above the hives; don't merely shade them by having the roof right on top of the hive as then the rays of the sun will come too close to the hive.

Putting Empty Combs Between Brood.

When the centre combs are well filled with capped brood and the nights are warm, take an outside comb, and if the comb is full of honey uncap it; then put it between two combs that are filled with brood. In this way every eight days put a comb between brood. If three combs are put between brood it is enough, and not more than one comb should be put between brood at a time; if more is used at one time the brood nest is spread too fast for the bees.

Getting the Bees to work in the Honey Boxes.

Give each swarm two, three or four sections filled with comb, and another section that is empty. As soon as the bees gather honey, they will fill the combs in the section, and at the same time will commence to build combs in the adjoining empty section. As soon as the sections are full take them off, and put empty sections in their place. If the sections are left on till they are full the bees will not have enough room to build combs, and will commence to build queen-cells, and the brood chamber being filled with honey, the queen will have no room to lay.

A general discussion followed in which a number of the members participated.

Mr. I. G. Martin said in answer to the question, "Should glucose be fed to bees?" that he didn't know; that he never used it, and would like to hear from some one who had tried it. He was not in favor of experimenting with it.

Mr. J. F. Hershey said that he had never used it, and never intended to. He thought it a rather risky experiment.

Mr. Reist said that Mr. Thurlow, of this city, had tried it. The bees seemed to like it, but the honey tasted bitter.

Mr. J. F. Hershey showed a case of Italian bees and also a frame, exhibiting his method of making a comb foundation.

Mr. I. G. Martin exhibited a jar of extracted honey, and a piece of honey in comb, prepared for shipping, containing twelve two-pound boxes.

Mr. Lintner exhibited a pan of honey containing eight or ten pounds.

Mr. J. F. Hershey showed a crate of honey, in one pound boxes, size 3½ by 5 inches, which he called the right size boxes. He says they sell faster than two pound boxes. He also showed several cases of Italian bees and queens, put up ready for shipping.

The President stated that the Fruit Growers' Association was holding a meeting to determine whether they would have a fair this season, and stated that the society had been invited to assist in case they agree to hold one.

Mr. Lintner read the following essay:

Some people will contend that bees are injurious to crops. Now, instead of bees being injurious to crops, I shall prove to you that they are an advantage. First, the stamens and pistils of flowers answer to the different organs of the sexes—that is, male and female. The stamen is the male, which furnishes the pollen; the pistil is the female, which must be impregnated by this dust or pollen from the stamen, or no fruit will be produced. Now, as we all know that the breeding in and in of animals is detrimental, so it is in the vegetable kingdom. The pollen from one flower always falling on the pistil of its own flower would deteriorate. Thus it becomes necessary that the pollen produced by the stamen of one flower shall fertilize the pistil of another, to prevent barrenness. This is fully accomplished by the bees traveling from flower to flower, and carrying the pollen sticking to their legs and wings, to the next flower, and impregnating the pistil of it. If all the bees were to be destroyed, I for one, if a farmer, would prefer to go into some other business. This prejudice against bees seems to me has no foundation, and I hope that the day is dawning when it will be done away with.

The society now adjourned until the second Monday in November.

A COUNTY FAIR.

The Board of Managers of the Lancaster County Agricultural and Horticultural Society Fix upon Time and Place for Holding it—Committees Appointed.

The Board of Managers of the Lancaster County Agricultural and Horticultural Society met Monday, August 11, in their room in the City Hall, for the purpose of discussing the subject of holding a county fair. The officers of the society constitute the Board of Managers and are as follows, all of whom were present: President, Calvin Cooper, Bird-in-Hand; Vice Presidents, Henry M. Engle, Marietta, and Jacob B. Garber, Columbia. Recording Secretary, Jos. F. Witmer, Paradise; Corresponding Secretary, J. Miller, Litiz; Treasurer, Levi W. Groff, West Earl township; Managers, Martin D. Kendig, Manor township; William H. Brosius, Drumore township; Casper Hiller, Conestoga township; John G. Linville, Gap; and Israel L. Landis, Lancaster.

On motion, they adopted Wednesday, Thursday and Friday, September 10, 11 and 12, as the days upon which to hold their exhibition, and it will be held in the Northern Market House, on North Queen street.

Committees.

The President announced the following committees, which were unanimously approved:

Committee of Arrangement—Daniel Smeych, city; S. P. Eby, city; Israel L. Landis, city; Ephraim Hoover, city.

On Fruits—Henry M. Engle, Marietta.

On Cereals—Jno. C. Linville, Gap P. O.

On Flowers—Martin D. Kendig, Creswell; Mrs. Dr. Wilson, Lancaster.

On Vegetables—Casper Hiller, Conestoga Centre.

On Apiary—Peter S. Reist, Litiz.

On Poultry—Wm. J. Kafroth, West Earl.

On Domestic Productions—Mrs. Calvin Cooper, Bird-in-Hand.

On Dairy Products—Johnson Miller, Litiz.

On Light Farm Implements—C. M. Hostetter, May P. O.

On Fine Arts, etc—Wm. H. Brosius, Liberty Square.

On Musical Instruments—Ephriam Hoover, Lancaster.

On Agricultural Miscellany—Levi S. Reist, Oregon.

The committee have power to appoint colleagues if they deem it necessary.

All who desire to become exhibitors will make application to the heads of the departments in their line of articles, or to the Committee of Arrangement.

Further details will be found in posters, advertisements and a premium list, which will be issued in due time.

POULTRY ASSOCIATION.

Meeting of the Executive Committee of the Society at Litiz.

The meeting of the Executive Committee of the Lancaster County Poultry Society was held at the Litiz Springs Hotel, on Tuesday evening, August 12. The committee was organized by electing Rev. D. C. Tobias chairman and Jacob H. Lichty secretary. The object of the meeting was to make suitable arrangements for the holding of a "Poultry Exhibition," by the society, in Lancaster, some time in December or January next. After a full discussion of the subject it was thought that a successful exhibition could be made; and the committee will at the next meeting of the society—the first Monday in September—submit a report embracing the necessary regulations to be made.

It is hoped that all interested in breeding poultry and pigeons will assist in making this, their first exhibition, a perfect success. The committee adjourned to meet in the room of the society, in Lancaster, on Tuesday, the 26th inst., at 10½ A. M.

AGRICULTURE.

Weeds and Hay Fever.

It would seem that the general advantage of thorough cultivation ought to be sufficient inducement to incite the tiller of the soil to vigorous efforts for the suppression of weeds. It is manifest to the commonest observer that, if we expect remunerating crops, we must not leave them to contend with hosts of rival enemies in the soil, and yet this is often the case, to a wide extent, throughout the country. Not only are noxious weeds allowed to grow among the crops, but often after the crops are removed whole fields are abandoned to weeds of almost every description, as also are roadsides. These are fruitful nurseries, and their flowering is thus protracted until late in autumn, filling the atmosphere with the impalpable dust of their pollen, irritating and inflaming the delicate organs of the human system in various ways. It is sometimes called hay fever.

The hay season, however, is short, and ought to be much shorter if farmers would have hay of the best quality; and is harmless as compared with the tediousness of the weed-flowering season, during which the eyes are affected with itching inflammation; the bronchial and nasal parts violently excited, causing extreme and protracted intervals of sneezing, and copious discharges of watery fluids from the nose. This is often continued for months, until frosts destroy these troublesome interlopers. In my daily intercourse I meet with persons who are severely afflicted with this troublesome nuisance, and entirely ignorant of the cause, being under apprehension that it proceeds from some radical defect in their organization, and seriously contemplating the necessity of seeking medical advice. In truth, I am half inclined to think that many times those complaints called influenzas have been treated by medical men without suspecting their common origin.

These disagreeable effects, arising from negligent husbandry, are far more prevalent now the late summer and early autumnal months are dry, as was the case during the past year. Frequently showers and rain storms carry the pollen to the ground, where the greater part remains. The presence of this evil is a very serious abridgment of the pleasures of rural life during these autumnal months, when a walk through the fields, or a stroll in the silent woods amid the shadowy lights and falling leaves, is especially enjoyed by contemplative minds.

Cutting and Curing Hay.

Though it is too late for the present season to talk upon this subject, we feel inclined to take up a small space in relation to it by merely referring to a discussion at a meeting of farmers who attend the "Farmers' Market," at Twelfth and Market streets, in this city, and who have formed themselves into a club to discuss matters and things connected with their pursuit, holding their meetings monthly in the room of the directors of the company. These meetings are well attended and comprise among its members a great deal of intelligence; but, as in all meetings of farmers, there is seldom an agreement of views on any question formally introduced.

At the last meeting the question of cutting and

curing hay was discussed, in which there was a great diversity of opinion. Some were for early cutting, some for late cutting, and some when the clover heads were just in bloom, and timothy when the blossoms fell. In curing, some thought that hay generally was damaged by overmaking and in having too much sun-heat. Others thought that grass should be merely wilted; others again who had some experience in this said the hay became mouldy and rotten and no animal would eat it. Some housed their clover the day it was cut, by keeping the tedder at work all the time; another preferred cutting one day and housing the next. Some thought that there was not raking enough done, frequently there was none until the wagons came along to take the hay away. One declared that timothy hay was worthless for dairy cattle; others said that their cattle preferred timothy to clover.

Notwithstanding these adverse opinions, these discussions must prove profitable by inducing experiments of the various modes proposed, so that each one can decide for himself which will best meet his views and inure to his profit. Sometimes one's established mode of conducting farm operations will favor one course better than any other, and of course he will pursue that. Sometimes the lay of the land favors one mode better than another.

Utilizing Night Soil.

On nearly every farm there is more or less of this highly fertilizing matter to be disposed of, and in some sections it is customary for farmers to haul it to their farms from neighboring cities and towns. How to treat it in the latter case often becomes a question with the inexperienced, who would gladly avail themselves of the opportunity. In my own experience I have found the following as good a way as any, and it proved generally satisfactory: Prepare in advance a bed or basin of seasoned muck, or soil and sods, making the bottom six to ten inches thick and raising the outer edges one to three feet high, according to the amount of night soil to be composted. As most of the contents of city vaults are in a fluid state, a water tight box or cask on wheels is needed for carrying. This is backed up to one side and emptied over the embankment into the bed prepared for it, filled as desired. It is then allowed to stand, settle and dry away, so that the whole may be shoveled over and well mixed, after which it commences to warm, when it should be used at once, or overhauled and plaster mixed with it. This overhauling is only a little less unpleasant than the forking over of common yard manure, and often much more exciting, and almost everything is found, from gold watches down to hoop skirts, &c., among the contents. According to our best chemists, this manure should not be allowed to lie long before using after being thus prepared, as oxidation sets in and goes on rapidly, and its virtues as a fertilizer deteriorate. I have found that this fertilizer thus prepared should not be applied to the same soil in successive seasons unless mixed largely with other farm manure. Used in rotation alone, or mixed with other animal manure, benefit results; but where used alone successive seasons, results are unsatisfactory.—*W. H. White.*

A New Wheat.

I send you a few sample stalks, not selected, of my new white wheat which I call "Centennial Black Bearded" white wheat. I have only a small country place, and am only an amateur. What I grow is for my own satisfaction and pleasure, and not for profit. I had in 1876 two gills of this wheat which I sowed on a plat of well fertilized soil about 12 yards square, harvesting one full peck of grain. In 1877 I sowed the peck of seed broadcast on one quarter of an acre of light rotten rock soil (earth not more than 12 to 14 inches deep), with 100 pounds of fertilizer. I obtained 15½ bushels of seed, weighing 68 pounds per bushel. In 1878 I was very late (owing to drouth) in getting the land ready for seeding, and sowed, on the 1st of November, on about 3¼ acres; 5 bushels of seed. I have not threshed it out, but am told by good judges that they will be about 200 bushels. The seed was originally from a foreign land. I will be glad if you can say in your paper what you think of it. I might add that the land on which I sowed the past year, was mostly in corn in 1878, and I did not give it any special preparation.

C. E. E.

Baltimore, Md.

The heads of wheat sent were large and full, of good shape, bearded. The beards being black, while the chaff is white, with an occasional tinge gives the head a striking appearance. The kernel is white or nearly so, except when shrunken, and has a dark, smoky spot on the germ, or eye, rendering it very distinct from any other sort. It is apparently a promising variety.—*Country Gentleman.*

Is Clover a Fertilizer.

The following may throw some light on the subject. About twenty years since a man obtained by lease a large tract of land for a term of years, most of which was worn out and exhausted rye land. One field of ten acres was sown with rye when he took it. The lessee gave it a coat of ashes and a good sprinkling of clover seed. The rye yielded six bushels per acre; it was so thin that the clover had sufficient room to grow. The next season the clover covered the ground completely and was allowed to remain on the ground the entire season. In the spring of the second year the whole was plowed in and the field planted with corn, which yielded forty-seven bushels per acre, and it has remained a fertile field to the present time and is very valuable land.

About Corn.

Peter Cooper, in a recent conversation with a reporter, said: "About thirty years ago a man came into my office and offered to sell me a great secret for $30. He was so persistent and his condition so pitiful that I concluded to buy it. I paid him the money and he told me the secret." Mr. Cooper said it was a process of treating seed corn which would double its productive power. The corn should be covered with glue and rolled successively in lime, guano etc., and planted with the accumulation thus gathered around it. "I gave the receipt," continued he, "to a man in New York State, and he reported the yield of corn so treated was double that of corn planted in the usual way. I have a barrel of glue with me and intend to try the experiment."

The best time to cut wheat is when the straw is yellow two or three joints from the ground. Every day the wheat stands after the grain can be mashed without producing any milk, the gluten decreases in quality and the bran increases in thickness.

HORTICULTURE.

Bags for Protecting Grapes.

Below we give an extract from an essay read before the Kentucky State Horticultural Society by Thomas S. Kennedy, a well-known grape-grower near Louisville. Mr. Charles Downing used these bags years ago to protect his grapes from birds and "yellow jackets," and with success. We have used them also, and indorse all that Mr. Kennedy says. The protection afforded by the netting is probably fully as complete as can be attained without impairing the ripening of the fruit. The netting should hang rather loosely about the fruit. The extract here follows:

"But a better protection from insects and disease I have found in covering each bunch of grapes with a close-fitting bag made of cheap cross-bar mosquito netting, costing last season only forty-five cents per piece of eight yards long by two wide—one square foot being sufficient for a bag. It is slipped over the bunch and tied closely around the stem with a string. This simple contrivance is a simple protection against all kinds of insects, but only a partial preventive of rot. I have used this covering for more than fifteen years, and am satisfied that without this safeguard I would not be able to save any considerable portion of my annual crops from destruction by insects. Under this covering the grapes have fully ripened and hung long afterwards on the vines until wanted.

"About seven years ago, Mr. Younglove, of Bowling Green, exhibited at the Louisville fair a very large collection of grapes that had been protected with paper bags. These grapes were very clear and translucent, and only slightly colored. The darkest kinds of red grapes had only a light pink tinge, and no person could tell what kinds any of them were by their appearance. The paper bags had evidently excluded the sunlight and caused the grapes to mature without attaining their natural color. The flavor, too, was insipid and watery. The contrast between these and the rich colors of the grapes exhibited from my vineyards caused the judges who awarded premiums to decide that the netting was a better covering than paper bags."—*Rural Life.*

Cultivate More Turnips.

We all know the value of the turnip crop to England. It has been asserted that the interest of their immense debt is annually paid by the product of this crop. As to the United States, we do not make half the use of the turnip we might do, by increasing the consumption of the root and improvement in the manner of its cultivation. The great want of our winter-feed for cattle is succulence. We somewhat obviate this want by using cut feed moistened, but as a general thing hay and oats and corn and water form the bulk of cattle-food. Carrots, potatoes, rutabagas and turnips are used at times, but to a very limited extent to what they might be.

One reason for this limited use may be in our old enemy, dear labor. In the culture of the carrot, for instance, there is a great amount of hand-work. As soon as the seeds are up the plants must be thinned; and after every hoe-harrowing between the rows, hands must go over again to keep the rank weeds from smothering out the carrot plants. Carrots are excellent horse-feed; but few of us have this hand-labor to spare. It is so much easier to hoe corn in the hills both ways; though we know how nice it is to have carrots with corn, corn alone has to do the work.

Here is the same trouble with the turnip, though in a less degree to be sure. Every single turnip has to be handled in pulling; and then after pulling every one has to be gone over again and handled to take the top off. If we could manage to do this by machinery, as we do so many other things, so as to get rid of this hand-labor business, no doubt the production would soon be doubled, and use be found for an immense number more than is now dreamed of. This may come in time, for Yankee genius is equal to any achievement in this direction.—*Germantown Telegraph.*

Fertilizers and Fruit Trees.

I find that lime, wood ashes and old iron, put around the roots of declining fruit trees, have a very beneficial effect. These fertilizers restore the trees to a healthy condition, and also greatly improve the fruit in quality and quantity. I made the application on a Winesap and Never Fail, about half a bushel of mixed lime and ashes to each, and dug it in with a hoe some six feet around the trunk, and put old iron immediately around the base of each.

The trees put forth with renewed vigor, bloomed abundantly, and yielded a good crop of fruit. An excellent wash for trees may be made thus: Heat an ounce of sal-soda to redness in an iron pot, and dissolve it in one gallon of water, and while warm apply it to the trunk. After one application the moss and old bark will drop off, and the trunk will be quite smooth. The wash has highly recuperative properties, making old trees bear anew.

I have tried soft soap as a wash with good results, and also a coating of lime in the spring season, which is a fine specific for old trees. The question is often asked, Is it best to manure trees in the fall or spring? I have found the summer season to be a good time; have much faith in mulching, especially young trees, for several seasons after they are planted. Apple trees are said to have two growths during the season; the secondary growth takes place after midsummer, hence it is that a top dressing of good manure, and also coarse litter, facilitates the late growth, and often produces very marked results in the habit and formation of the tree. The good effect that mulching has on young trees is, that it wards off the intense heat of the sun from the tender roots, and also has a tendency to hold moisture. A good top dressing of stable manure in the fall, around young trees, with a good many corn cobs cast over the surface of the soil, gives satisfactory results.—*Correspondence Rural Messenger.*

Setting Out Strawberries.

In reply to some inquiries, principally from new subscribers, as to the best time to plant out a bed of strawberries, we would say September by all means. And we would add that setting the plants some fifteen inches apart and allowing them to form a complete bed, more fruit and of larger size can be obtained than if set in rows and the hill system pursued. When this mode is adopted the plant should be set about two feet apart each way. It is well to change the variety after cultivating a bed for three or four years, to fresh ground. Generally a new variety will do better altogether after cultivating it for a series of years. We have raised more Hovey's Seedling than any other; but after running from six to eight years it gradually diminished in yield. We have in the same way done well with the Monarch of the West, Triumph, Jacunda, and latterly with Seth Boyden, and Captain Jack. The Sharpless just now is the general favorite, but the cost of the plants is still pretty well up. All the foregoing are choice varieties and will well repay any one either for the market or for domestic use. In setting out the plant, it should not be done too deeply, but firmly. The soil selected should not be low, or cold, or liable to retain water.—*Germantown Telegraph.*

Growing the Crab Apple.

In Pennsylvania there are very few crab apples raised, though they would no doubt always command a good price in our markets for "preserving," as there is no fruit that is so valuable and would become so popular for this purpose. The Siberian crab is the best for marketing. It is a beautiful fruit, good tasted, and produces full crops where it is grown in central parts of New York, as we witnessed it several years ago. It also produces abundantly all over the North and West, and we cannot see why it should not be grown in Pennsylvania. There are a number of varieties of the Siberian crab, some being better than others, and we are informed on credible authority, that the variety known as No. 20 is a superior kind, and we know it to be highly commended in the West, where it can be purchased at some of the vast nurseries in that section of the country. We are also aware that it can be obtained of Mr. Samuel Edwards, whose address is Mendota, LaSalle county, Illinois. We have read the certificates of a number of leading men of the

West who unite in speaking in the most decided terms of praise. We should be pleased to hear of some of our agricultural friends trying it, as we have reason to believe that its culture would be both successful and profitable.

DOMESTIC ECONOMY.

Advantages of Staying in Bed.

Taking an occasional day in bed, simply on account of indisposition, is, however, a very simple and rudimentary notion of this glorious institution. Bed is the natural domicile of every man :

"In bed we laugh, in bed we cry:
And born in bed, in bed we die."

Bavard the French physiologist, maintained that man as an animal who exercised the thinking faculty best in a horizontal position. Thus, there are high artistic, social, and intellectual uses connected with an occasional day in bed which imperatively claim discussion. Brindey, the great engineer, when he was fairly bothered and puzzled by some tough problem, always betook himself to bed until he had solved it. Most people have a great kindness for Lord Melbourne, who, under the affectation of frivolity, used to get up Hebrew and the Fathers and imperturbable good humor to bear with his wife, Lady Caroline, while the pretty Byron-struck termagant used to smash the drawing-room furniture. His intimate friends would find the premier calmly taking breakfast in bed, with letters and dispatches strewed all over the counterpane. The poets have been terrible fellows to get out of bed. I suppose it is because the visions of the day and of the night sweetly intermingle. The poet Thomson cultivated laziness as a fine art, and thought out his poems in bed. Pope was a still worse fellow. When he had a fit of inspiration on him, he would keep the servants running about for him all through the night. He makes amends to them by the plenteousness of his "veils."

Have a Fish Pond if You Can.

It is not every farm that can have a fish pond on it, but there are many farms that could have them as well as not. Wherever there is a good strong spring to feed it there a profitable fish pond can be made. Hundreds of farms have swamps or marshes, too low to drain without great expense and fed by springs, and these could be turned to profitable account by turning them into fish ponds. We don't mean profitable in the way of making money, but in saving it. The flesh of fish is a wholesome diet, better every way than so much fat or measly pork. We know plenty of farmers who scarcely taste fish from one year to another. Not because they are not fond of fish, but because they can't get them without going some distance after them and paying a good price for the bargain. A pond of an acre or so in extent, stocked with varieties adapted to the place, would furnish abundance of the very best meat, costing nothing to produce it either. As to catching, it is only sport, and that part can be safely delegated to the boys or girls. We are sure, also, that such an institution on the farm would prove one of its chief attractions, if your boys are inclined to leave the farm. We write from knowledge in this matter, having in earlier days caught many a "nice string" of fish in a pond that was formerly a swamp. During one dry August the owner with two of his boys, went into it with a plow, scraper and shovel, and in a short time had a pond of nearly an acre in extent. This he stocked with fish common to the sluggish streams of the neighborhood, and some procured at a distance, and for years thereafter it proved to be the best acre on the place.

Blackberry Wine.

The following is my mode of making this wine or cordial, after trying several other modes :

Take a five or ten gallon keg, cleanse it thoroughly. Take only ripe berries, crush them in a wine or cider press, or if not at hand, in cloths. After expressing the wine strain carefully, and to each quart of juice add three pounds of the best yellow sugar and as much water as will make a gallon, and in this proportion for any quantity. Put the entire mixture in a kettle and bring it to boil, skim and when cool fill the keg three-fourths full and let it ferment for one week; then fill up the cask with freshly made liquor, and when done fermenting bung up tight, set away in the cellar, where it should be racked off, the keg scalded out, and the liquor either returned to the keg to remain permanently or bottled for use. We prefer putting it in five-gallon demijohns instead of bottles.—*Germantown Telegraph.*

How to Deal with Rats.

A writer in the *Scientific American* says: We clean our premises of these detestable vermin by making whitewash yellow with copperas and covering the stones and rafters in the cellar with a thick coat of it. In every crevice where a rat might tread, we put the crystals of the copperas and scatter the same in the corners of the floor. The result was a perfect stampede of rats and mice. Since that time no a footfall of either rats or mice has been heard about the house. Every spring a coat of the yellow wash is given the cellar, as a purifier as well as a rat exterminator, and no typhoid, dysentery or fever attacks the family. Many persons deliberately attract all rats in the neighborhood by leaving fruits and vegetables uncovered in the cellar, and sometimes even the soap is left open for their regalement. Cover up everything eatable in the cellar and pantry and you will soon starve them out. These precautions joined to the service of a good cat will prove as good a rat exterminator as the chemist can provide. We never allow rats to be poisoned in our dwelling, they are so liable to die between the walls and produce much annoyance.

Fruit Jams.

It is generally known that boiling fruit for a long time and *skimming it well without the sugar* and *without a cover* to the preserving pan, is a very economical and excellent way—economical because the bulk of the scum rises from the *fruit* and not from the *sugar*, if the latter is good; and boiling it without a *cover* allows the evaporation of all the watery particles therefrom; the preserves keep firm and well-flavored. The proportions are three quarters of a pound of sugar to a pound of fruit. Jam made in this way of currants, strawberries, raspberries or gooseberries is excellent.—*Germantown Telegraph.*

Duchesse Potatoes.

Mash one quart of hot boiled potatoes through a fine colander with the potato-masher; mix with them one ounce butter, one small teaspoonful of salt, half a salt-spoonful of white pepper, a pinch of grated nutmeg, and the yolks of two raw eggs; pour the potatoes out on a plate, and then form it with a knife into small cakes two inches long and one wide; lay them on a buttered tin, brush them over the top with an egg beaten up with a teaspoonful of cold water, and color them golden brown in a moderate oven.—*Germantown Telegraph.*

A Delicious Vegetable Soup.

Fry two turnips, two carrots and two onions in a little butter; well wash a pint of lentils, and boil them with the turnips, carrots and onions in a quart of water till perfectly tender, then add a pint of water and rub through a sieve; add pepper, salt and a spoonful of mushroom ketchup, also a small lump of sugar, about half the size of a walnut. Boil a quarter of an hour, and serve with or without rice.—*Germantown Telegraph.*

Elderberry Wine.

Two quarts of juice, two quarts of water, four pounds of white sugar; put into a jar, cover with a thin cloth to protect from the flies, and skim every day until well fermented. Then turn into cask, and cork tightly.

HOUSEHOLD RECIPES.

GREEN sage put in a closet, will clear it of red ants.

POTATOES can be kept from rotting by dusting them with lime, using about one bushel of lime to forty bushels of potatoes.

AS MUCH nitrate of soda as can be taken up between the forefinger and thumb in the glass every time the water is changed will preserve cut flowers in all their beauty for above a fortnight.

TO EXPEL FOUL AIR FROM A WELL.—The quickest way to expel foul air from a well is to heat a bar of iron red hot, and lower it down into the water; the sudden formation of steam is effectual.

THIS is said to be a good recipe for staining wood: For black walnut stain simply use sulphatum varnish, thinned with spirits of turpentine, and apply with a brush. It can be made light or dark, as desired.

DO NOT work butter too much nor too fast. Work slowly, and until all the salt is thoroughly and evenly absorbed, otherwise the butter will not be of uniform color. Working it too fast will destroy the grain.

TO KEEP seeds from the depredations of mice mix pieces of camphor gum in with the seeds. Camphor placed in drawers or trunks will prevent mice from doing them injury. The mouse objects to the odor, and keeps at a distance.

TOMATO STEW.—Scald and skin the desired number and place in a stew-pan without water; let them simmer for half an hour. Add pepper and salt, a good sized piece of butter, and a spoonful or two of white sugar. Grate a few bits of stale bread over all; boil up once, and serve very hot.

STEWED CABBAGE.—Shred a small cabbage as for cold slaw; boil it in water for twenty minutes, then drain thoroughly and cover with sweet milk. Cook until tender, season to taste with butter, pepper and salt, and just before serving add the yolk of a beaten egg, mixed with a little sweet cream.

HERE is a recipe for meat cheese: Boil an ox's liver, heart and tongue; remove all the hard and sinewy parts, and chop the remainder fine; add to this a pound of boiled pork, also chopped fine; season it well; then tie it in a cloth or put it into a pan and press it hard. After standing a few hours it will come out in a solid cake, and is very nice to slice from, for eating at breakfast or supper.—*Ex.*

BUTTER should be kneaded with fresh milk and then with pure water. By this treatment the butter is rendered as fresh and pure in flavor as when recently made. This result is ascribed to the fact that butyric acid, to which the rancid taste and odor are owing, is readily soluble in fresh milk, and is then removed.

TO CLEANSE a rubber piano cover lay the cover on a long, clean table, and sponge it all over with clean warm water, containing a little powdered borax; use no soap; with a clean soft cloth rub it dry. If it looks dull or does not give satisfaction take another soft cloth and drop on it not more than two or three drops of sweet oil, and rub gently all over the cover.

NOW that colors are so largely used in stockings, and so many are ruined in the laundry, a good plan in washing them is to roll them, after being rinsed, into a piece of white linen and squeeze it, to remove all the moisture possible, then dry, and the stockings will look new again. It is also a good plan to put a small spoonful of spirits of salts into the water in which stockings are washed in order to keep in the colors.

IN baking buckwheat and other griddle cakes, a piece of fat bacon as a "greaser" is by many thought to be almost indispensable. Those who use it of this opinion will, on trial, soon learn that a turnip divided in two answers the same or a better purpose, as the odor—the most unpleasant part of cake baking—comes from the greaser in contact with the hot iron, whereas with the turnip very little of this is perceptible.

TO BAKE EGGS.—Butter a clean, smooth saucepan, break as many eggs as will be needed into a saucer, one by one. If found good slip it into the dish. No broken yolk allowed, nor must they crowd so as to risk breaking the yolk after putting in. Put a small piece of butter on each, and sprinkle with pepper and salt, and bake in a well heated oven, and bake till the whites are set. If the oven is rightly heated it will take but a few minutes, and is far more delicate than fried eggs.

CRANBERRY JELLY.—Put one quart of cranberries, which have been carefully picked over, to boil in one pint cold water; have ready in a bowl one pint white sugar; when the cranberries are perfectly soft mash them while hot through a colander into the bowl which contains the sugar, and stir until the sugar is dissolved; then pour into moulds and set in a cold place for at least twenty-four hours. If the cranberries are good and no more water is used than the recipe calls for, this way of cooking them makes beautiful molds for the table.

BAKED INDIAN PUDDING.—Pour enough boiling water on two cups of meal to wet it thoroughly; then add one-half cup of butter, well beaten with one cup of sugar, till like a cream; two well beaten eggs, a little salt, two cups of milk, two tablespoonfuls molasses, nutmeg and cinnamon to suit the taste; one tea-cup of stoned raisins, slightly chopped; bake slowly three hours. If preferred, use two-thirds of a cup of finely chopped suet instead of butter; instead of raisins a cup and a half of dried whortleberries are very nice, or two cups of finely chopped sweet apples instead of any other fruit is excellent.

TO PRESERVE FLOWERS.—1. MIX a tablespoonful of carbonate of soda in a pint of water, and in this place your bouquet. It will preserve the flowers for a fortnight. 2. Sprinkle the bouquet lightly with fresh water, and then put it in a vessel containing soap suds. This will keep the flowers as fresh as if just gathered. Every morning take the bouquet out of the suds, and lay it sideways—the stock entering first—into clean water, keep it there a minute or two, then take it out and sprinkle the flowers lightly by the hand with water, replace it in the soap suds, and it will bloom as fresh as when first gathered. The soap suds needs changing every three or four days. By observing these rules (says a lady who has tested them), a bouquet may be kept bright and beautiful for at least a month, and will last still longer in a passable state. 3. We have heard that the natural color of flowers may be preserved for any length of time by dipping them for a moment in clear glycerine. When the glycerine dries, the various tints are seen almost as bright as before the flowers were plucked.

WAFFLES.—One quart milk, half cup melted butter, yolks of three eggs well beaten, one heaped teaspoonful of baking powder. Beat in flour enough to make a thin batter, and add the well-beaten whites of the three eggs the last thing. Maple syrup, golden syrup, sugar and thick cream is usually considered best to eat with waffles. But if sauce is preferred, any that is fancied on puddings is allowable on waffles.

LIVE STOCK.

Pigs.

Black or flesh-colored pigs are freest from skin diseases in hot climates. The choice is practically between the Essex and Berkshire, for males with which to improve the native stock of hardy grubbers of the root-or-die variety. Those who have tried the former have been delighted at first, but after a few years began to recall with longing the lean hams and slim but solid and flavorous bacon of the old race-horse breed. The trouble with the Essex pigs for the south is that they are the eat-and-sleep to sleep and-wake-to-eat kind, and their grades are, of course, like them. The side fat is superb, and so is the leaf lard, and so far the breed is all that could be desired; but the ham and shoulders are too fat for profit, and the ham is not marbled with fat like the Berkshires. These (the Berks) are much more wide awake, less easily controlled, but good foragers. Their grades are a wonderful improvement upon the original stock, may be made very fat, and yet the proportion between the fat and lean hams, shoulders and side pork or bacon, is such as to develop and preserve the excellencies of the meat. The hams are large and rich and juicy, with diffused fat. Berkshires are not quite so easily fattened when penned and systematically fed as the Essex grade, but they will take much better care of themselves in the woods, and when penned or fastened for fattening, may be finished off with half the feed the original "land pikes" require.

With many northern and western breeders, the Essex is a more profitable pig than the Berkshire, because his nature leads him to take little exercise, so that all he eats goes to flesh and fat. Respiration, which, if rapid reduces fat greatly, is with him never accelerated by moving about, and with plenty of feed, the sole burden of life is to digest it. This breed is pre-eminent among the black breeds, and excelled by none as fat producers.—*American Agriculturist.*

Raising Pigs.

The *National Live Stock Journal* gives the following valuable information on the subject of raising pigs: The most important thing for the swine breeder at this season on the year is to get the greatest possible growth from his spring pigs. There is no period in the life of the hog when so great a return for the food consumed is possible, as during the first six months, and it is here that the advantages of skillful feeding are apparent. Unless great care be taken the growth of the pig will be seriously checked when it is from three to five weeks old. The milk of the dam, which was ample to promote a rapid growth in the litter of pigs during the first two or three weeks, is not sufficient to answer the demands of the same litter as they grow older; hence the pigs should early be taught to look elsewhere for a part of their sustenance. This is au easy matter; a little milk, or nutritious food of any kind in liquid form, placed conveniently by, where the pigs can have access to it at all times, but beyond the reach of the cows, will soon do the work, and it should be replenished frequently through the day. If this is attended to there will be no "stunting" of the pigs at this critical period, and their growth will be uniform and rapid. A good clover pasture is a valuable adjunct and helps wonderfully. The true secret of successful pork-making is to push the pig from the date of birth until it is big enough for the market; and the earlier the age at which this point can be reached, the greater is the return for the food consumed. A slop made of corn and oats, ground in about equal parts, with a little bran-meal added, makes the best food for the sow while suckling, to increase the flow of milk; and this, with clover pasture and plenty of soaked corn during the summer, will promote a rapid healthy growth of the pigs.

Feeding Dry Cows.

It is a common practice among some dairymen to give their cows while dry but scanty living. When a cow comes in give milk or is dried up any feed is considered good enough for her. I think this a great mistake, and the result is a diminished product of milk both in quantity and quality when she comes in. There is a large draft on the system to sustain the calf while the cow is carrying it, and to keep the cow in good condition good feed is as important as when she is giving milk. It is my opinion that a dollar's worth of food when the cow is dry is worth $1.50 after she comes in. An animal in poor condition can not digest as much food as one in good condition. If the cow is poor when she comes in she will not digest enough food to support the system, and at the same time to make a large quantity of milk. The practic of turning cows out on poor feed while dry, expecting to make up when they come in by good feed, is a very uneconomical one, and will not be followed by good and careful dairymen. The way I treat my cows when they get a calf is as follows: In the summer time I keep them in the stable for two days, feed good hay, give one quart wheat bran morning, noon and evening. I also give them a bucketful of lukewarm water with a pint rye flour in it, morning and evening. In the winter I keep them in the stable three days, and with such treatment I never have a sick cow. My father kept cows for 45 years, and he always gave them rye flour in the winter; he never lost a single cow, and he owned as high as 30 different cows in one year.—*D. N. Kean, in Practical Farmer.*

Sheep and Wool.

We have indications every year that sheep and wool raising is on the advance in the Northwest and Western regions of the Republic. All our information, derived from not only agricultural publications, but from the newspapers of the day, satisfies us that this business is destined to become one of our most profitable branches of agriculture. Not only is the wool steadily growing in demand from our own factories, but the carcass is becoming more and more used in domestic economy. Many families now consume more or less mutton that twenty years ago never had it upon their table. Mutton is a meat different from beef, veal or pork. These we naturally take to as early in life as we are permitted to eat meat at all. But mutton, unless we acquire a taste for it in early life, is sometimes resisted until middle life, when all at once we discover how much we have deprived ourselves by not *learning* to eat mutton earlier. Getting to like it, there is no meat so desirable or palatable; but it must be young, or what is called "spring lamb;" or old—that is three or four year old sheep—and what is known as mutton. Thus, good lamb must be young, three to four months; and good mutton may do at three years, but ought to be four years old.

Considering that the raisers have the wool, the carcass, and the best manure, the latter all remaining on the land, it will be found on a careful figuring up at the end of a year, that every farmer who has the room upon his farm cannot do better than to introduce sheep as a branch of his operations.

Fattening Calves.

A sensible, practical farmer says that he has often noticed that calves would thrive better on milk that is not rich in butter than on what is commonly called very rich milk. The nutritive elements of milk reside chiefly in the casein. If you have a cow that gives particularly rich milk, and one that gives a quality poorer in butter, it is better to feed the calf on the milk of the latter. The calf will thrive better, and you will get more butter from the milk of the first cow.

EVERY SHEEP RANGE should have plenty of shade. Where trees are scarce, temporary shelters of boards can be constructed, and should be changed from time to time to keep out disease. The ground in permanent shade must be scraped or plowed up, that the standing room may be kept clean.

THE MAD ITCH in cattle is said to arise from their eating indigestible substances, such as the woody fibre of corn stalks after the juices have been extracted from them by hogs, and the feeding of hogs and cattle together in the West is given as a reason for its prevalence there.

POULTRY.

The Mother of the Chicken.

In some literary societies it is customary at the close of the session to have a "funny night," when all the orations, essays and declamations are humorous, and when some amusing or ridiculous question is set for discussion.

On one such occasion the following speeches, written by Randolph Macon student, were (in substance) delivered on the question, "Which is the mother of the chicken, the hen that laid the egg or the one that hatched it?" Messrs. J. and W. on the affirmative; Mr. C. negative.

Mr. J.—Mr. President:

This silly-sounding question, sir,
Concerning fowls' increase
Was specially designed, I think,
To abuse us up as geese.

But since I'm bid to speak on eggs,
I'll not eggs-cuse nor skrink;
And as a specimen you will eggs-act,
I'll eggs-press what I think.

That like begets that which is like
Is one of nature's laws,
And laws of eggs we sure must cite
In this exciting cause.

The mother of a calf 's a cow,
That of a wren is wren,
And thus the mother of a chick
Must surely be a hen.

Now set a duck on a hen's egg,
And, granting you have luck;
Pray, from that egg say will there come
A chicken or a duck?

And if you want a Shanghai chick,
Say, gentlemen, I beg,
Pray would you set a Shanghai hen
Or get a Shanghai egg?

Will a Shanghai hen hatch a Shanghai chick
From a common egg, I beg;
I'll take my chance with a common hen,
And a genuine Shanghai egg.

And the Shanghai pullet testifies
Whenever she does lay,
She cackle ates a Shanghai chick
Is started on the way.

Then let your hatchers strut around,
And cluck, and scratch, and pick;
But, sir, the hen that laid that egg
Is mother to that chick.

From the Poultry World.

The Migratory Quail.

Forest and Stream publishes a cut of the Italian Migratory Quail, and says: "This quail is between one-half and two-thirds the size of our *Ortyx virginianus* (our native partridge), of lighter color, rufous brown, suffused with fulvous; bill, slim, long and less arched; legs, slender and nearly flesh color; wings, larger proportionately than our quail. The female constructs her nest, a mere depression in the ground, in June and July, and lays from eight to fourteen eggs, whitish-gray, marked with large brown spots. They select no mate, the male being a polygamist, and a desperate fighter in the early season. His call is a twice repeated whistle. Food: grain, herbs, hemp, poppy and turnip seeds; insects, and insects' eggs and larvæ. When not migrating they become very plump, and properly prepared for the table, are delicious morsels. As would naturally be expected from its long migrations, the bird is strong and rapid of wing, and possesses, in this respect, every qualification for testing the skill of the sportsman. According to Mundle the migratory quail which appear in England feed in the early morning and in the evening, and squat at mid-day, when they will hot flush until a dog is quite upon them; sad Bechstein, the careful German naturalist, says that in Germany in August and September the young birds, if marked down, may sometimes be caught with the hand as they squat flat upon the ground."

This bird, which has caused considerable interest within a year or two, is not as handsome as our own partridge, and looks as if it might be a cross between the partridge and the meadow lark. We shall soon, however, know more about it, as it is being introduced in a number of places, and, so far as known, is doing well. We shall be glad to hear from any of our correspondents where the bird has been let out, about its habits and the readiness with which it is establishing itself and propagating.

Animal Food.

Animal food of some sort is necessary for fowls, if we expect them to lay well. This they provide sufficiently for themselves when they have their freedom; but when confined meat must be given them. Scraps from the table, where but few fowls are kept, may be sufficient; or one pound of bullock's liver for half a dozen fowls, twice a week, will suffice; and the increase of eggs will always well repay the cost. A less quantity will be enough, if the fowls have any opportunity to obtain their natural supply of worms and insects. The liver should be boiled, chopped fine and mixed with meal, otherwise it is apt to interfere with a relish for other food, and the more active birds will get the greater share.

Eggs cannot be produced well without nutritious food, and cooked meat, *when given in moderation*, while it cannot injure the fowls, is more conducive to the production of eggs than any other food. Horse flesh, when it is to be had, is as good as liver. The water in which it is boiled is useful for mixing meal.—*Bacon.*

Profits of the Barnyard and Coop.

I have thought for some time of sending my statistics in poultry keeping, but not having the advantage of oyster shells, bones, and such help in egg production, my figures will fall below the score of some poultry-keepers; then the prices here are generally low, which reduced the profit, but I think I have done tolerably well for an old lady of sixty-two years.

I will give my account for four years. The first year I commenced May 10, with 8 hens and 1 rooster; result 50 dozen eggs.

Second year 26 hens. Spanish and Brahma; 230 eggs, value $35.97; chickens killed, $14.90; cost of feed, $18.90; profit, $32.87.

Third year 40 hens; 581 dozen egg, value $98.94; chickens killed, $18.24; cost of feed, $40.75; profit, $76.13.

Fourth year 60 hens; 633 dozen eggs, value $102.33; chickens killed, $22.08; cost of feed, $54.22; profit, $80.18, and I have 75 chicks this year. —*Poultry Yard.*

Turkeys.

It does not cost any more, or much more, to raise a pound of turkey than a pound of hen flesh. In the summer they require to be fed less, being mas-

terly campaigners on their own account, while in the winter very likely their nervous disposition demands somewhat more stimulus than other fowls. If well fed they do not require nearly as careful housing as the hen, although it is a good policy to make them roost in-doors; but left to themselves they prefer to weather out the wildest storm in the tree-tops. Finally, when brought to market, their flesh is worth much more than that of the hen, so that, other things being equal, it is economy to keep them instead. Also, and this is well worth considering, allowing that the percentage of loss of young turkey chicks under most perfect management is greater than the loss of the common fowl, yet turkeys that survive reach such a great weight that a given number of pounds of turkey may, perhaps, be raised with less labor than the same quantity of flesh of the common fowls.—*Poultry Monthly*.

A White Duck That Lays Black Eggs.

Mr. Henry Miller, tenant on the farm of Benjamin M. Barr, in Martic township, is the owner of a young white duck that lays black eggs. She has laid at least a dozen of these dark colored eggs, some of which are quite black, and one of which has been handed to us for inspection. There are scratches upon the black surface, showing the white shell beneath, and the theory is that the dark pigment is deposited just before the egg is laid, so that it is so soft when the egg falls that the straw of the nest scratches off the coloring matter in places. It is certainly a curious natural phenomenon, and particularly so as the duck is a Democrat—a friend at our elbow suggesting that it would not have been so odd had the owner of the duck been a *black* Republican.

Onions for Fowls.

Too much can hardly be said in praise of onions for fowls. They are a preventive of, and a remedy for, many diseases to which domestic fowls are liable. For gapes, onions are the best things that can be fed. Give fowls as many as they will eat, chopped fine, as often as three times a week.

Destruction of Lice on Fowls.

Carbolic acid, by dissolving half an ounce in a quart of boiling water, and when cool rubbing the chickens heads and necks, and a little under the wings. It is death to the lice and life to the fowls.

LITERARY AND PERSONAL.

PROSPECTUS OF AROUND THE WORLD.—Every intelligent person desires to travel, and, if this be impossible, desires to learn what travelers have seen and heard and experienced in all parts of the world. Many an ambitious boy has left home comforts and bright prospects on shore and cheerfully encountered the hardships and perils of a sailor's life, that he might visit foreign lands and learn something of other countries than his own. The most enlightened governments have often sent out costly expeditions to circumnavigate the globe and inquire into the phenomena of nature in every clime, and the manners, customs and resources of strange nations; and the stores of information thus obtained have been published for the benefit of mankind. In more recent times enterprising individuals have, at their own expense, organized parties for the general exploration of unknown regions, for general scientific research, or for furnishing the advantages of travel to those who could spare but a limited amount of time and money for this object.

The Woodruff Scientific Expedition Around the World is undoubtedly the grandest and most attractive undertaking of this kind that has ever been projected, and has awakened the liveliest interest throughout the country. It has been for a considerable time before the public, and has steadily grown in favor with the people. The difficulties which pioneers in all great and novel enterprises must meet and overcome have by no means discouraged its managers and patrons, and they propose to persist in all reasonable and honorable effort until some, at least, of its magnificent possibilities have been realized. This Expedition has been very appropriately named a floating college because it is to be an educational institution of a high order, well organized, thoroughly equipped and located upon a first-class iron steamship which is to undertake a voyage around the globe. The Clyde-built steamer General Werder has been selected for the use of the Expedition and fitted with every convenience for the accommodation of two hundred and fifty professors and students. She has been inspected and approved by officers of the United States Navy, and granted an American register for the purposes of the Expedition by a special act of Congress. Naval officers of large experience and the highest reputation will be appointed to command and navigate the ship, and the journey of nearly forty thousand miles on the land and the ocean will occupy eighteen months, and will be so planned as to reach all the principal cities of the world in the most favorable season of the year.

President W. S. Clark, of Amherst, Mass., will have entire control of the educational department of the Expedition and will select the officers of instruction. The students will be furnished with uniforms and cadet rifles, and thoroughly drilled in military and gymnastic exercices with special reference to physical culture and the preservation of vigorous health.

The best sanitary and police regulations will be enforced, and the highest Christian morality inculcated, while gambling and indulgence in alcoholic liquors will be strictly forbidden. The students will be divided into suitable sections according to their ability and attainments, and each section will be under the particular care of a competent professor, though receiving instruction also from others. The course of study will be arranged to meet the necessities and tastes of every student so far as possible, but all will be required to attend faithfully to the duties assigned. Persistent disobedience will be followed by discharge from the ship, with a free passage home by the most direct route.

Books, maps, diagrams, apparatus and other necessary appliances for study and investigation, will be provided for the use of all members of the Expedition. Detailed information concerning the officers, the ship, the organization and the course of instruction, may be found elsewhere in this paper. It is confidently believed that the thought, time and money hitherto bestowed upon this novel educational institution has been well expended, and that the results, as seen in the present arrangements, will meet the entire approval of the most experienced travelers, the most intelligent educators, and the most prudent parents and guardians.

In response to the numerous favorable notices which have appeared from time to time during the past winter in public prints, hundreds of applications have been received from young men who were ready and eager to join the Expedition on any terms but the payment of a large sum of money. Students from various institutions in all parts of the United States and Canada, and even the graduates of colleges, have begged the privilege of serving as sailors, waiters, or in any other capacity, for the sake of seeing the world and participating in the benefits of the proposed voyage. Inasmuch, however, as more than half a million dollars are required to defray the unavoidable expenses of the Expedition, and as it is not a benevolent institution, it is evident that "those who dance must pay the piper." While a considerable number of the applicants are able and willing to give satisfactory security for the cash payment of the required fees, there is still a large majority who are almost without pecuniary ability and yet would cheerfully make great sacrifices to enjoy the advantages offered. Special efforts have therefore been made to devise some means by which this numerous class of ambitious and worthy students might secure for themselves free scholarships.

It has long been the intention or the managers to publish an illustrated weekly journal of the Expedition, to be printed regularly on board ship and to contain all the most interesting facts and observations which might come to the knowledge of its members. Such a publication under proper supervision would be a powerful and constant stimulus to all the faculty and students to observe accurately and record correctly, and in a pleasing manner, the incidents of the voyage, and whatever was new and noteworthy in the varied scenes through which they might pass. A copy of this paper sent to friends at home would answer the purpose of many letters, and thus save an immense amount of time and labor for better uses. As soon as it became known last winter, when it was expected the Expedition would sail on the eighth of May, that such a journal was to be issued from the ship in whatever port she might happen to be on the day of publication, and that the seventy-eight weekly numbers could be obtained, postage free, for five dollars, subscriptions began to come in from all parts of the country. It was at once demonstrated that the people would gladly welcome so unique a newspaper, especially if carefully edited, neatly printed, and well illustrated by original sketches and photographs prepared by the artists of the Expedition.

When on the eighth of May it was found that less than half the requisite number of students had deposited their fees with Drexel, Morgan & Co., the bankers of the Expedition, it was promptly decided to return the money to the depositors according to contract, and to try a new scheme for the accomplishment of the desired object. Students were abundant, while funds were scarce. Both were essential to success, and success in so good a cause seemed to be duty. After much deliberation it has been determined to offer the following terms to all young men of correct habits, who have attained the age of fifteen years and are well versed in the common English branches of education.

First, the sum of three thousand dollars, paid in advance on or before the day of sailing from New York, will defray for one student all the expenses of the voyage on ship and shore, including washing, books and uniform.

Secondly, a free scholarship, including all expenses as above specified, will be granted to any applicant, qualified as above indicated, who shall secure six hundred cash subscribers, at five dollars each, to the paper called *Around the World*, of which this may be regarded as a sample number.

Thirdly, any eligible person may pay his fee partly in money, and partly in subscriptions at the above-named rates.

Finally, any person, desiring to act as agent for the Expedition in obtaining subscribers, will receive authority and full instructions on application to Woodruff Expedition, St. Nicholas Hotel, New York. A certificate will be given to every agent at the close of his engagement, stating how many subscribers he has obtained; and, if he does not wish to avail himself of a scholarship, he may sell or otherwise transfer the number placed to his credit to any eligible person who may desire to join the Expedition, and who shall receive for the same the full value of five dollars each in the payment of his fee. In lieu of other compensation, any agent will, on application to the office, be paid, before the sailing of the Expedition, twenty-eight cents in money for each subscriber he may have obtained. As soon as two hundred students have secured their membership in any one of the ways specified, notice will be given to all agents of the fact, and the day of sailing will be announced as soon as practicable thereafter. Excellent accommodations will be provided for all who are accepted as students, and the state-rooms will be assigned by lot by the purser on board ship. Subsequent changes for the convenience of individuals will be made as may be found desirable.

All money received for subscriptions or in payment of fees will remain on deposit until the sailing of the Expedition is assured, and will then be drawn for use in defraying necessary expenses only by drafts countersigned by a majority of its three trustees. In case two hundred students should not be enrolled after a reasonable time, and the Expedition for any cause should be abandoned, all money for subscriptions and fees in the hands of the treasurers will be forwarded forthwith to the several owners thereof on return of the receipts for the same.

From the foregoing statements it will be seen that the Woodruff Expedition is not abandoned, but is in a healthy and hopeful condition. It is now more widely and favorably known than ever before, and has been reduced to a plan which seems both feasible and attractive, and which places its advantages within the reach of any enterprising and energetic young man. If its numerous friends will kindly render it the assistance it deserves, there will be little difficulty in securing one hundred thousand subscribers to *Around the World*, and two hundred students will soon be enrolled for one of the most romantic, delightful and instructive excursions ever undertaken.

THE PREMIUM LIST of the York county Agricultural Society, for 1879.

The twenty-second annual exhibition, to be held at York, Pa., on Tuesday, Wednesday, Thursday and Friday, October 7, 8, 9 and 10: with the rules and regulations governing the same—an 8 vo. pamphlet of 22 pages, offering very liberal premiums to 37 distinct classes of stock. Agricultural, domestic, mechanical, manufacturing, fine art and miscellaneous productions, being from $15.00 down to $1.00 or a diploma. The premiums for speed, from $25.00 to $200.00, with liberal second and third premiums.

There is almost an endless list, and it would be difficult to find any object of human production that is not contemplated by the list.

Our readers will particularly notice that this is an entirely different York county institution from the one noticed in our July number, which comes off Sept. 17, 18 and 19, 1879. It seems that our neighbor of the "White Rose" aspires to be a "double team," and perhaps looks upon the "Red Rose" as a "one horse affair." Be that as it may, we sincerely hope the "starboard horse may not fall on the larboard horse, and the old mare get tangled in the rigging."

GEO. D. NEWHALL & Co, successors to Dobmyer & Newhall, and J. L. Peters, No. 50, West Fourth street, Cincinnati, Ohio. Printers and publishers of new and select sheet music and music books, vocal, instrumental and theoretical.

Latest and best household melodies; new, pleasing and popular ballads for hearth and home; choice concert and parlor songs; family and choir sacred songs; festival collection of glees, songs and quartettes; humorous, dialect and plantation songs; society dances; new Latin music for Catholic churches; the song Clarion, by W. T. Giffe; John T. Rutledge's popular songs; Will. S. Hays' latest songs, &c., &c., in short, any musical want supplied at the lowest rates. Send for circulars.

WESTERN FANCIERS' POULTRY JOURNAL, and Stock Breeders' Review; an 8 p. Royal Quarto, very handsomely gotten up, and devoted to poultry breeding, stock, farm and rural miscellany. Published at Minneapolis, Minn., at *one dollar per year*, by T. T. Bacheller. Semi-monthly.

Those of our readers interested in the poultry trade of the country, and especially of the west, cannot enjoy a fortnightly indulgence in its literature more cheaply than by subscribing for this journal.

A HOME ORGAN FOR FARMERS.

THE LANCASTER FARMER,

A MONTHLY JOURNAL,

Devoted to Agriculture, Horticulture, Domestic Economy and Miscellany.

Founded Under the Auspices of the Lancaster County Agricultural and Horticultural Society.

EDITED BY DR. S. S. RATHVON.

TERMS OF SUBSCRIPTION:

ONE DOLLAR PER ANNUM,

POSTAGE PREPAID BY THE PROPRIETOR.

All subscriptions will commence with the January number, unless otherwise ordered.

Dr. S. S. Rathvon, who has so ably managed the editorial department in the past, will continue in the position of editor. His contributions on subjects connected with the science of farming, and particularly that specialty of which he is so thoroughly a master—entomological science—some knowledge of which has become a necessity to the successful farmer, are alone worth much more than the price of this publication. He is determined to make "The Farmer" a necessity to all households.

A county that has so wide a reputation as Lancaster county for its agricultural products, should certainly be able to support an agricultural paper of its own, for the exchange of the opinions of farmers interested in this matter. We ask the co-operation of all farmers interested in this matter. Work among your friends. The "Farmer" is only one dollar per year. Show them your copy. Try and induce them to subscribe. It is not much for each subscriber to do but it will greatly assist us.

All communications in regard to the editorial management should be addressed to Dr. S. S. Rathvon, Lancaster, Pa., and all business letters in regard to subscriptions and advertising should be addressed to the publisher. Rates of advertising can be had on application at the office.

JOHN A. HIESTAND,

No. 9 North Queen St., Lancaster, Pa.

ONE DOLLAR PER ANNUM.—SINGLE COPIES 10 CENTS.

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Entered at the Post Office at Lancaster as Second Class Matter.

CONTENTS OF THIS NUMBER.

PENNSYLVANIA RAILROAD SCHEDULE.

Trains LEAVE the Depot in this city, as follows:

WE TWARD.	Leave Lancaster.	Arrive Harrisburg.
Pacific Express*.....	2:40 a. m.	4:05 a. m.
Way Passenger†	5:00 a. m.	7:50 a. m.
Niagara Express.....	9:30 a. m.	10:40 a. m.
Hanover Accommodation..	9:35 p. m.	
Mail train via Mt. Joy.....	11:15 a. m.	1:00 p. m.
No. 2 via Columbia.....	11:20 a. m.	1:30 p. m.
Sunday Mail.....	11:20 a. m.	1:30 p. m.
Fast Line*.....	2:10 p. m.	3:45 p. m.
Frederick Accommodation.	2:15 p. m.	Col. 2:45 p. m.
Harrisburg Accom.....	5:45 p. m.	7:40 p. m.
Columbia Accommodation..	7:20 p. m.	Col. 8:00 p. m.
Harrisburg Express.....	7:25 p. m.	8:40 p. m.
Pittsburg Express.....	9:25 p. m.	10:50 p. m.
Cincinnati Express*.....	11:50 p. m.	12:45 a. m.
EASTWARD.	**Lancaster.**	**Philadelphia.**
Atlantic Express*.....	12:30 a. m.	3:00 a. m.
Philadelphia Express†.....	4:10 a. m.	7:00 a. m.
Fast Line*.....	5:20 a. m.	7:40 a. m.
Harrisburg Express.....	7:35 a. m.	10:00 a. m.
Columbia Accommodation..	9:28 p. m.	12:30 p. m.
Pacific Express*.....	1:20 p. m.	5:40 p. m.
Sunday Mail.....	2:00 p. m.	5:30 p. m.
Johnstown Express.....	3:05 p. m.	6:00 p. m.
Day Express*.....	5:18 p. m.	7:40 p. m.
Harrisburg Accom.....	5:50 p. m.	9:00 p. m.

The Hanover Accommodation, west, connects at Lancaster with Niagara Express, west, at 9:35 a. m., and will run through to Hanover.

The Frederick Accommodation, west, connects at Lancaster with Fast Line, west, at 2:10 p. m., and runs to Frederick.

The Pacific Express, east, on Sunday, when flagged, will stop at Middletown, Elizabethtown, Mount Joy and Landisville.

*The only trains which run daily.
†Runs daily, except Monday.

The Lancaster Farmer.

Dr. S. S. RATHVON, Editor. LANCASTER, PA., SEPTEMBER, 1879. Vol. XI. No. 9.

EDITORIAL.

SOMETHING ABOUT TOMATOES.

We are apt to think the tomato is a vegetable, or fruit, that has only come into general cullinary use within the last forty years or so; but this is a grave mistake. So far as we are able to localize the event, we verily believe we saw both the tomato and the egg-plant raised as a window pot-plant, and in fruit—as many as five and fifty years ago. The first named had beautiful crimson fruit about the size of an ox-heart cherry, and was called a "Love-apple." The other had white fruit about the size of a bantam's egg, and was called, as it is now, the "Egg-plant." Some went to the trouble of calling it the "Artificial Egg," but there was nothing artificial about it, it was natural.

In Philip Miller's *Gardener's Dictionary*, published in London, and dedicated to Sir Hans Sloan, in 1731, in reference to the "Love-apple," (*Lycopersicon*) we quote the following: "The Italians and Spaniards eat these apples as we do cucumbers, with pepper, oil and salt, and some eat them stewed in sauce, &c., but considering their great moisture and coldness, the nourishment they afford must be bad. The *first* of these plants is the sort directed for medicinal use by the college in their dispensatory."

By the "first," he means the yellow love-apple; for he describes what he calls five species, and distinguishes them by the form and color of the fruit.

Johnson, in his *Gardener's Dictionary*, published in 1872, follows the same specific nomenclature, but enumerates ten distinct species; the earlier ones of which were introduced into England in 1596, as ornamental plants. What Miller says about the cultivation of the tomato in 1731, contains all, and much more, than Johnson says in 1872; and at a more seasonable period we may give it to the public, merely to show how little advance we have made in 148 years.

But now we have somewhat to say nearer home. During the eight years of Jefferson's Presidency, namely, from 1801 to 1809, he kept a record of the fruit and vegetable market of Washington city, carefully noting down the date when each kind was placed on market, how long it continued, and the date when it was discontinued. It may seem singular that the President of the United States, and perhaps the greatest statesman of the period, should give his attention to such domestic details; but so it is, in a tabulated form in the first volume of his biography. Amongst the vegetables enumerated he mentions *tomatoes* and *egg-plants*, as being sold regularly during the period above named in the Washington market. To show what kind of a vegetable market they had in Washington, from 1801 to 1809, and that tomatoes and egg-plants must have been cultivated for culinary use, the kind of company they were in may indicate that use.

Lettuce, parsley, spinach, sprouts, corn-salad, radishes, sorrel, asparagus, broccoli, cucumbers, cabbages, cress, cauliflower, turnips, Irish potatoes, corn, snaps, artichokes, carrots, salsify, squashes, maids or beans, beets, parsnips, tomatoes, lima beans, endive, celery, egg-plants, mushrooms, melons and watermelons. Of fruits, there were pears, strawberries, currants, raspberries and grapes. Perhaps apples, onions and peaches may have been too common to mention. This was from 70 to 78 years ago. Just when, or by whom they were first eaten in Lancaster county we have not the means of knowing, but many are still living who well remember the time when the tomato was not included in our edible vegetation, and even no one dreamed it ever would become so general as it has. We first tasted them in the summer of 1832, and we approached them very "gingerly." Perhaps we would not have done so then—for to us the odor of the plant was not as "fragrant as peaches," but they had been prepared by a little hand that was afterwards laid in ours, and has prepared them for us from that period down to the present time, so we could not refuse. And since we have mentioned *peaches* in connection with the subject, it reminds us that the generic term, *Lycopersicon*, is a Greek compound, and literally means "wolf peach." (From *lykos*, a wolf, and *persicon*, a peach). It belongs to the family SOLANACEÆ, which also includes the common potato, the egg-plant, the deadly night-shade, the horse-nettle, the bitter-sweet, the ground-cherry, apple of Peru, henbane, jimson weed and the tobacco plant—not a very edible family. The generic name is now written *Lycopersicum*. The plant we cultivate is said to have been introduced into England from South America, which, if true, is certainly very suggestive. It encourages us to persevere in our attempts to acclimatize foreign plants, fruits, &c. If we have succeeded in the peach, the cherry and the tomato, who is prepared to say that we may not succeed in other things, the Japanese persimmon for instance? The tomato occupies such an exalted position in culinary vegetation; is so popular, so healthful, so widely diffused, and has been so rapid in its increase that it would be of importance to our next decennial census to have a special column devoted to it alone in 1880. There is hardly a family now so poor that it has not tomatoes upon the table at least once every day while they are in season, and they are so easily preserved by the canning process that many families have them every day all the year round, in some of their many forms of preparation. Tomato stews, salads, pickels, preserves, jellies, catsups, figs, wines, &c., are leading household articles in many families now, and we can hardly realize that five and forty years ago they were almost unknown for these purposes in Lancaster county; and to deprive us of them now, would be equivalent to tearing up all our railroads, and going back to stage coaches and Conestoga teams. No grocery store is now considered complete, without its stock of canned tomatoes. There was another use of the tomato about forty years ago in this country, which we had almost forgotten, and to which Miller alludes in the extract we have quoted. In a highly concentrated or sublimated form, they were used as medicine. Perhaps many of those who have attained to fifty years, will be able to recall the "tomato pills," "tomato tincture," and "tomato decoctions, "conspicuously advertised in drug stores, with wreaths of crimson fruit placarded on the boxes. But as they grew into favor as an esculent, they grew into disfavor as a medicine.

SCIENCE, AND ITS RELATIONS TO AGRICULTURE.

Many intelligent farmers are annoyed by the term *Science*, and many of the illiterate are absolutely horrified at it, and will have as little to do with it as possible; just as if they were able to entirely ignore it, or annihilate it, and act altogether independent of it. The fact is, whether they have any knowledge of it or not, whether they recognize it or not when it is brought to their view, or whether they acknowledge its presence in the various phenomena of nature or not, cannot affect a single principle in its domain, for it still "marches along" as it marched from the beginning of time, "when the morning stars sang together." No farmer can locate and lay off into fields his farm, nor erect a barn, nor lay nor wheat stack—and no farmer's wife can bake a loaf of bread, make a pound of soap, or a cake of cheese, without invoking the aid of science, and this too whether they understand its controling principles or not. Science and her laws are as inseparable from the domain of matter as a shadow is from its substance, or as light and sound are from an electrical concussion. Like truth, "The eternal years of God are hers," and poor feeble humanity can no more separate itself from science and its ramifying influences, than it can from the Creator of the universe, whether it has a living faith in that Creator or not.

Science is only another name for knowledge, and those to whom knowledge is distasteful of course will have little sympathy with science. But science does not only imply a knowledge of the truth, but it also implies a systematic arrangement of truths according to their mutual relations to each other. Science, however, only takes cognizance of truths that are capable of being demonstrated on a material plane. When truth leads beyond that, it enters upon the domain of spirit, which, as it is separated from matter by a discreet degree, has only an abstract relation to the present subject. When St. Paul, in his mission to the Athenians, observed an altar inscribed, "To the unknown God," he gave utterance to the famous enunciation, "He whom you ignorantly worship, Him declare I unto you." The mission of science to the physical realm is of a like character. Its object is to instruct people how to do that intelligently which they otherwise do ignorantly. If a woman happens to bake a good loaf of bread, make a good pound of soap, or a good cake of cheese, science will teach her how she accomplished these achievements, and if she fails in these it will point out wherein she failed. If a farmer by superior skill has succeeded in producing a good crop, erected a symmetrical stack of hay or grain, or constructed healthful and well-ventilated buildings, science will illustrate to him the principles upon which his success depended, and if he fails therein it will admonish him of the physical laws he has violated, and which involved his labors in defeat. The whole domain of physical knowledge, whether domestic, mechanical, mathematical, agricultural, commercial, chemical or professional, is included in the category of science. It abjures all arbitrary signs and seasons and plants itself fundamentally upon principles that are synonomous with truth, and if its deductions seem to be erroneous, the errors will not be found in the scientific principles involved in the case, but in the inability of the human mind to comprehend them, or in their false application.

The knowledges embraced by science are many and diverse, some of them complex or abtruse, and have only a remote relation to the agricultural and domestic concerns of life; and, although no single mind could expect to grasp the whole—nor is it necessary that it should—yet so far as any of its branches relate to specific human avocations they ought to become the subjects of thorough human study. The agriculturalist should have a knowledge of the chemical constitution of the various soils, and how to supply any of the fertilizing elements that may have become exhausted, and also know what elements are present in excess. Some farmers have a sort of prejudice against scientific knowledge, because they think it is only learned from books, and they have a contempt for what they call "book farming." If their illiterate neighbor, after many years of patient and careful experience, had discovered that

certain manipulations of soil—including season, location, and composition, had always resulted in certain beneficial effects, they would readily believe and adopt his experiences, if verbally communicated to them, simply because their neighbor was a practical man, and knew what he was doing; but should some person of literary ability write out those modes just as they were developed through the experiences aforesaid, the book in which they were recorded would not be entitled to credit, because of its scientific character. Now, the one is just as scientific as the other, and neither of them is so any farther than they are *facts*, and farther than they are founded upon principles of *truth;* and if either of them possesses these requisites they are *scientific*, whether they have ever been written and printed in a book, or only recorded in human memory; because, they are *knowledge*, and possess power. Science existed before the introduction of letters, hieroglyphics or pictorial illustrations, and it will survive all these.

For the sake of simplification science may be divided into physics, or physical science, exact science, and natural science; the last named including natural history, or the history of the animal and vegetable kingdoms; in which agriculture has a paramount interest, for they have a direct relation to the productions of the soil, and the history and improvements of domestic animals. The world is progressing, population is increasing, and through the drafts of these upon the virgin fertility of the soil, its primitive substances are becoming exhausted. By the aid of scientific knowledge its exhausted elements may be restored and continued, and the animal enemies of the human family circumvented or extinguished. In the crude and normal progress of the natural world there are checks and balances which tend to preserve and continue nature's equilibrium; but, under the stimulations of progress and increase, this equilibrium becomes disturbed or destroyed, and hence, there are alternate recurrences of paucity and redundancy. Neither the uncivilized aboriginals, nor the early civilized races, had any of the difficulties to contend with that now beset society in its abnormally stimulated progress and improvement. Unlettered science is too limited and superficial to supply the demands of a fastidious progress. A more rapid transit and a wider diffusion are now required to satisfy the yearnings of a restless human ambition. Society, and all the various interests and elements which compose it, now require a *written word*, instead of varying and unsubstantial traditions. Scientific knowledge needs to be invoked, and carried into all the concerns of life, from "a needle to an anchor," from the humblest kitchen, up through all the various domestic and social gradations, to the highest point of agriculture and mechanical excellence. One blade of grass is not sufficient now—nor yet are two—it requires half a dozen where only one grew before. The scientific principles involving these truths are beginning to be slowly apprehended by the intelligent yeomanry of the country, and as rapidly as they are apprehended they will be adopted and carried into practical operation. They are the "upper and the nether mill-stones," that will "grind into powder," the absurdities, the stupidities, and the prejudices of the past. Then welcome science as the beneficent handmaid to agriculture, as she has always been to commerce and manufacturers.

CATERPILLARS.

Friday, September 5th, Mr. Lemon, of West King street, brought to us an apple branch, about eighteen inches in length, on which were grouped about 350 caterpillars. These caterpillars had stripped off all the leaves, letting nothing remain but the midribs. They were attached to the branch by the four pairs of adbominal prolegs, with the posterior and anterior parts of the body turned upward, and appeared as rigid and immovable as if they had been composed of wax. When disturbed they only wriggled with a jerking motion from side to side. They were so closely compacted that no part of the branch they occupied could be seen, and we conceived the idea of preserving them just as they were, but this seemed impracticable; nevertheless, we made the attempt, and, contrary to our expectations, we succeeded. We cut the branch into three pieces of six inches each, but as the caterpillars were only grouped on two of them, we introduced these two pieces into a six inch jar with a wide mouth. The insects were disturbed very little by this process. They had taken their "position" and seemed determined to "fight it out on that line."

We then introduced a gentle stream of strong alcohol, and continued it until the jar was full; but the caterpillars remained rigid and almost entirely motionless. Perhaps half a dozen relinquished their hold upon the branch and sank to the bottom, but all the others, at this writing (eight days after immersion) remain just as they were when they were first taken from the tree. We never before witnessed such stoic indifference to the effects of alcohol in any insect. All—especially caterpillars—squirm, writhe, or contort themselves in a more or less agonizing manner, but these, except a gentle, tremulous motion of a few of them—seemed to be entirely indifferent to the pungent effects of the alcohol, and "died game." They either did not feel that sense of pain that is felt "when a giant dies," or they are endowed with the extraordinary faculty of almost entirely ignoring it. Through this experiment, the Linnæan Society possesses the most perfect specimens of alcoholized caterpillars, as they appear in nature, that we have ever seen, and we are by no means certain that the experiment could be again as successfully repeated with so large a number.

These caterpillars are from one and a half to two inches in length, three-quarters of an inch in circumference, and of a honey yellow color. The head is large and jet black, and the feet and a small spot on the upper side of the terminal segment are of the same color. The body is adorned with seven reddish longitudinal stripes, the dorsal stripe being about twice as wide as the lateral and marginal ones. The posterior pair of feet are very black, and project backward like a pair of caudal forceps. Immediately back of the head, the first thoracic segment has a broad dorsal spot, or collar, of nearly orange red color.

We have made this record, because this is said to be the apple-tree variety of the larva of DETANA MINISTRA—the "Handmaid moth," an insect that is especially destructive to the foliage of the walnuts and hickories, and is also occasionally found on other trees, the larva of which varies according to the foliage it feeds on. Last year Mr. L. brought us 1,200 of these caterpillars which he found grouped together in a compact mass, near the base of an English walnut tree on his premises, and of which they had stripped nearly all the leaves, leaving nothing but the naked midribs remaining. Those on the walnut tree were of the same size and form as those on the apple tree, but the body was a dull white, and the stripes were somewhat broader and of a deep chocolate-brown color. Last year Mr. L. had none of these caterpillars on his apple trees, this year he has none on his walnut tree. After the mortality of 1,200 so summarily, a sole survivor may have instinctively concluded that walnut trees are unhealthy to the race, and hence the scene of operation was transferred to the apple.

These caterpillars have one peculiar habit which places them effectually in the power of man, and if men permit them to perpetuate themselves from season to season they ought to be held amenable to law. They "moult" or cast off the old skin and acquire a new one four or five times before they perfect their larval condition, and when about to undergo this change, the whole brood on the tree congregate in a mass on the trunk, sometimes as low as the base—if not on the ground—but never very far from the ground, and this seems a practical suggestion to the proprietor of the tree, to gather them up and destroy them. If they are too repulsive to handle, a syringing of hot water would prove an effective extinguisher. There is no excuse for their continuance.

We have noticed these caterpillars for more than thirty years, but those on the apple tree we have always found congregated on the small branches, where they usually feed; whilst those on the walnut tree we have always found congregated somewhere on the trunk. When feeding they scatter wherever they can find food, but in their moulting trysts, they are remarkably gregarious. When they have matured their larval condition, they burrow into the ground, pupate, and remain there until the following month of June, when they come forth a moth. The alar expansion of the moth is from one and three quarters to two inches. The body is thick and about three quarters of an inch long. The antennæ are slender, and finely serrated along the anterior margin. The anterior wings are various shades of reddish brown, and the posterior wings and abdomen are a dull, silvery white. The thorax is a deep velvety brown, margined with lighter brown. There are four not very conspicuous, transverse lines on the anterior wings, somewhat darker than the ground color. They are attracted at night by lights burning, and this may suggest the destruction of the mature insect.

QUERIES AND ANSWERS.

MOTTLED HORN-BEETLE.

Mr. T. L. Graham, Elkton, Md.—Your postal card and small box by mail were duly received. The box contained a most magnificent specimen of the "mottled Horn-Beetle." It is by no means a "Bug;" it is a *Beetle*, and was described by Linnæus under the name of **Scarabæus typhœus;* but modern authors in entomology have placed it in the genus *Dynastes:* therefore it is best known under the name of *Dynastes typhœus:* family SCARABÆIDA, Section LAMELLICORNIA, and order COLEOPTERA.

The *larva* is a large, white crescent-shaped "grub worm," very similar in form to those that are found every season in the soil, only much larger. What we mean by "crescent shaped" is, that it is always found bent in the form of a crescent.

It feeds (the larva) on decayed wood, and is often found in the decayed heart of old trees. About twenty years ago a large willow tree was cut down at Safe Harbor, in this county, and in the heart of it were found about fifty of these beetles and their *larvæ*. Individuals, since then, have been captured in various localities in this county; but we have never heard of so many of them being found in one place as in the tree at Safe Harbor.

DROP-WORM.

Mr. E., Lancaster county, Pa.—The small box you left for our examination on the 9th inst., contained the follicles of an insect known by the common names of "Drop-worm," "Basket-worm," "Sack-bearer," &c., and by the Germans "Sach-trager." It has also received various scientific names, but is now best known among scientists under the name of *Thyridopteryx ephemeræformis*. It is particularly destructive to the foliage of the Arborvitæ, but is also found on various other trees; among which we may mention the apple, quince, pear, cherry, apricot, nectarine, elm, linden, locust, pines, cedars, &c., and when it becomes numerous it is injurious to the beauty, symmetry, vitality and general health of the trees it infects; but we know of no insects that are more accessible in the application of a remedy, if the remedy is

*Typhœus, in the heathen mythology, was a gigantic son of Jupiter and Ilaea, whom Apollo killed for offering violence to his mother, Latona.

Scarabæus means a beetle.

applied at the proper time, and especially when the trees are low, like the arborvitæ. The follicles or "sacks" of the females are found dangling from the naked branches of the trees all winter, and in trees that shed their leaves they become very conspicuous. In non leaf-shedding trees they are not so visible as in the former, but still from the fact that these sacks assume a dried and crispy aspect, they may be easily detected on pines, cedars and arborvitæ. If all these sacks are gathered and burned, any time before the first of May in this latitude, it will not be possible for them to increase or even perpetuate their species. The female never leaves her sack until she has deposited all her eggs therein, and these eggs are contained in the pupa shell, and warmly protected against the most rigorous winter. They are hatched out about the middle of May, when the young immediately begin to form sacks for themselves, which are spun of a fine white silk, and are covered over on the outsides with leaves, leaf-stems and bits of wood; enlarging them as the insect grows larger, and carrying them with them wherever they go; and from this habit they have been named "Sack-bearers." They have also the habit of dropping down from the branches, suspended by a fine silken fiber, and then drawing themselves up again, and this has given rise to the name "Drop-worm." Comparatively few persons ever have an opportunity of seeing the male insect. He emerges from the pupa and the follicle during the month of September, and after fertilizing the female, inside of her *habitaculum*, he almost immediately dies. The female is entirely destitute of wings, antennæ or feet—in fact, nothing but a white, oblong, cylindrical sack, filled with small round eggs, numbering from three to five hundred; with an exserted ovipositor at the posterior end, and a rudimental head and two small black eyes at the anterior end. The male expands about one inch, and has a body of about the same length, but with the power of extending the abdomen, similar to the extension of a telescope. He is covered with a thick coat of moderately long, swarthy, brown fur, and at first his wings are opaque, but he soon flutters off the mealy substance, or scales, with which they are covered, and they become more or less transparent, especially the posterior pair.

a The adult larva; *b* the pupa; *c* the adult female; *d* the adult male; *e* the opened sack showing the eggs; *f* the sack entire showing the manner of conveying it from place to place; *g* the young beginning to construct a sack.

The larva which inhabits the sack, and never leaves it, when mature, is about an inch and a half in length, robust anteriorly, and tapering backward; it has a smoky color, fleshy, and without intermediate feet or only rudimental ones. The head and three thoracic segments are smooth, hard, and mottled with bluish white and black, or brown. Being so perfectly incased in the follicle, it cannot be destroyed by birds, and is comparatively free from insect enemies.

OUR LATE EXHIBITION.

The fair was formally closed at 9 o'clock p. m., on Friday evening, the 12th inst., and whether an entire success or otherwise, nothing appears more evident to our mind than the fact that Lancaster county possesses the *elements* of a first class exhibition, if only the indifference or supineness of its people can be so far overcome as to allow them to give such an enterprise a sustaining support, both as participators and auditors. This support should by no means be a cold and uninterested one, but on the contrary earnest and hopeful, and accompanied by that self-abnegation which gives assurance that the Society is influenced by higher motives than those that relate to *self* alone. It is true, that these exhibitions should be self-sustaining, but aside from this, the cultivation of the useful and the beautiful, from moral and social considerations, is paramount to merely pecuniary gain. In any event these periodical exhibitions are the most practical means that can be employed to bring before the people the various productions of human industry, because they bring face to face the producer and consumer, and enable them to discuss intelligently the material results of labor, and to contemplate their various qualities.

Below will be found the list of premiums awarded to exhibitors in the several classes:

Class 1—Fruits.

We the undersigned committee appointed to report upon the grapes, peaches, plums and melons, beg leave to submit the following:

For the largest collection of grapes (22 varieties), H. M. Engle & Son, $3; for the second largest collection (14 varieties), Daniel Smeych, $2; for the third largest collection (9 varieties), Dr. C. Weidler, $1; best four bunches of Concords, J. Huber, 50 cents; best four bunches of Clinton, C. Hoover, 50 cents; best four bunches of Rogers, Samuel Benedict, 50 cents; best four bunches Martha, Daniel Smeych, 50 cents; Iona, Dr. C. Weidler, 50 cents; Allen's Hybrid, the same, 50 cents. Discretionary premiums to J. F. Hershey and J. H. Mayer, 50 cents each.

For the largest collection of foreign grapes (4 varieties), D. Smeych, $2; they also accord special mention to L. S. Reist, B. L. Landis, John B. Erb, P. S. Reist, Eph. H. Hoover and others for fine exhibits of grapes, and if the committee has failed to mention more, it is because of the difficulty of discriminating where fruit of the same kind is so widely scattered.

For the best plate of plums (ten specimens), Daniel Smeych, 50 cents. There were also some excellent yellow or golden plums on exhibition, but they lacked in number to elicit a premium.

For the best specimens of Casaba melons, M. C. Cooper, 50 cents; best cantaloupes 50 cents.

[Note—William Weidle exhibited 28 varieties of named pears and 8 unnamed; also, 5 named and 2 unnamed varieties of apples, also, Susquehanna and Crawford late peaches, and Isabella grapes, which were overlooked in the book of entries, but are entitled to notice].

It was exceedingly difficult to discriminate between the many excellent peaches on exhibition; therefore the committee was under the necessity of exercising discretionary power. To the largest collection (13 varieties) by Daniel Smeych, they awarded $2; the next largest (17 apples), L. S. Reist, $1. They also awarded the following persons for superior plates of peaches 50 cents each: Calvin Cooper, Susquehanna; Casper Hiller, Crawford Late; Wm. Weidle, Crawford Early and Susquehanna; M. D. Kendig, new seedling; C. F. Long, new seedling; A. S. Keller, Crawford Late; Wm. Richardson, Susquehanna; Joseph Samson, seedling; P. S. Reist, J. H. Hershey, J. H. Mayer, ditto, and Daniel Smeych, Sener peach.

The committee labored under the difficulty caused by many of the peaches being unnamed, and others never having even a card attached to them; but as all entries have been published in the daily papers, and they were each under the supervision of visitors, the public will be able to exercise a proper appreciation of what our county is able to produce in the different lines of fruit. Much credit is due to all the exhibitors for the fine displays of grapes and peaches.

The following additional premiums are recommended: Best plate of Delaware grapes, Abraham Summy, 50 cents; second best, Samuel Jacobs, 25 cents; third best Dr. Weidler, favorable notice.

Best plate of Telegraph grapes, John Grossman, 50 cents; second best, H. M. Engle, 25 cents; third best, F. Howell, favorable notice; second best, Rogers, No. 15, S. W. Brecklart, 25 cents. Best five cantaloupes, J. W. Breckhart, 50 cents; second best, J. K. Ryan, 25 cents.

Honorable notice to Reist & McCloud for Brighton grapes, and also for large collection of Concord and Martha grapes. Also to Mrs. Ann Bushong for county raised figs, and to Messrs. Garber, Hess, Hoover and Mellinger for sundry grapes.

S. S. Rathvon,
Wm. McComsey.

We the undersigned committee, appointed to examine and report upon apples and pears, respectfully report the following:

For the largest collection of apples (50 varieties), L. S. Reist, $3; second largest (16 varieties), H. M. Engle, $2; third largest (13 varieties), J. C. Linville, $1. Best plate Smokehouse apples, Wm. Weidle, first premium, 75 cents; second best plate, Jacob Zecher, second premium, 50 cts.; best plate Shenkern apples, Wm. Weidle, first premium, 75 cts.; best plate golden pippins, first premium, Jacob Zecher, 75 cents; basket of apples, Ambrose Pownall, first premium, 75 cents; plate of Porter apples, John B. Erb, first premium, 75 cents; plate of Jeffries apples, John B. Erb, first premium, 75 cts.; one mammoth Rambo, Samuel Benedict, first premium, 75 cents; plate of quinces, William Weidle, first premium, 50 cents; John B. Erb, second premium, 25 cts.; one mammoth apple (16½ inches) very fine, special notice.

Best collection of pears (38 varieties), Wm. Weidle, $3; second best (26 varieties), Daniel Smeych, $2; third best (24 varieties), Samuel Benedict, $1.50; H. M. Engle (27 varieties), discretionary premium, $1.50; Casper Hiller & Son (33 varieties), discretionary premium, $1.50; Hon. J. B. Livingston (14 varieties), discretionary premium, $1.

Best plate Sheldon pears, Adam S. Keller, first premium, 50 cents; second best ditto, Daniel M. Mayer, second premium, 25 cents; best plate Bartlett pears, Mrs. Hannah Randolph, first premium, $1; best plate Duchess, John B. Erb, first premium, 50 cents; best plate Seckel pears, John C. Linville, first premium, 50 cents; plate Seckel pears, J. M. Mayer, second premium, 25 cents; best plates Urbaniste, Flemish Beauty and Washington pears, Chas. E. Long, first premium, 50 cents each; basket of assorted fruit, Chas E. Long, $1; basket Bartlett pears, Chas. E. Long, 75 cents; basket of Clairgean pears, Mrs. E. H. Hager, 50 cents. Lot of cantaloupes, A. S. Keller, 25 cents; cantaloupe and melon, J. K. Rine, 50 cents; muskmelon, J. W. Bruckhart, 50 cents; citrons, Milton Cooper, 25 cents; Casaba melons, Milton Cooper, 50 cents.

The following named exhibitors—E. S. Hoover, P. S. Reist, Fannie Kready, J. M. Hess, Calvin Cooper, I. L. Landis, Charles A. Bauer, John Grossman, E. B. Landis, and others—are in our judgment worthy of special mention.

M. D. Kendig,
Louis C. Lyte,
J. H. Hershey,
Committee.

Class 2—Flowers.

First Premiums.—Mrs. Fanny Bushong, most extensive exotic collection of rare plants; Casper Hiller & Son, best collection of ornamental grasses; Chas Heins, best rustic basket; Miss Rosenmiller, best collection of

cut flowers; George O. Hensel, best collection of plants (106 varieties); George O. Hensel, best collection of ferns.

Second Premiums.—C. A. Getz, collection of flowers (107 specimens); Lenora Hershey, bouquet; George O. Hensel, second best collection of ornamental and foliage plants.

Special Mention.—Mrs. Mary E. Wilson, M. D., collection of plants; Mrs. Anthony Mott, begonias; J. Frank Landis, century plant; L. I. Steinhauser, orange tree and foliage plants; Leonard Bachler, passion flower; Miss Armstrong, passion flower; Robert Dysart, hanging basket.

CLASS 3—VEGETABLES.

First Premiums.—Jacob M. Mayer, best assortment of vegetables; Charles A. Bauer, first premium each for carrots, Lima beans, endive and yellow tomatoes; Casper Hiller & Son, best Snowflake potatoes; John C. Linville, best beets and cashaws; Benj. L. Landis, best red sweet potatoes.

Honorable Mention.—John B. Erb, cabbages, beans, Trophy tomatoes and sweet potatoes; Benj. L. Landis, yellow sweet potatoes.

CLASS 4—CEREALS.

First Premiums.—Joseph F. Witmer, Foltz wheat, clover seed and timothy seed; David M. Mayer, Red Mediterranean wheat; J. F. Landis, oats; Johnson Miller, rye and yellow corn; Charles A. Bauer, sugar corn; Calvin Cooper, Chester county, Mammoth corn.

Honorable Mention.—Elmer Cooper, Chester county, Mammoth corn.

CLASS 5—DOMESTIC PRODUCTIONS.

First Premiums.—John C. Linville, three pounds of butter; Mrs. E. S. Hoover, largest display of canned fruits; Mrs. John Zellers, two loaves home-made bread; Mrs. John B. Erb, blackberry and grape wine; Mrs. Peter Regennas, best canned peaches; Mrs. J. F. Hershey, best hard soap; Mrs. Heinitsh, crab apple jelly; Mrs. Adam S. Keller, best mixed pickles; Mrs. D. H. Heitshu, best jar of canned pears; S. G. Gensemer, best currant wine.

Second Premium.—Maria S. Landis, five pounds Alderney butter.

CLASS 6—THE APIARY.

First Premium.—J. F. Hershey, for honey and hive of bees.

Honorable Mention.—Peter S. Reist, box of honey.

CLASS 7—POULTRY.

First Premiums.—Dr. J. H. Mayer, best collection of Brahmas; H. E. Stoner, best Leghorns; H. H. Myers, best Bantams.

Second Premiums.—W. H. Amer, second best Leghorns; Chas. E. Long, second best Bantams.

Special Mention.—H. E. Stoner's collection of Golden Hamburgs and Game cocks.

CLASS 8—LIGHT IMPLEMENTS.

No competition; discretionary premiums awarded to John R. Buckwalter for tobacco fork and I. L. Landis for posthole diggers.

CLASS 9—THE DAIRY.

Honorable Mention.—S. E. and G. S. Ball, fine display of dairy products and salt meats.

CLASS 10—FINE ARTS AND INDUSTRIAL.

First Premiums.—Benj. F. Landis, oil paintings and crayon drawings; Mrs. A. F. Spencer, wax cross; Mary Bachler, toilet set, wax boquet, rustic cross, sofa cushion, thread tidy and bullion work.

Discretionary Premiums.—Mrs. J. H. Hostetter, afghan; Mrs. H. R. Barr, crayon portraits; Christie W. Gruel, counterpane; Jennie Scheetz, quilt; C. R. Frailey, penmanship; Mrs. E. S. Hoover, tidies; Annie R. Garber, water color painting; Mrs. C. Cooper, cushion cover; Walter H. Kinzer, stuffed birds; Viola Bushong, vase of dried grasses; Mrs. Peter Regennas, quilt; Lizzie C. Thomas, marking on linen.

Honorable Notice.—Mrs. Jane Hess, quarter of silk quilt; Annie Alexander, sofa mat.

CLASS 11—MUSICAL INSTRUMENTS.

First Premiums.—Alex. M'Killips, best variety of organs; W. H. Manby, best tone organ.

CLASS 12—MISCELLANEOUS.

First Premium.—S. B. Urban, six leaves of tobacco; J. M. Hess, four laths of tobacco.

Second Premium.—Chas. A. Bauer, six leaves of tobacco.

Discretionary Premium.—L. S. Gross, six stalks of tobacco.

We have been authorized to pay the above reported premiums, so far as they are in accordance with the awards of the judges, made in the books of entries. Therefore, all holding *premium cards* will present them at our place of business, corner of North Queen and Orange streets, within thirty days from close of fair, as after that date they will be considered as forfeited to the Society.

CONTRIBUTIONS.

For THE LANCASTER FARMER.

THE MOON'S SIGNS AND PHASES.

MR. EDITOR: I am not sure that it will be profitable to your readers to pursue the controversy with your "Seeker after Truth" any further, but I will ask your indulgence for a reply to his communication in the August number of THE FARMER.

Instead of endeavoring by facts and argument to answer the reasons I have given for disbelieving that the moon's changing signs and phases have any influence on the weather and the crops, he seems desirous of abandoning the original ground of difference between us and making it a matter of personal controversy. Unless he wished to excite the prejudice of farmers against an opponent whose arguments he could not answer, why does he quote as if they were mine, the words "ignorant farmers"—a phrase of his own invention or introduction, and never used by me.

Probably it was a slip of the pen, when at the commencement of his article he speaks of a "controversy on "*solar*" influences, as I am not aware of any difference of opinion in regard to the sun's influence; but when he goes on to say that *Amateur Farmer* "denies in toto the moon's effect on terrestrial matter," he asserts what he can find no warrant for in anything I have written, and what is in fact not true. Nor is it any nearer the truth when he asserts that "he (Amateur) simply tells us * * * that the moon cannot raise the water in the sea." He will look in vain over my several articles in THE FARMER for any denial of the moon's influence in causing the tides. I fully agree that the moon exerts an influence on both the land and water of the earth, as I am a believer in the Newtonian theory of gravitation. But this is a very different thing from believing in the sign theory advocated by my opponent. What I maintain and have attempted to show, is not that the moon has *no* influence on the earth, but that the influence or power attributed to *its changing signs and phases* upon the growth of vegetation, the state of the weather, &c., is without warrant in philosophy or fact—is in truth a delusion inherited from a darker age—a mere notion, originating no one knows how, when or where, and which its upholders of to-day can furnish no substantial reasons for believing; and so far as I can discover are even unable definitely and intelligibly to state just what their theory is. In fact our "Seeker after Truth" appears to have abandoned the attempt to sustain the notion he favors either by facts or arguments, for he admits that he is as "ignorant" as I am of the laws which regulate this supposed influence, and therefore does not undertake to enlighten us the least respecting the theory; and when I ask for facts—for "a series of experiments extending over a considerable space of time," he answers with one or two isolated facts, and in his last communication informs us that proof of the kind called for need not be expected unless we "could be assured of a life as long as that attributed to Methusaleh!" Is not this equivalent to an admission that the belief we are considering is a mere notion, incapable of verification in any way—a "superstition," in short, as Chambers's Encyclopedia calls it—resting on no rational or substantial basis whatsoever.

My opponent again refers to the tides as tending to support the sign theory. I ask again, as in a communication published in the May number of THE FARMER, how the rise and fall of the tides lends any probability to the belief in question, seeing that the tides change from ebb to flood twice a day, while the signs change from up to down only twice in twenty-seven or twenty-eight days? Why does not "A Seeker" attempt to show that the force of the tides is governed by or in correspondence with the ascending or descending signs? If the changing of the signs has the marked effect on the growth of vegetation and the stability of fences, that is claimed by him, one would suppose its effect would be no less marked on the waters of the sea. Yet—to say nothing of astronomers—no advocate of the sign theory that I have heard of ventures to assert that either the height of the tides or the times of their recurrence is influenced in the smallest degree by the changing signs of the moon.

Whilst duly appreciating Seeker's efforts to throw light on the subject, I would have been still more obliged to him if he had explained, as I asked him to do, what was to prevent his tence, constructed when the sign was going up, from settling down, after the sign turned downwards, two weeks or less afterwards; or have the fences been alternately raising and sinking each time the sign has changed, ever since they were made? Does the power of the moon to raise or sink fences become exhausted and cease to operate forever after, as soon as the first change of sign has occured? It is either so, or else it must have been some other cause than the signs of the moon at the times in which the two fences were built that caused one to raise or remain up from the ground and the other to sink into it.

In regard to my experiments with bricks on a grass plot, "Seeker" says they might as well have been placed "on solid rocks." But he fails to tell us why the changing signs would not have as much effect on my bricks as on his fences. If he writes again I hope he will explain this, and also tell us if he thinks the numerous careful experiments by scientific observers cited by Dr. Lardner, tending to prove that the moon's changes have *not* the effect attributed to them, are to be discredited because of *his* one or two isolated facts, unconfirmed, and I infer never attempted to be confirmed, by further experiments of the same kind. It is true he tries to discredit Dr. Lardner by reference to a mistaken opinion he expressed, and an alleged disreputable affair in which he was once engaged, but in my opinion it is not creditable to one who professes to be "a Seeker after Truth," to delve among the forgotten scandals of by-gone days for the purpose of discrediting an adversary in on a question of physical science. It reminds me of the man who undertook to dispute with another respecting one of Euclid's geometric demonstrations, and when he found he was getting the worst of the argument, settled the question (in his own mind) by declaring that Euclid was a benighted heathen, and therefore unworthy of belief.

Never having before seen or heard of "Prof. Mansill" or his almanacs, I can say nothing of his ability to predict the coming weather, though it is a little strange, if his predictions have proved reliable or valuable, that a knowledge of his works has not become more diffused among astronomers, meteorologists, farmers and sailors, and all who are specially interested in foreknowing the weather. It may all be as "Seeker" alleges, but as he does not say that the Mansill *theory* is based upon or confirms the *sign* theory, I don't see that it is particularly pertinent to the question at issue between us.

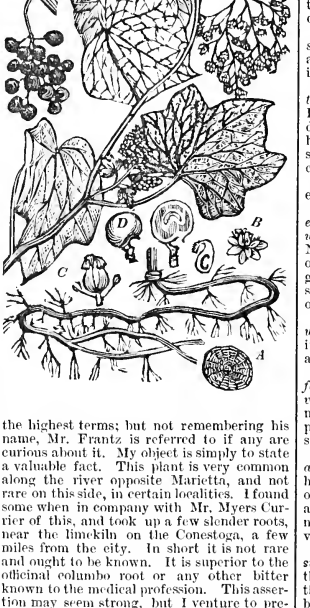
Whether or not Sir John Herschel ever wrote or published the formula for foretelling the weather, which appeared in an American Almanac many years ago in his name, and now referred to by "A Secker after Truth," I do not know; but there is reason to doubt that that eminent astronomer had anything to do with it. But whether he had or not, there is one simple consideration which it seems to me cannot help convincing every reflecting person that no possible rule for foretelling the weather, founded on the moon's signs or phases, or the times of its changing or fulling, can be formulated, or at least none that is of any practical value whatever. The consideration I refer to is this: The almanac we use in Pennsylvania answers also for Ohio, Illinois and Nebraska. They have the same moon in those States that we have, and the days and hours of its fulling and changing, and passing from the ascending to the descending signs are the same there as here. Yet we all know it is constantly happening that the weather is entirely different here on a given day or week from what it is there, and that extended general rains or snows scarcely ever commence on the same day in the East as in the West.

"Secker" says he has "frequently found the predictions" based on the formula attributed to Herschel "to come true." No doubt of it. Any rule or general prediction respecting the weather, no matter how groundless, will "*frequently* come true;" but unless it comes true more frequently than it fails, it can be of no value whatever. Let it be remembered that all predictions founded on the positions or aspects of the planets, must in the nature of the case be applicable to a whole continent or hemisphere. Such being the case, "Secker" might claim that Herschel's, or anybody else's weather predictions, not only "frequently" but *always* "come true," for pretty certainly there is not a day or an hour when there is not rainy weather and clear weather and every variety of weather, in one part or another of our continent. In the nature of the case, then, how worthless must all such general predictions be, no matter by how high authority they may be attempted to be bolstered up. How much wiser are we for being told that it will rain on a certain day, unless we can know whether it will fall here, or in Kansas or Oregon, or in the Atlantic or Pacific ocean? —*Amateur Farmer.*

FOR THE LANCASTER FARMER.

MOONSEED.

This interesting shrubby twiner belongs to the natural order *Menispermaseæ*, or moonseed family, known as *Menisperma Canadensis*, L. The cut shows the underground stem or rizoma, which is of a yellowish color, hence, it is also known as "Yellow Tharilla" in the older books. The flowers and berries are also shown, with a portion of the vine and leaves. A section of the root, so called, shows the central radiation, like in the officinal Columbo, called *Menispermum palmatum*, and much used in bitters. The berries have a crescent-like seed, hence, called moonseed, and are analogous to the *Cocculus Indicus*, what the Germans call "Fisch Kierner." This plant has no tendrils, but has a twining habit, growing among rocks and under shrubbery, found twining itself around the stems of trees and shrubs. The underground stem or rizoma-like root often extending from one plant above ground to another not far distant. This, when tasted is one of the purest and most intense bitters of all our plants. I called attention to its properties in an article in the *Mount Joy Herald*, published by my son Frank, in the first number of that paper, under date of March 17, 1854. Very little was known about its properties; the Materia Medica to this day seems silent on its true merits, and barely names it. My attention was called to experimenting with it, by reading the following remark in Lindley's Botany, who says, "Amslie in his Materia Indica, speaking of several species of this genus, that every part is extremely bitter, and is much used among the Malays in treating of intermittent fever, and is esteemed as powerful as Peruvian Bark." Being then in the drug business, I had frequent call for the sulphate of quinine and barks in the treatment of chills. I had made a pint of tincture of this root in proof spirits of an intensely strong but pleasant bitter. Jacob Mateer, of Mount Joy, a poor laboring man, began to run up quite a bill for the sulphate of quina, which would stop it, but only to return; I then got him to try the menisperma tincture; this effectually stopped and prevented a return in the use of two ounces of the tincture. I might report a number of such cases, and of the success of a physician in the cure of intermittents by it in his own practice. Not being a selfish man that I know of, I have pointed out the root or plant to several. A few years ago when on a visit to Mr. Frantz, residing near Millersville, in going with him over his beautiful farm inspecting the luxuriance of his cereal crops, and the general thriving condition of this model farm and farming, I met with this plant growing on his premises, and it seems a portion of it was just in liquor and tested by a neighbor. Mr. Frantz informed me that this neighbor speaks of it in



the highest terms; but not remembering his name, Mr. Frantz is referred to if any are curious about it. My object is simply to state a valuable fact. This plant is very common along the river opposite Marietta, and not rare on this side, in certain localities. I found some when in company with Mr. Myers Currier of this, and took up a few slender roots, near the limekiln on the Conestoga, a few miles from the city. In short it is not rare and ought to be known. It is superior to the officinal columbo root or any other bitter known to the medical profession. This assertion may seem strong, but I venture to predict a fair test will prove me to be correct.

It cannot be well mistaken, although there are species of smilax and the poison vine that at first sight might appear similar. The menisperma however, has the petiole of its leaves set in a little from its edge, somewhat peltate, and has from 3 to 7 angular lobes, the end or central rib or lobe terminated on the leaf by a kind of a hook. They are deep green on the upper surface and paler on the under side. The yellow underground root-stem (Rizoma) has a bright yellow color. No milk exudes when a leaf is broken off like in the poison vine.

I would like to hear from Mr. Frantz or those who have tested this root.

J. STAUFFER.

SELECTIONS.

THE PHYLLOXERA IN FRANCE.

Its Marvelous Reproductive Powers—The Best Means of Checking its Ravages—Superior Resisting Powers of American Vines—Their Introduction into France Officially Recommended.

The following is a translation of the official report (in the form of questions and answers) recently made on the subject of the phylloxera by Dr. Menudier, of the Superior Commission appointed for that purpose by the French government. That portion of it which refers to the superior resisting qualities of American vines will be found of especial interest.

Whence comes the Phylloxera? Even the oldest documents justify the assertion that the phylloxera had never existed in Europe, while, for a long time past, it has been found in the United States, causing all European vines to succumb to its attacks, after having been planted three or four years. The first points of attack in Europe have almost invariably had American stocks near at hand. Everything leads to the belief that the phylloxera was imported from America on American plants, and there are now scarcely any, save the importers, who will deny its American origin.

From what period does the phylloxera's invasion of France date? Its ravages began in 1863, at Pujaut, in the Department of Gard. Its invasion probably dates from about 1860.

At what period was the fact of its presence in the Charente Inferieure Department established? In November, 1873, at Montils, in the Arrondissement of Saintes; but the invasion must have taken place between 1868 and 1870, as some vines had already been pulled up on account of the phylloxera's ravages.

What is the phylloxera's line of march? Generally from south to north.

Is not the phylloxera's presence due to a diseased condition of the vine, superinduced by its weakened condition, or the exhaustion of the soil? No: for by placing this insect upon the roots of very healthy and vigorous vines in a region previously unattacked, all the external symptoms of the disease, and finally the death of the stock itself, result.

Is there not reason to hope that the phylloxera will disappear? Up to the present time, it is impossible to discover a single fact permitting a belief in a result so fortunate.

Have there not been instances where vines infected with the phylloxera have been left uncultivated, and have recovered by themselves? No; not a single vine really infected with the phylloxera has, without treatment, been restored to a complete state of health.

What is the extent of the ravages in this (Charente-Inferieure) Department? Of 168,945 hectares planted in vines in 1875, 135,490 were overrun, or appeared to be, at the end of 1877, and later inquiries prove that the inroads did not end there. Several thousand hectares of vines have since been pulled up.

Is not the phylloxera found, and may it not subsist, upon other plants? It has been noticed that plants the roots of which are mixed with those of a vine, sometimes carry phylloxera, but it has been established that it is upon the vine only that the insect subsists.

How is the phylloxera propagated? In the months of July, August, and September, it takes wing, and, either of its own accord, or carried by the wind, passes in swarms over a distance of several kilometers, to attack some fresh point. It penetrates the soil through the fissures between the roots and the earth, and thus step by step passes from one root to another, abandoning each as it becomes exhausted. Tools which have been used in working vines infected with the phylloxera are also means of its propagation; so, also, are plants, whether with roots or without.

Is the phylloxera as prolific as is reported? And what are the conditions favorable to its reproduction? The higher the temperature, the greater the deposit of eggs. Entomologists estimate that, in a southern climate, a single laying female will, in the course of one spring and summer, make nine deposits, and, by successive hatchings, attain a product of between twenty-five and twenty-six million phylloxera.

Upon what parts of the vine does the phylloxera stay? On the roots, the bark, the wood and the leaves.

Upon what part is the winter eggs deposited? On the bark, both new and old, on the under side of the leaves, and even on clumps of earth.

Has the winter egg been found in this department? All search for it has proved fruitless.

Has this winter egg the importance some have attributed to it? When it was first discovered, scientists asserted that phylloxera when underground could not reprodnce for a longer period than one year without the intervention of the others coming from this winter egg; and that consequently, by destroying the latter, the destruction of those at the root would follow. It was upon this assurance that the idea of washing the vines was adopted. But nnfortunately, it has been demonstrated that phylloxera underground can reproduce for three years without any assistance from those coming from the winter egg, and it takes less time than that to destroy the vine.

Are there any French vines that resist the phylloxera? No, but there are some it takes longer to destroy, such as the "Colombard" and the "Cabernet Sauvignon."

Are there not some soils on which the phylloxera do less damage than others? On land of which ninety-five per cent. is sand, the inequalities are so great that the phylloxera can only advance with great difficulty. Upon such soil consequently the vine can resist for a very long time.

Are not all other kinds of soil overrun? All without exception, from the poorest to the richest, whether calcareous, silicious, or clayey, are overrun by the phylloxera.

Upon what kind of soil is the phylloxera's advance the most rapid, and upon what kind the least so? All calcareous, light, and surface soils, and those in which the vine is obliged to put forth roots clearly traceable, are very unfavorable to resistance and defense. On the other hand, all compact, moist, deep, and rich soils, into which the vine pushes deep, are favorable to resisting the phylloxera.

Has the age of a vine any influence upon its resisting powers? The younger the vine, the less it resists; the older a vine is, and the better provided with roots, the longer does it resist.

Is it prudent, in proportion as vines are infected with the phylloxera, to replant in other soil the same stocks as those that have succumbed? Never up to the present time in a region infected with phylloxera, has a planting of French stocks succeeded; by the third or fourth year they are overrun, and their destruction is very rapid.

How long after the vines are pulled up do the phylloxera remain in the soil? They maintain themselves three or four years, inasmuch as, when the vines are pulled up, there still remain in the earth a certain number of roots. It is consequently prudent to wait for that length of time before replanting.

By leaving a wide space between the rows of vines, may not their preservation be hoped for? In setting out the rows from three to six meters apart, the stocks spread out their roots further, and have at command a more abundant nourishment; and it in fact results in such cases that their resistance lasts longer, but they none the less succumb in the end to the phylloxera's attacks.

Is it not possible to oppose the phylloxera, and resist its advance by means of manures? When a vine has not been attacked, it is very certain that its ssytem of roots can be augmented by means of manures, and that there results therefrom a great vigor, enabling the vine, when the attack does come, to defend itself for a longer time. But when a vine has once been attacked, and when the extremities of its roots, which are necessary to absorption, are partly destroyed, manures in such case will bring about no good results, unless accompanied by insecticides.

By what symptoms may persons unaccustomed to the phylloxera detect its presence upon a vine? In a region where the phylloxera's presence has been announced, it may be detected as soon as there are found to be some groups of stocks the shoots of which are shorter than those of others about them. By digging about the roots, if they are the least bit eaten away, there will be seen, in the latter part of April some little yellowish spots, united by *plagues*, and easily visible without the magnifying glass, when one holds the roots up and looks at them with his back to the sun. By the aid of the magnifying glass the insects themselves can be readily distinguished, and, even if one does not find any, let the extremities of the roots but show signs of destruction, or little club-like swellings, and one may be sure the phylloxera is there, or has been. In winter, the insects are of a dark brown, and it requires great difficulty to detect them, but the ravages made at the roots attest their presence or their passage.

How much time elapses between the appearance of external symptons of the phylloxera and its actual invasion? From one to two years may be counted on; less time in weak, surface soils than in compact, deep ones, where the external symptoms take longer to declare themselves.

Are not washing and stripping of the vines good methods of opposing the phylloxera? Washing with coal-tar or thick oil, mixed with soap, and diluted with water, has been resorted to to destroy the phylloxera and what is called its winter-egg. But the penetration of the fiber of the stock by the impure phenic acid contained in the oil has often caused the death of the stock, a fact which has necessitated the abandonment of this method. The stripping of the stumps and branches with a knife rasp, by freeing the stock of its old bark, upon which are the phylloxera and its eggs (as well as numerous other insects, and especially the pyrale), gives the vine powerful aid in point of healthfulness. At high points, and those where vines do not usually suffer from frost, the stripping is practicable in November, as the vines are pruned. In localities subject to frost vines may be stripped, beginning from January 15. This work costs about 45 francs per hectare, and only has to be repeated every three years.

The phylloxera's presence being once established is there any practicable and effectual means for opposing it? Yes: M. Dumas, the learned Permanent Secretary of the Academy of Sciences, having determined that the quantity of air contained in 1,000 liters (one cubic meter) of earth is about 333 liters, has demonstrated by frequent experiments that five or six grammes of sulphuret of carbon introduced into this cubic meter of earth amply suffices by evaporization to poison the 333 liters of air so as to kill all the phylloxera inhaling it. Sulphuret of carbon is very powerful, and can hardly be hoped any better agent will be found.

Is not some danger incurred in the use of this substance? It is, like alcohol, very inflammable, and great care should be taken not to bring a lighted match or anything burning, near it; above all when it is shut up in a room, the latter should be aired before a light is brought in. The best way to keep it is under a shed in the open air and sheltered from the sun.

Has not an attempt been made to render sulphuret of carbon easier to handle and less volatile by mixing it with other substances? By making a heated solution of five parts black soap and ninety-five parts water, and then, after letting it cool, and at the moment when it is to be used, mixing equal parts of this soap-water and sulphuret of carbon in a can while stirring, a non-inflammable and much less volatile mixture is obtained. In the warm season, this is a good step to take, but in the cold weathe: it may be dispensed with.

How many holes per hectare must be made in order to thoroughly poison the soil, and what does it cost? The hectare containing 10,000 necters, about 20,000 holes should be made. As a workman can make from 1,200 to 1,500 *per diem*, the hand-labor costs 36 fr.; ten grammes of sulphuret of carbon to each hole, 200 kilos, at 60 francs, 120 fr.; total 156 fr. In the warm season, it is prudent to lessen the quantity of sulphuret of carbon by one-third, but not the number of holes.

Are all the phylloxera killed by this plan? No, but when the application is well and timely made, a sufficient number of the insects are destroyed to enable the vine to sustain itself, and give a good yield.

Is it necessary to apply the treatment to an entire hectare when only a portion of it is infected? From the moment when a spot is discovered, dig around the roots that are infected, inclose them with stakes, and included in the treatment a certain number of healthy stocks; for instance, if 25 or 30 stocks are attacked, 100 or 150 about them should be treated. The expense for an entire hectare, considering the yield of the vines, and the prices of vines, would evidently be too great, but it should be remarked that the owner of a single hectare would at first only have to treat a twentieth or a tenth of his vines, and that if he can stop the phylloxera's propagation, and keep his vines some years longer, he will be doing well.

Does a single application of this remedy suffice? If the vine is but little infected, a single treatment may possibly suffice; but in cases where the wood of the vine is reduced to 50 or 60 centimeters in length, it is necessary to apply the treatment twice, once in the course of the winter after the vintage, and once in the spring.

Are there soils in which sulphuret of carbon is more or less active, and are there instances in which resistance is apt to prove so difficult that it would be more prudent not to attempt it? Experience indicates that in light calcareous soils, possessing a vegetal earth of 15 or 20 centimeters, with a rocky subsoil, sulphuret of carbon diffuses itself poorly and evaporates in part only, with so much pure loss, and affording no advantage. But in clayey, moist, and deep soils it diffuses itself quite regularly and effects good results, which is all the better, since it is upon such soils that are usually found the heavy-yielding vines, which will bear an outlay that the others would not.

Has temperature any influence upon the action of this remedy? Sulphuret acts with all the more certainty in proportion as the temperature is low and the soil moist.

What happens when insectides are injected upon a plant in full vegetation? Usnally there is a stoppage of vegetation for several days, and this is the more perceptible in proportion as the vine is severely attacked; beyond this, the good results of the application scarcely make themselves apparent before the following year, as the stocks have to renew their roots which have been destroyed.

How far apart should the holes be? Whether the vines be planted close together, or separated by passage ways of two or three meters, all the land attacked and a little more should be treated. and holes made for 65 or 70 centimeters in all directions, which would make about 20,000 to the hectare.

How deep should these holes be? From 25 to 40 centimeters.

How far does the vapor of the sulphuret deposited in the soil extend? Practical results indicate that the vapor does not remain confined about the holes; the scientific experiments of the Paris, Lyons and Mediterranean Railway Co., directed by Mr. Maurion, have demonstrated that under the most favorable condition it spreads nearly two meters in a horizontal direction, and downward to a depth at which it reaches nearly all the phylloxera.

Has not sulpho-carbonate of potash also been used against the phylloxera? And what is the

method of using it? Sulpho-carbonate of potash, according to the learned M. Dumas, contains from 15 to 18 per cent. of sulphuret of carbon and the same proportion of potash. It is not inflammable, and is more easily handled than sulphuret of carbon. It acts not only by means of the latter substance, but also by means of the potash, which is the special manure of the vine. Its application by injectors involves the inconvenience of rapidly spoiling the instruments, and rendering them unfit for use. Messrs. Dumas and Monillefert employ it as follows: When the stocks are laid bare, about 50 grammes of sulpho-carbonate of potash are poured on; they are then watered with from 5 to 10 liters of water, and covered up again. In general, the results of this plan are very satisfactory, but the cost, by reason of the hand-labor, the carrying of water, and the use of sulpho-carbonate of potash, is much higher than that of sulphuret of carbon. The former, being much less easily evaporated than the latter, offers a certain advantage in the warm season, but not sufficient, perhaps, to compensate for its increased cost.

What is the cost of the sulpho-carbonate of potash treatment?

For a single application there are required 50 grammes to the superficial meter, or 500 kilogrammes at 60 francs, 300 francs; water and hand-labor estimated at 200 francs; total, 500 francs. Or about five francs per are. By adding to these expenses the ordinary ones, it will be seen at a glance whether the yield of our vines is adequate to cover them.

Is it necessary to manure vines that have been treated by insecticides?

The vine attacked by the phylloxera grows feeble and becomes diseased, and it is highly necessary to strengthen it by manures in which potash dominates, azote and phosphoric acid in the proportion of two and three per cent. sulphate of iron or green copperas about five per cent. As a potassic and phosphoric manure, cinders of Isle of Resea weed may be used in doses of 200 grammes per stock. Soot has also a good effect. Stassfurt salts, in which chloruret of potash predominates, may (in doses of from one to two hundred grammes) be placed around the foot of the stock to help the formation of the new roots. In this way insecticides and manures should go side by side, if it is sought to obtain a satisfactory result.

Have endeavors to fight the phylloxera by means of insecticides and manures been made to some extent in this department?

Upon the Plaud-Chermignac property, about 6 kilometers from Saintes, there is a vineyard some 30 hectares and 50 ares in area, which for six years has been overrun by the phylloxera. The soil is very varied, in some places the calcareous and the plastic, chavey soils lie side by side, and it is very easy to observe the diverse results obtained according to the nature and depth of the different soils. All the patches of vines, without exception, have been attacked by the phylloxera, and have been treated with sulphuret of carbon and sulpho-carbonate of potash. In comparing the vines that have undergone treatment with the neighbors' vines that have remained without treatment, one cannot help seeing the good results of the use of insecticides in conjunction with manures.

Is not submersion a certain means of destroying the phylloxera?

Submersion of the stocks for forty days is unquestionably a certain means of destroying nearly all the phylloxera on a vine. But to adopt this method the land must be low, pervious on top, impervious beneath, and located in the vicinity of water. In our climate, where in low lands vines very easily freeze, great care is taken not to plant them there, and consequently submersion can seldom be resorted to hereabouts. It should also be noticed that as soon as a proprietor submerges a vine he moistens the soil of his neighbor, who, in case he wants no water, has a right to complain, and may bring suit, as is at present the case near Libourne. Submersion, moreover, under any favorable circumstances involves an expense of about 150 francs per hectare. It should not be forgotten that to this expense, annually repeated, must be added the cost of manures, which are in such a case indispensable, as the soil is infused with lye by the use of the water.

Since French vines do not withstand the phylloxera's attacks, would it not be possible by sowing to obtain some new species that resist better, or to graft French cuttings upon French wild vines?

All attempts of this character, made and repeated at various points, have caused nothing but disappointment and deception.

If appearing that the methods of fighting the phylloxera by insecticides, manures, and submersion are not attended with profit in this locality, except in cases of vines planted in soil of considerable depth, can there not be found in the resistance offered the phylloxera by certain American stocks a more economical way to the preservation of our own? And to begin with, is the resistance of these American stocks real?

For fourteen or fifteen years past, in the Departments of Gard and Gironde, the stock called "Jacquez" has resisted very well, in the midst of the phylloxera's ravages, and given good yields long after the native stocks have succumbed. The "Herbemont," the "Cunningham," the "Taylor," the "York Madeira," and the "Vitis Solonis," after being planted six or seven years in the very focus of the phylloxera's attacks, are resisting, and show a very handsome growth, while the other stocks have succumbed.

Will this resistance be permanent?

A resistance which in the case of the "Jacquez" has existed for fifteen years, in the case of the others for six or seven years, and which has always existed in America, offers almost indisputable assurance for the future, and no argument or facts why it should prove otherwise can be discovered.

Is the "Clinton," which is quite widely planted, worthy of recommendation?

When planted in rich, fresh soil it sustains itself passably well; but deprived of these conditions it does not resist the phylloxera. It gives, too, a poor wine, with a foxy taste. This stock has been abandoned by all good wine growers.

How is the resistance of American stocks explained?

The fiber of American resisting roots is, according to M. Foex, much denser and closer than that of our European vines, and turns into wood (lignities) much more quickly. So that in the American roots the phylloxera's puncture only attacks the outer bark, upon which it produces little excrescences which fall off like warts. In the case of French roots its puncture causes decay. Some stocks, such as the "Jacquez," especially, the "Herbemont," and the "Cunningham," can be planted and will yield wine without being grafted. They possess a resisting power equal to every test. The "Jacquez," when cultivated in this locality, blooms and ripens at the same time with the wild grape; it produces a good red wine of a very dark color and is highly valued by the trade. It is not difficult of cultivation as regards choice of soil. Its grapes, when ripe, keep for a long time without decaying. Up to the present time it is a stock against which nothing can be said. The "Herbemont" yields a fine red wine, not very dark in color. It blooms six or seven days later than the "Jacquez," and at the same time with the "Balzar." We shall know this year whether it ripens in this climate, which, however, is probable. It would be a very good vine to plant in our dry, calcareous, and stony soils, in which it flourishes and grows extremely vigorous. The "Cunningham" produces at once, and quite a good wine, something like Madeira. In 1878 it bloomed in this locality ten or eleven days later than the "Jacquez." We shall not be decided until the fall as to its period of maturity. Other American stocks yielding wine at once are under trial.

Is there not some difficulty about the "Jacquez," the "Herbemont," and the "Cunningham" taking root?

In 1877, in this locality, the "Jacquez" and the "Herbemont," being placed in nursery and in fresh soil, yielded a return of 70 per cent. The "Cunningham" yielded less. The "Riparia," the "Wild Cordifolia," the "Taylor," the "York Madeira," and the "Vitis Solonis" have great powers of resistance to the phylloxera, but yield so little wine that they should be used only to bear graftings from French stocks. They have the advantage of taking root very easily.

What is the best method for grafting French vines on the American ones?

Joining a French and American slip, by means of the "English graft," and placing them in the nurs ry for the winter and spring. In the following year those that have been successful are carefully taken up and set out, either with slats or in pots. Another good way is this: The American cuttings, after having been put in the nursery in winter or spring, are taken up, the French slips are then grafted upon them (by the English plan), and they are then set out. Success in this way is almost certain. A third way consists in planting the American slips permanently in the vineyard, and then, in the second year, grafting the native cuttings upon them, whether by slitting or by the English plan.

Is there not some danger that French stocks grafted upon American ones will yield an inferior quality of wine?

Experience has already pronounced in favor of French fruit trees and vines; and the wines coming from French stocks grafted upon American ones are absolutely the same as if they had not been grafted.

What, in short, is the best course to follow when a vineyard is attacked?

If the vineyard is on surface soil, and the spots on the vines not very numerous, try to oppose the phylloxera in favorable weather by sulphuret of carbon or sulpho-carbonate of potash, so as at least to retard its inroads and damages. If the vineyard is on deep, moist, and compact soil, struggle perseveringly and incessantly. The outlay will be repaid with interest; for those who are able to preserve their vines longest may be sure of being largely remunerated for their advances and labor. On surface as well as on deep soil do not hesitate to establish at once nurseries of American resisting vines, whether for the purpose of producing wine from them at once or for use in bearing grafts of French stocks.

What should be done in a section not yet overrun?

Manure the vines and cultivate them carefully; and if there is any ground not in use, *sow the grape stones of American stocks*, so as to be ready to start a second vineyard, and thereby not be taken unawares. In sowing grape stones there is absolutely no risk whatever of introducing the phylloxera, while, on the other hand, it would be extremely imprudent to introduce into any non-infected section in this locality, either American or French stocks coming from regions already infected.—*Scientific American.*

AMONG THE NEWER STRAWBERRIES.

EDS. COUNTRY GENTLEMAN.—In this vicinity the season of 1879 has been a very favorable one for the strawberry. A somewhat protracted drouth in May threatened serious injury to the crop, but copious showers about the first of June, at the time the berries were setting, secured a fair crop of finer fruit than is usually seen. In the Rochester market immense quantities of strawberries have been handled. As an instance of this, I quote from the "Union" of recent date as follows: "The sale of strawberries during the past few days has been unprecedented, and a leading groceryman informed a reporter of this paper, that the day before yesterday he sold 2,500 quarts; yesterday he disposed of 4,000, and this morning before eight o'clock he had sold 1,500 quarts. When we consider the large quantity many other groceryrnen like the above must have sold, together with what the dealers

shipped out of town, we will find that the daily sales of strawberries have been unusually large." At Cleveland, where the fruit is cultivated on a more extensive scale than at Rochester, the sales are said to have amounted to 2,000 bushels a day. Besides an increasing demand, it is gratifying to note that the larger and finer-flavored varieties are becoming better known and appreciated. When *Wilson* was selling at six cents a quart, *Sharpless* sold for twelve, and *Triomphe de Gand*, *Jucunda*, *Cumberland Triumph* and *Monarch*, for eight and ten cents. Of such varieties there has not been nearly enough fruit to satisfy the demand, and growers will consult their interests by giving more attention to the larger and better kinds.

The favorable season has afforded us a fine opportunity to test the many new varieties now on trial. These novelties have revived the interest in strawberry culture, and all over the country there are enthusiastic amateurs and growers who are waiting anxiously for the result of the year's experience. We propose to give ours as briefly as possible.

Arranging the sorts alphabetically, *Cinderella* first claims attention. It is one of Mr. Felton's seedlings, and was sent out in 1876. The fruit is of medium to large size, conical, regularly formed, and of a bright, glossy-scarlet color; flesh firm, solid, with a mild, rich, aromatic flavor; plant vigorous and prolific. It is a handsome strawberry, and in quality fully equal to, if not better, than *Triomphe de Gand*. It will undoubtedly prove very desirable for the amateur's garden. *Continental*, another of Mr. Felton's seedlings, and sent out with the above, is of medium to large size, obtusely conical, regularly formed, and of a dark red, almost black color when fully ripe; flesh firm and of fair quality, but inferior to *Cinderella*; plant vigorous and very productive. *Crescent Seedling*, which appeared so promising last year, has disappointed us greatly this season—not in productiveness, but in quality. Nevertheless, it is an improvement on the *Wilson*, and having proved to be wonderfully prolific, must on that account still claim a good deal of attention as a market berry. *Captain Jack* is another variety, the quality of which does not rank high, and it has the serious fault of overbearing. A large portion of its fruit does not mature sufficiently to render it marketable. Grown in hills under high culture, it may be of great value in some localities. In Ohio, several strawberry-growers esteem it very highly, some going so far as to call it the best variety. *Cumberland Triumph* is one of the newer varieties which, with us, has proved a real acquisition. The fruit is large, regular, very uniform, and of a beautiful bright red color; unquestionably one of the handsomest berries known. In quality it is good; plant vigorous and productive. It is not firm enough to ship long distances, but will be valuable for home market on account of its uniform size and attractive appearance. *Duncan*, of medium size, has an exceedingly agreeable flavor, and may be regarded as a valuable addition to the list of good garden sorts. *Duchess* is early, and the fruit large and handsome. In quality it can only be rated as good, but is worthy of cultivation on account of its size and earliness. The plants are not productive enough to render it a profitable market variety. *Forest Rose* is of large size and fine quality. The plant is a strong grower and quite productive. It promises well either for garden or field culture, and we are pleased to rate it as a real acquisition. We place it next to the *Sharpless* in value.

Glendale, one of the latest introductions, has not fruited upon our grounds, but a fine exhibition of the fruit was made at the Nurserymen's Convention lately held in Cleveland, where I had the pleasure of seeing and testing it. The fruit is large, conical, and of a bright red color; flesh firm and of a moderate flavor. Its size and appearance may render it valuable as a market fruit, but we do not think it will ever become popular for the amateur's garden. A trial of it at home may change our opinion. *Golden Defiance*, raised by Mr. Miller, originator of the *Cumberland Triumph*, is a large berry, roundish, regular, and of a dark crimson color; flesh moderately firm, solid, of delicate texture, and of fair quality. The fruit stalks are remarkably short, which is a serious objection; plant vigorous and moderately productive. It ripens late, and may be valuable on that account. *Great American* has not improved much in my estimation. It is quite productive, but a larger proportion of the berries do not attain full size. Probably if planted near a variety with abundance of pollen, it might do better. A well-known strawberry-grower says: "Plant the *Forest Rose* near it, and you are sure of a good crop." The berry is high flavored, and may be worthy of further trial. It should be grown in hills, and must have good culture. *Miner's Great Prolific* is large to very large, roundish, and of a bright crimson color, but the flesh is soft and deficient in flavor. On account of its size and fine appearance I consider it worthy of farther trial. *President Lincoln* averages large to very large, irregular, and of a bright glossy red color; flesh moderately firm, with a marked *hautbois* flavor, rendering it very desirable for the garden. *Sharpless* is unquestionably the best new strawberry. This was my opinion last year, and every report received thus far proves that I was not mistaken. We planted largely of it this last spring for market. *Springdale*, another of Mr. Miller's seedlings, did not do well with us last year, but has borne a good crop of fine fruit this season. In hot, dry weather the plants sometimes suffer. We think enough of it to give it another trial. *Star of the West* is unproductive, and therefore of no value. *Centennial*, *Favorite*, *Pioneer*, *Beauty*, *Glossy Cone*, all of them Durand's seedlings, have not yet been sufficiently tested to give a fair opinion of them. *Champion*, *Crystal City*, *Windsor Chief* and *Damask Beauty*, must fruit again before their value can be determined. *Longfellow*, a new seedling raised by A. D. Webb, of Kentucky, was shown at Cleveland. The fruit was large and handsome, but the quality not of the highest character.—*W. C. Barry, Mt. Hope Nurseries, Rochester, N. Y.*

VALUABLE ADVICE.

What to Do in Certain Cases, and How to Do It.

1. Child two years old has an attack of croup at night. Doctor at a distance. What is to be done?

The child should be immediately undressed, and put in a warm bath. Then give an emetic, composed of one part of antimony wine to two of ipecac. The dose is a teaspoonful. If the antimony is not at hand use warm water, mustard and water, or any other simple emetic; dry the child, and wrap it carefully in a warm blanket.

2. Hired girl sprained her knee violently.

First bathe in warm water, then put the white of an egg in a saucer, stir with a piece of alum the size of a walnut until it is in a thick jelly; place a portion of it on a piece of lint or tow large enough to cover the sprain, changing it as often as it seems warm or dry; the limb is to be kept in a horizontal position by placing it on a chair.

3. Bees swarm, and the man who hives them gets severely stung in the face.

The sting of a bee is hollow and barbed, and as it contains poison, the first thing to be done is to remove it. The part stung should then be bathed in warm water, and a little ammonia be rubbed in.

4. Some one's nose bleeds, and cannot be stopped.

Take a plug of lint, moisten, dip in equal parts of powdered alum and gum arabic, and insert in the nose. Bathe the forehead in cold water.

5. The child eats a piece of bread on which arsenic has been placed for killing rats.

Give plenty of warm water, new milk in large quantities, gruel, linseed tea, foment the bowels. Scrape iron rust off anything, mix with warm water, and give in large draughts frequently. Never give large draughts of fluid until those given before have been vomited, because the stomach will not contract properly if filled, and the object is to get rid of the poison as quickly as possible.

6. Young lady sits in draught, and comes home with a bad sore throat.

Wrap flannel around the throat, keep out of draughts and sudden changes of atmosphere, and every half hour take a pinch of chlorate of potash, place it on the tongue and allow it to dissolve in the mouth.

7. Nurse suffers from a whitlow on her finger.

Place the whitlow in water as hot as can be borne, then poultice with linseed meal, taking care to mix a little grease within the poultice, to prevent it from growing hard. Bathe and poultice morning and evening.

8. Child falls backward against a tub of boiling water, and is much scalded.

Carefully undress the child, lay it on a bed on its breast as the back is scalded, be sure all draughts are excluded, then dust over the parts scalded bi-carbonate of soda, lay muslin over it, then make a tent, by placing two boxes with a board over them in the bed, to prevent the covering from pressing on the scald; cover up warm.

9. Mower cuts driver's leg as he is thrown from the seat.

Put a tight bandage around the limb, above the cut, slip a cork under it, in the direction of a line drawn from the inner part of the knee to a little outside of the groin. Draw the edges of the cut together with sticking plaster.

10. Child has a bad earache.

Dip a plug of cotton wool in olive oil, warm it and place it in the ear. Wrap up the head and keep out of the draft.

11. Youth goes to skate, falls into an air hole; brought home insensible.

Strip the body and rub it dry; then rub with a warm blanket and place in a warm room. Cleanse away froth and mucus from the nose and mouth. Apply warm bottles, bricks, etc., to the armpits, between the thighs and the soles of the feet. Rub the surface of the body with the hand incased in a warm, dry, worsted sock; to restore breathing close the nostrils and breathe steadily into the mouth; inflate the lungs till the breast be raised a little, then set the nostrils free and press gently on the breast until signs of life appear. Then give a warm drink and put to bed. Do not give up all hope for at least three hours after the accident.

12. Child gets sand in his eyes.

Place your forefinger on the cheekbone, having the child before you; then draw up your finger and you will probably remove it; but if you cannot get at the sand in this way, repeat the operation while you have a knitting needle laid against the eyelids; this will turn the lid inside out, and then the sand may be removed with a silk handkerchief. Bathe in cold water and exclude the light for a day.

PLANTING AND TRANSPLANTING.

The well-known three requisites for the germination of seeds, are heat, air and moisture, but not light. In a cold soil they remain dormant; if too dry they will not sprout; and if buried deep and compactly beyond the action of the air, no movement toward growth takes place. The small seeds of weeds often remain in the soil for years when turned under deep by the plow; when brought again to the surface, the new and copious growth which at once takes place has led superficial observers to the erroneous notion that they have sprung up spontaneously. Nurserymen sometimes keep peach-stones dormant a year, when they happen to have a surplus, by placing them two feet under the soil till needed. The depth for planting must depend largely on the size of the seed; and

the general rule has been given to bury them from three to five times as deep as their diameter. This rule will vary somewhat with the nature and condition of the soil. If heavy and moist, the depth should be less than in a light, dry and porous soil. In a moist, well-pulverized soil, most seeds, whether large or small, will grow if merely covered and kept moist; but this condition cannot be commonly continued, as a few dry and warm days will dry the surface of the soil and prevent the germination of the seed. Hence the common practice to vary this rule with circumstances. Corn, planted early in the season when the ground is moist, will grow freely if buried only an inch deep; but under ordinary circumstances two inches will be better. It will find its way feebly to the surface after many days when buried six inches below. Early in autumn, when winter wheat is sown or drilled in, the soil is usually much drier than in corn-planting time, and for this reason: although the seeds are smaller than grains of corn, it should be placed at a depth of two inches. In a dry spring, corn should be planted deeper than in a wet one, and the old practice of pressing each hill with the hoe when the work was done by hand, was useful when the soil was dry. When planting is done with a machine, a roller to follow the tube would be useful in dry weather.

In a dry season, as the present has been in many places, much care is required to impart sufficient moisture to seeds when planted. If the particles of soil are dry, the small grains or lumps which compose it will touch the seed only at a few points, and the chances for its germination will be small. Even if moistened by a shower, the water will touch the seed only at a few points of contact. It is better, therefore, to plant seed after a shower than before it, as the soil is rendered moist and yielding, and, pressing the whole surface of the seed, causes germination at once. On this principle, experiment has shown that under common conditions seeds grow much better if planted after than before the rain. The exceptions are, when the soil has been so finely pulverized that it cases the seed well on all sides while yet drv; and when the rain is so copious that it fills with water for a sufficient time the interstices which surround the seed.

An interesting experiment was reported by Peter Henderson at the late nurserymen's convention at Cleveland, showing the importance of compactly enclosing the seed with the soil. Early in July he sowed twelve rows of sweet corn and twelve rows of beets, treading in the seed after sowing in every alternate row. In both cases, those which were trodden in came up in four days, while the others remained twelve days befors starting, and would not then have germinated had not rain fallen, for the soil was quite dry when they were planted. The seeds that were trodden grew freely from the start, and matured their crops for market by fall. The undertrodden rows did not mature, as they were eight days later in starting, and the plants were partly feebled besides.

The same general rules apply in some degree to the setting out of vegetables, and in transplanting trees. If the soil is dry, it will not come in contact with the whole surface of the roots unless finely pulverized and firmly pressed against them, and this process is assisted by pouring in water to soften the soil, taking care to cover she surface finally with pulverized earth. Some writers prescribe the use of water in transplanting in all cases, whatever the condition may be; others as uniformly object to the practice. The truth is, the rule should be adapted to circumstances, and every planter should have intelligence and experience enough to know when each course would be advisable. Mr. Henderson, in the article above quoted, says he sent a dozen rose-bushes to a lady at Savannah, and he subsequently received a woful story of the death of every one, with the singular exception of one on which a fat and heavy man had accidentally trodden. This awkwardness on his part pressed the dry soil about the roots and saved it; the others, loosely buried in dry earth, perished.

In conclusion we may give the following brief extracts from Mr. Henderson's remarks:

Experienced professional horticulturists, however, are less likely to neglect this with plants than in the case of seeds, for the damage from such neglect is easier to be seen, and hence better understood. But with the inexperienced amateur, the case is different. When he receives his package of trees or plants from the nurseryman, he handles them as if they were glass; every broken twig or root calls forth a complaint, and he proceeds to plant them gingerly, straightening out each root, and sifting the soil around them, but he would no more stamp down that soil than he would stamp on the soil of his mother's grave. So the plant, in nine cases out of ten, is left lo se and waggling, the dry air penetrates through the soil to its roots, the winds shake it, and it shrivels up and fails to grow.

It has often been a wonder to many of us who have been workers in the soil for a generation, how some of the simplest methods of culture have not been practiced sooner. I never pass through a year but I am confounded to find that some operation can not only be quicker done, but better done, than we have been in the habit of doing it. These improvements loom up from various causes, but mainly from suggestions thrown out by our employees in charge of special departments—a system which we do all in our power to encourage.

As a proof of the value of such improvements which lead to simplifying our operations, I will state the fact that though my area of greenhouse surface is now more than double that which it was in 1870, and the land used in our florist's business is one-third more, yet the number of hands employed is less now than in 1870, and at the same time the quality of our stock is infinitely better now than then.—*Country Gentleman.*

THE OUTLOOK FOR HOGS.

The new live-stock paper in St. Louis, in its first issue reviewed the prospects and condition of the hog crop of the country, saying:

"In view of the anticipated yield of corn throughout the corn producing states of the west, which at the present promises to be more than an ordinary one, it is well to consider the probable prices of hogs during the coming fall and winter months. During the last packing season, the producers considered the prices ruinously low, and many were the declarations that they could not and would not raise hogs again for such prices. Yet, notwithstanding that, the small advance in prices at the beginning of the summer packing season was sufficient inducement to cause heavy enough receipts to enable packers to cut about 150,000 more hogs since March 1st this year than during the corresponding time last year. From but few sections of the country have there come reports of sickness. And as it is well known that the hog is a very prolific animal the question arises, how can the producer expect higher prices, when all things tend to indicate a greater supply of hogs at all of the larger cities this year than last, and no additional outlet for all products? It is true that throughont Great Britain the prospects are for very short crops, which of course, means a corresponding decrease in the number of cattle, hogs and sheep that will be prepared for market, and this may cause the export of meat to be larger than last year, and if it is so, it may afford a temporary relief, but the abundant corn crop, and the increase in the supply of hogs will render it only temporary, unless the trade with that country should be greatly in excess of last year."

The Kansas City *Price Current* of last week quotes the above and makes comment as follows:

We think the *Journal* unnecessarily alarmed as to the prices of hogs the coming season. While the hog crop west of the Mississippi river promises to be a larger one than last year, the states east of it will have fewer hogs than in 1878. The state auditor of Illinois reports a decrease in the number of hogs faxed this year of 331,673. Ohio also reports a shortage of 299,762, total 631,436. In Kentucky and Tennessee hog raising is being gradually abandoned as unprofitable and the supply from those states must fall much short of 1878. Nor is this all. The corn crop in southern Illinois, Indiana, Ohio and Kentucky from all reports must be a short one, hence everything in those states has tended to discourage hog raising. In the country west of the Mississippi hog breeding is steadily on the increase. The gain, however, in this has not been sufficiently large to balance the loss in the states east of us. Iowa reports a gain this year 79,316 and Nebraska 65,831. Reports from Kansas and Missouri have not yet been received, but estimating the increase in these two states at 150,000 we have a total of 295,147 in the four leading states west of the Mississippi against a loss in the two leading hog states east of the Mississippi of 631,435. It would be well to bear in mind that many of the hogs that appear in these reports have already been marketed, thus further curtailing the winter supply. While we in the new west will probably have a larger supply of hogs than last year, the crop of the entire western states shows indications of a shortage, rather than an increase; hence there is no just grounds for fears of over production, and feeders will find it to their interest to keep cool and fully mature their hogs before marketing and not allow themselves to be frightened into disposing of their stock in a green or half-ripe condition.

The hog crop of 1877 was held back by farmers who refused to believe that they must accept the low prices current in the fall and early winter of that year. When the year 1878 opened and it was found that prices were still shrinking, the farmers began to "cut loose," and there followed a rush of hogs such as had never before been known. Last year, warned by the experience of 1877, farmers let their hogs go early in the winter, and a heavy part of the crop was marketed before New Year's day. These facts served to make the crop of 1878 remarkably heavy, but it should not be forgotten that the reports of that year include stock which should have been credited to 1877. It is our belief that the general healthfulness of the stock, the extension of the business of hog raising in the newer west, and the unequaled and altogether wonderful corn crop will combine to give us as many fat marketable hogs this as we had last year.

THE SUN.

Professor Rudolph, in a lengthy paper on the sun, says: "It is a molten or white hot mass, equaling in bulk 1,260,000 worlds like our own, having a surrounding ocean of gas on fire 50,000 miles deep, flame darting upward more than 50,000 miles, volcanic forces that hurl into the solar atmosphere luminous matter to the height of 160,000 miles, drawing to itself all the worlds belonging to our family of planets, and holding them all in their proper places; attracting with such superior force the millions of solid stray masses that are wandering in the fathomless abyss that they rush helplessly toward him, and fall into his fiery embrace. And thus he continues his sublime and resistless march through his mighty orbit, having a period of more than 18,000,000 years."

CLOVES.

Cloves are the dried flowers of a beautiful tree that grows in the East Indies. Its culture is principally confined to the Island of Zanzibar. After being gathered, the cloves are prepared for shipment by smoking them on hurdles covered with matting, near a slow wood fire, to give them a brown color, and they are further dried in the sun. They may be cut off from the flower-branches, and will be found to be purple colored within, and fit to be packed in bales for the market.

OUR LOCAL ORGANIZATIONS.

LANCASTER COUNTY AGRICULTURAL AND HORTICULTURAL SOCIETY.

The Agricultural Society met statedly in their rooms on Monday afternoon, Sept. 8th, at the usual hour.

The following members and visitors were present: Calvin Cooper, President, Bird-in-Hand; H. M. Engle, Marietta; Jos. F. Witmer, Paradise; Levi W. Groff, West Earl; M. D. Kendig, Manor; C. M. Hostetter, Eden; Dr. S. S. Rathvon, city; Israel L. Landis, city; W. W. Griest, city; Frank R. Diffenderffer, city; J. C. Linville, Salisbury; Rev. D. C. Tobias, Lititz; C. A. Gast, city; Peter S. Reist, Lititz; Jacob Bollinger, Warwick; Johnson Miller, Warwick; Levi S. Reist, Manheim; Ephraim L. Hoover, Manheim; J. M. Johnston, city; Henry Wissler, Columbia; Mr. Copenheffer, West Hempfield; Peter Hershey, city; Peter E. Hershey, Intercourse; Harry Cooper, city; M. Geisenberger, city; W. H. Brosius, Drumore; Daniel Smeych, city; C. L. Hunsecker, Manheim; A. F. Hostetter, city; Elias Hershey, Paradise; J. W. Bruckhart, Salunga; Jacob B. Garber, Columbia.

Report of Committee.

Dr. S. S. Rathvon, from the committee on general management, said one hundred posters had been printed and distributed; three hundred premium lists were also printed and sent out. There are enough tickets somewhere to answer the needs of the society; probably the librarian has them. He also made a number of other suggestions relating to the conduct of the proposed exhibition.

The President suggested that it might be advisable to suspend the usual business to take up that connected with the Exhibition. Deferred for the present.

The Crops.

J. C. Linville reported great improvement in the corn crop. Late corn will make a pretty good crop and so will late potatoes. Tobacco has improved much during the past five weeks. Clover was nearly scorched out and will be poor next spring. Apples, pears and grapes are all light.

H. M. Engle said the case was about as described by Mr. Linville. The rains have improved things very much. The young clover is a failure. Old fields, however, have revived. Corn is nearly an average crop. Potatoes are doing well. Apples are short and pears a good crop. Peaches are a good crop nearly everywhere. The rain fall for the month of August was 5 5-16 inches. With all this rain fall there was no time when the ground could not be worked.

Johnson Miller said wheat and oats were an average yield. Corn and tobacco have improved wonderfully where properly attended. Apples are scarce. Peaches are a full crop; pears an average one; grapes a full one.

M. D. Kendig said the corn would be a heavy crop. The tobacco crop will be the largest for years. Apples are scarce. Pears a tolerable yield. Rain fall in Manor for August six and three-tenths inches.

Joseph F. Witmer reported the yield of wheat per acre as good. Pasture fields are good. Tobacco is very good. There will be an average crop of corn. Some fields are badly washed. Farmers are well on with their plowing. No seeding done.

The Coming Fair.

Israel L. Landis, from the committee on the coming fair, said the committee had not yet organized.

J. F. Witmer wished to know whether the Secretary was to provide the necessary books for the use of the several committees.

Ephraim L. Hoover, another of the committee of arrangements, reported that he had visited many manufacturers and all had agreed to exhibit. A meeting of the committee was called by mistake for this afternoon, forgetting that to-day was the regular meeting time of the Society. He also inquired concerning the printing of tickets.

Johnson Miller thought if any of the former tickets were left, Mr. Alexander Harris had them.

H. M. Engle suggested an exhibition by numbers and not by names, which would put fruits and everything else strictly on their merits. Judges are but human, after all.

Levi S. Reist thought the names of exhibitors ought to be on their exhibits. All have pride in their productions; it is not satisfactory to have the exhibits passed without names.

J. C. Linville also believed the names should be on the exhibits. The Judges might act at once, and then the names of the exhibitors might be attached, which would satisfy both conditions.

Peter S. Reist was in favor of attaching the names of exhibitors. The exhibit was in reality an advertisement, and this would be done away with by the proposed system of numbers.

A number of other persons took part in this discussion, the burden of opinion being in favor of the same system.

A statement was made that the Oxford society found it harm ful to attach names.

Johnson Miller moved that the committee of arrangements be instructed to put the names of exhibitors on the several exhibits, and the motion was adopted.

Shall a Fee be Charged for Exhibits?

J. C. Linville heard complaints from exhibitors who were compelled to pay an exhibition fee. He did not think it right to make exhibitors pay.

J. F. Hershey thought that as an exhibit was an advertisement, they should be made to pay.

Johnson Miller thought exhibitors should pay what other people pay.

H. M. Engle spoke against season tickets; this practice has been much abused. He did not favor that way of issuing tickets.

J. C. Linville thought it was an injustice to make exhibitors pay the same as outsiders.

J. F. Hershey moved that two tickets be allowed each exhibitor daily.

M. D. Kendig amended by making the exhibition free to all exhibitors. The amendment was accepted, but, on motion, it was rejected.

H. M. Engle moved that exhibitors receive tickets permitting free entrance but not transferable. Carried.

Appointment of Judges.

H. M. Engle moved that the Secretary be added to the committee of arrangements and these appoint the judges. Carried.

Miscellaneous.

On motion, the appointment of doorkeeper and ticket vender was left to the committee on arrangements.

On motion, H. M. Engle was added to the committee on arrangements.

On motion, the treasurer was, in accordance with the by-laws, required to file a bond for the safe keeping of the funds of the society. Carried.

Johnson Miller said he had an invitation from the Berks County Agricultural Society asking this Society to send six delegates to attend their fair. He moved the appointment of three delegates. Messrs. Ephraim L. Hoover, Johnson Miller and Levi S. Reist were appointed.

A letter was read from the Pennsylvania railroad company, offering to sell excursion tickets from all points in the county to the fair. The offer was, on motion, accepted.

On motion of C. M. Hostetter, the secretary was authorized to procure entry books for the use of the judges.

It was moved that the corresponding secretary invite a delegation of the Berks county society to visit our exhibition.

It was also moved that the committee of arrangements get the fair advertised in the papers.

The chair appointed the following committee to report on the fruit presented for examination: Messrs. L. S. Reist, W. H. Brosius and H. M. Engle. The committee reported as follows:

Your committee find the following fruits on the table for examination:

By Levi S. Reist, some excellent specimens of Old Mixon peaches; Concord, Martha, Amber and Brighton Grapes; the latter is one of the handsomest and best tasted grapes to be found; also, Rogers No. 20.

Daniel Smeych exhibited a branch of the Sener peach tree, loaded with fine fruit; this peach is too well known to require further mention; also a seedling of the same, smaller in size and earlier than the parent fruit, but believed equal in quality. He also had two seedlings, extremely handsome, large yellow, showy and of good quality, and a bunch of fine Black Hamburg grapes.

J. M. Johnston had a fine Bartlett pear grown on a tree of last year's planting. The tree bore several dozen of large size and excellent flavor.

C. Cooper had Rogers 9 and 15, Concord, Martha, Brighton and Telegraph grapes, fine, Bartlett, Belle Lucrative and Seckel pears, each of excellent appearance and flavor.

Mr. M. D. Kendig, Chairman of the Floral Committee, has appointed the following ladies and gentlemen as associates: Miss Mary E. Wilson, M. D., Mrs. Samuel H. Reynolds, Mrs. Wm. P. Brinton, Mrs. G. W. Arnold, Miss Hallie P. Watson, Mrs. Joseph Preston, Mrs. Tacy Smith, Mrs. David Evans, Mrs. J. P. Wickersham, Mrs. Marriott Brosius, Mrs. Reuben A. Baer, Mrs. Charles F. Rengier, jr., Mrs. Aug. Rhoads, Mrs. A. C. Flinn, of this city; Mrs. S. H. Purple, Columbia; Mrs. Kate Barr, Bird-in-Hand; Hon. J. R. Livingston, Messrs. S. W. Heinitsh and Frank L. Sprecher.

THE POULTRY ASSOCIATION.

The stated monthly meeting of the County Poultry Association was held on Monday morning, September 1st, 1879, in their rooms in the City Hall.

Members Present.

The following members were present: Rev. D. C. Tobias, President, Lititz; J. B. Lichty, city; S. N. Warfel, Strasburg; John F. Reed, city; Charles E. Long, city; H. R. Tshudy, Lititz; C. E. Gast, city; William Schoenberger, city; Amos Ringwalt, city; Frank R. Diffenderffer, city; Henry Wissler, Columbia; Charles Lippold, city; John E. Schum, city; Joseph F. Witmer, Paradise; J. M. Johnston, city; John Trissler, city; J. B. Long, city; M. L. Greider, Rapho.

The meeting was called to order by the President, and the minutes were read by the Secretary and approved.

New Business.

The following names were proposed for membership: Ferdinand Sheaffer, city; Joshua L. Lyte, city; Dr. P. J. Roebuck, Lititz; Dr. Bernthelsel, Columbia, E. G. Eberman, city; Christian Miller, city. On motion, all the above were elected.

The discussion of the regular question, "What breed of fowls is most profitable?" was, on motion, deferred, as the other business on hand it was believed would consume all the time.

Report of Executive Committee.

The Chairman, Rev. D. C. Tobias, stated the committee had two meetings, one at Lititz and one at Lancaster, and after a full discussion, it was decided that an exhibition should be held.

Chas. E. Long read the rules and regulations adopted by the committee as follows:

Section First.

HOW THE PREMIUMS WILL BE AWARDED.

Rule 1. The premiums of this society are open to general competition.

Rule 2. The new American Standard of Excellence will be the guide of the judges on all the varieties for which premiums are offered.

Rule 3. Premiums will be awarded by the following scale of points:

First premium birds must score at least 170 points to the pair.

Second premium birds must score at least 160 points to the pair.

Section Second.

DIVISIONS OF CLASSES—MANNER OF EXHIBITING.

Rule 4. In all the classes an entry will consist of a pair of specimens shown in one coop together.

Rule 5. All specimens, whether for competition, exhibition, or sale, must be shown in the coops of the society.

Rule 6. All specimens must be exhibited in their natural condition, with the exception of games and game bantams. Any violation of this rule will exclude the specimen from competing, and cause the withholding of all premiums awarded the owner of such birds.

7. All birds competing for premiums must be strictly the property of the exhibitor. Any attempt to evade this rule in any particular will exclude all specimens entered by the offending party from competing if discovered in time; if not, all premiums awarded such exhibitor will be withheld.

Rule 8. Cards showing the name of the exhibitor, the variety, and the entry number will be attached to each coop as soon as placed in position.

Rule 9. Cards showing in detail the number of "points" allowed to each specimen will be attached by the judges to all coops of premium birds.

Rule 10. The term "specimen" implies anything for which a premium is offered.

The term fowl—A specimen hatched prior to 1879.

The term chicken—A specimen hatched during 1879.

The term cock—A male specimen hatched prior to 1879.

The term cockerel—A male specimen hatched during 1879.

The term hen—A female specimen hatched prior to 1879.

The term pullet—A female specimen hatched during 1879.

Section Third.

MANNER OF MAKING ENTRIES.

Rule 11. All entries must be made in writing and must be received by the Secretary on or before ——.

In all cases, the variety, the number of specimens, and full name of the exhibitor must be plainly and explicitly stated on blanks for that purpose, which will be furnished by the Secretary on application.—Errors in making entries will bar the specimens from competing unless corrected by the Board of Direction before the coops are placed in position.

Rule 12. In no case will an entry be placed upon the books of the Secretary unless the full amount of fees accompanies the entry blank.

Rule 13. Remittances for entry fees, etc., must be made by postal order, certified check, or bank draft, and made payable to ——.

Rule 14. Exhibitors need not accompany their birds. They can be sent direct to the exhibition hall, and direction cards printed for this purpose will be furnished by the Secretary. All specimens will be promptly returned to their owners at the close of the exhibition or otherwise disposed of, as they may direct.

Rule 15. The hall will be open for the reception of

specimens from 10 a. m. until 12 m. All specimens received after that time will be excluded from the exhibition hall, unless detained by unavoidable delay, in which case they may be admitted at the discretion of the Executive Committee. Excluded birds will be cared for in the storage rooms.

Section Fourth.

ENTRY FEES.

Rule. 16. Exhibitors must in all cases fully prepay transportation.

Rule 17. An entry fee of fifty cents will be charged for fowls, and twenty-five cents for pigeons entered for competition.

Rule 18. No entry fee will charged for specimens entered for exhibition or sale, but a coop rent of twenty-five cents will be charged on such entries. Exhibitors will be allowed to sell at their own prices and no commission will be charged by the society on sales made in the room. On all entries for combination and special premiums an additional charge of ten per cent of the premium entered for will be required.

Rule 19. Exhibitors competing for "Combination Premiums" will be allowed to make three entries for each combination, and will pay an entry fee of ten per cent. for each entry made. Should there be less than five entries for any one premium, the entry money will be promptly returned. In case there should be less than ten entries and more than five, the premium will be divided in accordance with the following scale:

Combination Premiums

$10 PURSE, WITH TEN PER CENT. ENTRANCE.

Ten or more entries, first premium, $6; second premium, $4. Five entries, first premium, $3; second premium, $2.

$5 PURSE, WITH TEN PER CENT. ENTRANCE.

Ten or more entries, first premium, $3; second premium, $2. Five entries, first premium, $1.50; second premium, $1.

Section Fifth.

THE JUDGES—APPEALS FROM THEIR DECISIONS.

Rule 20. Judges will not exhibit for competition in the classes which they are to judge. They will award all the premiums—regular, general, special and combination—offered in their respective classes. As soon as their awards are made for an entire class they will report their decisions to the Executive Committee, and under its direction will personally attach the premium cards to the winning coops.

Rule 21. Any interference with the judges on the part of the exhibitors, or collusion between them, will bar the exhibitor from competing. If not discovered until the wards are made, all premiums given such exhibitor will be withheld.

Rule 22. No appeals from the decision of the judges will be entertained except in cases of clearly proven fraud.

Section Sixth.

IN GENERAL.

Rule 23. The Executive Committee will have entire control of all departments of the exhibition, and no specimens will be removed without its consent. All eggs laid while the birds are in the possession of the Executive Committee will be gathered by the Hall Committee and their vitality destroyed.

Rule 24. The society will not be responsible for losses or accidents. The birds will be carefully cared for, and every possible precaution will be taken to prevent damage and loss.

Rule 25. Tickets of admission will be issued by the Secretary as follows: Single tickets 15 cents. Tickets for children under 12 years, 10 cents. No complimentary tickets will be issued. Members and exhibitors will be furnished at 50 cents each—not transferable. Representatives of the press are requested to present their credentials to the Secretary, who will afford them every facility for obtaining official information.

Special Premiums.

FOR THE BEST VARIETY SCORING THE HIGHEST.

For the best coop of any variety, not less than six specimens, $10.

Entrance fee $1.

Combination Premiums—with 10 per cent. entrance:

Light or Dark Brahma cock or cockerel, $10.
Light or Dark Brahma hen or pullet, $10.
White or Brown Leghorn cock or cockerel, $10.
White or Brown Leghorn hen or pullet, $10.
Plymouth Rock cock or cockerel, $10.
Plymouth Rock hen or pullet, $10.
Game cock or cockerel, any variety, $10.
Game hen or pullet, any variety, $10.
Game bantam, cock or cockerel, any variety, $10.
Game hen or pullet, any variety, $10.
Hamburg cock or cockerel, any variety, $10.
Hamburg hen or pullet, any variety, $10.
Cochin cock or cockerel, any variety, $10.
Cochin hen or pullet, any variety, $10.

List of Premiums.

BEST PAIR, $2. SECOND BEST, $1.

Asiatics—Light and Dark Brahmas, White, Black, Buff and Partridge Cochins.
Games—Black Breasted Reds, Brown Reds, Yellow and Silver Duckwing, Red and White Piles, Black and White.
Game Bantams—Black Breasted Reds, Yellow and Silver Duckwing, Red and White Piles.
Hamburg—Black, Silver and Golden Penciled, and Silver and Golden Spangled.
Spanish—Black Spanish and White and Brown Leghorns.
American—Plymouth Rocks and Dominiques.
Polish—Any variety.
French—Houdans and Creve Cœurs.
Dorkings—Any variety.
Miscellaneous—Sultan and Frizzled.
Bantams—Golden and Silver Sebrights, Rosecomb, White and Black.
Turkeys—Bronze, Buff, Slate and White.
Ducks—Aylesbury, Pekin, Rouen, White and Colored Muscovy.
Geese—Toulouse, Crubden, Egyptian and Hong Kong.

PIGEONS—BEST PAIR $1—SECOND BEST 50 CENTS.

Carriers—Black, Red and Dun.
Pouters—Yellow, Red, Black and Blue, Pied and White.
Fantails—Black, Red, Yellow and White.
Jacobins—Black, Yellow and White.
Tumblers—Short Faced—Almond, Black, Mottled, Beard and Baldhead.
Tumblers—Long Faced—Any variety.
Turbets—Any variety.
Trumpeters—Black, Yellow and White.
Antwerp—Any variety.
African Owls—White and Blue.
Swallows—Red, Blue and Black.
English Owls—Blue and Silver.
Dragons—Any variety.
Magpies—Any variety.
Nuns—Any variety.
Runts—Any variety.
Helmets—Any variety.
Moorheads—Any variety.
Cage birds—Belgian Canary, German Canary, Mockingbird; Talking Parrot.
Sundries—Best improved incubator in operation, $10; best improved coop, $1, best poultry water fountain, 50 cents.

J. F. Reed thought that the matter should be left with the Executive Committee.

H. H. Tshudy also thought that the best plan, after hearing the suggestion of the members.

S. N. Warfel suggested an entry of birds not already on the list.

Several other members made similar suggestions.

A motion was made by F. R. Diffenderffer that the Executive Committee be continued, and the entire details be left to them, which was agreed to.

Chas. E. Long moved that the Executive Committee be increased by the addition of city members, as upon those residing in the city the work at the exhibition will fall.

At this point the members of the society entered into a long and exhaustive discussion as to the initial steps requisite to make the coming exhibition a success. After a full exchange of opinions was had the hearty co-operation of all present was promised, measures were agreed upon which leaves no doubt of the ultimate success of that step. We think, therefore, we can promise our readers that some time during the winter they will have an opportunity of seeing what they have heretofore been compelled to go abroad to see—a first-class poultry exhibition.

Messrs. Charles E. Long and John F. Reed, both of this city, had on hand model exhibition coops, which were regarded very favorably.

There being no further business before the Society a motion to adjourn was made and carried.

FULTON FARMERS' CLUB.

The club met at E. H. Haines', Fulton township, on September 6. Members all present except Wm. P. Haines and Wm. King, whose families were represented. Visitors, Joseph Brosius and wife and Lewis Newcomer and wife.

The minutes of the preceding meeting were read and approved. The last meeting was held at Day Wood's, and was large and interesting.

Exhibits of Farm Products.

Sol. Gregg: Two varieties of peaches, one "Stump the World," the other a seedling; also a branch five inches long containing seven good sized pears, of the Lawrence variety.

Montillion Brown: Some grapes, which had been destroyed by the honey bee. The subject had been discussed before, but the bee was not thought guilty then by most persons. His grapes grew near his bee hives and they were constantly upon his grapes. The idea that a wasp accompanied the bee and stung the fruit before the bee attacked it was advanced, but the members were not decided which insect made the beginning. The bee was, however, considered very destructive. Mr. B. also exhibited a fine specimen of white fox grapes.

R. D. King: Iona and two kinds of grapes for name; one was Christiana, and the other no one knew.

Franklin Tollinger: A sample of timothy seed from Ohio, which contained some small black seed, but no one knew what kind it was.

Asking and Answering Questions.

J. Brown: Has any member a good set of grass?

None of the members were satisfied. Most of their clover looked well when their wheat was cut, but the hot sun and dry weather had killed it.

E. H. Haines: What are you going to do with the Rag Weed?

Some would leave it alone, if they were going to plow in the spring; others did not like to plow the weed down. Some advised cutting and hauling into the barn yard. One would cut and leave the winter weather rot it. If they were going to mow next summer some of the members thought the weed would protect the grass through the winter. It was remarked that these are sometimes called "the farmer's friend." They also protect the young grass from the hot sun. Those who have sheep would stack them in a convenient place for feed during winter, preferring them to hay. One spoke of using them for litter, and considered them of more value used in that way than when left on the ground.

Lindley King: Would you plow stalk ground, or cultivate for wheat?

A majority would cultivate only when barnyard manure was used. A few would plow and one would drill without any other preparation.

R. D. King: Which is the greater evil to the community—the man who breaks into your house or store and robs it, or the man who sells you rum?

This question created a lively discussion, and one which most of those present took an interest in. One thought it not a proper question in this place; that the members are a temperance people, so there was little opposition. Rum selling is a business sanctioned by law, consequently the man does not break the law, while the thief does. Rum was considered the forerunner of all evils, and tobacco was mentioned as second to it. The Legislators are most to blame, and those who vote for them are very little better. The man who votes for prohibition alone can be clear of the crime.

While in the midst of the discussion the hostess announced dinner. The question was dropped, and for want of time was not taken up again.

Afternoon Session.

Criticisms of the host's place were called for. Nice cabbage and hogs. A beautiful new carpet and bookcase, showing that although the host would complain of his business not paying he was at least not going back.

The beautiful lawn—its walks and flowers—displayed a taste for the beautiful; some weeds in the orchard were noticed. One advised less labor in the yard and more among the weeds, but upon the whole everything indicated progress. The host read a selection from the *American Agriculturist*, entitled "Success in Farming," showing the importance of taking care of the tools, fences, etc. Dogs do not make good gates or fences and cost more. A little care at the proper time will save a great deal

Literary Exercises.

Mabel A. Haines recited "Seed-time and Harvest," and Carrie Blackburn "Things I Love." Mabel Haines read an article from the *Household Magazine*, entitled "Poetry of Housekeeping."

Sadie A. Brown had received a communication from "The Old Man," in reply to one which was found on the floor under the chair of one of our most sedate members at last meeting, from "The Old Woman," complaining that the young folks had made a surprise—a "Golden Wedding" they called it; but it did not please her ladyship to get married again before she was a widow, at any rate; and as for the baskets of good things they brought, she was cooking what would have been much better for them—a good farm dinner. She didn't much believe in these new-fangled ideas, and, besides, they tore her house upside down, and all they brought would not pay for the horse feed.

The "Old Man" was ashamed of the "Old Woman," to write to the Club after the way she ate the good things. He was sure people would conclude she had forgotten; but women are changeable. For his part he was very well satisfied; he feared they would need some of the good things for Polly's funeral dinner. His married life, he said, had been sometimes sunny and sometimes extremely stormy. He had noticed the "cats" peep round the corner to see whether they might venture in, and had adopted the same plan, and made it suit to stay out when he would have come in. These were the stormy days. It was with them "love at first sight," and he sometimes blamed Polly for throwing the dust in his eyes; but, all things considered, he would take Polly in preference to anyone else, if it were fifty years ago.

Regular Question.

"Is sheep raising more profitable than any other business farmers can engage in?"

If farmers depend upon hired labor sheep were considered most profitable; while if you do not have to hire, dairying took precedence. A ewe was allowed to gain one hundred per cent. by some, while others considered it a very poor cow which would not pay as much. If we had a stringent dog law sheep raising would pay. The "city gunner" makes the law and the farmer submits. If the farmer has a nice flock of birds or has squirrels they come and shoot them. It is so much trouble and expense to enforce the law that it is seldom done. You dare not set a snare or shoot a bird until a certain day, and the "city gunner" sets the day. It was remarked by one that the dog makes sheep raising profitable. Upon the whole, it is whatever you are suited to that pays, and not the business in itself.

Question for discussion at next meeting—Will stock pay fed upon purchased feed?

Appointments for next meeting: Sadle Brown and Mabel Haines for selections and essays; Mabel H. Haines, Allie Gregg, Carrie Blackburn and Phebe King for recitations.

Adjourned to meet at Franklin Tollinger's, on the first Saturday in October.

THE LINNÆAN SOCIETY.

A stated meeting was held on Saturday, August 20, Vice President Rev. J. R. Dubbs, in the chair. The minutes and preliminary opening attended to, the following donations to the museum were examined.

Quite a number of coleoptera and other insects, that were donated by Prof. Miles Rock, and collected a few years ago by him in South America, and neatly mounted and arranged by Dr. S. S. Rathvon, (formerly noticed,) were now beautifully displayed for detailed inspection. A pair of small gold fish in a bottle; a spirobolus, a species of millepede from South America, by David Baxter; a bottle containing the larvæ—one the pupæ and another the imago or perfect insect, of the elm beetle, by Dr. S. S. Rathvon; a gall found on beech trees in the grand duchy of Baden, and a bottle of sea water, dipped up in mid ocean on his return home by Franz Bender. In a clear flat-sided bottle, a full sized Attacus cecropia, inserted while yet soft from its escape from the cocoon; this now tightly corked displays the expanded wings of this large and pretty-colored butterfly, and a new mode of preservation, per S. S. Rathvon. William B. Fahnestock, through Jacob Stauffer, donated a variety of coleoptera, hemiptera, hymenoptera and diptera; also four pretty, small snakes, one new to our collection—the beautiful scarlet snake *Osceola elapsoides* (Hol.) The ring-necked snake *Diadophis punctatus*, the abdominal scutillae being beautifully marked with a central black spot on the whitish ground; color, dark slate colored with a white ring around the neck; occasionally met with in Lancaster county, two specimens having a dark color, orange red abdomen and three yellowish spots on the back of the head. The *Storeria Occipitomaculata*, not new to our collection; a small lizard, by some called the cameleon, a specimen sent us by Mr. Charles Nauman, from Florida, named *Anolis principalis* by Prof. E. D. Cope; also a reddish spotted salamander, *Nothalomus punctatum*; six small sized fishes, much like our *Rhinichthis* and a specimen much like our striped bass, called down South the "Coneras trout," but it is a percoid fish, and has no analogy to our trouts. This was caught in the Coneras creek, Oconee county, South Carolina; a remarkable long-legged fly, with upper joint of the taris very much enlarged, like a paddle of a broad, oblong and obovate shape, and skims upon the water with outstretched wings. Mr. Stauffer, after figuring it carefully, found that Prof. Glover has it also beautifully figured among his dipteria, plate 1. fig. 16, but no name is attached, nor was it hunted up. The doctor also collected and neatly pressed a number of plants. Mr. Stauffer has arranged and named them; some are new and not found in this locality, such as the *Shrankia Uncinata; Spigelia Marilandica; Geranium Caroliniana*, &c.

Mr. Stauffer also presented a singular fungus, cut through the centre. This was given him by his neighbor, Mrs. Solomon Sprecher, found growing in their garden. It is hemispherically conic; the base has centrally a wiry root. When cut it presented a central core, milk white, embracing on each side a dense dark granular mass joined above, and outside of this an amber colored, jelly-like mass of a shining and dense consistency, next the parchment-like epidermis. This is much like the two specimens sent us by J. C. Haub, September 26, 1877, found in the crevice of an ice cellar at Quarryville. Having cut open one specimen, which was also figured and described by Mr. Stauffer, and the other sent to W. G. Farlow, M. D., of Boston, our most noted Fungiologist, who, in his letter of October 18, 1877, informs us that during the time it had developed into a species of *Phallus*, of which genus Mr. Stauffer has five species figured. These show a sack of jelly-like substance at the base, a stout central stripe, with a perforated cap on its upper end, and wholly different from this puff-ball like fungus at this stage in appearance.

Additions to the Library.

Pamphlets: Collections of the Old Colony Historical Society; papers read during the year 1878; report on the *Chaco cranium*, &c., by H. J. Hoffman, M. D.; Moore's Rural Life, No. 1, Vol. I, for 1879; THE LANCASTER FARMER for July and August, 1879; United States Patent Office Gazette up to August 26, 1879. Circulars: Preble's History of the Flag of the United States. Report: Central Park Menagerie; Book Catalogues, new publications; a copy of the Cherokee *Advocate*, in part in that language.

Papers Read.

Dr. S. S. Rathvon read a paper making special notes of information given him by Prof. Miles Rock. When here on a late visit from Washington, on seeing his collection displayed, pointing to a large hemipterous insect of the Reduvian family, which the Spaniards call *Vinchucas*. This secretes itself in and about beds, and is a bloodthirsty villain to the poor sleeper who has been careless to exterminate him. This giant bed bug gorges itself without disturbing the sleeper often, and a dozen of them might prove fatal. Another was the luminous beetle—the *Elater Noctilucus*, a kind of skip-jack. These at night emit a steady phosphorescent light. Three or more put in a bottle will enable one to read by them. The Spaniards call them "Queo," and decoy them by a torch light, and the words repeated, "Queo toma-pan," that is Queo take bread; but these night flyers are rather attracted by the light than the invitation to take bread. In looking over them Mr. Rock associated much of interest which the memory brought up that we cannot here report. Paper No. 524.

J. Stauffer read a list of the names of the objects deposited by Dr. Wm. B. Fahnestock, with remarks, to put on file, No. 525.

Mr. Rathvon read a detailed account of his observations of the Elm Tree Beetle, to put on file, No. 526.

New Business.

Dr. David B. Wilson was nominated by Dr. Dubbs and Mr. John Burrowes by J. Stauffer, as active members. A balot was had for each, and both were unanimously elected active members of this society.

Mr. Rathvon reported, as chairman of the committee appointed to number and catalogue the subjects in the museum, that J. Stauffer having made accurate drawings of the cases and compartments in and around both rooms, with letters and numbers, in accordance with which a portion have been numbered and catalogued in such divisions; but much remains to be done, and members are earnestly requested to come forward and assist in speedily completing the work.

Under Scientific Miscellany.

Mr. J. B. Kevinski made a verbal report of a late visit, in company with Mr. J. T. Reading and Mr. J. Gumpf, to the blowing cave on the Susquehanna. On their way Mr. Henry Yost, near Good's mill, on the Pequea, called their attention to his luxuriant tobacco patch; which surpassed anything they had yet seen in that line. They measured one leaf which was 50 inches long, 36 broad quentrally and 24 inches wide, 18 inches in from the ends. Arriving at the foot of the mountain they tasted the temperature of the Spring. They then zigzagged their way up the hill side, and inspected the several openings through which a cold current escapes, and went up to the higher opening. Into this they descended to a ledge, down from which a rope ladder was dropped about twenty feet. Messrs. Reading and Gumpf, being less in bulk, could descend, and found a number of fissures and tortuous galleries in every direction and at various angles from 45° to 80° but nothing like an open chamber. It seems as if the rocks had been rent and the seams laid open by some upheaval; but no truly scientific inspection was made, only they found the temperature the same as the water in the spring 100 feet below them, and that the wind felt above was the draft that entered beneath, through the flue-like crevices rising upwards.

Mr. Kevinski, at the close of his remarks, made a formal donation of his case containing thirty drawers now in the room, but excepted the contents. A vote of thanks was cordially offered, but he objected to having it published. A vote of thanks to Dr. William B. Fahnestock and other contributors was also given.

No further business offering, on motion, adjourned.

Soiling

saves fences, one of the most expensive features of ordinary farming; prevents the seeding of weeds; and keeps stock from trampling down and wasting more fodder than they eat. It doubles the amount of stock which can be kept on any given amount of land, and there is a vast increase in the amount of valuable manure that may be saved. There is some additional labor, but the returns are so much greater that soiling is *the* system of the present as well as future agriculture.

ENTOMOLOGICAL.

The Snake Worm.

This singular little animal is only met with occasionally, but its singular habits never fail to elicit a good deal of interest, and especially among the uninformed or those who have seen it for the first time. On this occasion it appeared on Thursday morning, (24th) in the back yard of Mr. G. M. Zahm West Chestnut street. It is not a single worm, as the above term might imply, but thousands of small worms which mass themselves together in sections of greater or lesser numbers, the heads of the one section seemingly attached so the tails of a preceding section, thus forming a long, ropy, snake-like procession, and to keep the resemblance to a snake, the column is usually enlarged in the middle and tapers toward the ends. They come up out of the ground, and move very slowly in an obtuse zigzag or wavy line, which still more enhances their snaky appearance, and finally they disappear in another locality. Each little worm, or maggot, is almost a quarter of an inch in length, and about the thickness of a common knitting needle; their color is a dirty white, with a middle longitudinal streak of an earthy color, and a small very black head. The streak is caused by the contents of the stomach seen through the translucent tissues and skin of the worms. The whole mass is protected from the sun by a shiny secretion from their bodies similar to the protecting slime of the "pear slug." The procession of these worms in Mr. Zahm's yard was over three feet long, and it moved northeasterly, from nearly opposite the kitchen door, to the southeast corner of the main building, where it ensconced itself in a crevice between the house wall and the paving. We think it made a mistake, for the sun shone on them hot and dry in the afternoon, and many of them no doubt perished. The nature, or object of these migrations, is more or less conjectural. Some suppose it is seeking a more favorable feeding ground, while others suppose it for the purpose of selecting a better place to pupate and undergo final transformations.

These maggots are the larvæ of small *dipterous* insects (two-winged flies) and which to the family of TIPUDIDÆ, which includes the craneflies, mosquetoes, and others. The individuals under consideration belong to the genus *Sciara* and although it is difficult to name them specifically from the larva alone, yet it is very probable that they are *toxoneura*. There are many species of them however, and they are liable to be confounded. Some years ago specimens were sent from Bethleham, Pa., that had come up between the cracks in the floor, of a part of a house under which there was no cellar. It is difficult to continue artificially the conditions necessary to their successful development, and hence—although they have been observed more than a hundred years ago on the continent of Europe—there is a lack of definite knowledge in reference to their life, habit, and transformations. They have been observed from May to September at various periods.

"Saddle-back Moth."

Dozens of these insects in their larva state have been brought to us during the past month, which were found feeding on apple, cherry, pear, quince, plum, rose, cabbage, corn, gladiola, willow, currant, and other species of vegetation, illustrating the exceeding omnivorous character of their feeding habits—indeed, they seem to have been more numerous the past summer than we have ever known them in any previous season; or, it may be that the observing habits of the people are more active than they have been at any other time. Many of the people had never noticed them before and these thought that they must have been something new and rare, and very pretty withal. There is a number of genera that are more or less allied to this insect, and they are commonly called "Hag-moths." They belong to the section HETEROCERA, their *antennæ* being very variable and the forms and habits of the *larva* still more variable. They are included in the family CONCHILOPIDÆ, and the Genus *Empretia*, the most numerous species of which is, *stimula*. The "body and forewings of the moth are a uniform ferruginous, with two small subapical white spots, and in the male, two more near the base of the wing beneath the median nervure; but they are rarely seen in the moth state. The body of the larva is semi-cylindrical and obliquely truncated at each end, with a pair of anterior and posterior, long, fleshy, and slenderly spined horns, and two smaller pairs beneath them. That part of the body which is between the anterior and posterior horns, is of a fine bright green color, bordered with white, with a central dorsal, oval, reddish brown patch, bordered with white and black. The lower part of the body is fleshy and whitish, and they do not appear to have any forelegs, but seem to glide steadily along rather than walk. The spines on the horns produce an exceedingly painful sensation, when they happen to come in contact with the naked back of the hand, or any other tender portion of the body.

Bark Lice on Apple Trees.

Judicious pruning of the branches, draining the land where the trees stand, manuring the soil and keeping it free from grass and weeds, all have the effect to promote vigorous growth, and are therefore useful in preventing the depredations of bark lice. Unless a vigorous growth of a tree can be insured it is of little use to apply substances to kill the lice. The little lady-bird, whose presence should always be welcomed on farms, is the mortal enemy of the bark louse, as it is of many other sorts of insects. But hurtful insects increase so much faster than useful birds do that we may never expect to see the latter exterminate the former. Indeed no amount of cultivation and no number of birds ever collected in an orchard will be sufficient to clear it of the scale bark lice, if they are generally distributed among the trees.

If but a few trees have bark lice on them and they are well covered with them, it is best to cut them up. This heroic treatment will prevent their spreading to other trees. The time to kill the insects is when they begin to hatch. They are most readily killed by applying some wash to the bark with a stiff brush or swab. The articles most highly recommended for killing the lice are strong lye made of wood ashes, a solution of caustic soda of potash, diluted soft soap, and a mixture of lime whitewash and kerosene oil. If the latter is employed the proportions of the mixture should be one pint of kerosene to a gallon of the whitewash. Whatever substances are chosen should be applied thoroughly. To insure complete destruction of the insect a second application should be made some days after the first.

The Cabbage Worm.

Repeated inquiries come to us for the best remedy for this formidable destroyer of the cabbage. From the many experiments made, we are induced to discard the various applications which soil or contaminate the leaves. When the plants are young, and when the worms first make their appearance in comparatively few numbers, they are to be removed by hand. The plants may be cleared as rapidly as by the various applications used, counting in the time in preparation or procuring these applications. As soon as the heads form, use hot water. If any injury results from the heat, it will be only to the edges of the outer leaves. The body of the head cannot become heated. If the insects have become numerous, this will be found a rapid mode for their extermination. We are often asked for the degree in temperature to which the water should be heated. We cannot give the precise degree. The watering-pot in which it is carried will not retain a high heat long, and the fine streams of water from the rose are partly clooled in their passage through the air. It is supposed that a temperature of 120° will kill the worms, but a great'r heat is' better, provided the cabbage leaves are not scorched. Some practice is required to do the work right, and the operator may experiment on a few small heads, or else begin with warm water and gradually increase the temperature. In a little time he will learn to apply the water as it should be. Immediately after filling the watering-pot, when the water is hot, he will give a quick or instantaneous dash, and this will be sufficient to destroy all the worms; after the water has partly cooled, the washing will continue longer. The great advantage of this treatment is that the cabbages are left perfectly clean.—*Country Gentleman.*

Toads.

Many gardeners already appreciate the valuable services of the common toad, and afford them protection for their insect-destroying propensities, while as many more, perhaps, are ignorant of their usefulnsss. To the latter class it may be interesting to know that toads live almost wholly upon slugs, caterpillars, beetles, and other insects, making their rounds at night when the farmer is asleep—and the birds, too—and the insects are supposed to be having it all their own way. English gardeners understand these facts so well that toads are purchased at so much a dozen, and turned loose, and the best of it is that the toads generally stay at home, so that the garnener is not troubled with buying his toads over again every few days

The toad can be tamed, and will even learn to know "its master," and will come when called; the writer has not only had such pets himself, but could give other instances of toad taming that have come under his observation. Toads can be made very useful about the house, and will do no little good in destroying cockroaches, flies and other household pests.—*N. Y. Tribune.*

Self-Binding Reapers.

The self-binding reaper was brought into use in 1874, when fifty tons of wire were required for binding sheaves; in 1875, 340 tons; in 1876, 2,800; in 1877, 6,500 tons; in 1878, 14,000 tons. This last amount is quite as much as all of the wire which was manuufactured in this country in 1860.—*Atlantic Monthly.*

AGRICULTURE.

The Origin of Wheat in America.

It is difficult in the present day to realize the fact that wheat was at one time unknown in America; yet, prior to the discovery of that continent by Columbus there was no cereal in America approaching in nature to the wheat plant. It was not, observes the American *Miller*, until 1530 that wheat found its way into Mexico, and then only by chance. A slave of Cortez found a few grains of wheat in a parcel of rice and showed them to his master, who ordered them to be planted. The result showed that wheat would thrive well on Mexican soil; and today one of the finest wheat valleys in the world is near the Mexican capital. From Mexico the cereal found its way to Peru. Maria D'Escobar, wife of Don Diego de Chauves, carried a few grains to Lima, which were planted, the entire product being used for seed for several successive crops. At Quito, Ecuador, a monk of the Order of St. Francis, by the name of Fray Jodost Bixi, introduced the new cereal; and it is said that the jar which contained the seeds is still preserved by the monks of Quito. Wheat was introduced into the present limits of the United States contemporaneously with the settlement of the country by the English and Dutch.—*Pall Mall Gazette.*

Grass as a Renovator.

Many farmers labor for years, ignorant of the fact that a close, well-set sod is the foundation of good farming and the basis of good crops. Soil that will produce an immediate and firm set of grass, will bring a good crop of any kind. There is no better way to test the producing capacity of the soil than by its grass production. If a field yields a scant grass crop, and is uneven or full of barren spots, it will not be safe to depend on such soil for any other crop without extra heavy manuring, and even then the crop is not of so great certainty as if the ground was covered with a firm sod at plowing time. There is something in a heavy sod that will perfect a crop even in an unfavorable season. I never have failed of a good crop on such land. Soil will soon be renovated after partial deterioration, if grass can be densely set on the surface; and this mode of renovation, I claim, is the quickest, surest and cheapest of any. There never was a mistake made so full of loss to the farmer as to allow naturally good soil to deteriorate at all; and when the farmers understand and act on this principle, our productions will never fall below an average, or even to this point.—*Cor. Country Gentleman.*

Fall Ploughing.

The better the preparation of the ground the better the crop. The high average yield of the English farms is no doubt largely due to the thorough preparation of the ground before seeding. Our climate is superior to that of England for wheat growing; yet a yield of 64 bushels per acre is not at all infrequent among good farmers there, while here 40 bushels per acre is an unusual yield. Two ploughings, several harrowings and, in many cases, rolling or crushing, and the excellent preparation of the soil by a previous root crop, must have a much better effect upon the soil than one ploughing, very poorly done, because of the hardness and dryness of our soil in midsummer, and very imperfect harrowing. It might be well for us to lay out more labor on our wheat crop, and so prepare the ground better, and raise our average from 12 to at least 20 bushels per acre. The difference in the amount of wheat at harvest would pay for a good deal of extra work in ploughing, etc., and yet leave a profit; beside the soil would not forget the generous treatment in one year nor two.

For Pennsylvania Farmers.

Since the 1st of August every package of commercial fertilizers offered for sale in this Commonwealth must have plainly stamped thereon the name and the place of the manufacturer, the net weight of its contents and an analysis stating the percentage of nitrogen or its equivalent in ammonia in an available form, of potash soluble in water, or soluble and reverted phosphoric acid and of insoluble phosphoric acid. Under the act the term commercial fertilizers applies to any and every substance imported, manufactured or sold for fertilizing or manuring purposes, except barnyard manure, marl, lime and wood ashes. All other preparations sold as fertilizers come under the provisions of the new law, and it must be of great value to both consumers and honest manufacturers and dealers. With the protection against spurious fertilizers guaranteed to farmers under the act the sale of useful artificial manures must be greatly increased.

Treatment of a Worn-out Meadow.

Meadows that have been run down, become so bound or covered with moss, sorrel, or other weeds, may be renovated without plowing. The old sod needs to be disturbed, but a thorough harrowing or chopping of the surface with a disk harrow will disturb it sufficiently without plowing. Fresh seed is needed, and a dressing of lime may in many cases be all that is required in the way of a fertilizer. If it can be afforded, a moderate quantity of fine manure, used as a top-dressing, and harrowed in just before sowing, will be of great benefit. The work may be done at any time before September, so that the grass and clover, the latter more particularly, should be well set before severe frosts occur. Orchard-Grass will thrive upon soils that are not rich enough for timothy; but it is better to have the ground good enough for the latter even if the former is to be sown. Grass is a crop for which the soil can not be too rich, for if the growth is excessive it can be cut at any time and made into hay or fed green.

Minnesota's Wheat Crop.

The returns from the Thrashers furnish a basis for an estimate of the probable yield of wheat in this State. The whole average is much better than last year, but lower than was expected. The early wheat is the poorest in the southern counties, where the average yield is from ten to twelve bushels, and steadily improves to the north, till it reaches twenty to twenty-five in the Red River Valley. The grade will be largely No. 2 in the south and No. 1 in the north. A conservative estimate places the average in two-thirds of the wheat area in the State at thirteen bushels per acre, and in the remainder at seventeen. This would give 40,000,000 bushels as a whole crop, and more than half of it No. 1.

Oats and Wheat.

The experiment has been made of sowing oats and wheat together with a view to gaining a winter covering for the wheat. The seed, in the proportion of one part of oats to two parts of wheat was sown in the fall and the oats sprang up quickly and were killed by the early frosts, the stalks and leaves lying on the ground all winter, keeping the snow from blowing away and preventing the sun from thawing the frozen ground. In the spring the dead oats made a good top dressing for the growing wheat. The crop of wheat secured on the following season was reported to be excellent, while wheat on adjoining land, planted in the usual manner, was of no value. *Scribner for September.*

Storing Hay.

When properly cured, hay keeps the best in a *large* mow in which it has been thoroughly packed. Hay thrown up loose on a scaffold loses that aroma and freshness which characterizes that from the center of a large mow. Hay does not demand the large spaces between the outside boards of many barns in order to preserve it. Put the boards close together and keep out the air and rain, and save the hay, which would otherwise spoil by weather staining. It looks better, too.

HORTICULTURE.

Pruning Fruit and Ornamental Trees.

We read a great deal about the proper time of pruning trees, and especially the apple tree. Some prefer fall, some mid-winter, some early spring, but scarcely one recommends the very best time in our humble opinion—mid-summer. Doubtless some old fogies will open their eyes and hold up their hands at such an innovation, and denounce it as an absurdity; but we think we will be sustained by a majority of the "live" men of the day.

If we desire to improve the form of a fruit tree and get rid of some of the superfluous wood, we should prune in winter; but if we desire fruit and a perfectly healed stump, we should prune from the fifteenth of June to the twentieth of July. We have done this often with the happiest results. The fruit-beds form after this, and the operation in suddenly cutting off its growth produces buds, while the winter or early spring pruning will produce only wood.

In pruning ornamental trees in midsummer, the bark, instead of receding from the stump, grows over it, and in a few years will completely cover it and make a perfect amputation. We have noticed this upon our own premises as well as upon those of others many times. This pruning is done when the tree is taking its mid-summer "siesta," and then wakes up, refreshed for another start, and the bark gradually steals over the stump as if ashamed of the shabby looking exposure.

When the tree is in full leaf, and presents its full form to us, we can see exactly where the pruning should be done, in order that while the overgrowth may be removed, the symmetry of the tree may be preserved. Especially is mid-summer pruning to be preferred, first, to produce buds on fruit-bearing trees as before stated; and second when large limbs are to be removed.

Currant Culture.

The currant worm has played havoc with one of our most productive and healthful fruits. The consequence is that the price of currants have quad-

rupled with a few years. Those market gardeners who have fought the worm with persistence are receiving from 15 to 20 cents a quart against 4 and 5 cents received in former years. Then again, instead of the small currant, improved and larger varieties are cultivated. The Red and White Dutch and Cherry varieties are a vast improvement on the old berry. The size of the Cherry will always give it an extra value in market, but for the family there is nothing superior to the old standard Red and White Dutch. Currants will grow in any soil where corn grows. The fruit, however, is best in a rich sandy loam, kept well pulverized and free from weeds. It is one of the peculiarities of fruit growing that high cultivation increases the pulp and lessens the seed. Wood ashes make the best fertilizer for currants. Where ashes are not to be had, the bushes should be mulched with leaves or leaf mold. The best mode of propagating is by slips or cuttings. The slips, a foot long, may be cut in the fall and planted immediately where they are desired to grow permanently, or thickly in some day soil where they can be left till spring. The worm has done less damage than usual this season than heretofore; all that is needed to rout him is a complete peppering with hellebore. As no fruit, not even apples, is more easily raised, and as the money returns are more compensating, an extensive, well-cared for patch of currants will certainly pay handsomely.

The Blackberry.

The blackberry requires nearly the same treatment as the raspberry; but being a more rampant grower it should have more room, and needs more pruning or pinching. The distances of the rows may be 6 to 8 feet apart, and the plant, if kept single, two feet in the row. Sometimes they are allowed to grow thickly or in a continuous line, in which case they should be well cultivated and properly pruned. Constant cultivation is always better than much manuring. Pruning the blackberry is commonly but little understood. We hear complaints of the rambling and straggling growth of the bush, extending across alleys, tearing dresses, at the same time proving unproductive. This is owing to a neglect of summer pruning. As soon as the new shoots have reached 2½ or 3 feet in height the ends should be pinched off with the thumb and finger, which will cause the protrusion of laterals. These in turn are to be pinched off when they have grown from 12 to 18 inches. It will be necessary to pass along the rows every two weeks in doing this work, as new shoots will be constantly thrown out during the entire summer. The plants, being thus kept within bounds, will present neat, compact and productive bushes, instead of the unproductive stragglers, as if left untouched.

Famous Apples of Lancaster County Origin.

Charles Downing, of Newburgh, N. Y., the famous horticulturist, writes to the *Country Gentleman* that inquirers after the history of the Belmont or Gate apple will find it in the transactions of the Ohio fruit growers and nurserymen, held at Columbus in September, 1847. The following is an extract: "The residence of Mamma Beam, mother of Jacob Nessley, sr., was near Strasburg, Lancaster county, Pa. The Gate apple is from a seedling which grew at her gate, from which circumstance it was called by the family the 'Gate apple,' though by the neighbors it was called Mamma Beam, after the old lady. It was brought to the Ohio river, above Steubenville, by Jacob Nessley, sr. a nurseryman, about the commencement of the present century, and propagated throughout the West." Dr. J. K. Eshleman, who introduced the beautiful and excellent "Fanny" apple informed Mr. Downing that it originated within one hundred yards from where the Gate apple did, and on property formerly owned by Jacob Beam.

Huckleberries.

Speaking of the culture of berries, the Massachusetts *Ploughman* says: "The culture of the strawberry has been carried to such perfection that it has become a staple article of produce as much as corn or petatoes. The blackberry is fast coming into general favor. Huckleberries have been popular from our earliest recollection, yet we know of but few instances where any of our market gardners have tried to improve any of the numerous varieties which can be found wild on almost any hillside. If the wild strawberry can be made to produce, by cultivation, such fruits as we have seen in the markets this season, cannot the huckleberry be made to grow proportionately large? We hope those of our market gardeners who have not already begun, will give this small fruit the attention it deserves."

Hotbeds with Muslin Sashes.

Rufus Mason in the Cincinnati *Grange Bulletin* says: "Three years' experience with muslin sashes, where the thermometer ranges from twenty degrees below zero to seventy degrees above, satisfies me of their superiority. I make a frame of one and one-fourth inch stuff with a single bar of the same size down the middle, cover it with common, heavy, unbleached muslin; paint it over two coats with boiled linseed oil and find it far better than glass. Have had no freezing or scalding, but better colored plants, more stocky, and better able to withstand early transplanting. After the hotbed is filled with manure, lay in the soil so as to come within three inches of the muslin, sloping exactly as it does. As the season advances the bed will settle about as fast as the growth of the plant requires it. This plan prevents the plants from becoming long-legged, which is the main cause of the slow aftergrowth, and in the cabbage family, of so many plants failing to make solid head."

Pruning Grape Vines.

Trim in autumn after the first hard frost. Remove the old wood as much as possible, leaving six canes of present summer's growth which are the largest and most thrifty, and as near the base of the vine as canbe found. All of the other wood is cut out, being probably fully nine-tenths of that which is on the vine. This comprises all of the trimming needed for the whole year, with the exception of removing the extra buds in spring. Go through the vineyard often to see if anything is amiss, and to admire the magnificent bunches of fruit as they are growing, but scrupulously avoid handling them, as Dame Nature has provided a delicate bloom for a covering, which, if rubbed off, destroys the luscious ripening process.

The Quince.

The quince, of the fine old orange variety, is making its appearance in our markets from California, and commands a good price. Their cultivation has been generally abandoned in this region, owing to the depredations of the worms in the roots. As the roots are at the very surface of the ground it is difficult to protect them by covering, as we have suggested the dwarf-pear should be, the stock of which is quince. There is no other way to dislodge the worm than by ferreting them out twice a year with a wire. The only other way to get quinces is to let the worm alone in its operations and always have a fresh lot of trees coming on. They will bear six years before requiring renewal.

Suckers Around Apple Trees

are permitted in some neglected orchards, disfiguring the trees and doing them harm. Now is the time to clear them off, and so that they will not sprout again. Seize them by the tops with both hands, place the cowhide boot which you wear upon them, between the sucker and tree, and one stamp with the foot and corresponding jerk with the hands will tear them off at the base. If too large cut them out with a gouge and mallet; do not leave a stub to sprout again.

Domestic Economy.

Breakfast Bacon.

There is something sensible in the suggestion contained in the following article which we clip from the *Western Stock Journal*. There is no good reason why farmers should not have the choicest and most substantial food in the land—unless it be that lack of skill necessary for properly preparing the materials is a good reason. We quote:

"For country town or village, the most convenient and to many persons acceptable dish for the morning meal is breakfast bacon. Yet, while it is charged upon the farmer that he lives upon pork, breakfast bacon, that which is worthy of the name, is seldom seen upon the farmer's table. In any first-class hotel in the larger cities it is regularly found upon the bill of fare, and to say that it is a popular dish is the least we can say. But mind you, these houses don't buy the tough, flabby old meat known among the soldiers as "sow belly," nor the thick, greasy, over salted and over-smoked sides of a three-year old, four hundred pound hog. The farmer's wife who reads this, and knows not of the reputation which the standard bill of fare breakfast bacon has before travelers and what are termed genteel boarders, is ready to ask: "Well, tell us exactly what it is?" We will tell you how to make it. When new corn is ready to feed, select two or three early spring pigs that are strictly healthy, yet are thin in flesh. Feed these up rapidly, thus causing the flesh to be tender. At butchering time take the sides and hams, and the shoulders if you like, into your own keeping. Sugar-cure these in the most careful manner, using plenty of sugar, and a small amount each of salt and saltpetre; after being about six weeks in this preparation, smoke moderately, not for a month or two, steady, until the meat is as brown as the skin of a mulatto, three-fourths black, but gently browned, and having the flavor of the curing process slightly through the meat. Do not pursue that abominable practice of leaving the meat in the smoke-house to be treated to a heavy dose of smoke once a week, to keep the flies away, but encase each piece separately in heavy paper and pack away in dry wood ashes. When wanted, take one piece at a time from the storage place. Cut thin, not half so thick as the ordinary farmer's bacon is cut. Broiling is better than frying, and as the saying is, "do it nicely, and if you have prepared the bacon and hams from two such pigs as a first venture, you will need to double the allowance for the next season.

Hints for the Kitchen.

If your coal fire is low, throw on a tablespoonful of salt, and it will help it very much.

A little ginger put into sausage meat improves the flavor.

In boiling meat for soup, use cold water to extract the juices. If the meat is wanted for itself alone, plunge in boiling water at once.

You can get a bottle or barrel of oil off any carpet or woolen stuff by applying dry buckwheat plentifully. Never put water to such a grease spot, or liquid of any kind.

Broil steak without salting. Salt draws the juices in cooking; it is desirable to keep these in if possible. Cook over a hot fire, turning frequently, searing on both sides. Place on a platter; salt and pepper to taste.

Beef having a tendency to be tough can be made very palatable by stewing gently for two hours, with pepper and salt. Taking out about a pint of the liquor when half done, and letting the rest boil into the meat. Brown the meat in the pot. After taking up, make a gravy of the pint of liquor saved.

A small piece of charcoal in the pot with boiling cabbage removes the smell.

Care of Farm Implements.

For farm implements of all kinds having metal surface exposed, for knives and forks and other household apparatus, indeed for all metals likely to be injured by oxidation or "rusting," we know of no simpler or more effective application than that furnished by the late Professor Olmstead. He used it on air pump telescopes and various other apparatus. Take any quantity of good lard, and to every half-pound or so add of common resin (rosin) an amount about equal to half the size of an egg or less—a little more or less is of no consequence. Melt them slowly together, stirring as they cool. Apply this with a cloth or otherwise, just enough to give a thin coating to the metal surface to be protected. It can be wiped off nearly clean from the surface, where it will be undesirable, as in the case of knives and forks, etc. The resin prevents rancidity, and the mixture obviates a ready access of air and moisture. A fresh application may be needed when the coating is washed off by the friction of beating storms or otherwise. There was talk of patenting this receipt at one time, but Professor Olmstead decided to publish it for the general good.

No Eggs so Good as Fresh Ones.

For the life of me I cannot see the sense in packing eggs for winter use, when, with proper care, Brahma, Cochin or Plymouth Rock hens will keep the family supplied with fresh-laid eggs. I have tried all the ways that I ever heard of, but never succeeded in keeping eggs over three months. At the end of that time they were good for eating, better than half the "fresh" eggs sold in cities, but still I could tell them from new-laid eggs. At the end of six months they "would do" for cooking—if you could get none better—but it was like "tolerable" oysters. After they had been in pickle eight months I scrambled some (they looked best that way), and tried to eat them, but my stomach revolted.

Household Recipes.

Spiced Cantaleup.—We prefer the rough skin, firm fruit, though ripe. Take out the seed, cut and pare, then cover the whole quantity with good cider vinegar. We use a large earthen crock and let it stand over night. Next morning measure the vinegar and throw away half of it. Then to every quart that is left add three pounds of sugar, and put it on the stove with the fruit, and let it simmer until you think it is done. I think we did ours over two hours. Don't forget to cook with it half an ounce of cloves and one ounce of cinnamon. I suppose that amount of spice to every quart of juice is the right way, but I only put that quantity to five pints of juice or vinegar. I also use white vinegar, and think it cheap as any. I know a good cook who does the most of her spicing and preserving in tin pans, and I followed her example and had no trouble; there is more danger of burning preserves.—*Becky, in Germantown Telegraph.*

Grape Wine.—As this is now the season for making grape wine, I send you the following recipe, which is so simple and produces such excellent wine, that I hope every one having grapes will try it:

Five Gallons Wine.—Express the juice from twenty pounds grapes, rinse the pulp and skins in as much water as will cover them, mash them and

strain through a coarse cloth, add this to the juice and put in two pounds of brown sugar to each gallon; when the sugar is dissolved, pour the whole into a keg, having the bung open, and let it stand where the temperature will be about 70 degrees until *fermentation ceases*; then bung tight, and let it rest for a month to settle, when it should be drawn off quietly, the keg well-washed, and the wine returned to it, adding one pound good raisins; and if the wine does not seem sweet enough two pounds sugar may be added to the whole. The necessity of doing this depends upon the kind and quality of the grapes.

The wine should remain until the keg is wanted the next season, when it may be bottled for use.—*M. H. S., Germantown Telegraph.*

Cheese Pudding.—Melt half an ounce of fresh butter in a sauce-pan, stir into a tablespoonful of flour; when the two are well amalgamated put in a small quantity of milk and about three ounces of grated Parmesan cheese. Stir the mixture on a slow fire till it assumes the appearance of thick cream, but be careful not to let it boil; then add some Cayenne pepper, mix thoroughly, and if required, add a little salt; keep on stirring the mixture at a very moderate heat for about ten minutes; take the saucepan off the fire and stir the contents occasionally until quite cold; then stir into them the yolks of three eggs, beaten up with a little milk and strained, and finally the whites of five eggs whisked into a stiff froth. Put the mixture into a pudding dish, and put into the oven at once. Serve quickly as soon as the pudding has risen and the top is well browned.

Green Tomato Sauce.—One gallon of green tomatoes and one pint of onions chopped fine, two pints of vinegar, one pint of sugar, two tablespoonsful of salt, one tablespoonful of ground black pepper, one tablespoonful of spice, one tablespoonful of cloves, either whole or ground, one and one-half tablespoonsful of table mustard, one tablespoonful of red pepper, a few mustard seed, and boil all together until quite tender. It is best to put up in air-tight jars and sealed. This is a delicious sauce for fresh meats in winter.

Cucumber Pickles.—The question has been asked how to put up cucumbers from the vine. Take three gallons of water, to which has been added one quart of salt, put it in a kettle and let it come to a boil. Then prepare your cucumbers in a jar. Now pour the boiling water over them and let stand twenty-four hours, when the salty water must be poured off. Then take cider vinegar make it boiling hot and pour it over them while hot. It is then ready for use.

Brattleboro Fricassee.—Take two chickens, cut them up neatly, and lay them in a skillet with two slices of thin-cut ham, two small onions, and a few blades of mace, seasoning with pepper and salt. Add a little water, and put on a quick fire. When about half done, add a pint of cream, and a lump of butter the size of a walnut, rolled in flour. Keep constantly stirring until done.

Tapioca Cream.—Put two tablespoonsful of tapioca to soak in cold water; set it on the stove, and, when thoroughly dissolved, pour in a quart of milk. When this begins to boil stir in the yelk of two eggs well beaten, with a cup of sugar. When this boils stir in the whites, beaten to a stiff froth, and take it immediately from the fire. Flavor to taste.

Sweet Green Tomato Pickles.—Wash, remove any imperfections, weigh out eight pounds, chop fine, add four pounds of white or light brown sugar; boil slowly for three hours, then add a quart of vinegar and a desertspoonful each of ground cinnamon and cloves. Boil fifteen or twenty minutes longer, and when cool, put into bottles or jars.

Frogs and Tomatoes.—Put your frog-legs in boiling water; take them out and place then in cold water; prepare your tomatoes as for a sauce, put in a casserole your frog-legs, with a piece of butter, and fry them gently, serve the legs nicely arranged in the tomato sauce; garnish with toast cut into lozenges.

Fruit Jelly.—One box of gelatine, rind of a lemon, one pint of cold water; allow this to stand one hour and a half, then add two and a half pints of boiling water, two pounds of granulated sugar, one pint of any fruit syrup; stir gently until the sugar is dissolved, then pour into mould.

Breakfast Biscuit.—Rub butter in flour in the proportion of ⅛ of a pound of a former to a quart of the latter; add ¾ of a teaspoonful of pulverized baking soda, and a little salt; mix with thick milk and bake in hot oven.

Boiled Pudding.—Six egg, well beaten; seven tablespoonsful flour, one quart milk, nutmeg; boil in a pudding boiler one hour. Sauce: Cream, one cup of butter and two cups fine sugar; add one claret glass of sherry or currant wine.

When molasses is used in cooking it is an improvement to boil and skim it before you use it. It takes out the unpleasant, raw taste and makes it almost as good as sugar.

Lamp Wicks.—Lampwick soaked for a quarter of an hour in vinegar and then dried before being put into a lamp will not smoke. Try so simple a cure.

Live Stock.

Pigs.

Black or flesh-colored pigs are freest from skin disease in hot climates. The choice is practically between the Essex and Berkshires for males with which to improve the native stock of hardy grubbers of the root-or-die variety. Those who have tried the former have been delighted at first, but after a few years began to recall with longing the lean hams and slim but solid flavorous bacon of the old race-horse breed. The trouble with the Essex pigs for the south is that they are the eat-and-sleep to sleep-and-awake-to-eat kind and their grades are, of course, like them. The side fat is superb, and so is the leaf lard, and so far the breed is all that could be desired; but the ham and shoulders are too fat for profit, and the ham is not marbled with fat like the Berkshires. These (the Berks) are much more wide awake, less easily controlled, but good foragers. Their grades are a wonderful improvement upon the original stock, may be made very fat, and yet the proportion between the fat and lean hams, shoulders and side pork or bacon is such as to develop and preserve the excellencies of the meat. The hams are large and rich and juicy, with diffused fat. Berkshires are not quite so easily fattened when penned and systematically fed as the Essex grade, but they will take much better care of themselves in the woods, and when penned or fastened for fattening, may be finished off with half the feed the original "land pikes" would require.

With many northern and western breeders the Essex is a more profitable pig than the Berkshire, because his nature leads him to take little exercise, so that all he eats goes to flesh and fat. Respiration, which, if rapid, reduces fat gently, is with him never accelerated by moving about, and with plenty of feed, the sole burden of life is to digest it. This breed is pre-eminent among the black breeds and excelled by none as fat producers.—*American Agriculturist.*

Sheep in the Corn Fields.

A correspondent of the Cincinnati *Commercial* says that he has found the corn fields excellent places for sheep. After the corn is laid by the sheep may have a week's run there with great advantage. There is fresh grass along the fence rows, and perhaps weeds that will give variety. We have never had lambs do better than in the corn fields in the fall. We bring them out every night. In this way they do not break down the corn. The day is busily spent, and the field as well as the flock looks the better for the run there.

After the corn has eared we have turned the whole flock into the fields and been well pleased with the practice. The sheep eat millions of weed seeds and very little or no corn. Should an ear be pulled off, which is very rare, every grain on that ear will be picked off and eaten by the sheep, and find no trouble in the practice of turning them into the corn fields after roasting ears have well formed. At that time pastures are generally the poorest and need rest. Changing the sheep to the corn fields will give the needed rest. Then the sheep can take the grains of the pasture before the severe frosts injure the grass. After these frosts the sheep may find a fresh change in the corn fields. Sheep need frequent changes of range, and we who have no woods or waste lands on our farms can make a porfitable change to the corn fields.

Galled Shoulders and Backs.

During the hard work of seed time, farm horses are, in some seasons more than in others—in wet and warm seasons—subject to galled shoulders and backs, which, when not attended to, are apt to produce troublesome sores. The skin is not only abraded by the collar and saddle, but irritated and inflamed; and if the irritation is kept up, an ichorous discharge takes place, which is difficult to heal without giving the horse rest. When a saddle-gall is observed, the harness should be looked to, and the pressing points which have caused the sore should be relieved. A lotion should then be used to anoint the bruised parts every night, after they have been washed with warm soap-suds, and dried with a soft cloth. The following is a useful application: Take hot lime shells of the bulk of two quarts, and pour upon them two quarts of cold water; and, after they have intimately combined, pour off the liquid into a dish. Add to this liquid five wine-glassfulls of linseed oil and two ounces of fine powdered sugar of lead, dissolved in a little water. Stir them together, and then bottle and cork up for use. After the bruises have been washed in the evening, anoint them with this liquid with a feather until the wounds heal.

Preserving Sheep from Dogs.

On one sheep in every ten of the flock put a bell of the usual size for sheep. The instinct of the dog prompts him to do all his acts in a sly, stealthy manner; his attacks upon sheep are most frequently made at night while they are at rest, and the simultaneous jingling of all the bells strikes terror to the dogs; they turn their tails and leave the sheep, fearing the noise of the bells will lead to their exposure. The ratio of bells may be made to vary according to the size of the flock.

Driving After Eating.

The digestion of a horse is governed by the same laws as that of man, and as we know that it is not best for man to go at hard work the moment a hearty meal is eaten, so we should remember that a horse ought to have a little rest after his meal, while the stomach is most active in the process of digestion. Many a good horse has been ruined by injudicious haste in working him with a full stomach.

Hurrying the Cows.

If moderation is needed anywhere on the farm, it is in the driving of cows. A boy or a dog that will hurry, and therefore worry, the cows as they are taken to and from the pasture should be to put it mildly—attended to. Boys, do not run the cows home, even if it is getting late, especially if it is on the way to the yard and their udders are full of milk.

Apiary.

The Harvest White Honey.

Our honey harvest usually commences about June 20th, and closes from July 20th to August 10th, unless we get a yield of buckwheat honey, and in that case it closes about September 1st, we almost always having a period of nearly two weeks scarcity between the white honey harvest and buckwheat. The 4th of July is the earliest we ever took off any box honey, we believe, so we will suppose that our swarming is all done up by the time this reaches you, and we are ready to look after the boxes. If you did not forget to put your boxes which were nearly full of comb in the centre, on top of each hive, you will now only need to look after those to ascertain if any are fit to come off, as those will certainly be the first finished. To do this, get your smoker, gently pry the cases apart with a stout knife, blow in a little smoke so the bees will get out of the way, and you can see if they are completed. If they are, pry the cases off a little at the bottom, and then lift out gently the case holding the finished boxes, and give it a quick shake, as you would a frame, to dislodge the bees from it. Shake the bees off at the entrance so they may readily enter the hive, remove the boxes from the case, and shake off from each separate box the few bees that may still cling to the honey; fill the case with empty boxes provided with starters, and put it in place again on the hive. Set your honey in your wheelbarrow or cart which you have to carry the honey to your honey-room with and go on to the next hive, and so on until the apiary is gone over. There is little danger of robbing at this season, but if the bees seem disposed to follow your honey, keep it covered with a sheet.

In a week start over the apiary the second time, and so keep going over it once a week, being sure that all filled boxes are removed, and thus your honey will be nice and the combs as white as snow. If you use side boxes, raise the partly filled ones from the sides and put them in place of the full boxes, raise the partly filled ones from the sides and put them in place of the full boxes taken off, and place the empty ones at the sides. We usually place but one tier of boxes at the sides at first, and then when the bees get well at work in them, push them out and place the other tier between them and the side of the hive, thus inciting the bees to greater activity. As the season draws to a close, we raise the side boxes to the top and close the sides with the followers, so as to get all boxes commenced in filled, if possible. With the top box hives, we crowd the partly filled ones together, placing the empty boxes on the outside instead of the centre, as at first. It usually takes us four days to go over the apiary in the height of the season, leaving us two days to look after our nuclei and attend to the many duties which devolve on the apiarist.

Store your honey in a small, tight room, placed on scantling, so that the fumes from burning sulphur can enter or pass between each box, so as to kill the larvæ of the wax moth, which always appear to a greater or less extent, burning three-quarters of a pound of sulphur to every two hundred cubic feet contained in the room. To best do this your scantling should be raised at least a foot from the floor, and a kettle with some coals in it placed beneath. Pour on the sulphur, close the room tight, and leave it for fifteen minutes, when it should be opened to let the smoke out, for if it settles on the combs it will give them a greenish tint, or if you burn more than the above amount it will turn the combs green. We have found it a nice point to burn just enough sulphur; if you use too much it hurts the looks of the honey, and if too little all the worms are not killed. Burn your sulphur two weeks after the boxes are removed from the hives, as the eggs are generally all hatched by that time, and if you store all in the

same room sulphur once in two weeks till the last is off. Your honey should be assorted, as piled, into about three grades—first, second and third quality. Put nothing but No. 1 in the first, the colored combs and the mixed in the second, and the buckwheat in the third. By this way you will be saved trouble when you come to crate for market. In short, have an eye to business, as this month is the harvest time for beekeepers in most localities, and leave no stone unturned that will give you a pound more honey.—*G. M. Doolittle in American Bee Journal.*

Why Bees Work in the Dark.

Every one knows what fresh honey is like—a clear yellow syrup, without any trace of solid sugar in it. After straining, it gradually assumes a crystal appearance—It candies, as the saving is, and ultimately becomes a solid mass of sugar. It has been suspected that this change is due to photographic action —the same agent which alters the molecular arrangement of the iodine of silver on the excited collodion plate and determines the formation of Camphor and iodine crystals in a bottle, causes honey to assume a crystalline form. M. Schriber inclosed honey in well corked tubes, some of which he kept in perfect darkness, while the others were exposed to the light. The result has been that that portion exposed to the light soon crystallizes, while that kept in the dark remains unchanged. Hence we see why the bees are so careful to work in the dark, and why they are so careful to obscure the glass windows which are sometimes placed in their hives. The existence of the young depends on the liquidity of the saccharine food presented to them, and if light were allowed access to this, in all probability it would prove fatal to the inmates of the hive.—*Western Farm Journal.*

Fertile Workers.

At the Western Illinois Convention, Mr. Argo said: Fertile workers used to be my masters, but now I am their master. About mid-day take out two or three middle frames from the hive, with a fertile worker; go about ten yards from the hive and shake off every bee in a pile, then take the frames to a strong stand and exchange for frames full of brood, with the young bees just emerging. Brush back the bees and give the frames to the fertile worker-stand and close up. Then you can give them a queen in the cage or cell to rear one by night, as by that time there will be young bees enough out to accept and protect either. Besides, if the fertile workers ever found there way back to the hive, they will kill them when they have a queen or a cell. I never failed in this method.

POULTRY.

Save the Choice Fowls.

It is too commonly the practice among our fanciers who are so fortunate, year after year, as to be able to produce finer specimens of fowls—of one kind or another—to dispose of their better kinds to the first comer who will pay the fancy price demanded for these best examples.

The temptation of twenty, thirty or fifty dollars for a choice pair, or often for a single specimen that is A 1 in a quality, is very great, it must be admitted. But it is rarely that such successful raiser of these beautiful fowls reflects upon the importance of retaining in his own possession these extra cocks and hens—with which he may be able to produce, in a little while, dozens or scores of their like—should he keep and breed them himself.

We suggest the propriety and advantage to the original breeder of such exceptional fowls of saving these choice samples for himself in many cases. No one can breed these birds so well as *he* can. No purchaser can take such extra fine fowls away and breed from them so successfully as can the man who knows how they are produced and what they should be mated with, to yield the average of future good results.

At the least, we conceive it most advisable to retain some of our choicest breeders for use in succession. We went into the yards of an Asiatic fancier recently, who has bred some rare birds in the past three years, and were astonished when we asked to see the splendid fowls we knew had taken so many prizes latterly, to be informed that he had "sold them *all*—at very good figures, too!"

He relies upon his young stock, now coming up, for future operations. But we could not avoid the impression that he had made a mistake in thus clearing out his pens of the fine old birds.

Save some of the best ones annually. You may make a few dollars by your sales, but your patrons are the men who make the best of this bargain with you in the end.—*Poultry World.*

Poultry Notes.

Take care of the young chicks; protect them well at night from rats, cats, and "varmints," keep their coops out in a clean grass plot, and keep the henhouse well cleaned and whitewashed. Don't pen up chickens, if you wish them to be healthy; let them run and catch the insects.

The value of milk as a drink for chicks, or as a fluid, when scalded, with which corn meal and bran may be mixed for their early diet, can scarcely be overestimated.

Feed often. All the younglings can eat up clean at a time should only be furnished. Pouring into the coop a mass of meal-posh, uncooked and watery —to "save time"—is *not* feeding chickens well. If hungry, they will devour a portion of this mess, but it does them little good comparatively. The balance sours, they peck it for lack of something better, and shortly we find them scouring, getting ill, weakening in the legs, and dying off by degrees. Good, sweet, sound food is indispensable.

Some farmers make it a practice to keep their poultry in their orchards from early spring until cold weather sets in, and they find that it pays. A picket fence should be built around the orchard, high enough to prevent their flying over, with suitable buildings in one corner of the yard to shelter them at night. Thus situated the poultry will thrive and prosper, keeping themselves in good condition, and the increase of eggs will be greatly augmented and their usefulness enhanced to their owners at least, on account of the myriads of insects and worms they destroy, and which will more than repay the cost and labor of building the fence. By keeping them inclosed in this manner, a large number of fowls may be penned in the orchard, and the continual scratching which is done by them will prove advantageous both to the soil and trees themselves. —*Western Agriculturist.*

Vegetable Food.

Any of the roots—as potatoes, rutabagas, turnips, carrots, etc., when boiled and mixed with corn and pea-meal, make an excellent and economical daily food for poultry. In this form fowls are fond of the diet, and it works very kindly with them.

Most inexperienced breeders think it necessary to dole out dry grain only to their chickens—generally whole corn—from year's end to year's end. And where large numbers of fowls are kept it is often considered too troublesome to supply cooked vegetables for the fowl stock, the dry-feed system being the handiest, of course.

But there is nothing that is so great a help to the poulterer, first and last, either in the cost or through the benefits to be derived to the stock, as a regular feed every day of cooked vegetables. We have tried this particularly for years, and we have found it highly advantageous, as compared with any other method of feeding.

There are other kinds of vegetables also which are quite as valuable as are the *roots* mentioned, for use among poultry, in their season. The leaves of turnips or carrots, raw cabbages at any time of the year, green corn in the ear, etc., may be given to poultry freely, and these will all be relished. But if at least one-half of all the food given them be of some sort of vegetable and green, fowls will constantly be found in better health and in finer condition than when fed in any other way.—*Poultry World.*

Poultry.

Poultry needs far more care during damp, rainy, or wet weather than during the dry, warm weather or the clear cold of winter, for dampness engenders numerous disorders, many of which are difficult to cure, therefore it is always better to apply the preventive than to administer the supposed cure.

LITERARY AND PERSONAL.

CIRCULAR LETTER of Commissioner of Agriculture, relative to the manufacture of maize and sorghum sugars, 21 pp. octavo, Washington, D. C. W. G. LeDuc, Com.

QUARTERLY REPORT, of the Kansas State Board of Agriculture, for the quarter ending, June 30, 1879. Also containing statistics relative to industries, population, &c., &c., by counties. Alfred Gray, Secretary, Topeka, Kansas, with table of contents, 66 pp. 8 vo.

Report of Condition of Crops to Aug. 1st, 1879. 25 pp. octavo, including Table of Statistics, Washington, D. C.

The foregoing documents are all interesting and useful to the farmer and the farm, and may be obtained by sending a postal card to the respective addresses.

WHOLESALE PRICE LIST, of the Bloomington Nursery. Principal office ¾ mile N. E. of Court House, and one mile south of Normal School: three blocks south-east of Normal Passenger Station, Bloomington, McLean Co., Ill. For the fall of 1879. Baird & Tuttle, agents. For J. S. Tuttle and A. Follet, Proprietors, 20 pp. octavo.

A GENERAL INDEX of the Agricultural Reports of the Patent Office for twenty-five years, from 1837 to 1861, and of the Department of Agriculture, for fifteen years, from 1862 to 1876. By the commissioners of agriculture. This is an octavo of 225 pages, and will be exceedingly convenient to those who wish to consult those reports, and especially to those who possess them; and will add materially to their value.

Not a subject that has been treated in those reports during the last forty years, but what may be found, under its proper letter, in this index, and the Government has been very considerate in publishing it.

We are indebted to Cyrus T. Fox, Esq., Secretary, for a complimentary copy of the Premiums, Rules and Regulations of the Berks County Agricultural and Horticultural Society, at their twenty-fifth annual Exhibition; to be held at Reading, Pa., on Tuesday, Wednesday, Thursday and Friday, September 30th and October 1st, 2d and 3d, 1879. Berks county is famous for its agricultural shows, and to judge from the enterprise manifested in this premium list, the one this year is going to be a success, for it is exceedingly liberal, and looks more like business than any we have seen the present season.

AFIELD AND AFLOAT. A demi-folio of 12 four column pages; devoted to such subjects as may be legitimately included in its title, namely sporting intelligence in general, and the manipulations of the Rod and Gun, and military matters, in particular. Published by the "Afield and Afloat" Company, at 607 Sansom street, Philadelphia, every Saturday, at $2.00 per annum. W. C. Harris, managing Editor. This is a remarkably well gotten up journal, with faultless typography and a fine quality of paper; and on the whole, its literary composition is of a superior order in the sphere of its operation. To those who lean towards the pleasures of the rod and gun, it is of inestimable value.

CARPENTRY AND BUILDING, a 9 by 13 quarto of 28 three column pages, devoted exclusively, in its advertising and literary departments, to the inter ests of theoretical and practical building; finely embellished with appropriate illustrations, printed on fine white calendered paper, and in clear type. The August number before us has seventy-two illustrative figures, explanatory of elementary and practical building, exclusive of those which exemplify the advertisements, and 60 separate articles on various collateral subjects. One dollar a year, monthly, 83 Read street, New York; 2.0 South Front street, Philadelphia; 77 Fourth street, Pittsburg; Merchants' Exchange, Cincinnati; Eighth and Market streets, Chattanooga; a single number, 10 cents.

ANNUAL REPORT upon Explorations and Surveys in the Department of the Missouri, by E. H. Ruffner, 1st Lieutenant of Engineers U. S. A. Being Appendix S. S. to the general work. Through the kindness of Prof. Herman Haupt of Reading, Pa., we have received a copy of this work, in octavo, and about 200 pages. In addition to other matters it contains reports from Prof. Asa Gray, Prof. T. S. Brandegee, Prof. Cyrus Thomas, and Prof. Herman Strecker, on the Botany and Entomology of the survey.

Prof. Strecker's paper is illustrated with beautifully colored figures, making two full page plates, among which are eight new species of Lepidoptera. Our thanks are due for this act of kind consideration.

"THE SOUTH"—A journal of Southern and Southwestern progress—Ably inculcates the doctrine that "wealth is a natural element to be utilized by labor. The highest human condition is possible where climate, soil and minerals exist in the greatest perfection." Office No. 9 Spruce street, Printing-House Square, New York; August, 1879. $1.50 a year in advance. This may be called a monthly demi-folio of 20 pages, and four columns to the page; and as it is solid and mainly in small type, it contains a more than ordinary amount of well written and well selected reading matter on subjects relating to its specialties, as set forth in its enunciation of principles—principles that underlie our whole social system, however the rigidly righteous may affect to despise them; for wealth is the great lever of progress, and when we regard it as a "natural element," and subordinate it to the rational and the spiritual, it may become the medium of human regeneration.

RUSSEL ON SCIENTIFIC HORSESHOEING, for the different diseases of the foot. An octavo of 142 pages, with a full page portrait of the author, and fifty excellently executed wood-cut illustrations, distributed throughout the work; together with *five similes* of the International diploma of 1876, and of Centennial and Cincinnati Industrial medal; in eight chapters and an appendix. This is a remarkably well gotten up work, printed with clear type, and on fine tinted calendered paper. These chapters treat respectively on anatomy, the practice of shoeing, shoeing of different kinds of horses, diseases of the foot, forging, speedy cutting, &c., gaiting and balancing the action of horses, the mule, and shoes used for specific purposes, with observations on the training and responsibilities of farriers, &c. If horses are to be shod (and we think to be used in cities with paved streets, and overhard macadamized roads, they ought to be, notwithstanding the modern theory to the contrary,) then they ought to be scientifically, artistically and practically shod; and reliable information on those very subjects is what this work professes to furnish. Substantially bound in cloth, and published by Robert Clark, & Co., Cincinnati, Ohio.

A HOME ORGAN FOR FARMERS.

THE LANCASTER FARMER,

A MONTHLY JOURNAL,

Devoted to Agriculture, Horticulture, Domestic Economy and Miscellany.

Founded Under the Auspices of the Lancaster County Agricultural and Horticultural Society.

EDITED BY DR. S. S. RATHVON.

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All subscriptions will commence with the January number, unless otherwise ordered.

Dr. S. S. Rathvon, who has so ably managed the editorial department in the past, will continue in the position of editor. His contributions on subjects connected with the science of farming, and particularly that specialty of which he is so thoroughly a master—entomological science—some knowledge of which has become a necessity to the successful farmer, are alone worth much more than the price of this publication. He is determined to make "The Farmer" a necessity to all households.

A county that has so wide a reputation as Lancaster county for its agricultural products, should certainly be able to support an agricultural paper of its own, for the exchange of the opinions of farmers interested in this matter. We ask the co-operation of all farmers interested in this matter. Work among your friends. The "Farmer" is only one dollar per year. Show them your copy. Try and induce them to subscribe. It is not much for each subscriber to do but it will greatly assist us.

All communications in regard to the editorial management should be addressed to Dr. S. S. Rathvon, Lancaster, Pa., and all business letters in regard to subscriptions and advertising should be addressed to the publisher. Rates of advertising can be had on application at the office.

JOHN A. HIESTAND,

No. 9 North Queen St., Lancaster, Pa.

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The Lancaster Farmer.

Dr. S. S. RATHVON, Editor. LANCASTER, PA., OCTOBER, 1879. Vol. XI. No. 10.

EDITORIAL.

THE WEATHER.

Has the "oldest inhabitant" ever before noticed sixteen consecutive days in the month of October, during which the temperature was elevated to the 80's and 90's of the thermometer? We confess that we never have, and we are now as old as Washington was when he died. We have seen one or two days, rarely three, but never seventeen as has been the case the present season, including the last day of September, which was nearly as warm as the sixteen following days.

The southern portion of Lancaster county is, and has been for some weeks, very dry, and the water in the streams and wells very low; indeed some of them have been compelled to "dry up," a contingency very inconvenient and uncomfortable to domestic life, especially on farms which have no running streams flowing through them. A good long "soaking rain" would now be desirable, but not accompanied by such warm weather as we have had for two weeks or more.

Such weather is a great breeder of the Hessian-fly, midge and other noxious insects. It also heats the ground and invigorates the "grubs" and other insects hidden therein. Even plowing them up during such weather would hardly compass their destruction. First, because during warm weather they have sufficient vital energy to rebury themselves. Moreover, the birds are now about leaving us and many of them have already left for the sunny South, although, perhaps, had they known it would have continued so warm they would not have been in such a hurry. This being the case, few birds except crows will be on hand to eat up the grubs and other insects that may be turned up by the plow. On the 18th of October, the hot spell of weather was, in a measure, broken, but still it continued warm and murky, good weather for the growing crops, but with warm rains likely to bring them too far forward to bear the winter well.

Up at Lancaster, N. H., the heat was 100 on the 9th, and from many other points similar reports come in. On the 15th the large and beautiful butterly (*Danaus archippes,*) was flying about the streets of Lancaster as gay as in midsummer, and the "White Cabbage Butterfly" (*Pieres rapæ,*) was quite plenty on the 14th and 15th. The Susquehanna is now quite as low as it was in 1803, which is the lowest on record. The mill streams are getting *low* and flour is getting *high*. Many wells and springs have become dry that have not been in that condition for half a century—and still no rain.

"COMMON SENSE."

We have received a very handsome little volume purporting to be a common sense treatise on the treatment of asthma, consumption and catarrh, and especially *nasal catarrh*, or "cold in head," (or any other nose, throat or lung disease,) by Dr. N. B. Wolfe, of Cincinnati, Ohio. The doctor has made the treatment of the organs of respiration a special practice for over thirty years, and has put his varied experiences and reflections in this little monograph, which he offers "*a free gift*" to any person suffering from any of the above diseases. The book is very handsomely printed and illustrated, and not the least conspicuous is the portrait of the doctor himself. He invites all to send for it by all means, especially if suffering from sore throat or lungs, cough or disease of the nose, &c.

Dr. Wolfe was formerly a citizen of Columbia, in this county, and we think was born there or at Wrightsville, immediately opposite, in York county. We knew him, or knew of him, "long, long ago," when, as a little "Nap," he commanded a company of juvenile volunteers in the borough of Columbia. We have perused his book, and we think that in the abstract he is on the right track in the treatment of nasal catarrh and bronchial inflammations. We have suffered many weary years with nasal catarrh, and if we could have had access forty years ago to treatment akin to his system we believe we could have saved our hearing, which now, alas, we fear, has departed forever. We have long been using medicated fumes, vapors, infusions and deturgents, and without pretending to say that these alone have arrested the chronic character of our case, yet it is chronic no longer, and in acute attacks we invariably resort to *inhalations*, and generally with good results. A physician who makes this mode of treatment a specialty would, no doubt, be preferable to one who only employed it incidentally. Without intending to forestall the judgment of our readers we think we can commend the perusal of this book to their favorable consideration.

OUR LATE LOCAL EXHIBITION.

The Fair of the Lancaster County Agricultural and Horticultural Society, at the Northern Market House, on the 10th, 11th and 12th of September last, was, under all the circumstances, both financially, and in respectability of display, a success. It illustrated fully that with the proper time and effort, Lancaster county *can* and *will* get up an exhibition that will rival successfully any other district of the "Keystone State." With a liberal and systematically detailed premium list, an early and energetic beginning, and a more extensive advertisement, we feel confident that the society in future will be able to accomplish its end with credit to itself and the community. The present season has been peculiarly a prolific one in the getting up of exhibitions all over the country, and so far as we are able to learn, they have been generally successful. As long as they do not involve a financial loss to the societies getting them up, or to exhibitors participating in them, we may regard them as successful, for there are compensations accruing to the participants in them and the public at large that are beyond immediate pecuniary calculation—like bread cast upon the waters that will return after many days.

MAPLE COCCUS.

A new insect, to this locality, made its appearance during the present season on two "sugar maple" trees (*acer sachariun*) standing in East Orange Street, on the south side of St. James' Church, which seems to be the *Pseudo-coccus aceris*, of Europe, or an insect nearly allied to that species, and is supposed to have been, in some manner, imported from that country. There are millions of them, but it does not yet appear to what extent they will be injurious to the trees they infest. None have yet been noticed on the "silver maple" (*acer dasy carpaun*); but there are very few leaves on the sugar maple that have not more or less of the white flocculent or cotton-like matter on the under sides, which they secrete, and which covers them. All the fissures in the bark, on both the trunks and the branches are filled with granulations of the same white substance, and many of the insects are secreted under it, and will thus pass the winter. Those attached to the leaves have probably perish; but as they are tolerably active, although almost invisible to the naked eye, and may crawl up the trunk, it would be well to gather up the leaves as fast as they fall and burn them, even though they *may* be as harmless as the famous "kegs," during the revolution.

THANKS.

It gives us more than ordinary pleasure in having occasion to return our sincere thanks to Messrs. William Weidle, M. D. Kendig, and Daniel Smeych, for generous donations of Peaches, Pears, Grapes and Apples, of a lusciousness and a flavor most grateful to the "touch and taste." These gentlemen are celebrated for the production of fine fruit, and in that respect, may justly be ranked in the class of Horticultural benefactors; and in nothing is this more manifest than in their kind remembrance of the toiling editor. If the man who causes two blades of grass to grow where only one grew before may be esteemed a benefactor, how much more those men, who, through thought and patient labor of head and hand, have wrought such wonderful improvement in the size, the texture, and the flavor of the different varieties of fruit. May they receive their reward.

QUERIES AND ANSWERS.

LARGE WATER-BEETLE.

A fine large specimen of *Cybister fimbriolatus*—a chestnut-brown Water-Beetle—was placed in my possession by Mr. Hiram Stamm, that had been captured alive by Mr. John J. Tripple, of Safe Harbor, Lancaster county, Pa. Mr. T. captured this insect in his rain-stand, and never having seen anything of the kind before he is naturally anxious to know what it is, and how it got into his rain-stand. These insects breed in the water, and although, other things being equal, it might have bred in a rain-stand as easily as elsewhere, still I do not think it did; simply because in its larval condition it is a most voracious feeder, and would not be likely to find food enough there—indeed, they have been known to be very destructive to the fry of fish in fish-ponds. Although they are aquatic in their habits, yet in the adult state they are provided with ample wings, which lie folded up laterally and transversely beneath their *elytra*, or shield-like wing-covers, and by the aid of these they are able to mount into the air and fly a considerable distance, and hence they often fall on the roofs of buildings, from whence they find their way into the gutters, down the spouting, and into rain-stands and cisterns. I have found them in the gutters of our streets, or in the street itself, floundering about without being able to make much headway. They pass the winter in the mud, at the bottom of ponds and streams. This subject would probably have been in the mud by this time had it not been for the extraordinary warm weather now pending, which doubtless has deceived it, and should it continue much longer we may next look for a return of the swallows. This insect is nearly two inches in length and one inch broad, elliptic in form, and a polished chestnut-brown in color. Its hind limbs are like a pair of oars, and it uses them as such. It uses them very effectively in water—its natural element—but it is an indifferent pedestrian on land.

SPECTRE INSECT.

Mr. L. H., North Queen Street.—The large, gray, and long-legged and long-bodied insect you sent me is the "Spectre insect," or "Walking-twig," (*Spectrum femoratum,*) and belongs to the order ORTHOPTERA, section *Ambulatoria*, family *Phasmidæ*. It feeds on vegetation and is remotely allied to the crickets, grasshoppers and true locusts. It

nsusually feeds on the leaves of trees—especially the sassafras—and instances are known in which it has been destructive. This is a female specimen and is unusually large.

COMMUNICATIONS.

LETTER FROM MISSOURI.

BENTON CITY, Audrain county, Mo., Sept. 27th, 1879.

MESSRS. EDITOR: If you think the following would interest your readers please give it room in your columns:

Benton city is on the St. Louis, Kansas City and Northern Railroad, one hundred miles from St. Louis and seven miles from Mexico, which is the county seat of Audrain county, and has a population of about 6,000, but no saloon. Good unimproved land—prairie and timber—is worth from $4 to $8, and improved land $8 to $16 per acre. Wheat is yielding 15 to 30, and corn 30 to 60 bushels per acre. We have good soil, markets, lumber and water. Also, good schools and good society, and a healthful climate, but the country needs more farmers and manufacturers. I have lived here several years and I find that I can do better on a farm here than I could do in any of the several States in which I formerly lived. The stock range is an item of considerable importance. Sectional prejudice is a thing of the past here now. The population is from all parts of the Union, and sectionalism would not know where to begin.—*Respectfully, B. F. Wyldc.*

INTRODUCTORY.

We offer no apology for publishing entire, in the FARMER, the following diary of a trip from Elk Grove, California, to the shores of the Pacific. It is written by an old and esteemed native citizen of Lancaster county, who cast his fortunes in the Golden State thirty years ago, and who will probably end his days in that modern *El Dorado*. He has always been plain, unostentatious, honest, frugal and industrious—an honor to his town, his county and his State—and his domiciliation in California, we feel confident is as great a gain to that State, as his absence is a loss to ours. We believe our readers will be interested in his narrative, and some of them may wish, as we have, dozens of times in reading it over, that they had been with him, to have had a practical demonstration of the scenes he describes so graphically. From it they may gather something about the civil and physical geography of California—its products, its curiosities, its world-wide wonders, and its local phenomena. Of course, he makes no pretension to scientific lore, or he might have developed much that would have been of material interest to the scientific specialist. As it is, it cannot but be interesting and also useful to the farmer, the fruit grower, and the cultivators of cereals and garden truck. Under any circumstances, a journey of that character far more satisfactory in making personal observations upon the country passed through, in relation to its quality, its soil, its hills and valleys, its productions, its people and their ways of doing things, their social and domestic condition, and its climate, than in passing through it at a rapid railroad speed—at one moment elevated in mid air, and the next driving through deep excavations and dark tunnels, with all visible objects swiftly receding from view, and apparently running with reckless speed in an opposite direction. Commend us to this "good old way" in gaining a knowledge of the texture and composition of the country we are traversing for pleasure and profit.

"March to the Sea."

ELK GROVE, September 11, 1879.

EDITOR LANCASTER FARMER—*Dear Sir:* General Sherman marched from Atlanta, Georgia, to the Sea; but according to the adage of the famous Sam Patch, "some things can be done as well as others." My friend, Mr. Stewart, Mrs. Stewart and myself, fitted up a two-horse wagon for the purpose of going from Elk Grove, Sacramento co., Cal., to the shores of the Pacific Ocean. We set out on the *24th of July*, 1879, at 7:30 a. m., and arrived at Sacramento City at 12, m. Here we purchased a tent, provision, and an outfit for camping at our various stopping places. After loading up our cargo we started again on our journey, and crossed the bridge that spans the Sacramento river, entered Yolo county, continued up the river, keeping on the levee until we reached Mr. Clark's ranch. The day being very warm, we made our first camp for the night. Mrs. S. got us up a nice supper of beefsteak, boiled eggs, coffee, cake, and cheese. After supper we pitched our tent in a shady grove, where the Alfalfa clover was two feet high.

July 25. This morning we started for Woodland, which is quite a large town, situated in the wheat-growing district of Yolo county; they were at this time busily engaged in threshing their wheat of which they had a large crop. After leaving Woodland the next place we arrived at was Madison, a prominent railroad station.

There is an immense flouring mill at this place; also large storehouses; and there are hundreds of tons of wheat piled up in and about the place. After leaving Madison we took our course up the Cache Creek Valley. This valley has some of the best farming land in the county of Yolo, or perhaps anywhere else in the State. After reaching the head of the valley we entered the canyon, which has a very heavy grade. After traveling up this grade we reached the top of the mountain and came to a fine sulphur spring, on a ranch belonging to the widow Fisk. To-day we saw the first deers,* on the grade descending the mountain on the other side, and after driving pretty late we pitched our tent and camped on Mr. Hall's ranch.

July 26. This morning we had "California Quail"† for breakfast, and it being Sunday we remained late in camp to rest our horses. After starting out again we visited some of the quicksilver mines, being now in Lake county. We also came across a sulphur spring, and also some soda springs, and after resting ourselves and horses we started on and camped for the night two miles from the town of Lower Lake, in the county aforesaid.

July 27. This morning we drove into town and fed our horses. This town is supported by the quicksilver mines, and the small mountain ranches in the neighborhood; after leaving here we drove on until we came to good water and grass, and here camped for the night. There is a ranch of 480 acres of the most splendid land here on the top of the mountain. The man that lives here informed me that he could not grow corn nor vegetables on his ranch, as the deer were so numerous that they destroyed everything in the shape of garden truck. They have to make a high fence around their enclosures in order to keep out the deer.

July 28. This morning we met a camp of hunters. They brought in two deer and we bought a hindquarter from them, so we had venison for breakfast. After breakfast we struck camp and reached Kelseyville at 8 o'clock, A. M. From there we went to Lake Valley, which is, in my opinion, one of the greatest wheat-growing valleys in the State of California, and raises immense crops. At 11 A. M. we arrived at Lake Port, which is quite a fine town, situated on the upper end of Clear Lake. This lake is about forty miles long and has several steamboats navigating it. After leaving Lake Port we passed through Scott's Valley, which is small but very rich. The people were just engaged in heading (harvesting) their wheat. At 2 P. M. we arrived at Potter Valley, and after dinner we hitched up and took the road for Blue Lake. Traveling about twelve miles we held up and camped for the night. Our bill of fare, as usual, was fresh venison and quails, prepared in Mrs. S.'s best style; and doubtless they were better than those of the Israelites in the wilderness.

July 29. After setting out from camp this morning, we arrived at Blue Lake at 10 a. m. Blue Lake is one of the most beautiful sheets of water that can be imagined, and is as blue as indigo. It is about four miles long, and we continued down its margin until we came to a place called "Valley Rest," where we stopped to lunch. After traveling down the Canyon for some distance we came to a stream that was literally filled with trout,* and here we camped for the night, being just one week from home.

July 30. Mr. S. got an empty barley sack and made a seine and commenced fishing, with indifferent success. At 10 a. m. we arrived at Ukiah which is the county seat of Mendocino county. There is a very fine Court House here, and it is a lively and handsome town. This is a good wheat growing valley, settled among the mountains. After buying supplies we started on the up grade for the mountains. This was the heaviest grade we have thus far met with. We arrived at the top of the moutain at 6 p. m., and camped at a spring called "Shady-side." Here we fell in company with Mr. Lapham, wife and brother, from Ohio. He is an artist taking steroscopic views of some of the mountains and valleys, of which these are some of the most magnificent in our country.

July 31. This morning Mr. Lapham took a view of our two camps, and the scenery around them. We now commenced to enter the Red-wood† timber over a heavy grade, and after traveling all day we camped at a place called "Prairie Camp."

August 1. This morning we crossed the north fork of Big river. In crossing the mountain we saw a small bear‡, but as we had not lost anything we passed him by. At noon while feeding the horses, we picked a bucket full of huckleberries, there§ being acres of the finest here. At 4½ p. m., we arrived at Mendocino city, and the Pacific Ocean. Here the weather was so cold as to render a change of clothing necessary in order to be comfortable. We encamped at Little river in an enclosure belonging to Mr. Stevens, which sheltered us from the winds, which nearly always prevail along the Pacific coast. We were now just ten days from home.

August 2. This day was spent in taking a view of the coast, and collecting shells, of which there are sometimes an abundance, and occasionally some rare ones.

August 3. To-day Mr. S. and myself collected shells and crabs,‖ when the tide was out, and we had them for dinner, with potatoes baked in the ashes, and huckleberry pie, and they were eaten with a relish more than usual.

August 4. To-day Mr. S. and myself, accompanied by an old German, went out on the coast to collect Abolonies, but it proved a complete failure. We then made arrangements with an old sailor to go out again next morning.

August 5. This morning Mr. S. went out with the sailor, and they soon came back with a sack full of the "Abolonies."¶ We did not want them for the animal mollusk so much as we did for the shell. Mrs. S. fried one of the

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*These were probably the "Black-tailed Deer," (*Cervus columbianus,*) as this species is confined mainly to the Pacific coast of North America.

†"California Quail" (*Lophortyx californicus,*) a beautiful crested bird belonging to the PERDICIDÆ, or Partridge family.

‡The bear was probably the common brook trout (*salmo fontinalis*), which abounds in many of the clear streams of northern North America.

§Red-wood.—This may be the Red-pine or Norway pine (*Pinus-rubra*) which is so widely distributed throughout our country and is so extensively used in shipbuilding, and especially for masts, if not, what is it?

‖Probably the young, or a variety of the "Black Bear," (*Ursus americanus*). The "Cinnamon Bear" of California and Oregon is said to be only a variety of the common Black Bear.

¶There are four species of "huckleberry" in the United States (*Gaylussacia*), namely the Box (*bracteera*), Dwarf (*dumosa*), Blue (*frondosa*) and Black (*resinosa*), of which the dwarf seems to be the most ABUNDANT. Heath Family.

‖Probably the common "edible crab" (*Lucca dicantha*), abounding along all our coasts.

¶The term "Abalony" is new to us and must be very local. From the fact three or four adult persons made a meal off it, and that probably the shell was saved entire, it must have been a large bivalve, sea shell.

abolonies for dinner, and I do assure you it was very fine. She was so well pleased with them that she went to the old sailor's camp and presented him with a can of fruit. Mrs. S. is a real lady—one of nature's nobility—and enjoys camp life hugely. She is never tired, and is always in a good humor and ready for anything that may turn up in the way of rational pleasure or fun. We spent our time very pleasantly on the coast, but the weather is much cooler than it is in the interior, or even five miles back in the timber lands. This is a great timber country. There are sawmills all along the coast and on all the streams running into the ocean. There is a very large business done here in the way of getting out railroad ties and fence-posts. The timber is red-wood. The weather being cold and windy, and the fogs and dews heavy, Mr. S. took sick, he being unwell when we left home, but gaining all the way until we came here. We had to leave the coast after being here just one week.

August 7. This morning we struck our tent, broke camp, and went down the coast about seven miles. At this point we left the coast and started for the mountains. After traveling eighteen miles we reached Navaro river, where we pitched our tent at a fine soda spring. There are quite a number of persons here from San Francisco and Oakland. After sojourning here four days, on Aug. 11 we set out on our journey up the Navaro river to White Hall, where we struck Ranchero river, and at 5 o'clock P. M., we camped near Russian river, in famous Sonoma county.

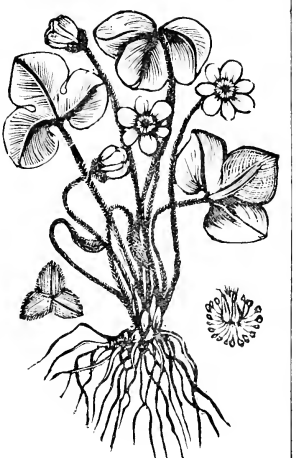
August 12. This county has the reputation of having the largest vineyard in California, if not in all the world, having an area of over seven hundred acres. "How is that for high?" Nothing but grapes on grapes, "far beyond the straining vision's gaze." We camped at a place called Alder Glen, kept by Mr. R. J. Shipley.

August 13. Here there are a number of soda springs, four of them being all in a line, and can all be covered with a sixteen feet board, and each spring had a different kind of water flowing from it. They are visited by a great many invalids. It is a beautiful place, just fitted up this season with rustic seats and fine walks on the mountain, and other improvements.

August 16. Mr. Shepley is to-day bottling soda water and shipping it to San Francisco, and does a very large business in that line. Although everything is very nice here, and Mr. S. seems to be a nice sort of a man, yet he is something of a "bilk." After making a bargain with him for hay for our horses he charged us just double the price we agreed upon, when we were ready to start away. There is within three miles of this a lady doctor, by the name of Preston, who claims to have received her gift directly from God, and professes to cure almost any kind of disease. She is not a medium, and disclaims having anything to do with spiritism. There are hundreds of patients here in waiting. Every house in the neighborhood has as many boarders as they can accommodate, and in Cloverdale it is the same, besides a great many that live in tents. I had a good opportunity of seeing and conversing with a number of those who had been treated by her, as many of them came to the springs every day for soda water while I was there. No person drinks any other kind of water while here. There is one gentleman here who had doctored with all the best doctors in the State, and had spent thousands of dollars in vain. He had cancer of the stomach, and his physicians all told him that they could do nothing for him, and he therefore must die. He heard of Mrs. Preston and thought he would *try* her, anyhow. When he first came here he was carried into the house. He is now well, and the day before we left the springs he went out and shot a deer and carried it half a mile on his shoulders. This is only one case out of a great number. Mr. Stewart was on the sick list when we left home and when we came here he went to see her. She told him the nature of his disease—his aches and pains—much better than he could tell himself, and at no time was within six or seven feet of him. She is truly a wonderful woman, and all speak in her praise.

August 17. After remaining three days at Alder Glen, we started for Clover Dale, which is three miles from the Glen. Clover Dale is quite a nice town with railroad communication with other towns. Here we crossed Russian river and followed Sulphur creek to the Geysers. These are among the greatest wonders of the world. These springs throw up great volumes of water of every temperature, from icy cold to hot enough to scald a hog or boil an egg hard. There is a perfect fog or cloud of steam every morning for over a hundred feet high, and a person can smell sulphur for a mile around. Here we pitched our tent and camped between two streams, not four rods apart. One we used for drinking and cooking, and the other was hot enough for a hot-bath.

August 18. This morning we started up the mountain and at 1 p. m. we reached "Pine-flat," where there are some old quick silver mines, but since they have ceased working these mines, Pine-flat has "flattened out," flat enough. It was at one time quite a town.



We saw but two men and one woman in the whole town. From here we passed through Kellogs. This is a place of great resort and recreation for many of the San Francisco people. After traveling five miles further we camped for the night.

August 19. This morning at 10 a. m., we arrived at Mark West Springs. This is the handsomest fitted up place that we have yet seen. It is fitted up with bath houses, cottages, swings and croquet grounds. The hotel is large and the accommodations good and ample, but the springs do not amount to much. After leaving here we started for the Petrified Forest, which is one of the greatest curiosities of California. There is about a mile square covered with petrified Red-wood trees. There is one—the largest we saw—that is eleven feet across the stump, or butt, and eight feet at the top. The petrified log is sixty-eight feet long. This place was discovered, and is now owned by an old Swiss sea captain named Evans. He has three hundred and forty acres and asks fifty thousand dollars for it. Here we again meet our friends from Ohio. Mr. Lapham took another photographic view of our camp and fixtures. We parted with him while he was taking views of the petrified forest, and started for Calistoga, and arrived there at 12 m. Over one of the springs there is a sign board which has inscribed upon it—"*Cook for yourself*," and on a shelf there are two dishes, one containing pepper and the other salt. You put a little of each in a cup, and fill it up with water out of the spring, and you have as good chicken broth as you desire to drink. After leaving Calistoga we struck the valley runing to Napa, and were in Napa county. There are some large vineyards in this valley, and also some very large wine cellars. We passed through St. Helena, which is a very lively town. Napa valley is thirty miles long and about five miles wide, and has some of the best and most advanced improvements of any place I have yet been in. Napa is the county seat. When we arrived in Napa city we pitched our tent in Mr. Davis's large yard, he being an old acquaintance, formerly residing in Elk Grove. Napa has between five and six thousand inhabitants, a College, a Seminary, a number of Public Schools, and the State Insane Asylum.

August 23. We expected to hear Dennis Kearney speak to-day, as his name had been announced, but after the shooting of Kalloch by De Young, at San Francisco, he was telegraphed to come down, when he immediately left. We, however, had the gratification of hearing White, the candidate for Governor on the H. B. ticket, ("Honorable Bilks.")

August 24. To-day (Monday) we drove out seven miles, to a splendid place owned by Mr. Hudemann. It is in the basin of the mountain, and he has a beautiful little lake and four or five fountains, with every imaginable kind of flowers. The place is fitted up with rustic bridges, seats and tables. After having tarried three days at Napa and here, we started out for the great wheat fields of Solano and Yolo counties, and passed through Bridgeport, Suisun, Elmira and Dixon, and stopped the last night from home, at the ranche of Mr. Poorman. Mr. B. keeps bachelor's hall, has an organ in the house, which he plays tolerably well for an amateur, in my judgment *very* well.

August 28. Mr. P., this morning, refused any compensation for the hay he furnished our horses. We hitched up our horses this morning for the last time, and started for home. We arrived at Sac city at 2 P. M., and at home at 8 P. M. We had now been out forty-two days and had traveled between four and five hundred miles, and taking it altogether we had a splendid time. Had I given the details I might have written a book.—*J. Wittich.*

CONTRIBUTIONS.

For The Lancaster Farmer.

THE HEPATICA, OR LIVER LEAF.

This is an humble but interesting plant, and one that usually puzzles the young botanist. The botanical, like the common name, has reference to the lobes, as well as color, often, of the leaves, to the lobes of the liver. This is one of our earliest flowering plants, very common from South Carolina to Canada; according to Bongard as far north as Sitka; blooming in February, March and April. There are two forms noticed in the leaves of the common *Hepatica triloba*, named by Chaix. Linnæus named it *Anemone Hepatica*, but it seems the name given it by Chaix has the priority. One form has the lobes roundish obtuse, the variety *obtusa*; the other has three to five lobes, which are spreading and acute, the *acuta*. Loudon gives us six European varieties of the *Hepatica triloba*; the blue, *cærulea*; the double blue, *cæruleoplena*; red, *rubra*; double red, *rubro-plena*; red-anth white, *alba*; snowy-white, *nivea*. These are in Europe great favorites of the flower border, being evergreen in its foliage, and for its abundant blossoms and great variety of colors and shades. It is a question whether our common wild plant would not, under cultivation, become equally attractive,

but so it is that common things are too often neglected, when if some attention were bestowed upon them would prove them to have uncommon hidden properties to be developed. To analyze these flowers, the usual calyx in them is like in the Anemone (only much closer to the flower), an involucre resembling a three-sepalous calyx; so that it really has no petals, but the sepals are petaloid, from 6 to 9 in two or three rows. The involucre one-flowered, leaves radical, entire or three-lobed. They belong to the cow-foot family, order *Ranunculaceæ*. To cultivate them they should be grown in a light, sandy soil and a shady situation; and, as they have a propensity to raise themselves out of the soil, they should be taken up every two or three years, in autumn, and replanted. If this be not done the earth should be raked or hoed up around them, so as to cover the roots; if these are left exposed they will wither and the plants may die out. The flowers of the *Hepatica*, unlike those of most other plants, possess their full color from the first formation in the bud. Another remarkable fact is, the flower lies a year complete in all its parts within the bud; the seeds are oblong-ovate, involved in a silky substance, and many of them abortive. The plant is a mild astringent and corroborant, and formerly used with these intentions in an infusion like tea, or in a powder, given to the quantity of half a spoonful at a time. It is found wild in Sweden, abundantly in Denmark, Switzerland, France, Spain, Italy, and other parts of Europe; in woods and among bushes, with blue, red and white flowers, single. Cultivated in England in 1596, by Gerard. In the language of flowers the Liverwort, as it is often called, or *Hepatica*, signifies *confidence*. When the gardeners see the pretty flowers of the *Hepatica* they say: "The earth is in love, we may sow with confidence."—*J. Stauffer.*

SELECTIONS.

LANCASTER COUNTY CATTLE.

Chief among the many attractions at the York Co. Agricultural Fair were the splendid herd of Jersey cattle shown by Colin Cameron, of Brickerville, Lancaster county, Pa. They are a part of the well known and justly celebrated herd the property of the late G. Dawson Coleman—a gentleman of large means and fine culture, and who was second to none in his effort to further the cause of agriculture, having especial pride in his well-cultivated lands and in the increase of his fine and pure bred stock.

He chose the Jerseys on account of their graceful beauty as ornaments for his lawn, and again for the rich lusciousness of their cream, and the peculiarly gratifying nutty flavor of their golden butter. He bought the very best specimens from the best importers, and as it was his pride to improve on the original animals he was signally fortunate in getting Colin Cameron to direct that improvement.

Mr. Cameron has gone into the best herds of this breed of cattle in America, and bought some of their choicest animals to keep up, and if possible raise the high standard of the herd in his charge. How successful he has been the cattle on exhibition will testify. All are registered in the herd book of the American Jersey Cattle Club, and of the thirteen animals on exhibition not one is an imported animal—all are home bred.

The bull at the head is Vespers Royalson, No. 2,946. The editor of the *York Daily* says, in shape and general outside appearance he is the finest Jersey bull it has ever been his pleasure to see—his *extremely* yellow horns and fairly yellow skin, and his rudimentary teats—almost the size of a yearling heifer's—indicate him to be—as his get proves—a sire of unusual worth.

To follow him in his herd, Mr. Cameron has purchased of Mr. Mackie, who is one of the oldest and best known breeders in the country, a young bull, called Coxcomb of Pine Cliff, No. 3,507. He is from the famous Hebe family of Jersey cows, being so thoroughly inbred that there can be no doubt of his being able to stamp his worth on any herd. He is prized very highly. The last of the bulls is Kilgore, No. 3,909. He was bought of T. J. Hand, and is of aristocratic extraction, as far as the records at the pail are concerned, and being of very fine appearance, straight of back and fine of limb, mellow of skin, we judge, with his owner, that he is a coming treasure.

The cows are LaBride, No. 2,617; Mount Lebanon, No. 4,557; Lebanon Girl, No. 6,-104; Lebanon Mother, No. 6,107. The heifers over one year old are Lady Seelock, No. 6,932; Wilson Dawson, No. 7,581, Emmie Dawson, No. 7,582; Alice Dawson, No. 7,583; those under one year being Belle Dawson, No. 8,270, and Lewis Baron, yet a calf.

The cows upon examination prove to be an even lot of very high excellence. They are typical representatives of the Jersey cow that is famous for thick cream and rich butter, and in every particular that points to the production of those articles they show the hands of the skilled breeder.

The fine, clean cut heads, small crumpled, waxy horns, light necks, wedge-shaped bodies, thin thighs, large, square and well proportioned udders, fed through large, prominent and knotted milk veins, indicate these animals to be large producers of milk, and to have undoubtedly descended from a race of great performers at the pail.

Standing almost side by side are three generations in one family, being mother, daughter and granddaughter, in the order named: LaBride, Lebanon Mother and Alice Dawson. Mount Lebanon reproduces herself in Belle Dawson.

Another noticeable feature is that five of the animals shown—Lady Seelock and all the Dawsons—are sired by that famous old bull, Commodore Roxbury, No. 1,586, that won the *First Prize* and *highest commendations* wherever he has been shown, as being not only the *finest*, but having the *thinnest, mellowest and richest skin*, and the best *escutcheon* of any Jersey Bull in the United States; and a careful examination of these heifers would endorse the sound judgment of the men who eulogized the old bull. *Lady Seelock* is a marvel in development of her mammary structure, while none of the rest are far behind her.

The *Daily* adds that taking the herd, as a whole or singly, it is one of the very best exhibits that has graced the grounds of the York County Fair for a long time; and he only hopes for the manager of the herd the success he deserves, and that each year may find him there to record his advancement in the study of the science and the practice of the art of breeding.

REVISED FRUIT LIST.

Since the last publication of our fruit list we have, for satisfactory reasons, changed our opinion with respect to a few of the fruits which it contained. But in regard to the list as a whole we can see no just grounds for disturbing it. Indeed, we do not see how it can be improved for this section of country, or a general list for all the Middle States. Some of each of the separate selections may not do well upon one premises that will succeed admirably on another. Each grower must find out for himself the particular apples, pears, &c., especially adapted to his soil and location.

According to our present preference we should select the following for our own planting:

Standard Pears.—1, Giffard; 2, Doyenne d'Ete; 3, Early Catharine; 4, Kirtland; 5, Bloodgood; 6, Summer Julienne; 7, Tyson; 8, Brandywine; 9, Bartlett; 10, Belle Lucrative; 11, Manning's Elizabeth; 12, Seckel; 13, Howell; 14, Anjou; 15, Shelden; 16, St. Ghislan; 17, Lawrence; 18, Reading.

For those who may desire a smaller number we should select: 1, Giffard; 2, Early Catharine; 3, Bloodgood; 4, Tyson; 5, Bartlett; 6, Belle Lucrative; 7, Seckel; 8, Lawrence; 9, Reading. They ripen in about the order they are arranged.

In the above list, from No. 1 to 8 are summer varieties; from 9 to 16 autumn (early and late;) and 17 and 18 winter, thus affording a sufficient number for each of the periods of the best known sorts for this region.

Dwarf Pears.—1, St. Michael d'Archange; 2, Bartlett; 3, Comice; 4, Rostiezer; 5, Diel; 6, Tyson; 7, Belle Lucrative; 8, Lawrence; 9, Ott; 10, Louise Bonne; 11, Bose; 12, Bousock; 12, Glout Morceau.

Apples.—1, Maiden's Blush; 2, Baldwin; 3, Smokehouse; 4, Jeffries; 5, Smith's Cider; 6, Fallawater; 7, Cornell's Fancy; 11, Gravenstein; 12, Tompkin's King; 13, Roxbury Russet.

We add to the foregoing list Tompkins' King and Roxbury Russet, both most excellent varieties; indeed the King is regarded by some as unsurpassed.

Peaches.—1, Crawford's Early; 2, Hale's Early; 3, York Early; 4, Old Mixon; 5, Crawford's Late; 6, Ward's Late; 7, Smock's Late; 8, Susquehanna.

There is no solid reason to change this list so far as it goes. We suggested to peach growers to favor us with a list of their own, and a few did, but where they differed from ours we did not deem it an improvement.

Grapes.—1, Telegraph; 2, Concord; 3, Hartford; 4, Clinton; 5, Slem; 6, Rogers' No. 32.

We have added to the list Rogers' No. 32, which, should it maintain its present character, will be the best out-door variety cultivated. It is a beautiful pink, or rather maroon colored grape, at times is transparent. It bears regular crops yearly with us. Clinton, in the foregoing list, is only for wine, and is probably the very best for that purpose in that section.

Cherries.—1, May Bigarreau; 2, Belle de Choisy; 3, Black Tartarian; 4, Black Eagle; 5, Black Hawk; 6, Eton; 7, Downer's Lane; 8, Early Richmond; 9, Early Purple Guigne; 10, Del. Bleeding Heart.

The ripening of the list will range from the earliest to the latest, thus carrying one through the whole cherry season. No one can go amiss in adopting this list.

Raspberries.—1, Hornet; 2, Herstine; 3, Philadelphia; 4, Brandywine.

Strawberries.—1, Captain Jack; 2, Seth Boynden; 3, Monarch of the West; 4, Triomphe de Gand.

Currants.—1, Black Naples; 2, Red Dutch; 3, White Grape.

These three varieties are the best among the different colors. The Red Dutch is a regular bearer and is of better quality than any other. There are others larger, but they are more acid. The white grape is transparent, of good quality, and ought to be more generally grown, but it is not a great bearer.

Gooseberries.—1, Houghton, 2, Downing.

These are the two best gooseberries grown in this country. They bear every year heavy crops, are free from mildew, and are of excellent quality. They are large enough for all practical purposes. Keep clear of the giants and their big prices,

Blackberries.—1, New-Rochelle; 2, Missouri Cluster; 3, Wilson's Early; 4, Snyder.

The Snyder, a new Western blackberry, is highly spoken of at distant points, but we prefer to wait another year before recommending it, but in the meantime we give it a trial.

It is better for those who intend to cultivate fruit and have to make purchases, to take this list with them to the nursey and adhere to it as far as possible.

In selecting fruit trees, or any others, be careful to choose those with smooth, healthy looking bark, and have entirely shed their leaves, with plenty of small fibrous roots. Trees on which the leaves remain after frost sets in, and stick to the branches in the spring, may be regarded as not healthy and in some way lacking stamina.—*Germantown Telegraph.*

Please send in your back subscriptions.

HOME AND EXPORT TOBACCO MARKET.

Below will be found the monthly trade circular of Messrs. J. S. Gans, Son & Co., tobacco brokers of 86 Wall street, New York. From it we learn what has for some time been whispered in trade circles—that the 1878 crop of Pennsylvania leaf is not up to what was expected. The best portions of it, such as were first purchased, will no doubt bring full prices, but the inferior kinds will have hard work to hold their own:

Seed Leaf.

With large offerings of 1878 crop by stripped samples, we have an extensive business to report, principally in Pennsylvania and New England. The former does not by any means come up to expectations, as far as leaf is concerned, and when compared to the 1877 crop, appears very high-priced; so much so, that some of our manufacturers, after a thorough examination of the various packings, eagerly bought nearly all good lots of 1877 remaining on the market. As we are, however, bare of old tobaccos, there is no doubt but that all the finer lots of 1878 Pennsylvania will be rapidly taken by consumers, whilst we hardly believe that present asking prices for common lots can be maintained.

The better classes of New England tobaccos, (including Housatonic) look extremely well, and with, as we hear, the demand for abominable black cigars falling off, we should not be surprised to see this long neglected article again come into favor.

Ohio tobaccos are also meeting with approval from home buyers; in fact, with Wisconsin nearly out of the market, it is the best and most useful article for cheap cigars.

The export trade offered no new features; factors, who this year have been nearly the only exporters, dispose gradually of their offerings abroad, but at by no means satisfactory profits, and the German markets have, according to our latest advices, become duller.

Of the new crop we hear the most flattering reports, and only regret that some let us hope not too sanguine operators have already commenced buying eastern and western Havana Seed and other sorts; in Wisconsin nearly all the Havana has been bought at from 8 to 12 cents through, unpacked.

Sales.

CROP OF 1877.	
New England	500 cases.
Pennsylvania	1,200 "
New York	200 "
Wisconsin	300 "
CROP OF 1878.	
New England	2,200 cases.
Havana seed	300 "
Pennsylvania	4,340 "
New York	60 "
Ohio	1,100 "
Wisconsin	800 "
Total sales	12,200

of which 421 cases were for export.

Quotations.

New England:	Crop of '77.	Crop of '78.
Havana seed	@	22 @30
Wrappers, common	13½@15	13 @15
do medium	16 @17	16 @18
do fine	18 @25	20 @25
do selections	27½@35	27½@35
Seconds	@...	10 @12½
Fillers	@...	5 @ 6½
Pennsylvania:		
Assorted lots, common	@...	10 @12
do fair	13 @14½	13 @15
do fine	15½@18	17 @22
Wrappers	20 @40	...@...
Fillers	9 @19	8½@ 9½
New York:		
Assorted lots, good	12 @15	12½@15
Ohio, assorted lots, good	9 @12	8 @14
do wrappers	12 @18	... @...
Wisconsin, assorted lots	8½@10	8 @12
do Havana seed	@...	15 @20

Exports of Seed Leaf since Jan. 1, 13,267 cases.
Same time last year, 53,660 cases.

SHEEP HUSBANDRY IN THE UNITED STATES.

There is warrant for saying that this country is entering upon a new era in sheep husbandry which is fraught with great promise for the future of that important industry—an era which will bring wealth and honor to intelligent and careful flock-masters, and to the country at large.

First there is the assured demand for wool to meet the requirements of the manufacturers of woolen goods, or, rather, the consumption of such goods by the people. During the period of business depression through which the country has passed, there was under-consumption of woolen fabrics. Thousands of people were not able to buy them, and to supply cheaper goods, the mills turned out a class of fabrics into whose texture entered, more or less, cut-up rags. Shoddy goods were the rule, and straight woolen fabrics the exception. Now this is vastly changed. People will buy good goods if they are able to do so, knowing that the best is the cheapest. Western mills, almost without exception, make straight goods, and eastern manufacturers will be compelled, sooner or later, to adopt the same policy. Indeed, the percentage of the stuff which circumstances made necessary for some years past, forms an inconsiderable portion of the product of the mills at the present time, and as it is being relegated to the rear, there is little probability that it ever regain the place it recently occupied.

Again, notwithstanding the quantity of refuse with which rag-dealers furnished the mills, the country has been a large importer of wool and woolen goods; in other words, we have fallen short of supplying our home requirements for wool by millions of dollars' worth. If this was the case while prostration marked almost every branch of industry, how much greater must be the deficit with labor of all kinds employed, and every manufacturing industry in active operation, unless the wool product is largely increased? We have not taken into account the increase of population, which, as recent statistics show, is being greatly augmented by immigration, and constitutes an item by no means insignificant in forecasting the future requirements of the country for wool and woolen fabrics.

The foreign meat traffic furnishes, also, an opportunity to extend sheep husbandry in the production of mutton, which must, we opine, awaken a far greater interest in that branch of the business than has hitherto been known among us. The export trade in mutton—live and dead—is increasing every year, and must do so for some time to come. It is, as yet, in its infancy; and as American farmers come to understand, more generally, what the foreign market requires, it needs no seer to predict that this traffic will reach proportions compared with which its present volume is insignificant. Our capacity for the production of mutton of fine quality is almost without limit, and upon the quality of the product more than anything else the volume of this traffic depends. That it may be vastly augmented does not now admit of question; and that it will continue to grow in greater ratio even than it has yet done is scarcely less probable. Greater care in selection, in breeding, in rearing, in alimentation, on the part of farmers who make this branch of sheep husbandry a part of their business, will mark the future of this industry, and place it on a higher plane than it has yet occupied in American agriculture, for the inducements are greater than they have ever been before.

But another feature which renders the future of sheep husbandry still more promising has been inaugurated. The rearing of sheep for breeding purposes to supply the requirements of farmers throughout the country has long been a specialty with some breeders. The demands, also, of flockmen in the southwest and far west, have for the last few years considerably stimulated this branch of the business. But the shipment of sheep to foreign countries for breeding purposes has commenced. It has not been long since a shipment of American merinos was made by Mr. Markham, of New York, to fill an order from the Government of Japan. Nor is this all. American merinos have been sought and bought by Australian wool-growers, to cross upon the sheep of that region, which, as in the case of Japan, there is hardly room to doubt, will be followed by increasing orders. From South America, also, there are inquiries for our sheep for breeding purposes. The fact is, our American-bred merinos are superior in all essential characteristics to their French, English, or Spanish congeners, and foreigners who are largely interested in wool-growing learned that fact at the centennial. The fruits of that knowledge are beginning to be gathered. The American sheep of this breed have greater hardiness and constitutional vigor, and at the same time produce a heavier fleece than others, the shrewd flockmasters of the vast sheep-walks of Australia, South America and elsewhere are beginning to find it out; and knowing that the maximum of profit lies in breeding from such sheep, they are turning their attention this way to secure breeding animals. It is, therefore, a reasonable supposition that this branch of American sheep husbandry will develop steadily in the future, and become an important source of wealth, as well as fame, to this country.

From every point of view, therefore, the outlook for sheep and wool is encouraging. The oportunities are not wanting to make this industry more prosperous than it has ever been in this country, and judicious flock-masters, breeders and farmers will turn them to advantage. As has aptly been said by a prominent authority in this industry—"The 'luck' of sheep husbandry is so thoroughly within the control of the flock-master that he rarely need look beyond his own management for those causes and effects which go to make or mar his fortune." The present is a time, we believe, when the chances are all in the flock-master's favor.—*American Stockman.*

RAISING HORSES IN TEXAS.

One of the most prolific sources of wealth in this county, and, in fact, throughout the entire State, is the raising of horses. This frontier country, until within a very recent date, did not indulge in the luxury of thoroughbreds. In former years the Lone Star State boasted of fast pacing or fast running ponies and Mexican mustangs. They were small in stature, and in many cases quite rapid, the speed of some reaching a quarter of a mile in twenty seconds. Within the last few years greater interest has been taken in stock, and the crosses of Kentucky and Canada and other more hardy and vigorous horses with the Texas ponies have vastly improved the breed. Each year increases an interest in horse raising in Texas, and produces better animals. As the blue grass region of Kentucky affords such delightful food for horses, a more extensive and greater crop of mesquit grass, peculiar to Texas only, furnishes to the stock-raiser a far better article of food, and almost without limit. Everywhere west of the Trinity river it is abundant, and east of that river it is found in many localities. Until very recently stockmen and horse-raisers encountered severe trials from the Indians, who would frequently make raids and rob them of much of their property, taking on these occasions the very best stock on the ranch. One of the peculiarities of all the Indian tribes is their knowledge of and extraordinary fondness for the horse. They seem to have an intuitive understanding of all the strong points about the animal, and generally steal the best of the horses on the ranch or in the corral, or wherever else these governmental thieves make their predatory incursions. Keeping or raising horses is much easier than cattle or sheep. After securing a ranch, which is similar to selecting the proper location for cattle, the owner divides his stock into "bands," or "bunches," or "cavallards" of twenty or twenty-five mares and their colts and as many yearlings, and places a stallion with them, which acts in the capacity of herder. The bunches are placed about a mile apart. The stallion guards the cavallard with a jealous eye, and allows no interference from other horses, often battling so ferociously with any and all intruders that when the owner or herdsman approaches he is compelled to use stones or other missiles before the guardsman allows him to enter the range over which he holds supreme jurisdic-

tion. When the horses go to water his equine majesty drives them to the creek, stands over them while they drink, quenches his own thirst, and then leads the band back to their accustomed feeding-grounds. He also brings the bunch up to the salting-place, keeps the closest watch over those intrusted to his guardianship, and when all have received their quota of salt the chief circles and leads them back as before. Heading or driving by the cavallard horse exhibits the sagacity of the animal. In case of either of the mares, colts, yearlings, or two-year-olds wandering or running off, the attendant promptly follows, circles, or promptly runs around the estray, and, with ears well set, puts his head near the ground on the side opposite to the direction in which he desires them to go; and, understanding his nod, usually yields willing obedience and starts back to the ranch, or wherever the cavallard may be. Should the mares become rebellious the stallion picks and bites them until they become obedient and placed under complete subjection. The supreme command of this horse, and the autocratical manner in which he shows his authority, is delightful to behold. He is a very severe disciplinarian, a most careful and competent guardian, and as kind to those under him as a mother can be to a babe. When by chance two cavallards happen to meet, the stallion representing each will advance and commence to battle. It is generally sharp and decisive. The bunches, when their leaders begin to fight, move off to the right and left, every step widening the distance between them. The stallions run up and down their respective columns with more anxiety, and exercising even greater surveillance, than a faithful colonel at the head of his regiment. When the engagement terminates, and quiet is fully restored along the entire line, the stallion takes his accustomed position in the rear. When on the move for better grass, and it is found, and it is necessary for the bunch to step, the stallion selects the ground, and, running forty or fifty yards ahead, puts his ears back, his head down, and comes to a halt, facing those under his charge. The bunch will instantly obey this signal and go to grazing. Branding the colts is the work for October, November and December. The bunches, or cavallards, are driven into a pen or corral, when the herdsman and two others enter. A lasso is then thrown over the head of some colt by one of the men, while the other expertly ropes the colt's hind legs. When this is done the colt is thrown to the ground. While the first one plants himself on the colt's neck the second laniats the fore legs; the third, with branding-iron, red-hot, proceeds to apply the brand in exactly the same manner that is used in branding cattle. The profits on horse-raising are not so large now as they were a few years ago. At present they will possibly not exceed 30 per cent. There are about 2,000 head of horses raised in Parker county annually, and each year now adds to the number. Every farmer raises all he has facilities for attending to, and considerable rivalry is going on between many of them in the production of improved breeds of horses.—*American Stockman.*

GROWTH AND DEVELOPMENT OF THE WEST.

During the closing session of the American social science association at Saratoga, on September 12, Mr. Robert P. Porter, of the Chicago *Inter-Ocean*, read an interesting paper on the growth of the West. The immigration at the West, and especially in Kansas and Minnesota, he said, exceeded anything known in the past history of the country. It is not altogether nor chiefly an immigration of foreigners, but also a movement of the agricultural population of the States east of the Missouri and Mississippi, their places being rapidly filled up by a population less exclusively of the farming classes, and who are promoting the general industrial development of the sections into which they are moving in an unexpectedly rapid way. The centres of the great industries and manufactures are traveling westward, and Massachusetts and Pennsylvania discover that they can no more retain the monopoly of the handicraft industries of the country than New York can hold a monopoly of its import and export trade. This movement is an entirely natural one, and therefore wholesome. While it deprives sundry sections of the monopolies secured to them by the combined forces of legislated protection and aggregated capital, it in turn induces these sections to rely upon their strong natural resources. It teaches Philadelphia the folly of depending upon a home market exclusively, and sends commercial travelers from that city to every port in the West Indies and South America to sell goods of American manufacture, and should do the same with Baltimore. Mr. Porter contributed a glowing analysis of the resources of the great West, and of its capacity for reproduction and its energy in self-development. The great corn belt of the Northwest, with the adjacent subsidiary areas, produced in 1877 $225,000,000 worth of corn. The wheat fields of the Northwest the same year grew crops yielding $208,000,000. The grazing lands fed cattle the same year the productive value of which was $125,000,000. Beneath these purely agricultural resources lies a subsoil teeming with the potentiality of manufactures of illimitable variety and extent. Illinois alone contains a seventh of all the known coal on the continent. In Missouri, throughout whole broad districts, the iron ore has been piled up by nature into mountains, while Wisconsin and Michigan can still furnish timber in practically inexhaustible quantities. The growth and development of manufacturing centres in the West may be inferred from the surprising fact that while in 1860, in a total population of 18,000,000, 72 per cent. was rural, against 28 per cent. urban, in 1870, total population 23,000,000, the rural population was 66 per cent. and that of the cities and towns was 34 per cent. The census of 1880 will probably show a much larger diversion of population from farming to manufactures in the great Western country. Labor in the West, according to Mr. Porter's figures, is more remunerative, in proportion to the scale of living and general expenses, than it is in any of the other great sections. In Illinois, Indiana, Missouri and Michigan "manufacturing," he says, "can be carried on cheaper, and labor paid better, in proportion to the cost of living, than in the Middle and Eastern States. Lots are cheap in Western towns, and the careful, industrious mechanic soon has a home of his own and he becomes identified with the city in which he lives." As a Rockford (Ill.) manufacturer is reported as saying: "Our firm have aimed to keep the hands partly employed through the hard times, and now that we have started up in full blast again I find hardly a new face in the shop. We have tided the men over because they have become part and parcel of the city of Rockford." They stood by their employers and now the latter stand by them. The rate at which the West is growing in manufactures is very surprising. Illinois, Wisconsin, Indiana and Kansas, with hardly any water power, last year produced upwards of 30 per cent. of all the railroad iron produced in the United States. Missouri and Kansas produced one-seventh of all the rolled iron. The iron ores of Missouri and Michigan, owing to their freedom from phosphorus, it is claimed, must soon become the standard ores in the manufacture of steel, and steel will shortly supplant iron in all the more important branches of this great industry. Chicago has already outstripped Pittsburg in the production of Bessemer steel rails, and as for furniture, that city supplies all the country west of Grand Rapids. The population of Missouri, Kansas, Nebraska, and the six Northwestern States, exceeds that of New England, New York, New Jersey and Pennsylvania by more than 300,000; at the same time the growth of the former States is more than twice as rapid, and their public debt and local taxation but little more than half so much as those of the Eastern States enumerated. Mr. Porter's paper, of which we have been able to give but the barest abstract, neglecting many important particulars, has only to be read by the observant to make them appreciate fully what is meant by the term, "The Great West." And yet the Middle States of the East present attractions for successful industry and comfort in living which few equal and none surpass.—*Baltimore Sun.*

PRODUCTION AND KEEPING OF EGGS.

Oftentimes it is a matter of importance to keep eggs for a time. When prices rule low, they may be preserved in comparative freshness for several weeks, even in July and August, if care be taken to place them on end as soon as brought in from the nest. One not accustomed to the handling and care of eggs can form no idea of the shortness of time required for the yelk of an egg to settle on one side, where it adheres to the shell and quickly spoils in warm weather. Always place the egg on the big end. I have tried both ends, and have decided in favor of the former position. Eggs should be gathered from the nest every day, and where there are many hens kept, twice in a day. It matters not for what purpose we desire eggs, the hens that produce them should always be young and healthy. Eggs that are to be kept for any length of time should always be those from young hens, or if two years old, only from those in perfect health. If this rule is closely observed by breeders who export eggs for hatching, from one locality to another, there will be better satisfaction given. It is of much importance that the eggs have perfect shells, and a hen not in perfect health may drop her eggs regularly, yet the shells may possess imperfections that render them unfit either for keeping or hatching.

A hen in perfect health will not drop an egg daily for more than three days in succession. Fowls that are confined in narrow enclosures for any length of time cannot be in perfect health. They are forced out of their natural habits, and the restraining of nature tells on the system, sooner or later. For immediate use, their eggs, perhaps, are as good as any. With increasing age the egg-shells grow thinner, and soon up to them with the shells at all. Strength and stamina of the system, supported by good wholesome food, produce the shell. It is a calcareous substance that forms around the egg after it is perfected in the oviduct. The completed egg consists of several component parts, each one of which draws on the vital energy and stamina of the bird, which is so formed that its body performs its natural functions in regular order when in health. We must consider that they are forced out of their natural order when we feed them up for great egg production. Did any one ever hear of a wild bird that dropped a soft egg, or ever see a shelless egg that was dropped by a wild bird? We have produced poultry that do not sit. Nature intended the hen to sit on her eggs for three weeks, and afterwards to nurse and run with her chicks for four or five weeks longer. In this interval the system gains tone and strength. It is an entire change; a division of labor, and the fowl gathers strength and tone for future egg production. The regular sitters seldom drop more than sixteen eggs in a clutch, and then comes broodiness.

Our non-sitters are the result of successful breeding from fowls which had manifested little desire to sit. It was a great achievement. They are a manufactured race, and must be cared for differently from the old common breeds much giving to sitting and little laying. Many years back perpetual layers were unknown, as well as the production of eggs in winter. Among the birds of the air there is one species known as "cow blackbird," that never sits, but perpetuates its kind by dropping its eggs into the nests of other birds, by which the young are brought up. Generally

the nest of a smaller bird is chosen, and in rearing, the smaller birds are frequently robbed of their food and perish, the overgrown bird's beak getting the larger share of food. The cow blackbird cannot be any great layer, or their eggs are discarded by the other birds thus imposed upon, for the species is not very plentiful. Eggs dropped in May and June keep much better than those dropped later in the season. The reason is that the fowls are in better condition. After the middle of July, the close summer heats and sultry nights come on, and the birds are more or less exhausted. The moulting season is close at hand, and the whole system is preparing for a change, the recovery from which is a question of time and care. By this time, if left unheeded, their roosting places have become foul and infested with vermin. From this time ont, stimulants and mild tonics should be given to the perpetual layers as required. To be thoroughly profitable, these fowls should not be kept over the second winter, unless it be in exceptional cases. There is no breed of fowls that accepts management as readily as the Brahmas. They yield to confinement, in time, place, and food without repining, yet they are tender, and require more care and forethought in feeding than any of the other races of sitters. Perfect eggs, after once obtained, should be set up on end in good, sweet, clean oats, and kept in a cool place, and there will be found little difficulty in saving them to obtain a fair price at the fall markets. They must possess good, thick, perfect shells, or they will not keep.

TOBACCO.

The *Tobacco Leaf* gives a large assortment of the views of New York leaf tobacco merchants and importers on the condition and prospects of the seed leaf and Havana tobacco trade of this country. We select some of them of local interest for republication:

A. S. Rosenbaum & Co.—We consider trade in a sound condition, and the prospect is good for a continuance of the same, providing people do business at a fair profit, and do not go into speculation. The crop of last year is thus far affording only a small proportion of fine wrappers, and prices for those that are fine will be well sustained throughout the season.

E. Rosenwald & Bro.—It seems to us that all seed leaf tobaccos will maintain their prices, and fine wrappers of the 1878 crop will go higher than they are at present.

H. Schubart & Co.—We find trade very good and consider the prospect very favorable. Dealers look forward to and must have higher prices, as they do not want to, nor intend to, lose money on their investments. Those who have good tobacco will get higher prices than are now paid. Cigar manufacturers must get higher prices for their goods than they are now receiving.

J. S. Gans's Son & Co.—The condition of trade is very satisfactory, and notwithstanding the high prices of the 1878 tobacco, manufacturers will be compelled to take it very freely before long. In fact, during the present month they have been liberal buyers. We doubt whether the prices that are at present ruling will in all instances be maintained. We are convinced that no further advance in prices is to be expected.

Charles F. Tag & Son.—There will probably be a legitimate advance on the stock on hand, enough to cover the interest and charges, but we don't expect a large advance. We look forward to a legitimate supply and demand business. The new tobaccos have been bought rather high, and it is going to be a slow business to sell them. The old stock is almost all entirely exhausted, and while manufacturers will have to take the new we do not anticipate a speculative movement in it.

L. Gershel & Bro.—Our idea is that trade has never been in a healthier condition than at present, and we feel that in the next sixty days higher prices than are now paid for seed leaf tobacco will be obtained. There is very little old stock on hand, and the new crop contains but a small portion of fine goods. Those who hold fine wrappers are in possession of good property and will get their prices for them.

N. Lochenbruch & Bro.—In fine goods the market is very bare, and we think for them higher prices will certainly rule in the near future. We believe all grades of Pennsylvania tobacco that are anyway useful, good property to hold; as also fine wrappers of the growth of other States. We are having offers for our 1878 tobaccos very close to our prices, and think it will not be long before those in want of them will come up to our figures. We are satisfied prices will range still higher than they are at present. The market is in a very good condition indeed, manufacturers being very busy, and yet holding exceedingly light stocks.

Havemeyer & Voplius.—Trade is in a dull and unsatisfactory condition. According to our opinion tobacco was bought at too high prices last year, speaking exclusively of the 1878 crop. Taking into consideration the fact that a large crop has been raised, one that has been pronounced to be good in every State—not only good but excellent in every State—there is, according to our idea, no likelihood of an increase in price. As trade is now we certainly cannot look for a great trade; it is cut up so much that there can not be.

M. Oppenheimer.—I consider trade in a fair, healthy condition, and the prospect of its remaining so is good. There is a satisfactory demand for good tobaccos. In general the 1878 crop is of better quality than we have had for a long time. The Connecticut and Ohio are both leafy crops, and will yield as many wrappers as ever before; and as much may be said for the other green or new crops.

Bunzl & Dormitzer.—Trade is very good. We are selling as fast as we are sampling, and what we do not dispose of in this country we find a ready market in Bremen. We are getting a poor crop in wrappers, that is, poor in serviceable wrapper leaf, but the demand is steady and legitimate. There is more of the new crop going to Europe than is generally known, the Messrs. Rosenwald and ourselves sending a good deal there of which no account is made public.

ESSAY ON THE SUBJECT OF MANURING LAND AND HOW TO APPLY IT.

The proprietor of the Reading *Eagle* offered two premiums for two of the "best essays on the subject of manuring land and how to apply it." To pass upon the different essays written in response to these premiums, Hon. George D. Stitzel, Ezra High, J. H. Funk, W. G. Moore and Christian Shearer, all practical farmers, agreed to act as a committee to read and pass upon the essays and award the premiums.

The committee examined the different essays submitted to them by the writers thereof, and after due consideration awarded the highest or first premium to John S. Eckert, of Womelsdorf, and have decided to hold the remaining essays under advisement. Following is Mr. Eckert's essay:

I live in Heidelberg township, a short distance below Womelsdorf, on a farm owned by one of my best friends, George B. Eckert, of Reading. I have lived on this farm for the last fifteen years. The community know the condition of this farm when I first occupied it and believe I have improved the soil as well as the general appearance of the farm very much. From what I know of fertilizing land, I believe barnyard manure to be better than guano or phosphates. I do not believe in top-dressing with manure, for after you seed the ground the manure will still be on top and a large part of the ammonia will be lost, instead of entering the soil and enriching it. My plan is to manure oats stubble and plow it under. The best wheat I ever raised was by plowing down sod, well limed. Manuring the sod or the oats stubble is very good, and I believe with a good season a splendid crop will reward the farmer.

I believe farmers make a mistake in seeding timothy. It would be better to cast the timothy seed into the sea and double seed with clover. To plow timothy sod you will find it hard and tough, the ground looking poor and the soil not in a good condition. Clover sod is right the opposite of timothy—clover being blacker and richer. Some farmers argue if they do not raise timothy they will not be able to feed their stock, as their soil is marshy, and clover will freeze out. Such is not the fact if farmers will use barnyard manure instead of phosphates, which I do not believe pay the farmer at all. Phosphates may pay small truck farmers near a city or book farmers. The latter conclude to quit the city and live in the country, then buy a farm and expect results from it just as practical farmers get. These fancy book farmers forget the long and patient toil and close observation of the laws of nature which a practical farmer must possess to make farming profitable. A fancy book farmer believes a man must serve an apprenticeship to become a watchmaker, but that anybody can farm. This is a great mistake. Experience on the farm is worth more than anything else. I think that after manure and proper cultivation of the ground a good season comes next, for without weather to make what we plant grow a farmer's labors will not amount to much. Every farmer should know that the better the soil is tilled the more it will produce and pay. Keep your weeds down.

There is a great difference between limestone and gravel soil, and also between rolling, level and low lands. Rolling lands will require more feeding than level land on account of the drainage. Heavy rains on rolling land will wash it and carry off the fertilizers, which is not the case with level lands with good drainage. To raise a good crop of corn plow rolling land in the spring and level land in the fall. Rolling land when plowed in the fall will become mellow and wash out the sod, while such is not the case with level land. I believe in deep plowing, if the soil allows it. Deep furrowing for planting will save corn from drouth and it will not blow down so readily.

Canada Thistles can be killed by using fine dust from the furnaces put on about four inches thick. I have killed Canada thistles in this way, and also have enriched the soil by it. You can get the fine dust from furnaces without cost, and you will be richly repaid for your labor.

A grave question for the consideration of farmers in the future will be fencing. As the country becomes more thickly settled and timber becomes more scarce fencing will cost much more than now. To overcome this prospective trouble I have osage orange, which will last a lifetime and will not cost as much as post fence. I plant osage orange for two thousand feet at the cost of three and a half cents a foot, which are growing nicely. I would also urge my fellow farmers to plant shade trees around their dwellings, for in this way you will make your homes more comfortable and valuable.

Often city people speak of farmers being careless in their dress. We cannot be as tidy in our dress as city people, for our business will not permit it, but against this we know how much better fresh milk is from a cow than after it is hauled to the city and drank by city folks. We also know how much better fresh vegetables are than after they are kept for several days and then sold and eaten by city people.

To my fellow farmers I would say again, plow deep while sluggards sleep, and we will have grain to sell and to keep.

Remember, any work well done will bring its reward.

LABOR-SAVING IMPLEMENTS.

A great historian of civilization declares that "wealth alone gives leisure for study, culture, and true education." On this continent, the adaptation of every description of power to agricultural and household implements whereby human labor and toil is saved,

gives the required leisure that insures rest and recreation, and that leads to culture. We are wont to look at this saving of labor exclusively as the means of multiplying and cheapening the products, and ignoring that greater and more important fact *of the time* it saves to every son and daughter of toil. It is in the memory of many of us, before the adaptation of power to mowing machinery, that it was a day's labor of ten hours to cut an acre of grass; to-day, through the triumphs of inventive genius, the same man can accomplish *ten* times the amount of labor in a day, whereby ninety hours of toil are gained. A portion, it is true, goes to the increasing and cheapening of the product, but the greater gain is for leisure, to be devoted to moral and intellectual improvement. This is true of every implement in use in human industry. It is this adaption of other than the power of the human muscle to farm improvements that has elevated, by rest and education, more people than all other agencies of modern times. It is this that will, in its progress, make agriculture a profession rather than a mere occupation. The genius which gave to the field and the fireside labor-saving implements, emancipated thirty million laborers, men, women and children, in this country alone, from the bondage of incessant toil. That genius gives wealth to found institutions of learning, and sons and daughters their whole youth to profit by them. It gives wealth for ten thousand periodicals of agriculture, of art and science, and gives you time to read them. It creates public and private libraries, and gives leisure to study them. A half century ago the tilling of the soil was the merest manual labor; to-day it is a question of skill, art and intelligence. Then the measure of the producing power of any region was the number of those who dug and delved. Now it is from the number and character of farm implements, and the skill and intelligence of those who use them. Then the farming population represented mere muscle; the employer alone represented the brain. Now an agricultural population represents the brain; the implements the muscle. The agricultural population represents a great producing power, but labor saving machinery represents a vastly greater.

THE BALANCE OF NATURE—FISH.

It is difficult to convey an adequate idea of the number of individual fish which may compose a shoal of herrings, and it has been averred that they would speedily impede navigation were it not for the vast number of agencies that are at work to prevent an undue increase of their number. As the result of recent inquiry we have been informed that the quantities which man takes from the water for food uses do not represent a tenth of what are captured by the sea birds, or devoured by marine enemies. As the herring is the only fish of which statistics of the capture are collected and tabulated, we are in possession of figures which afford us a rough idea of the number annually withdrawn from the sea for food purposes. In a recent year sufficient herrings were taken to fill a million barrels, and as each barrel contains, on an average, 700 fish, we have thus a number equal to 700,000,000. This quantity, it must be observed, represents cured fish only, and only those which are caught in Scotland under the superintendence of the Fishery Board. It is pretty certain that as many herrings are captured and offered for sale as fresh fish and "reds" as are cured for the markets in Scotland and offered for sale as salt herrings; which gives us the prodigious total of 1,400,000,000 withdrawn annually from the sea; and even this number, vast as it is, does not include what are used in the form of whitebait, or those which are sold as sprats. After draining the sea to such an extent it might also be supposed that there would be scarcely so many herrings left as would suffice for a breeding stock; but the demands of man are a mere fraction of what are taken out of the shoals. All that are captured, as well as all that are wasted during the capture, and destroyed in the process of curing, sink into insignificance when compared with the vastness of the quantities which are devoured by other enemies of the fish. Cod and ling are known to prey extensively on the herring; and a calculation, based on the number of cod and ling annually caught under the auspices of the Scotland Board of Fisheries (3,500,000 were taken in 1876), assumes that there is a capital stock of these fish in the Scottish firths and seas of 70,000,000 individuals; and that each individual consumes 420 herrings per annum, which, at the rate of two herrings every day for seven months in the year, shows a consumption of 29,400,000,000 individual herrings. Nor does the account stop at this point. The commissioners who recently collected information on Scottish herring fisheries assume that in Scotland alone the gannet (a sea-bird) will annually draw on the shoals to the extent of 1,110,000,000 herrings. In addition to dog-fish, cod, gannets and other sea-birds, the herring has many other enemies; porpoises, seals, cod fish and other predaceous fishes are constantly lying in wait to fall upon and devour them. A female herring, we know, yields over 30,000 eggs; but at the shoaling-time myriads of these eggs are devoured by a variety of enemies, besides which hundreds of thousands of the eggs are never touched by the fructifying milt of the male fish, and so perish in the waters.—*Chambers' Journal.*

STANDARD OF THE AMERICAN JERSEY CATTLE CLUB.

A letter has come to hand, written by a gentleman interested in dairy matters to some extent, in which the writer takes exception (and we think very justly) to the standard adopted by the American Jersey Cattle Club. We have not that standard before us, but have examined it hitherto, and do not, therefore, speak of it altogether at random. Our correspondent desires to know what our views are in regard to the scale referred to, and especially in reference to what he calls "the frills and furbelows" with which it is ornamented.

Not having the scale of points before us, we are not prepared to examine it in detail, but from recollection and some figures given by our friend we shall not have much difficulty in pointing out what we think are serious faults it contains, and at the same time plainly indicate our position in regard to some things which such standards should recognize, as well as some things they should ignore.

In deciding upon standards of excellence by which to measure any class of stock, it has happened not unfrequently that the importance of the real merit has been overlooked, or that the most desirable points have not been given the prominence they deserved, while fanciful and non-essential characteristics have received too much consideration in the scale. The behests of fashion have thus been obeyed to the detriment of true interests which were at stake. It is only proper to remark here that we have no unfriendly feelings against the American Jersey Cattle Club, or any other similar club or association. And so far as Jersey cattle are concerned, we look upon them as a very useful and desirable breed for certain purposes. We are dealing entirely with a scale of points laid down by the club by which Jerseys are judged, which, in our opinion, is inimical to the welfare of breeders of and dealers in that breed of cattle in this country; hence we are free to say in all kindness and candor that in catering to fanciful tastes and placing undue value upon non-essentials, we believe that the club stands in its own light, and is really, though unintentionally of course, doing an injury to the Jersey cattle interest. Results at the pail and in the churn are what Jerseys must show—results that at once recommend them to farmers, to dairymen and others—if they are to retain reputation. If these are sacrificed to the color of hair, horns, hoofs, and to high up nostrils, it is but a question of time when the breed will lose much of its prestige and prominence. As the value of the Jerseys consists almost exclusively in the richness and quantity of the milk they produce, the true policy, of course, is to preserve these qualities; but how long can this be done, if they are made secondary or subservient to other things which are not material, or which really count nothing by the side of these useful characteristics. In the scale adopted by the club there are thirty-four points, and of this number four only relate to the lacteal characters of the cow, viz.: the milk veins, the front and rear udder, and the teats. Twenty-nine points are required to entitle an animal to a prize at a competitive trial, or to be classed as a prize animal, and it will be seen, therefore, that a cow or heifer of this breed—whose chief and almost only recommendation consists of its milk quality—may secure a prize without possessing a single one of the points indicating excellence in that direction. The color and size of the ears count two in the scale, and the length and quality of the tail also count two, so that ears and tail equal in the count the number of points given to milk veins, front and rear udder and teats. Now we respectfully submit that milk veins, udders and teats are likely to be more favorably canvassed than delicate and deer-like ears by dairymen and others desirous of adding Jersey cows to their herds or purchasing for family use; and further, that with such persons it is more a problem of *pail* than of *tail*. The question of utility is paramount, and hence the folly of giving undue prominence to tests of no real value, or at least of such small consequence as to entitle them to little appreciable weight in any proper standard or scale of points. We repeat that performance at the pail is the highest test. The quantity of butter a Jersey cow produces within a year, or what profit she yields to her owner in dairy products, has more to do with her value than anything else; all others are secondary, and some that are present in this standard are worse than useless.—*American Stockman.*

WHOLE ACRES OF PERFUME.

The Swiss *Times* says: Some idea of the magnitude of the business of raising sweet-scented flowers for their perfume alone may be gathered from the fact that Europe and British India alone consume about 150,000 gallons of handkerchief perfume yearly; that the English revenue from French Eau de Cologne of itself is $40,000 annually, and the total revenue of England from other imported perfumes is estimated at $200,000 each year. There is one great perfume distillery at Cannes, in France, which uses yearly about one hundred thousand pounds acacia flowers, 140,000 pounds of rare flower leaves, 32,000 pounds of jasmine blossoms, and 20,000 pounds of tuberose blossoms, together with an immense quantity of other material used for perfume. Victoria, in New South Wales, is a noted place for the production of perfume-yielding plants, because such plants as the mignonette, sweet verbena, jasmine, rose, lavender, acacia, heliotrope, rosemary, wallflower, laurel, orange, and the sweet-scented geraniums are said to grow there in greater perfection than in any other part of the world. South Australia, it is believed, would also be a good place for the growing of these perfume-producing plants, though they are not yet cultivated to much extent. The value of perfumes to countries adapted to their production may be gathered from the following estimate of their growth and value per acre, as given in the London (England) *Journal of Horticulture:* An acre of jasmine plants, 80,000 in number, will produce 5,000 pounds of flowers, valued at $1,250; an acre of rose trees, 10,000 in number, will yield 2,000 pounds of flowers, worth $375; 300 orange trees growing on an acre, will yield, at ten years of age, 2,000 pounds of flowers, valued at $250; an acre of violets, producing 1,600 pounds of flowers, is worth $800; an acre of cassia trees of about 300, will, at three years of age, yield 900 pounds of flowers, worth

$450; an acre of geranium plants will yield something over 2,000 ounces distilled attar, worth $4,000; an acre of lavender giving over 3,500 pounds of flowers for distillation, will yield a value of $1,500.

ALTITUDES IN PENNSYLVANIA.

Following is the elevation above mean ocean level at Philadelphia of points on the Pennsylvania Railroad and branches, compiled from the second geographical survey of Pennsylvania, which it would be well to preserve:

	FEET.
West Philadelphia,	34
Lancaster,	359
Columbia,	251
Harrisburg,	320
P. R. R. bridge over Susquehanna river,	350
Mifflin,	441
Lewistown,	498
Huntingdon,	622
Bedford, B. & B. R. R.,	1,062
Tyrone,	907
Sandy Ridge, Tyrone & Clearfield R. R.,	1,042
Phillipsburg, Tyrone & Clearfield R. R.,	1,422
Clearfield, Tyrone & Clearfield R. R.,	1,103
Curwensville, Tyrone & Clearfield R. R.,	1,141
Bell's Mills, Junction of Bell's Gap R. R.,	1,060
Point Lookout, Bell's Gap R. R.,	1,015
Lloydsville, Bell's Gap R. R.,	1,180
Summit, Bell's Gap R. R., Bench Mark Summit of Mountain,	2,301
Altoona,	1,178
Hollidaysburg, Hollidaysburg Branch,	958
Springfield Mines, Williamsburg Branch,	1,379
Henrietta, Morrison's Cove R. R.,	1,422
Kittanning Point,	1,594
Dennington Furnace,	2,038
Gallitzin,	2,161
Cresson,	2,017
Ebensburg, at High and Centre streets, approximating,	2,160
Concmaugh,	1,225
Johnstown,	1,184
Blairsville Intersection,	1,113
Blairsville station, Indiana Branch,	1,011
Indiana, terminus of Indiana,	1,311
Latrobe,	1,006
Ligonier, Ligonier Valley R. R.,	1,151
Greensburg,	1,091
Connellsville, S. W. P. R. R.,	915
Irwin,	884
East Liberty,	918
Pittsburg,	745

THE CATTLE DISEASE.

In his official report to the Governor of his work under the act of May 1st, 1879, during the month of September, Secretary Edge reports the quarantine of seventeen herds infected with pleuro-pneumonia. These herds contain 285 animals, and are located in the counties of Chester, Delaware, Montgomery, Bucks and Lancaster. One herd each in Chester and York counties have been released from quarantine, and the latter county is, so far as known, clear of the disease.

In order to prevent the further spread of the disease in the herd, and to prevent its spread to adjoining herds, sixty animals have been appraised and killed. In all cases the disease has thus far been confined to the herd, after it has been strictly quarantined, and the Secretary reports that all owners of infected cattle have supported him in his attempts to prevent the spread of the disease.

In Chester county the Sheriff has levied on one of the quarantined herds and he now finds a conflict of duty between himself and the agent of the Governor; the matter will undoubtedly be settled amicably, but if forced to a legal decision, would give room for the display of much legal lore.

Secretary Edge also reports that in these herds, (one of which is that of Mr. Turner, in Colerain township, in this county,) the disease has shown itself in an unusually malignant form, and that the greatest loss has been in these herds. So far as known every infected herd has been quarantined and it is hoped that the authorities have the disease in check.

All cattle imported from Europe are quarantined in Philadelphia before they can be sold, and must show a clear bill of health at all times after their shipment in England. One importation has been thus quarantined, and another is expected soon.

When compared with neighboring States of New York, Massachusetts and New Jersey, the expense in Pennsylvania has thus far been very slight. In Massachusetts the eradication of the disease cost $67,500; New York has appropriated $35,000, and New Jersey $25,000.

SINGULAR DISCOVERY.

A Lafayette (Ind.) man accidentally made a most singular discovery respecting the electrical influence of the ordinary morning glory vines. Seated near the lattice work over which the vine was trained, his attention was attracted to a single branch tipped with a growing vine extending straight out from the rest, and speculated within himself whether the tiny hairs with which the stem was clothed were not placed there for the purpose of conducting the electric fluid of the atmosphere to the plant. In order to continue his investigation, he approached his finger within about half an inch of it, and was amazed to observe a slight, almost imperceptible, yet unmistakable motion of the stem. As he pushed his finger a little nearer the stem trembled very visibly, and was seemingly attracted and repelled from him. The hairs which he noticed before did not move, but remained erect. There was no wind at the time, and the motion was purely an induced one. After this interesting experiment he placed his finger within a short distance of the growing bnd and slowly moved it in a circular direction. The stem followed the motion until it was bent in the form of the letter C, and when the finger was withdrawn instantly regained its former straight position. The last experiment was witnessed by several persons, all of whom tried it with varying success.

A NEW USE FOR THE MULLEIN.

A correspondent writes to an exchange as follows about the flower of a well-known plant:

I have discovered a remedy for consumption. It has cured a number of cases after they had commenced bleeding at the lungs and the hectic flush was already on the cheek. After trying this remedy to my own satisfaction, I have thought philanthropy required that I should let it be known to the world. It is common mullein, steeped strongly, sweetened with coffee sugar and drank freely. Young or old plants are good, dried in the shade and kept in clean bags. The medicine must be continued from three to six months according to the nature of the disease. It is very good for the blood vessels also. It strengthens and builds up the system instead of taking away the strength. It makes good blood and takes inflammation away from the lungs." It is the wish of the writer that every periodical in the United States, Canada and Europe should publish this recipe for the benefit of the human family. Lay this up and keep it in the house ready for use.

JUICE OF THE TOMATO PLANT AN INSECTICIDE.

A writer in the *Deutsche Zeitung* states that he last year had an opportunity of trying a remedy for destroying green fly and other insects which infest plants. It was not his own discovery, but he found it among other receipts in some provincial paper. The stems and leaves of the tomato are well boiled in water, and when the liquor is cold it is syringed over plants attacked by insects. It at once destroys black or green fly, caterpillars, etc.; and it leaves behind a peculiar odor which prevents insects coming again in a long time. The author states that he found this remedy more effectual than fumigating, washing, etc. Through neglect a house of camellias had become almost hopelessly infested with black lice, but two syringings with tomato plant decoction thoroughly cleansed them.—*London Gardener's Chronicle.*

In the United States the consumption of tobacco is 4¼ pounds per head of population; in Germany, about 6 pounds.

OUR LOCAL ORGANIZATIONS.

LANCASTER COUNTY AGRICULTURAL AND HORTICULTURAL SOCIETY.

The regular stated meeting of the Society was held on Monday afternoon, October 6th, in their rooms over the City Hall.

The following is the list of members and visitors who were present: Calvin Cooper, President, Birds in Hand; H. M. Engle, Marietta; M. D. Kendig, Manor; Joseph F. Witmer, Paradise; C. M. Hostetter, Eden; S. P. Eby, city; Wm. McConsey, city; W. W. Griest, city; Frank R. Diffenderffer, city; J. M. Johnston, city; John H. Landis, Manor; W. H. Brosius, Drumore; Dr. S. S. Rathvon, city; Johnson Miller, Warwick; Webster L. Hershey, East Hempfield; E. S. Hoover, Manheim; Peter S. Reist, Lititz; Jacob B. Garber, Columbia; Daniel Smeych, city; Israel L. Landis, city.

The members were called to order by the President, Calvin Cooper.

The minutes of the preceding meeting were read by the Secretary, and on motion approved.

Report of Special Committees.

The Committee of Arrangements of the fair that was held last month made a report, which showed a small balance in favor of the society.

On motion, the report was received and the committee discharged.

Johnson Miller said he was one of the committee to visit the Berks county fair. The fruit display was better than at the State fair. The cattle were very fine. The attendance was very large. The fair was a complete success. He thought we ought to be able to do at least as well here as they can in Berks.

Crop Reports.

H. M. Engle reported fall pastures good. Most of the wheat is sown and is growing very rapidly—indeed, too much so. The fly will ravage it in all probability. The rainfall for September was 3½ inches.

M. D. Kendig, of Manor, reported the wheat as being all sown. The winter fruit crop is very small. The rainfall for last month was 2¼ inches.

C. M. Hostetter, of Eden, reported grain looking very well. The fly is already at work. Water is becoming scarce. Wells are drying up. Pasture is getting poor. Corn is not yet husked.

W. H. Brosius of Drumore, said that corn is a medium crop; grain looks well; grass fields are drying up; there has been hardly any rainfall; the potatoes are half or two-thirds of a crop.

Johnson Miller said wheat in Warwick is good; the corn crop will be the largest for years; pasture is good and grass growing finely, except young clover; some farmers had to take their tobacco down because it was rotting.

H. M. Engle said some of the tobacco in Donegal was so hail cut that it was thrown on the dung heap.

Should Orchards be Cultivated.

H. M. Engle said this was a mooted question. Some successful fruit growers never cultivate at all; others believe just the reverse. The best fruit he had ever seen was from cultivated orchards. In peach orchards the ground is always cultivated. He was not certain this rule was good for apples. Thos. Meehan never cultivates, and he is one of our best fruit growers. Mr. Satterthwait cultivates all the time and is also very successful. Tobias Martin, of Franklin county, is the greatest pear grower in the country, and he plows annually. He was therefore not prepared to say what was best, but he would say while trees are young you can't cultivate too much; if you can't they will become stunted. As for himself, he inclines to cultivation, but favors very shallow plowing; a common cultivator is perhaps as good as a plow. We must, however, manure; we cannot draw on our orchards without making them some return.

W. McConsey does not think he could settle this question, but he believed cultivation and fertilization were absolutely necessary to keep orchards in good bearing condition. His own experience has proved this to him clearly. Whether it was owing more to cultivation or the manuring he was not able to say, but he attached more importance to the latter than the former. He gave an instance where a fine tree began to give inferior fruit from year to year. He used some pig manure and the change was really wonderful. He believed it all due to the manure. He was not so sure as to the advantages of cultivation. He cultivated an orchard that had run down, and also manured it; the results were good.

Johnson Miller has an orchard that was not cultivated for twenty years and yet produced wonderful crops. He gave other similar instances. He has planted a young orchard but did not cultivate it, and it has done very well. He believed in manuring orchards.

The President said his practice was not to cultivate; he manures and limes often, and has good crops; he leaves all the grass and weeds on the ground; he has pruned but little; he grubs the

grass within three feet of the stem of the tree. His trees are branched within three feet of the ground.

H. M. Engle thought while one man succeeds by cultivation another may fail; therefore there is no certain rule; certain soils are better adapted to fruit-growing than others; this must be considered; this may account for these differences; it is so with nearly all crops. These facts must not be forgotten. Some trees also bear better crops than others. Some are surer bearers; one orchard may have more of these latter than the others. The soil, however, needs replenishing.

E. S. Hoover gave the experience of a friend, who thought that an orchard ought to be cultivated from the beginning; then the roots would go down and the trees not be injured. He has an orchard that latterly is not doing well, although manured and cultivated. He can't account for the change. He was careful not to cut any large roots. He will not cultivate again, but he believes in manuring as regularly as for any other crop. Perhaps, also, his orchard is growing too old. It is a nice question whether we can cultivate our orchards without injuring the trees.

Webster L. Hershey spoke of an orchard that has not been cultivated much but has been regularly manured but seldom gives a crop; the trees are of the same age, and in the same kind of soil; pear trees in these orchards show the same results; some seedling trees also show the same effect under the same condition.

W. H. Brosius asked whether hogs feeding in an orchard were injurious. He was told they might not hurt the fruit crop, but they would the sod and roots.

E. S. Hoover had a peculiar experience; he tore down an old hog pen and planted there several kind of trees—pear, peach and apple—all of which died; finally he planted a crab apple tree, which grew wonderfully.

H. M. Engle said wood ashes were more conducive to the growth of trees than anything else. He gave instances of their beneficial effects at the State Experimental Farm.

The New Society.

W. McComsey called attention to the fact that an impression prevails that our meetings are now only the meetings of the officers and not of the society in general. He thought this had affected the size of our meetings. If it was the same old society he thought it ought to be stated.

H. M. Engle also observed our attendance is smaller than formerly. He thought that the President ought to make a statement, setting this thing in its proper light, and publish it in the papers.

Considerable discussion arose over this question, whether the members of the old society are full members of the present one, all holding that they ought to be.

F. R. Diffenderffer said that when the society obtained its charter it was held that the new organization was a different body, and it was then proposed that all the members of the old should by resolutions be made members of the new.

W. H. Brosius thought that as the charter was obtained by consent of the members they must be considered as members of the new organization.

F. R. Diffenderffer offered the following resolution, which was unanimously adopted:

"*Resolved*, That all the members in good standing of the Lancaster County Agricultural and Horticultural Society prior to its incorporation, be and are hereby declared full members of the chartered society, and as such entitled to all the rights and privileges of the society."

W. McComsey said that John H. Landis, a member of the State Legislature, was present, after having made an extended tour through the far West. He moved that the gentleman be invited to address the society.

Farming in the Far West.

Mr. Landis responded, and gave an account of the immense crops that were grown in the new States of the West. Business is reviving. Capital no longer seems afraid of making new investments. All the great industries are looking up. Everything seems flourishing. Different causes have contributed to this. Among these, perhaps, is the feeling that people once more have confidence in the money they now have. They feel that the dollar they have will be a dollar all the time and everywhere. Surprised at being called upon, he was not prepared to say more.

On motion a vote of thanks were extended to Mr. Landis for his remarks.

H. M. Engle, having been West, was also asked to relate his impressions, but as he had already written several articles concerning that trip he asked to be excused for the present.

John H. Landis consented to deliver an address before the society at its next stated meeting.

Amendment to By-Laws.

The following amendment to the by-laws, having been offered at the last meeting, was called up: The Treasurer of the society shall before entering upon the duties of his office, give bond with approved security for the safe keeping of the funds and proper disbursement of any funds of the society which may come into his hands.

On motion the resolution was adopted.

Daniel Smeych exhibited the branch of a pear tree loaded with fruit: this tree has for years borne Hosenshenk pears, but has lately commenced bearing entirely different fruit. The limbs are gradually varying from the original variety. Some look like the original, and some are entirely different. The change seems to be going on constantly. The members were seemingly doubtful of such a freak of nature, and were inclined to think a stray bud or graft may have surreptitiously been put on the tree.

Business for Next Meeting.

The business committee reported the following questions for next meeting:

What kind of horses are most profitable for the farm? Referred to E. S. Hoover.

What branch of farming will pay best? Referred to C. M. Hostetter.

Are large or small farms most profitable? For general discussion.

Jos. I. Witmer, H. M. Engle and others thought we ought to adopt some new features to make our meetings more interesting. We ought, now that we are taking a new departure, to make some advances in our proceedings. It was suggested that the German element ought to be brought in. No people anywhere understand farming better; if they would come here they might teach us much; we ought to have them by all means.

Fruits and Flowers.

H. M. Engle had for examination a number of fine pears: Urbaniste, Bose, Kingsessings, Buerre Langalier, Mount Vernon and Sheldon.

M. D. Kendig had a Hericort pear and also a hardy shrub with plumes—the *Ulalia Japonica Varegata*, and a handsome flowering plant, the *Hydrangia Paniculata Grandiflora*.

There being no further business before the society a motion to adjourn was carried.

THE POULTRY ASSOCIATION.

The stated monthly meeting of the Lancaster County Poultry Association was held Monday morning, October 6th, in their rooms in City Hall.

The following members and visitors were present: Rev. D. C. Tobias, President, Lititz; J. B. Lichty, city; Charles E. Long, city; Wm. Schoenberger, city; W. W. Griest, city; Charles Lippold, city; Frank R. Diffenderffer, city; J. M. Johnston, city; T. F. Evans, Lititz; Amos Ringwalt, city; Frank B. Buch, Lititz; Henry Wissler, Columbia; Ferdinand Sheaffer, city; Washington L. Hershey, West Hempfield; Jacob B. Long, city; William J. Kafroth, West Earl; S. C. Garber, Rapho.

The meeting was called to order by the President. The minutes of the previous meeting were read and approved.

Report of Committee.

Charles E. Long, from the Executive Committee, reported that that body had met at Lititz and transacted a large amount of business, among which was the securing of the room above D. P. Locher's Banking House, at a rental of $2.00 per day.

The committee on procuring judges for the coming exhibition stated it was not yet in a condition to report.

The time fixed for the exhibition is from the second to the seventh of January.

New Business.

Harry Myers, Mt. Joy; J. W. Bruckhart, Salunga; John Lorentz, Benj. F. Cox, John L. Metzger, Gideon Arnold and Joseph A. E. Carpenter, from the city, were unanimously elected to membership.

J. B. Lichty stated that since last meeting a number of new subscriptions had been received, making a total up to this time of $81, towards setting the coming poultry show on a sure financial basis. Other members came forward and put down their names, swelling the list considerably.

A long informal discussion occurred at this point. The chairman of the Executive Committee stated that while the success of the coming exhibition was undoubted, his committee, nevertheless, felt some reluctance in going ahead until they had enough money in hand to pay any and all expenses that might be incurred, so that under any circumstances the society would be able to meet its obligations. A number of plans were suggested to meet the desired end. The most liberal disposition was evinced by all the members present, all being willing to do their utmost and even increase the number of tickets they had already agreed to take. A committee of three, consisting of Messrs. William Schoenberger, J. B. Lichty and Chas. Lippold, was appointed to solicit a few outside subscriptions to make assurance doubly sure. This committee will call upon the hotel keepers, and perhaps some others, for subscription to tickets, and as it is believed a large crowd will be drawn they may easily realize far more than the cost out of the persons who may visit the city to see the exhibition. We think we are not mistaken in promising the people of this city a poultry show that will compare favorably with those of societies ten times as old as this one.

A letter was received from A. H. Shriner, of Sporting Hill, resigning his membership on the Executive Committee, because of the impossibility of being present often enough. The resignation was accepted. The filling of the vacancy was deferred under the rules until the next regular meeting.

A motion was made and carried to meet in two weeks from to-day, in order that the business connected with the exhibition could be more fully discussed.

There being no further business before the society a motion to adjourn was made. Carried.

FULTON FARMERS' CLUB.

The Club met October 3d, at Franklin Tollinger's. The members were all present during part of the day, and they also had the pleasure of the company of three neighboring farmers as visitors—Davis A. Brown, Isaac Bradley and Edwin Stubbs. The Club was called to order by the president.

Exhibit of Farm Products.

Josiah Brown exhibited a radish of immense size, weighing eight pounds, some Yellow Dent Corn, a few large sweet potatoes from an enormous crop for a small number of plants, and an apple for name, pronounced the Northern Spy.

C. S. Gatchell: Two varieties of apples for name, one Paradise, the other still unknown.

J. R. Blackburn: Four varieties of grapes, which were enjoyed by all present. Among them he called our attention to some good sized fruit that had blossomed and grown since the 11th of July, at which time a very severe hail storm passed over his and adjoining farms, in all cases leaving little or no vegetation.

Mr. B.'s Isabella grape vine seems to have suffered, but being of good cheer it went to work and put forth its blossoms anew, and although the fruit was not ripe it shows by example that we are intended never to get disheartened when difficulties overtake us, but turn the bright side to the task and with willing hands and hopeful spirit try to win.

Davis A. Brown: Four kinds of apples—King of Tompkins county, Rhode Island Greening, Smith's Cider and Winter Sweet.

Montillion Brown: Corn.

Asking Questions

What would the club do with cabbage when the heads are bursting?

Most would loosen the roots by pulling it to one side, and thus prevent it from growing; and some others plant late, so that it would only mature in time to put up for winter use. Still others would make sauer kraut, and by this method preserve those that had already burst.

How is sauer kraut made? D. A. Brown endeavored to give a recipe, but we failed to gather it accurately enough to report.

Day Wood was called upon to give a report of his experience of the Cooley creamery. Having no written report, he gave some idea of the mode and his opinion of the plan. He considered it a very great saving of work, as there is little washing required to keep them clean, and when the milk is put in there is no danger of dirt or insects getting into it. The only objection was that it took more room to hold the cream and a larger churn to churn the cream. Not the great increase of butter, but the bulk of cream must be greater. It requires very little ice.

One of the ladies gave a recipe for removing white spots from varnished furniture caused by heat. Rub them with spirits of camphor. She had tried it, and was quite successful.

Dinner being now announced, the club adjourned until afternoon. The table was not only laden with good things to eat, but a large and beautifully arranged bouquet of choice flowers, presented by one of the lady visitors, Mary H. Stubbs, graced the table and was the centre of admiration by both sexes.

Viewing the Farm.

After dinner the gentlemen took their accustomed stroll over the farm, while the ladies had a general good time.

Afternoon Session.

The minutes of the last meeting held at this place were called for, and after the reading of the criticisms of the farm, &c., were in order. These, however, were more in the form of praise, and truly our host deserved all they gave him. He, with the assistance of a valuable wife, or *helpmate*, has earned for himself a comfortable home with everything comfortable around them.

If the young men who look on would take our host as an example and contrast him with those who started at the top, they would, we think, try to save the littles. It is the young man who rides in fine buggies, drives fast horses, smoke cigars and indulges in his social glass who will be the poor man of a few years, for then the boy who is now poor, if he has proper ambition, will step into his shoes as he steps out.

Literary.

The essay of the host was substituted by Lauretta A. King, who read a selection entitled, "Why some men are poor." It laid all misery, suffering, mis-

fortune, etc., at the door of neglecting little things; but we are not certain that such perfection could be reached, and if it were, whether it would be profitable. One of the members suggested that the man who wrote it was like the temperance lecturer who was listened to by two Scotchmen. After it was over one said to the other, "What do think of that?" "I think he must have been a bad lad, or he would nay hae kenned so weel."

One present thought the easiest way to bring about a reform was to stop the large taxes, and the first step in this direction was to vote for prohibition. The man who does not vote for less taxes in the form of prohibition votes for a large tax, and not for himself alone, but to support others who are made destitute by the use of intoxicating liquor.

Allie Gregg recited the "Yankee Girl," by John G. Whittier; Carrie Blackburn, "How Maud Kept Watch;" Phebe King, "The Will of St. Keen;" Mabel A. Haines, "The Death of the Flowers."

The regular question was now taken up, "Whether it is profitable to feed stock on purchased food?" This was discussed by nearly all present, but we think no one could get a definite idea from the discussion of the truth of the matter. Hogs were the only stock that seemed to pay, and some thought they would not.

Question for next meeting—"All things considered, what advantage has the Western farmer over the Eastern?"

Essays for next time: Sadie Brown, Allie Gregg, Renie Tollinger, Mary A. King and Mabel A. Haines.

Adjourned to meet at G. A. King's, on the second Saturday in November.

THE LINNÆAN SOCIETY.

The Society held their stated monthly meeting on Saturday, the 27th of September, President Rev. J. S. Stahr in the chair. After attending to the opening duties, the donations to the museum were examined, found and to consist of a well feathered, full sized flicker or Golden-winged Woodpecker, *Colaptus auratus*. This, in its flight, came in contact with a telegraph wire and was captured, and donated by Albert Clark, city, and neatly mounted. A conglomerated mass of caterpillars, adhering together, in alcohol, by S. S. Rathvon. A small jar containing a House or Milk snake, a small ring-necked snake, and several red, black-spotted salamanders; name not given. Dr. Baker found a caterpillar covered over with small cotton-like pellets. These were the cocoons of a small parasitic fly, of a family related to the Ichneumons. A beautiful specimen of pipe ore, a variety of brown hematite, from the Mourer mine, at New Providence, Lancaster county, donated by A. H. Peacock, esq. A fine specimen of Margarite, from Pequea, no name given. A singular encronite, picked up in the street at Erie, per S. W. Mifflin, esq. A number of the winged fruit, a species of maple, picked up at Saratoga, by Dr. Baker. These, instead of being in pairs, were in triplets, and each had only one seed vessel which was not eaten out by some creature. This seemed curious that one should be spared, but Dr. Davis discovered, on inspection, that all those that were not eaten out or defaced were abortive and had no kernel in them. A sagacious creature—it would not waste time to open a barren shell. Mr. Melton found a maple tree of considerable size, grown wild, the leaf of which is like the introduced species—the Norway maple—no fruit seen; rather thick leaves, with long red petioles; seems to differ from the sugar maples. The five-legged frog donated by Mr. Snyder, North Queen street, having been put in strong vinegar instead of whisky, when inspected was found all softened to the very bones, so that nothing could be done with it. Dr. Davis took it along to experiment whether it was possible to harden it so as to retain its anatomy of the bones. It is well that Mr. Stauffer had an accurate copy of it illustrated in the *Scientific American* for September 13, 1879. No. 11, vol. XLI, page 165, otherwise this interesting monstrosity would have speedily become oblivious. To the

Historical Section.

was added two fine plaster casts, taken from moulds furnished by the actual stones sculptured in England from a kind of calcareous rock known as Oolite or Roe-stone, having the coat of arms of Thomas and Richard Penn on the north side, and that of Lord Baltimore on the south side. Every fifth mile had one of those stones marking the boundary between Pennsylvania and Maryland, known as Mason and Dixon's line. The intermediate mile stones had simply a P on the one, and an M on the other side. William. M. Lee, esq., of Green postoffice, Lancaster county, at some trouble and expense, hunted two of the most perfect of these stones to copy from, as all were more or less defaced. We understand that he has a few duplicates which he will dispose of at a reasonable price. Those donated to the society are truly beautiful and highly valuable mementoes of our early history. Mr. Rathvon also deposited ten envelopes containing 153 clippings of newspaper articles of historical interest.

To the Library.

was added a general index of the Agricultural report of the Patent Office and Department of Agriculture; the Patent Office Gazette, up to September, 1879; *The Lancaster Farmer* for September, 23, 1879, and book circulars.

Papers Read.

S. S. Rathvon read a paper, "Observations on *Pseudo-coccus aceris*," infesting the leaves and lodging in the bark of the sugar maple. *Acer Saccharium*, in Lancaster Pa., illustrated by drawings, per J. Stauffer, No. 527. The remarkable development of a fungus illustrated, and a description given by J. Stauffer, No. 528. This is of a fungus found growing in the same locality in Mr. Sprecher's yard, from which that was taken in the report at the last meeting (August 27.) This was left in the ground until morning of September 23, when it had attained to the height of seven inches. The gelatinous bulb was ruptured and a thick stipe of a white color, composed of large open cells, and centrally hollow, surmounted with a cap only attached to the upper end of the attenuated stipe; this cap hung loose, like a bell, smooth inside; on the outside it had thin, high meshes or cell-walls, of various forms, with its lower edge bent up and terminated by curved points; from the stipe under the cap, a loose pendant net work all around like a veil of lace, having coarse open meshes. This proved to be like a specimen found by Mr. H. L. Zahm, in his garden, October 6, 1876, a drawing of which was sent to Dr. Farlow, Boston, who makes this class of vegetation a specialty; he called it the *Phallus indesiatus*. In its first stage it was like those sent from Quarryville, by I. C. Raub, September 26, 1877; one sent to Mr. Farlow had partially developed, and he supposed it would be the *Phallus inpudicus*, which, however, has no such pendant lace-work like veil. That such a potato-like, elastic bulb, which looks more like a large puff ball, should turn into a Phallus is a very interesting fact in its development. Mr. Stauffer also read a paper, No. 529, on the history of the facsimiles of the line stones donated by Mr. Lee, and the date of their erection, size and fluting.

On motion a vote of thanks was cordially given to Mr. Lee for his liberality in bestowing so great a favor on this society.

Mr. George F. Rathvon, who has a share of stock, and was supposed to be a member, was on motion unanimously elected an active member of this society.

On motion of J. Stauffer, Mr. Wm. M. Lee was elected a corresponding member of this society.

Scientific gossip was indulged in on various topics suggested by articles deposited, and an interesting meeting had.

Society adjourned to the last Saturday in October next.

AGRICULTURE.

Application of Manure.

Manure is becoming to most American farmers something more than a mere luxury—it is really to plants in these old-established places one of the necessaries of life. We cannot afford to waste it, and hence any information that leads us to use it with economy, is welcome to us all.

The subject comes up periodically as the fall comes round, and seeing its importance, it is not to be wondered at. The proper application is the great question. Singularly enough, though pages on pages have been written about this, the most intelligent of our agriculturists seem to differ about it. Some insist that they have the best success when they bury the manure deep into the earth, while others contend that the nearer the surface the better.

Judging by what we read, much of the arguments used in this question are theoretical. One tells us that he has found roots of grain and grass two or three feet from the surface, and as they thus wander so far, manure ought to be scattered all along the road traversed by them. Others contend that the mass of roots are generally near the surface, and that the food ought to be chiefly placed where there are the most mouths to require it. For our part we have little faith in any rule of agricultural practice that is derived from mere theoretical considerations, knowing how often they fail when put to the test. We know that in Europe, where the theories of intelligent men have been put to practical test, it is found that the nearer the roots can be kept to the surface, the better are the crops. Not that they favor shallow soil, or shallow culture, for they subsoil and underdrain at an expense per acre that would frighten us; but this is chiefly to keep the ground open that water may pass rapidly away, or that moisture may come up by capillary attraction at a dry time. But after working the ground up thus deeply, they take pains not to let the roots run deep. We noticed recently in a chapter on grape growing in England, that they even go to the trouble of raising roots occasionally in the grape borders, so as to bring them nearer the surface, and it is well known in Germany, that in order to have walnuts in perfection, the roots must be compelled to keep near the surface; and this they insure, by planting under the tree a milk pan of the old earthen pattern, so that the roots cannot extend down, but outwards.

These and other European experiences all favor the idea of surface-feeding. We are inclined to think also, that the average American experience has been in favor of keeping the manure near the surface. Some even go so far as to assert that it is best applied wholly on the surface, and not buried in the earth at all, and we may add that it is becoming more and more the custom among our best farmers in Eastern Pennsylvania. Nevertheless we should like to see the matter tested more thoroughly than we think it has been, and the results sent to us for publication. As we have said, it seems that the best testimony is in favor of surface dressing; but there is much to be said on the other side, and our columns are open to hear from it.—*Germantown Telegraph.*

Plowing Down Green Crops.

The more I see of plowing down green crops the more I become convinced of its utility. Even if there is only a short growth so that it covers the ground well, and though young and tender, exhibiting little manurial value according to analysis, yet the effect is undoubted and considerable. It adds to the fertility and improves the mechanical condition beyond what the means would seem to warrant, though it is known that shading the ground mellows and cools it and thus lessens what evaporation of its fertilizing gases might take place. The vegetable growth plowed under also furnishes humus rapidly, acting at the same time chemically upon the soil, and in an advantageous way from its equal distribution through the soil. Certain it is that here is a benefit and a profit on the outlay. This is especially the case where plowing can be avoided, as with stubble land, where only the harrow, or cultivator followed by the harrow, need be used to secure a seed bed. Where the land is designed for a spring crop rye is perhaps the best to sow, as it grows a heavy mat by late fall, and if intended for corn quite a heavy growth can be turned down before planting, if the soil is in good condition and its fertility not too much reduced.

Buckwheat may be substituted for rye. This is especially good for earlier sowing where a crop of rye, or wheat, or barley has been removed. The ground in this case will be better shaded and hence protected, will be mellower and weeds are kept down. The pea also is a great benefit. Any plant that grows well and covers the ground will answer. The matter is dependent somewhat upon circumstances, such as the cheapness of the seed, the plant best adapted to poor or rich land, sandy or clay soil, etc.; also whether plaster has a good effect, which it almost always has upon the pea, and being the cheapest of manures in such case and readily applied, recommends itself. This little labor and expense the after part of the season can, in most if not all cases, be afforded, as the harvest is then secured and the work is less crowding. Our stubble land, instead of lying idle and exposed to the elements, should be given something to do so as to protect and improve it.

Putting in the Wheat Crop.

A singular discussion arose in the papers lately as to whether there was really any advantage in the drill over broadcast sowing. It is strange to find such subjects coming up. To experienced minds it is like arguing whether we had not better abolish reaping machines and return to the old cradle, if not, indeed, to the sickle at once. To us a more reasonable matter would be the width of the drills. We do not know of any extended and satisfactory experiments in the country so as to test the matter beyond question. At any rate, what a foreigner would call very close sowing is the rule here. In England, however, where close calculation is much more the rule in farming among the more intelligent than with us, there is a growing feeling in favor of wide drills. Some set them as wide as ten inches, and the reports, especially this year, are generally in favor of the wide drills.

The great trouble with most of the experiments of this kind is, when made in experimental grounds, that they extend but over a single season, when it is only after trial through a series of years that a general rule can be formed. It makes a great difference, for instance, whether the experiments are made through a dry season or a moist one. In a dry season, when there is a deficiency of moisture in the ground, a wide row will have the advantage over the narrow, as there would not be enough for all. In other seasons when there is moisture, and enough for all, the result might favor closer rows. So, also, the nature of the soil might make much difference. A soil which does not dry out easily will permit of closer sowing. The one element of moisture for the growing crop alone makes a considerable element to be considered. Still an average of years would show what would be best on the whole, and we should like to see such figures.

Smut in Grain.

The black powder observed in grains of wheat, oats, barley or rye, and ears of corn, is generally known as smut. Viewed under a microscope of high power this smut is seen to be a mass of black, round

balls. These are the seeds of a plant or fungus which has several intermediate stages of growth, and finally reproduces a new set of spores. These seeds will float in the atmosphere and adhere, without being noticed, to the grain. When grains of wheat are sown with this fungus attached, the fungus strikes a filament into the tissue of the plant and affects it as with poison. The parasite penetrates throughout the tissues of the plant sometimes, as with corn bursting out upon the stock, but generally appearing in the ear. It has been discovered that caustic allies destroys the substance of smut; and, also, that the application of sulphates of iron, copper and zinc have the same effect; of these latter the sulphate of copper—the commonly known blue vitriol—is the most useful. The usual method of applying these remedies is to steep the seed in a solution of the various substances. The solution may be made as follows, and either the one or the other may be used, as found convenient:

One pound of common salt in one gallon of water.

One pound of glauber salts in one gallon of water.

Four ounces sulphate of copper in one gallon of water.

Sufficient of the solution should be made to saturate the seed, or thoroughly moisten every grain. When the seed has steeped for two hours it is drained and spread upon a floor and sprinkled with dry lime in powder, that which has been air-slaked, by exposure to the atmosphere in a covered shed, until it falls into a fine dust, is best fitted for the use. The seed is then shoveled and stirred until each grain has been coated with lime. In an hour or two it will be dry and may be sown. There are at least fifteen species of the smut fungus known to botanists.

Western Farmers Much Favored.

The growers of wheat in the Mississippi Valley, and the owners of cattle ranges in the prairies beyond are certainly favored individuals. In opening up a new channel of trade, most persons have immense difficulties to contend with; they have not only to pay what might be called regular charges,but usually have extra demands of one kind or another to meet in consequence of their ignorance of existing customs. In the case of the person referred to above, this friction of inexperience seems to have been avoided. A comparatively new trade has been started of shipping surplus grain and surplus cattle to England from the far West, and by this arrangement the Western farmer is put in an exceptionally easy position. From the farm to the seaboard his productions intended for export are carried by rail at a much lower rate than that asked for taking the wheat of an Eastern grain merchant from Chicago to New York. The same consideration is shown on ship board, and the Granger sends his wheat and cattle across the Atlantic at about a third less than he would pay if he shipped them directly from New York. We had supposed that the advantage ended here, and that, when once in England, even the farmer of the mighty West was placed on a plane of equality with the rest of the world. In this judgment we were, however, mistaken, for, from a debate which recently took place in the House of Lords, it appears that his influence is as great abroad as it is at home. The English farmers and dealers complain that their interests are sacrificed to encourge American trade. They point out that the railroad companies take American beef from Liverpool to London at 25 shillings a ton, while they charge 50 shillings for transporting English beef over the same distance; again a preference in rate of about one-third is given to American grain over home productions.

Cultivating Wheat in England.

Our readers well know that we have not favored what is called the new system of "cultivating" wheat, which for the last couple years, in the eastern part of our state, has caused some excitement among our farmers. In pursuing the "new" method it was fortified by the statement that it had been adopted by the best farmers in England to the exclusion of all others. In our reading we could not see that this statement was endorsed to any considerable extent, though some some years ago it became somewhat practiced. The editor of the *Rural New-Yorker*, wishing reliable information on the subject, wrote to Dr. J. B. Laws, of Rothamsted, England, and received the following reply:

"No one here cultivates wheat, nor has thin seeding ever made much way. At the present moment the great bulk of the wheat grown in this country is drilled in rows about five inches apart, and the seed used is about two bushels per acre. It stands to reason that if one plant of wheat has possession of one or two square feet of soil, its power of growth must be increased, but except upon garden soil, or upon farms in excessively high condition, I feel sure that thin seeding will never be successful."

This would seem to settle the question, alike as it regards cultivating, thin sowing and drilling-in the crop. In England, where labor is cheap and a ready demand for every bushel of wheat that can be raised at good prices, they are quick at taking up every new idea that looks to an increased production at reduced cost; and this ought to cause American farmers to hesitate to adopt a system that has been tried and abandoned under circumstances so clearly condemnatory of it.—*Germantown Telegraph.*

To Kill Sorrel and Clean Gravel Walks.

A correspondent remarks: I have seen several inquiries about eradicating sorrel but having been engaged hitherto unsuccessfully in attempts to do the same thing, I have had no suggestions to offer. But I have recently made a discovery which I think is valuable. The gravel walks in my lawn have given me much trouble to keep free from weeds, of which sorrel was the most persistent. The fingers and hoe might free the gravel from this pest to-day and in two weeks the walks would be again covered with it. This method of weeding was too costly, and remembering an old plan of my father's, I purchased two bags of cheap salt, and gave the walks a liberal dressing of it. There were sorrel, chickweed, purslane, plantains, crab grass,so called, of various kinds, ragweed and others of which I knew not the names. The sorrel was the first to succumb; the chickweed followed; the crab grass and ragweed, and some grass spread from the lawn, mainly blue grass and white clover, were uninjured till I doubled the dose; then every green thing gave in, and the walks were clean. The fact as to the sorrel prompted me to try salt on portion of the lawn overrun with it. The effect was gratifying. A dressing which just made the place white as though hoar frost was upon it, killed all the sorrel but left the grass uninjured.

Fall Plowing for Corn.

Heavy clay soils that have a good covering of clover or grass sod may be plowed in September for a crop of corn next season. We would not plow the furrows flat, but set them on the edge. In the spring a good harrowing, lengthwise the furrows, will give a sufficient depth of mellow soil for planting, leaving the decomposed sod just where the roots can reach it. A light application of artificial manure, before the harrowing in the spring, would be beneficial. The planting should immediately follow the harrow, while the soil is fresh. Light or mucky lands had better be left till spring, as this treatment is not proper for them.

HORTICULTURE.

Growing the Pear.

For some reason or another, pear-culture as a profitable investment has only been exceptionally successful; and yet it would seem that there ought to be some way to make them as good a paying crop as the apple. There are, however, many special localities where pear-culture has proved very remunerative; and in some places not specially favorable there is once in a while an individual who does pretty well with them. It is more than probable that much of our ill-success in this line is owing to the wrong varieties being planted. We doubt whether the summer varieties ever paid very much, except those who personally attend to their own retailing. They keep but a very short time, and are often rotten if not sold in a week from gathering. Fall pears, which will keep a few weeks, do better; but the winter pear, when well-ripened and cared for, is the kind which pays.

The pear is one of the most regularly bearing of all fruits in Pennsylvania. There is rarely a season when they are total failures, as apples sometimes are; and if the kinds suited to the location are judiciously selected, and then proper attention given to ripening them, they ought to be among the most profitable of all crops in the vicinity of populous towns. As a fruit for country people we do not think as a matter of profit the pear will ever compete with the apple. They cannot be barreled and shipped as readily as the apple can, without danger of rotting by the way. They cannot stand hard treatment as the apple can. And then they cannot be put to as many uses. The apple can be cidered, and dried, and buttered, and lots of other things; and even when it reaches the kitchen there are numberless uses to which the apple is put to which the pear durst not aspire. But on the other hand the apple on the dessert-table, no matter how roseate and smiling it may be, is always passed by when a delicious pear is present. In this particular line it will always rule, and for this purpose will always command a ready price when goodly specimens are offered. Now it seems to us that in pear culture the inhabitants of town neighborhoods have a great advantage which the apple growing country cannot emulate.

There is another advantage in growing the pear. It usually throws its roots deep dawn into the earth, and does not seem to eat out the surface soil for a long way around as the apple does. After an apple orchard comes fully into bearing, we must give up the ground wholly to it; but we can crop up almost to the trunk of an old pear tree, and get very near as good vegetables there as in any other part of the garden ground. This is of course in alluston to old standard pear trees where the branches have been trimmed up to a good height; as however rich the soil, good vegetable crops cannot be grown if shaded by branches. The main point is that the roots of the pear tree do not rob the surface earth near so much as the apple roots do.—*Germantown Telegraph.*

Small Fruits.

H. M. Engle & Son, nurserymen, Marietta, this county, after considerable experience with strawberries and raspberries, give their opinion about various varieties, as follows:

STRAWBERRIES.

CHAS. DOWNING—One of the best for cultivation.

SETH BOYDEN—Large and of good quality; a vigorous grower.

CUMBERLAND TRIUMPH—Berries large and uniform shape, bright red and of good quality. One of the best for home market, but not firm enough for distant shipment.

CRESCENT SEEDLING—Although not recommended by some,we think this a most valuable sort for general cultivation. It is a rampant grower, an immense cropper, and when not allowed to run too closely, the fruit is very fine and of a good quality. It is a pistillate, and should be planted near some staminate sort to insure proper fertilization.

SHARPLESS—From one season's observation and experience with this variety we are disposed to place it at the head for size and vigor of growth; while its quality and productiveness are all that can be desired. It will, perhaps, more than any other sort, repay careful cultivation, and when kept in stools or narrow beds, will yield a handsome crop of the finest berries.

PRESIDENT LINCOLN—Although not yet extensively fruited with us, we think well of this variety. It is of immense size, irregular in shape and of best quality.

RASPBERRIES.

BRANDYWINE—We have tested quite a number of new varieties of raspberries, but have thus far found nothing so desirable among red varieties as Brandywine. There may be sorts of better quality and larger size, but for beauty of color, productiveness, and general market purposes, we consider it the best.

DOOLITTLE and MIAMI are black-cap varieties of good quality and very productive.

GREGG—A new black-cap variety of great prominence, a strong grower, very productive, and berries of largest size and best quality.

Mulching Strawberries.

A correspondent of the *Country Gentleman* says: Ground stirred frequently and kept fine serves as a mulch to some extent and promotes growth; but a special mulch has been made to do better. Sawdust has been objected to as possibly souring the soil. But I doubt whether this is the case, or at least enough to form an objection, as I have seen plants grow in it in the most thrifty manner, only a little dust being mixed with it, resulting from the thawing of ice embedded in it. Leaving the winter covering on strawberry plants till late—till after the freezings and thawings are past—which serves in a measure as a mulch, I find to be an excellent plan, protecting them against the changes of the weather. The present season I applied a heavy mulch of buckwheat hulls and dust obtained at the mill. This being dark absorbed the heat of the sun, and is one of the best materials for holding moisture. During all the dry weather it kept the ground moist. Green weeds and swamp grass I have used for years around trees with good results. I give a thick coat, which hugs the ground closely, and when decayed affords manure and improves the texture of the soil when worked into it. Especially is it good on clay. It also retards the pushing forth of weeds and grasses. We do not mulch enough, and we do not mulch thick enough. The soil should always be worked mellow before the mulch is applied. A thick porous mulch is to the soil and the roots of the tree what an air chamber in a house is to the room and its inmates—a guard against the extremes of heat and cold and sudden changes of temperature. Now is the time to apply it, before the summer drought has relieved the ground of its moisture, the mulch serving as a preventive. Muck, forest mould, sawdust, cut straw and chaff, each makes a good covering. Where fertility is lacking coarse manure is the best mulch, but should be applied either late in the fall or early in the spring, so as not to push the growth too late in the season.

Distances for Grapes.

The strong-growing American grapevine must have ample space to grow. They may be restricted for a few years and bear moderate crops, but when they are older they should have a full chance to throw out their long arms. The late Wm. A Underhill, of Crown Point, N. Y., showed us a part of his twenty-year Isabella vineyard, where he had allowed the vines to extend over a roadway, giving them some sixteen feet more room. The improvement in the crop was striking. Mr. A. Hood, of Ontario, planted Concords six feet apart each way. They bore little

fruit. The spring of the seventh year, he took out every alternate vine, and then had a fine crop. He tried a similar experiment on a large Catawba vineyard planted eight feet apart; the result was a greatly increased quantity of grapes. He also stated that Concord vines covering 54 to 48 trellis, carried by actual measurement more grapes than any adjoining vines 12 feet apart and occupying the same extent of trellis. An experienced grape-grower has just stated to us that he had planted his vines 15 feet apart, and had grafted every alternate vine with another sort. The grafts failed to grow, and the old vines, being thus thinned to one-half in number, gave a much better crop than the whole did before. We might cite many other cases—all showing the importance of giving ample space to strong growers. And one other precaution should always be observed, never to allow the vines to overbear; thin out the numerous bunches. We do not now hear vineyardists, as formerly, boast of the many tons of grapes they have raised to an acre, as they have learned that the fruit is better and the vines less exhausted when the thinning has been properly done.

Putting Away Potatoes.

The Germantown *Telegraph* says: "Every method has been tried by farmers to store and preserve their potatoes through the winter, and we may say until potatoes come again. It is the most valuable of all vegetables, though here and there we find a person and a writer who undertakes to tell us of its unwholesomeness. It is universally consumed in all civilized countries, as where it cannot be grown it is imported, which can be done long distances without injury when ventilation is attended to. In storing potatoes several methods are adopted, yet they are all practically the same, the object being to protect them against freezing, whether buried in pits or stored in cellars. The first consideration is to keep them in perfect darkness; the next is the bins should not be too deep—not over three feet—to prevent warmth and consequent sales should be frequently examined and all sprouts removed, for as soon as a potato begins to sprout it loses its solidity, dryness and quality."

Beet Sugar.

Already some fourteen companies have been formed in the states and Canada for the manufacture of this sugar, and the demand for seed last spring was so great that immense quantities have been imported from France. Several tons were ordered early in the year for New Brunswick and Delaware parties; the Maine Beet Sugar Company took three tons on the 14th of April, and on the 12th of May an equal amount arrived for the farmers of the Connecticut Valley. These are but a few among the many instances which might be named. As six pounds are held to be ample for planting an acre, it can easily be seen that a great area was devoted to this root this year. Good beets ought to yield from nine to ten pounds of sugar, to ten hundred weight, which is rather more than the same quantity of cane will do.

The effect of beet culture on the prosperity of a community is well exhibited in France. Official records show that the production of cereals and meat has steadily increased in those departments where the roots were regularly cultivated, and the same is true of similar sections of Germany and Belgium. This year's venture in this country will have a more important influence on the future of this industry here than any which have preceded it. But the complete success which has crowned the efforts of those who have heretofore raised the sugar beet on a small scale cannot well fail to be the reward of those who are now making trials much more expensive.—*Philadelphia Record.*

Apples—Picking and Keeping Them.

Stephen Betts, a well known fruit grower of Bucks county, says in an essay read before his county society: "We think the time to pick apples is from the 25th of October to the 10th of November. This may seem too late to some; but our experience is that apples left on the trees late keep much better and are better flavored than those picked earlier. We have reference now to gilder and Ridge Pippin apples, Baldwins would have to be picked about the 10th of October. Winesap apples ought to be left out about as long as they will remain on the trees.

For keeping apples in an ordinary cellar it is well to have the bottom of the bin eight or ten inches from the floor; keep doors or windows open as long as it does not freeze much in the cellar, for we may let it freeze a little without injury; but when we are compelled to close the cellar tight there should be some means of ventilation. Probably a board flue placed in the window on either side and extending above ground two or three feet higher than the flue floor, would be as cheap an arrangement as could be adapted to the common cellar. We would prefer a flue, for we cannot always be at home to open and shut windows or doors to suit the weather.

Seedling Fruits.

In raising seedling fruits, wherever it has been attempted, the usual way is to take some kind already superior, and from this endeavor to procure a seedling of still better quality. It is remarkable that all attempts of this kind have failed, so far as we know. No person has ever been known to originate a good variety in this way. All our best fruits are the results of accident. Those who have persevered in the old line rarely offer us anything good, while the similar kinds are generally such as have been found in wastes or fence corners. The Seckel pear is an admirable illustration. This was found wild in a meadow below Philadelphia. It is the most popular of all pears for flavor, but it is small, a slow grower, a long time coming into bearing, and ripens only a season when pears are plenty. If these imperfections could be remedied, what a grand thing we should have! So seeds are saved of the Seckel, and in all cases, so far as we have ever known, with results inferior to that of the parent. Most of the seedlings seem to have a tendency to produce earlier fruit instead of later. The Ott, a seedling of the Seckel, is earlier, but not as good, and never will be so popular.—*Germantown Telegraph.*

Olives in California.

Recently Mr. Ellwood Cooper, of Santa Barbara, California, shipped to San Francisco 1,000 gallons of well clarified olive oil, the product of his orchard at Santa Barbara. According to the San Francisco *Alta*, Mr. Cooper has 6,000 trees, some of them seven years old, and these produce 20 gallons of berries. Trees ten years old in a good soil will average 50 gallons of berries in a good year, but sometimes will yield 150 gallons. After a good crop the tree usually takes a year's rest, so that its good years alternate. The yield from a matured orchard may be set down at 200 gallons of oil to the acre, and of this 50 gallons may be deducted to pay for gathering the berries and making and marketing the oil.

The *Alta* believes that the olive should receive more attention in California, since it can bear good crops on poor soil, with less care than any other plant. The hillsides, now worthless, should be covered with olives. The olives requires no irrigation, grows on clayey or rocky soil without much cultivation, and begins to bear in five years, coming to full bearing in ten years.—*Scientific American.*

To Prepare a Strawberry Bed.

If you want the strawberry bed that has borne you a good crop one season to bear well the next year, you must work it out thoroughly and manure well as soon as it is through bearing. Don't put it off until the bed is filled with weeds and grass. First, plow or spade the ground between the rows, cutting the rows down half-way; then work the rows out well with a fork potato-digger, and scatter in them a good quantity of well-rotted compost, guano, or poudrette. It is a good plan to draw fresh earth in among the plants.—*Fruit Recorder.*

DOMESTIC ECONOMY.

Extravagance of American Housekeepers.

Mr. Delmonico, talking about *entrees*, says that Americans ought to copy "the French method of utilizing small bits of raw meats and fowls, and of recooking all kinds of cold joints and pieces of cooked meat which remain day by day from dinner in almost every family." The success of such dishes depends mainly on the sauce, which is best made from broth. The following is his receipt for a favorite sauce: "Take an ounce of ham or bacon, cut it up in small pieces and fry in fat. Add an onion and carrot, cut up, thicken with flour, then add a pint or quart of broth, according to quantity desired, season with pepper and salt, and any spice or herb that is relished, (better though without that spice,) and let simmer for an hour, skim carefully and strain. A wine glass of any wine may be added if liked." Cold roast or broiled beef or mutton may be cut into small squares, fried brown in butter, and then gently stewed in the sauce above described. Mr. Delmonico describes croquettes as the attractive French substitute for American hash, and tells how to make them: "Veal, mutton, lamb, sweet-breads, almost any of the lighter meats, besides cold chicken and turkey, can be most deliciously turned into croquettes. Chop the meat very fine. Chop up an onion, fry it in an ounce of butter, add a tablespoonful of flour. Stir well and then add the chopped meat and a little broth, salt, pepper, little nutmeg. Stir for two or three minutes, then add the yolks of two eggs, and turn the whole into a dish to cool. When cold mix well together again. Divide up into parts for the croquettes; roll into the desired shape in bread crumbs again fry crisp, a bright golden color. Any of these croquettes may be served plain, or with tomato sauce or garniture of vegetables."

A Goose.

Trussing.—Pick and stub it clean, cut the feet off at the joint, and the pinion off at the first joint. Then cut off the neck close to the back, leaving the skin of the neck long enough to turn over the back. Pull out the throat and tie a knot at the end. Loosen the liver and other matters at the breast end with the middle finger, and cut it open between the vent and the rump. Draw out all the entrails except the soul, wipe the body out clean with a cloth, beat the breast-bone flat with a rolling-pin, put a skewer into the wing, and draw the legs up close; put the skewer through the middle of the leg, and through the body, and the same on the other side. Put another skewer in the small of the leg, tuck it close down to the sidesman, run it through, and do the same on the other side. Cut off the end of the vent and make a hole large enough for the passage of the rump, as by that means it will keep in the seasoning much better.

Roast Goose.

Clean and wash the goose, not forgetting to put a spoonful of soda in next to the last water, rinse out well and wipe the inside quite dry. Add to the usual stuffing of bread-crumbs, pepper, salt, etc., a tablespoonful melted butter, a large sized onion chopped fine, a tablespoonful chopped sage, the yolks of two eggs, and some minute bits of fat pork. Stuff the body and craw, and sew up. It will take fully two hours to roast, if the fire is strong. Cover the breast until it is half done with white paper, or a paste of flour and water, removing this when you are ready to brown. Make a gravy as for roast duck, adding a glass of sherry or Port wine, or (if you can get it) old Port. Send to the table with cranberry or apple sauce.

Green Goose, to Roast.

Put a lump of butter the size of an orange into the goose, spit, and lay it down to roast; singe, dredge with flour, baste well with butter, and when done enough, dredge again, and baste till a fine froth rises on it, and it becomes a nice brown. Gooseberry sauce is the correct one, but apple with a little ginger and sorrel juice answers as well.

Roast Ducks.

Clean, wash and wipe the ducks very carefully. To the usual dressing add a little sage (powdered or green), and a minced shalot. Stuff and sew up as usual, reserving the giblets for the gravy. If they are tender, they will not require more than an hour to roast. Baste well. Skim the gravy before putting in the giblets, and thickening. The giblets should be stewed in a very little water. Then chopped fine, and added to the gravy in the dripping-pan, with a chopped shalot and a spoonful of browned flour. Accompany with currant or grape jelly.

To Boil Ducks.

Let them lie in hot water two hours. Then wrap in a cloth dredged in flour; put them in cold water, salted at the rate of half a teaspoonful of sugar for each pint. Let them simmer half an hour; then take them up, and pour over them a sauce made of melted butter rubbed into flour, and seasoned with lemon-juice, salt and pepper, and thinned with gravy or hot water. Wild ducks must be soaked in salt and water the night previous, to remove the fishy taste, and then in the morning put in fresh water, which should be changed once or twice.

Ducks Stewed with Red Cabbage.

Cut the cold ducks into convenient pieces, and warm them very gradually in a good clear gravy, by the side of the fire. Shred some *red cabbage* very fine; wash it, and drain it on a sieve; put it to stew with a good proportion of butter, and a little pepper and salt, in a stewpan closely covered, and pepper it frequently. If it should get too dry, add a spoonful or two of the gravy. When well done and tender, add a small glass of vinegar; lay it on a dish; place the pieces of duck upon it, and serve.

To Roast Geese and Ducks.

Boiling water should be poured all over and inside of a goose or duck, before you prepare them for cooking, to take out the strong oily taste. Let the fowl be picked clean and wiped dry with a cloth, inside and out; fill the body and crop with stuffing. If you prefer not to stuff it, put an onion inside; put it down to the fire and roast it brown. It will take about two hours and a half.

Proverbs in Cookery.

The second of Miss Dods' demonstrative lectures in cookery was given recently. Miss Dods' lectures are full of little bits of information that might properly be called culinary proverbs. Here are a few of them:

The only kind of a stove with which you can preserve a uniform heat is a gas stove; with it you can simmer a pot for an hour, or boil it at the same rate for twenty minutes.

Single cream is cream, that has stood on the milk

twelve hours. It is best for tea and coffee. Double cream stands on its milk for twenty-four hours, and cream for butter frequently stands forty-eight hours. Cream that is to be whipped should not be butter cream, lest in whipping it change to butter.

There is a greenness in onions and potatoes that renders them hard to digest. For health's sake put them in warm water an hour before cooking.

Good flour is not tested by its color. White flour may not be the best. The test of good flour is by the amount of water it absorbs.

A few dried or preserved cherries, with stones out, are the very best things possible to garnish sweet dishes.

Nelson's gelatine is the best, because it is stronger than any other kind.

To beat the whites of eggs quickly put in a pinch of salt. The cooler the eggs the quicker they will froth. Salt cools and also freshens them.

In boiling eggs hard put them in boiling water ten minutes, and then put them in cold water. It will prevent the yolk from coloring black.

Facts About Flour.

Flour is peculiarly sensitive to the atmospheric influences, hence it should never be stored in a room with sour liquids, nor where onions or fish are kept, nor any article that taints the air of the room in which it is stored. Any smell perceptible to the sense will be absorbed by flour. Avoid damp cellars or lofts where a free circulation of air cannot be obtained. Keep in a cool, dry, airy room, and not exposed to a freezing temperature nor to intense summer or to artificial heat for any time above 70° to 75° Fahr. It should not come in contact with grain or other substances which are liable to heat. Flour should be sifted and the particles thoroughly disintegrated and then warmed before baking. This treatment improves the color and baking properties of the dough. The sponge should be prepared for the oven as soon as the yeast has performed its mission, otherwise fermentation sets in and acidity results.

Chinese Cookery.

Americans who dine with the Chinese are surprised at the perfection to which they have carried their cooking. During a recent Chinese banquet at San Francisco, an orange was laid at the plate of each guest. The orange itself seemed like any other orange, but on being cut open was found to contain within the rind five different kinds of delicate jellies. One was at first puzzled to explain how the jellies got in, and in a worse quandary to know how the pulpy part of the orange got out. Colored eggs were also served, in the inside of which were found nuts, jellies, meats, and confectionery. When one of the Americans present asked the intrepreter to explain this legerdemain of cookery, he expanded his mouth in a hearty laugh, and shook his head and said: "Melican man heap smart; why he not findee out?"—*Ill. Ch. Weekly.*

A Cheap Ice-House.

He lays down some rails for the bottom, on which he places a fifteen-inch layer of sawdust. He then packs his ice, leaving around the outside a space of fifteen inches, to be packed with sawdust. Straw or boards can be used to prevent the sawdust from escaping through the cracks between the rails. Two or three feet of sawdust should be placed on the top of the ice; and finally four posts or forks should be set up, one at each corner, to support some planks for a covering. It would be well to place the whole under a good shade-tree, and with such a device one may have ice throughout summer.—*Rural New Yorker.*

Household Recipes.

To Polish Steel.—Rub it with a piece of emery paper from which you have removed some of the roughness by rubbing an old knife with it.

Salad Dressing.—Three tablespoonsful of oil, half a spoonful of tarragon vinegar and same of common vinegar, a little black pepper, a teaspoonful of salt. Mix very smooth. Do not stir until used.

Rancid Butter.—I know of nothing that will make bad butter good; but it may be reformed and improved somewhat by churning it awhile in good new buttermilk, then working the buttermilk out of it, as at first.

An English florist says that quassia and soft soap will destroy the aphides found upon roses; used by steeping four ounces of quassia chips half an hour in about one gallon of water. Strain, and when cold adding two more of water and six ounces of soft soap; with this syringe the bushes.

Gumbo Soup (as made in Florida).—One chicken, fried brown; one gallon water, four slices of ham; put this on the fire to cook slowly from 8 o'clock to 12 M.; have ready one quart of okra, chopped fine, one pint green corn, one pint tomatoes, peeled, one onion, chopped fine; salt and pepper to taste. Let all cook till done.

Apple Omelette.—Take about six large apples, pare and stew them as for sauce, beat them smooth while hot, adding one tablespoonful of butter, five tablespoonsful of sugar, nutmeg to taste, or lemon should you prefer; when cold add the beaten yelks, and lastly the whites of three eggs; pour into a buttered dish, and bake in a moderately hot oven, and serve for tea with graham bread.

Coffee Ice Cream.—Three pints of cream, one cupful of strong, clear coffee, two cupsful of sugar, two tablespoonsful of arrowroot wet in cold milk; heat half of the cream to boiling; stir in the sugar, and, when this is dissolved, the coffee; then the arrowroot; boil all together about five minutes; when cold, beat up very light, whipping the rest of the cream by degrees; then freeze.

Green Tomato Soy.—One peck green tomatoes, sliced without peeling; twelve good sized onions, also sliced; two quarts vinegar, one quart sugar, two tablespoonsful of salt, two tablespoonsful ground mustard, two of black pepper, one tablespoonful of allspice, one also of cloves; mix all together and stew until tender, stirring carefully lest they should scorch; put up in small glass jars.

Domestic Champagne.—When grapes are just turning, or about half ripe, gather them, pound them in a tub, and to every quart of pounded fruit add two quarts of water; let the mixture stand fourteen days, then draw it off; to every gallon of liquor add three pounds of loaf sugar; when the sugar is dissolved pour it into a cask; after it is done working put in a cellar; in six months bottle and wire the corks tightly.

To Remove Rust from Steel.—The steel to be cleaned should be washed with a solution composed of one-half ounce cyanide of potassium in two ounces of water, then brush with the following recipe: Cyanide of potassium, one-half ounce; Castile soap, one ounce; whiting and water sufficient to form a paste. Cyanide of potassium is a most violent poison, and persons using it should be particularly careful.

Petroleum has a strong perservative power, converting soft, perishable woods to the durability of red cedar. It improves all farm implements, baskets, all wooden tools, as rakes, hoe handles, common water-pails or any wooden tool which is exposed to the weather. It may be found valuable, also, for rustic work, rustic furniture or chairs left upon a piazza. Give them a good coat of this oil occasionally. It will harden the wood, give them a dark color and make them last longer.

To Pickle Fruit.—The following excellent mode is practiced in many families: To each peck of fruit allow four pounds of sugar, a pint of sharp vinegar, and spice to taste; boil the vinegar and sugar together for a few minutes, then drop in the fruit and boil until moderately soft; when done pour the vinegar over them and let them stand until cool before covering. Plums, peaches, pears, &c., can be done in this way.

Tomato Soup, I.—Take a shin-bone, have it broken, and put in soup-kettle with five quarts of cold water; allow it to boil steadily and skim; in an hour put in four dozen of good-sized tomatoes; do not skim them; boil until your soup is reduced to one-half; take a potato-masher and crush the tomatoes; pass through a strainer; return to kettle, and remove the beef before serving; season with salt and pepper. This is a plain country tomato soup.

Tomato Soup, II.—I make a good clear stock the day beforehand. I take two quarts of the broth and a dozen large, full-ripe tomatoes, a bunch of herbs, and a quarter of a pound of rice. I scald the tomatoes and peel them first before introducing them. I let all come to the boil, and skim frequetnly. I reduce to about one-half. This makes rather thick soup. If I want it thin, I cook my tomatoes first, just as if for stewing. Cull out the rice, and add the stewed tomatoes to the broth an hour before serving, letting the soup simmer gently.

Ice Cream with Eggs.—One quart of milk, four eggs—the whites and yolks beaten separately and very light—four cupsful of sugar, three pints of sweet cream, five teaspoonsful of vanilla; heat the milk to boiling; have your yelks well beaten; pour the milk into the yelks; add the sugar, then the whites, beating all the while; return to the fire and beat again, stirring and watching carefully until it begins to thicken like custard; then set aside to cool. When cold, beat in your cream and flavoring. Freeze as soon as possible after it is thoroughly cool.

Beef Soup.—Three pounds good juicy beef, cut into about 20 pieces; two carrots, one turnip, six large onions, teaspoonful salt, one-half teaspoonful pepper, two good heads celery; cut the vegetables small; put all into a large pot, with four quarts water; let it boil very gently, or rather, let it simmer eight hours; let it stand all night; take off the pot next morning; make it boiling hot when wanted for dinner; this is excellent, properly made.—Amy.

Squash Pie.—Stew the squash as usual with a little salt; rub it through a colander, and have it perfectly smooth; mix the squash with sweet milk; if you have cream it will be all the better; make it about as thick as batter, adding the yolks of two eggs; sweeten with pulverized sugar to taste, flavor with rosewater or with nutmeg; line a pie dish; fill with squash, and bake for half an hour; if you do not want a pie, make fritters and fry brown, with good butter; when about to serve, sprinkle a little sugar on them; squash does not require much sweetening.

Rabbit Stew (Gibelotte.)—Skin and cut the rabbit in eight pieces, and split the head two; cook it in a stew-pan, with a little olive-oil; brown it slightly, season with pepper and salt, add to it a teacupful of good stock; put in one-half bottle of good red wine, and a small wineglassful of brandy; let it all simmer until the sauce is reduced one-half; serve as hot as possible.—Comperi Loriot.

[A greater use of sweet-oil in cooking is advised. It is no more expensive than butter for basting or frying and in many cases gives better culinary results. There is no doubt that good olive-oil is more readily assimilated than butter]

Matelotte D'Anguilles (Stewed Eels).—Take some small white onions and stew them in the best butter, season with thyme, bay leaves, and a very small bit of garlic, not bigger than a pea; sprinkle this with a little flour, and add a coffee-spoonful of brandy; cut the eels across, in pieces of about inches; moisten the whole with a teacupful of bouillon and about the same of red wine; add salt and pepper; when it is on the boil, put in the pieces of eel; cook not more than ten minutes; before dishing, let it keep warm, so as to evaporate the sauce a little.—*Clemencin, Chef of the Steamer La France.*

[This matelotte of eels has been tried and found to be excellent.]

Mock Oysters.—Take one-half dozen of good-sized ears of corn; put them in cold water, and when it begins to boil set it on the back of the range, and let it simmer for one-half hour; then put the corn in cold water: when cool, wipe the ears with a dry towel, and grate them; then put them through a hair-sieve to rid them of the shells of the corn; have two eggs well beaten, two tablespoonsful of cream, two of grated crackers, one teaspoonful of salt, one-fourth teaspoonful pepper; beat this all well together; have a lump of good butter about the size of half an egg; put it in a frying pan; when hot put the corn mixture in by tablespoonsfuls, allowing space that they do not run together; when they are a nice brown, turn them over and fry the other side; it requires about five minutes to cook them; this will make about two dozen oysters; serve them hot.—M. A. M.

Live Stock.

Cows in Early Winter.

At no season of the year do cows need better and more generous diet than in early winter. The change from grass to dry fodder is of itself sufficient cause to produce more or less derangement of health. But when the animal's tone and vigor have been lowered by a long period of milking, and she is then subjected at the same time to the rigors of winter, and a change of food from nutritious herbage to dry, coarse, and often innutritious fodder, a severe tax is laid on her system. Yet, on many farms it is the practice to feed to cattle in early winter only a coarse and inferior fodder, and the poorest hay, because these articles have been stowed last in the barn, or on the tops of the mows, and must, therefore, be disposed of before the better portions of the supply can be reached. This, however, is a great mistake, as the best food should be given when the cows first go into winter quarters. Afterward, when they have been dried of their milk and have grown accustomed to the change of diet, the poorer food may be used, or, better still, as animals, like men, are fond of variety in their diet, the coarser and less nutritious fodder may be advantageously used in conjunction with that of a better quality.

Through neglect of this precaution, however, it frequently happens that cows in milk lose flesh in November and December, and sink into a bad condition to endure still more severe weather yet to be expected. To avoid this misfortune, in cases, where poor or damaged fodder has necessarily to be given out first, the feed should be supplemented with rations of ground grain, oat and cornmeal mixed, bran, or ship-stuff, to add a proper amount of nutriment to a given bulk of fodder. Compelling cows to consume an excessive bulk of inferior food, in order to enable them to support life and yield milk, overcrowds the stomach, tends to derange health, and is by no means a rare cause of serious ailments. Moreover, on the score of self-interest, as well as of humanity, cows should not be allowed to lose flesh in early winter, for it would require much more food to restore them to good condition in cold weather than in summer. Besides this, as lean animals are more susceptible to cold than those in flesh, and a proportionately larger amount of the food they consume is therefore expended in generating a sufficiency of animal heat, it would require considerably more

food to carry a poor beast through winter than a fat one, even though nothing may be added to the animal's condition.

The necessity of shelter for all kinds of stock from the storms, frosts and inclemency of this bleak season, has been frequently dwelt upon in these pages, and its economy as well as its humanity fully demonstrated.—*Rural New Yorker.*

Runaway Horses.

If you are in a wagon and the horses take fright, and gets on a full jump before you can bring your strength to bear on the bits, there is nothing for it but to hold on and try your best to stop him, "sawing" if necessary on the bit. Failing in this, you perhaps keep him in the road until his wind gives out, or should a good opportunity occur, you may turn him against a fence or the side of the house, or in fact anything that will stop him. This last is a dangerous recourse, but we have seen it done with success. When a span of horses are running, the difficulty is increased, and more strength, more skill, and better luck on the part of the driver, are very desirable qualities. A strong hand and a determined will nearly always suffice to stop runaways, if nothing breaks. If the lines break or the bits give way, an active person may, without much difficulty, is increased, and more strength, more skill, and better luck on the part of the driver, are very desirable qualities. A strong hand and a determined will nearly always suffice to stop runaways, if nothing breaks. If the lines break or the bits give way, an active person may, without much difficulty, climb over the dashboard, get on the animal's back, and check him by grasping his nose. Leaping from the carriage while the horse is running is almost certain to involve more or less injury. An active person may do it safely, but it is the part of pluck, and generally that of wisdom, to stay by the carriage as long as the traces hold. When the horses is fairly stopped, treat him kindly, and if possible let him stand until his nerves are quieted. If a horse is running toward you, courage and adroitness may enable you to stop him. If you can secure a hold on the reins of one of them near the bits you are all right. Hold on and within a few rods at the most the horse will stop, unless he is a most extraordinary animal. In case of a span, if you stop one horse the other must stop too, if nothing gives way. We can tell those who have never tried it that it is not a pleasant pastime to stand by the roadside and watch the approach of a frantic horse,making calculation the while to catch some part of the harness.

The Wild Cattle of Great Britain.

The Chillingham herd are the connecting link between the wild cattle of England and those of Scotland—beautiful creatures, with black ears and muzzles; "their horns fine, with a bold and elegant bend," who hide their young and feed in the night, and whose calves lay in the form like hares. It has had many chroniclers, and Bewick and Landseer took portraits among its members. The late Lord Tankerville observed their manners and customs attentively, no easy task, as he would sometimes, in summer, be for several weeks at a time without getting sight of them. At that season, on the slightest appearance of any one, the wild cattle retire into their forest sanctuary; but they come down for food into the inner park, and will let one come almost among them, especially if on horseback. Here is a pretty picture of these strange creatures, remnants of an old world, which have hitherto been preserved under extraordinary difficulties, but cannot, we should think, long continue to exist: "When they come down into the lower part of the park, which they do at stated hours, they move like a regiment of cavalry in single file, the bulls leading the van; and when they are in retreat, the bulls bring up the rear. Lord Ossulton was witness to a curious way in which they took possession, as it were, of some new pasture, recently laid open to them. It was in the evening, about sunset. They began by lining the front of a small wood, which seemed quite alive with them, when all of a sudden they made a dash forward altogether in line, and, charging close by him across the plain, they then spread out, and after a little time began feeding." The wild white cattle are ferocious animals, valiant fighters, capable of domestication when taken very young, but once partially or wholly grown up, quite untamable. Mr. Storer says that they hate and fear man, scenting him, as related by Botehius, and he adds: "I am convinced that if any of them were placed in captivity his description would be verified: they would be 'sa impacient that, eftir thair taking, they deit for importable dolouro.'"

The Cattle Belt.

"The cattle belt" of the United States begins to attract attention from its enormous extent and the rapidly increasing value of its products. The cattle yield of Colorado is said to exceed its bullion products in value. A banker in Denver, it is reported, says that he would rather have one hundred stock dealers' accounts than three hundred mining accounts from depositors. The "cattle belt" referred to begins at the Rio Grande, near Corpus Christi, and extends northwest through the interior to the frontiers of Manitoba. In its extreme southern and northern portions it is neither highly elevated nor particularly dry, but for the greater part of the immense area included under this distinctive denomination—and it is said to be an area of 350 miles in width by 2,000 miles in length—it lies along the surface of high table lands, of which Northern Texas and Colorado are fair types. Cattle on these plains need to be herded and watched, in order that they may receive water at proper intervals, but it is claimed that the cost of raising a four-year-old steer, selling at the depots at an average of $30, does not exceed from $2.50 to $3.50. The average natural increase of the herds is about 30 per cent. The business is one which requires large capital at the outset, regular wages, and strict attention to the best markets, and the inference is that it will speedily fall into the hands of a few large drovers and butchers. The enormous droves on the plains, said to number at the present time nearly 15,000,000, are thought to be in some danger from the approaches of pleuro-pneumonia, but the rapid conversion of grazing lands into farming lands is probably the chief danger to the profits of the system, which is now imminent.—*Baltimore Sun.*

Swiss Dairymen in California.

Fully two-thirds of all the dairy business of the upper coast counties in California, says the San Francisco *Chronicle*, is in the hands of Swiss, either as renters or owners. "They seem to be peculiarly adapted to the business, and are turning out a very good imitation of Swiss cheese. Most of the prosperous dairymen in the State are men who but a decade since came here without money and have made valuable homes, and stocked their farms with the best breed of cattle, by their own industry and economy. One of the peculiarities of this people is their disposition to assist one another. A Swiss settlement takes the form of a practical mutual aid society, and the system is to be commended all the more, on account of the absence of all selfishness. A poor boy comes from his native land and begins by working in one of the dairies by the month. By scrupulous economy, in two or three years, he has accumulated money enough to rent a piece of land a and few cows. His countrymen take a practical interest in him, loan him money as he needs it, and in every way assist him to become the owner instead of tenant, and when he has achieved that result, he in turn helps the next poor countryman who shows a willingness to work. The Swiss dairyman prefers a small farm, in a high state of cultivation, on which he raises the finest stock, and the best of feed for them. The average California dairyman figures on from four to seven acres to support each cow, while a Swiss dairyman will reverse the order of things and keep seven cows on one acre very soon."

Hints for Horse Trainers.

Never try to beat a colt into doing a thing, for if nervous he may turn out a vicious horse, and if stupid he may become stubborn. Remember that by patience and gentleness he can be got to do anything that will not hurt him.

When the horse shows signs of shying at an object do not beat him, but lead him up to it, allowing him to stand and look as he comes close, and after he examines it a few times he will not fear anything of the kind again. In passing by hedges with a colt, throw in stones and stop him until he takes no notice of the noise.

Before putting on any article of harness let your colt smell it, and then rub against his head, neck and body.

Always start a horse with the voice, never with the cut of the whip. In starting turn a little to one side; in stopping when going up a hill do the same. —*Norristown Herald.*

Colic in Stock.

A correspondent of the Massachusetts *Ploughman* gives the following cure for colic in horses, which is convenient at all times and easily applied. He says he has never known it to fail: Spread a teacupful or more of fine salt on the back of the animal over the kidneys and loins, and keep it saturated with warm water for twenty or thirty minutes, or longer if necessary. If the attack is severe, drench with salt. I have a valuable bull, weighing nineteen or twenty hundred, which had a severe attack of colic a year ago last summer. I applied salt to his back as above, and it being difficult to drench, we put a wooden bit into his mouth, keeping it open two inches, and spread salt upon his tongue which, together with the salt on his back, relieved him at once, and within a very short time equilibrium appeared fully restored. I have for several years past successfully applied this treatment to other animals in my herd.

How to make Cows give Milk.

A writer in the *Southern Farmer* says his cow gives all the milk that is wanted in a family of eight, and that from it, after taking all that is required for other purposes, 260 pounds of butter were made this year. This is in part his treatment of the cow:—"If you desire to get a large yield of rich milk give your cows every day water slightly warm and slightly salted, in which bran has been stirred at the rate of one quart to two gallons of water. You will find, if you have not tried this daily practice, that your cow will give twenty-five per cent. more milk immediately under the effects of it, and she will become so attached to the diet as to refuse to drink clear water unless very thirsty. But this mess she will drink almost any time, and ask for more. The amount of this drink necessary is an ordinary water pail full at a time, morning, noon and night.

Polling Cattle.

The horns of our cows seem to be neither ornamental nor useful. As a means of warfare they can only have consideration, but warfare and goring is precisely what we desire to keep away from the barnyard. English farmers, whose herds are probably more precious and closer confined than in America, have introduced the practice of unhorning cattle by clipping the small projections in calves, when half an inch long, using simply a strong pair of shears. It is true it hurts the calves somewhat. There will be a little bleeding, but that will stop in an hour or two and the calves will soon resume eating.

Salt For Stock,

I have never been so successful in producing quantity and quality of milk, or even flow, as wh re the cows had access to salt at their op'ion; and I k now that it affected the butter and churning, the butter being better and "coming" sooner with than without salt. Furthermore, cattle having salt as freely as they choose, look smoother and do not have a staring coat, as do animals which had no salt, or only a trifle at long intervals. May not these favored individuals who supply no salt to their stock, fail to discover that their stock is supplied from some unknown source!—*Ex.*

To Tell a Horse's Age.

After a horse is nine years old a wrinkle comes in the eyelid, at the upper corner of the lower lid, and every year thereafter he has one well-defined wrinkle for each year of his age over nine. If, for instance, a horse has three wrinkles he is twelve; if four, thirteen. Add the number of wrinkles to nine and you will always get at it.

POULTRY.

Hints to Poultry Breeders.

A correspondent of the Massachusetts *Ploughman* writes some good hints about the management of poultry in answer to an article on that subject:

"First, you say, if eggs in winter are wanted the light Brahma or white Cochin is best for that purpose. An experience of ten years with fowls of different breeds has not brought about such a conclusion with me. I keep fowls for the eggs—black Spanish, white and brown Leghorns—and have no trouble about their laying in winter. I find as much trouble in keeping fowls cold in the summer as I do in keeping them warm in winter. I keep Brahmas for hatching. They discount all other breeds in that line of business, and their motherly qualities are without a rival. I find the expense of food for twenty black Spanish, white and brown Leghorns, to be the same as that of fourteen Brahmas. There is no question in my mind but what the Plymouth Rock excels all others, when brought upon the table as an article of food. For eggs the Plymouth Rock still stands as second, which is saying much in their praise, when we consider the number of good laying breeds with which they have had to compete. A hen that lays one hundred eggs in a year is not an unprofitable one. Still she cannot be classed as a very profitable one. A hen to be in favor with me must produce from one hundred and thirty to one hundred and eighty eggs a year. At the latter figure I can make them pay three hundred per cent., on the investment, beside the cost of food.

"If it is desired to obtain a stock of hens for laying eggs to sell when they bring the highest price I like the hatching to take place the first week in May, if of the black Spanish, white or brown Leghorn breed. They will lay as soon as the tenth of October. From that time until the first of March is when I find it a good time to sell eggs. In the matter of feeding feed so that your hens shall be healthy. The healthy hens are those from whom we may expect eggs, and not those that are extremely fat. When a hen does not lay four months in succession I know no way by which she can be made to make up for lost time, any more than I can tell how a farmer can be made to make up the loss of two days' time per week in a grocery store discussing his neighbors' business. As for a hen not being profitable to

keep for laying after she is two years old I cannot indorse it, as I have hens that are four years old and still continue to deposit one dozen a month. Still, I prefer young hens. In selecting hens to set select eggs from those hens in your flock that you know are constantly laying. Black Spanish, white and brown Leghorns, are not of much account for the table. To kill them for the market is folly."

Red Canary Birds.

At the London Exhibition in 1872 Mr. Bembrose, of Derby, exhibited some red canary birds. The birds received no prizes, however, as the jury had doubts as to the origin of their color, and believed them to be dyed. The following year, at the exhibition held at Whitby, the red canaries were recognized as a new variety, and they became all the rage. In numerous controversies Mr. Bembrose had given his word of honer that the color of his bird was not due to any fraudulent processes, but had been really obtained through a special mode of feeding. But as a friend to whom he had communicated his secret had abused his confidence and sold it, the author has believed it his duty to make known to the public the process which he used to obtain his results. It appears, according to him, that the birds are fed upon hard-boiled eggs crushed up with the crumbs of common white bread and dusted over with cayenne pepper. Dr. Dusch, a Belgian amateur, adds the following: Purchase at the druggist's some of the very best quality of cayenne pepper, ground very finely; for each meal mix some of it with stale bread macerated in well water, and press it together so that it will crumble, but not form a paste. Instead of bread the white of an egg may be used if preferred. This kind of food should be given to the bird only before and after moulting. It is well to add that it would be a waste of time to experiment on any other canaries than those of the Norwich breed or on birds that are not of a very dark strain. This statement is made on the authority of Les Mondes.

Chicken Cholera.

The New York *Times* gives the following remedy for chicken cholera: Give one-fourth of a blue pill to the fowl as soon as it seems to be sick, and repeat this the second day after. Then give half a tea spoonful of castor-oil. After the fowl improves, give scalded corn-meal, in which a teaspoonful of black pepper for each fowl has been mixed. Poultry need a little salt, and if they were supplied regularly and moderately they would be more healthful than they usually are.

Young Fowls

Are the best for laying eggs. It is not good to keep hens beyond the second year. A good authority on such matters says: "Feeding will do a great deal—a surprising work indeed—in the production of eggs, but not when old hens are concerned; they may put on fat, but they cannot put down eggs. Their tale is told, their work is over."

LITERARY AND PERSONAL.

FRENCH AND BELGIANS.—By Phebe Earle Gibbons, author of "Pennsylvania Dutch," and other essays. Published by J. B. Lippincott & Co., Philadelphia, Pa., 1879. Price, $2.00. Pp. 441. This may be called a royal 12 mo., and is executed in the publishers best style, on fine, faintly-tinted, calendered paper, a clean print, and substantially bound in embossed muslin. People may differ in opinion as to its literary merits—and they have a perfect right to differ—but the reader cannot but accord due credit to the author for the energy, the industry and perseverance with which she executed her mission, and the fund of information which she has developed (sometimes, too, under difficulties which would have discouraged one of a less tenacious constitution,) and the interesting and instructive manner in which she has presented it to the public. The first chapters may, perhaps, be regarded as somewhat desultory, and may contain a few things not specially French and Belgian, but alike common to humanity, or the natural world at large, but taking the work all through it will be found an epitome of the social, domestic, political, educational and religious life of France and Belgium, reflected from a plane of observation to which the fewest numbers of travelers and writers ever attain. It may be true that the peculiar style of the writer may not be the most agreeable to all readers, being mainly in the first person, present tense, as for instance, "I say," "I ask," "I see," "I go," &c., but this only evinces the greater practical authenticity, and that the author narrates what she has actually experienced—what she herself has seen, heard and done. Many facts, opinions and principles, as they exist among the common, the agricultural and the middle classes, are brought out in this book that we find in no other. Buy it and read it.

HOW TO SELECT COWS.—The Guenon system simplified, explained and practically applied. By Willis P. Hazard, secretary of the Guenon Commission, &c., &c., &c., with nearly one hundred illustrations, photographed from Guenon's engravings. I. M. Stoddard & Co., 787 Chestnut street, Philadelphia, Pa. This is a royal octavo pamphlet of 84 pages, printed in clear type, with a portrait of Francis Guenon, and a resume of his entire method in selecting stock, and seems to be a reprint of the same article, with some additions, as published in the Report of the State Board of Agriculture for 1878. Of course, we cannot speak of the system experimentally, but in as much as some of the best stock men in the country are taking hold of it approvingly, we commend it to the examination of our stock dealing and dairy readers. Price 50 cents. Cloth 75 cents.

DEPARTMENT OF AGRICULTURE.—Report special, No. 12. Investigation of diseases of swine, and infectious and contagious diseases incident to other classes of domestic animals. Containing an introductory and reports of Drs. Detmers, Law, Vogles, Salmon, Dunlap, Dyer, Payne. McNutt and Hives, together with correspondence relating to the prevalance of diseases among domesticated animals, including pleuro-pneumonia, rinderpest, glanders, and a strange disease among cattle in North Carolina. 292 pp. royal octavo, with 17 full-page plates and one chart, embracing 81 figures and groups of figures, and 28 tabulated series of experiments. This work is handsomely gotten up, and the full-page plates, illustrating the diseased condition of the various animal organs, are colored to life. The quality of the material and the letter-press are rather in advance of the usual documents issued by that department. The work contains an alphabetically arranged index, and on the whole must prove a valuable contribution to our veterinary literature and practice, although our personal opportunities and experiences are too limited to pronounce an unqualified endorsement. The commissioner desires the work to be as perfect as possible, and therefore he solicits the co-operation and assistance of the practical portion of the farming and stock growing public. But, in order to bring the chief of the department and the public concerned, in *rapport*, we append his appeal as an appropriate conclusion of our remarks:

Department of Agriculture, Washington, D. C., Sept. 25, 1879. SIR: In forwarding you this copy of the "Investigation of Diseases of Swine, and Infectious and Contagious Diseases incident to other classes of Domesticated Animals," it is with the hope that you will give the work a careful perusal, and favor the department at your earliest convenience with such criticism as you may think it deserves. In this connection permit me to say that I will be pleased to have the results of any experiments you may have had in the prevention, treatment or cure of infectious and contagious diseases of swine and other classes of farm animals, and the extent to which such diseases prevail in your locality. Stock breeding and rearing has become one of the largest interests of the country, and any facts or observations that are likely to bring about a more intelligent system of breeding and treatment of farm animals will prove of interest and value to the whole country. If you have been successful in the prevention of diseases among your domesticated animals, please give your system of breeding, rearing, and preparing for market, and the preventives employed, if any were used. If remedies have been employed with any degree of success, please state the ingredients and the proportions in which they are compounded and the quantity given. Any observations relating to this subject which you may think will prove of interest to the public will receive the careful attention of the department.—*Yours, respectfully, Wm. G. Le Duc, Commissioner.*

THE NORTH AMERICAN ENTOMOLOGIST.—Edited by A. R. Grote, and published by Reinecke & Zeseh, No. 500 Main street, Buffalo, N. Y. Eight pages, 8vo. illustrated. $2.00 a year in advance. We have received a complimentary number of this work (Oct. 1879) and we are much pleased with it. We welcome it into the ranks of entomological literature, and sincerely hope it may have a longer life lease than the *Practical Entomologist* and the *American Entomologist*, and doubtless it will if enough subscribers can be found in the country who can appreciate its value. It is about the size and is gotten up in the style of the *Canadian Entomologist*, and deserves to be as well supported. This number contains the history and description of a new carniverous species of LIPEDOPTEREO (*Dakruma coccidevora*), which is something very unusual for insects of that order.

ONE of the sweetest songs we have heard this many a day is entitled, "We Shall Meet all the Little Ones There." Words and music by Will L. Thompson, of East Liverpool, Ohio. Although all our little ones are graciously spared in the editorial home we must confess to a breakdown in tears when trying to sing these touching words. The song is an inspiration of comfort, surely, to all whose homes have been invaded by death. It is one of the few compositions which will live for generations. To all lovers of music we may say, send 40 cents to the author and bless the household by a copy of this gem.—*Methodist Record.*

LOCAL GOVERNMENT, AT HOME AND ABROAD.—By Robert R. Porter, Esq., Chicago. Being article No. 1 from the *Princeton Review*. Price 5 cents, at the office of publication, 37 Park Row, New York. This able paper was originally published in the *Princeton Review* for July, 1879, but is also published in a separate royal octavo pamphlet of 25 pages, and those pages should be read and thoughtfully pondered by every man who aspires to or is thrust into a legislative administrative or judicial office, whether it be National, State or municipal. There is doubtless a great deal of reckless legislation, executive administration and judicial decision that is the result of present impulse, entirely ignoring the experiences of the past, and having little regard to the welfare of the future. This pamphlet discusses with ability the nature and origin of local government in the several States of our own country, as well as in foreign countries, and shows that all forms of government, domestic or foreign, are the outbirths and embodiments of local governments from time almost immemorial, and that the tyranny or liberality of governments are due to their original local form. The vassalage of the Feudal System was nothing more than local government, although not self-government so far as concerns the masses of the people; out of vassalage as a local form grew monarchy; out of local self-government grew republicanism; and the success of both are largely influenced by the financial systems that have been incorporated with them. Send for the pamphlet and *read it.*

THE PHRENOLOGICAL.—We have received the *Phrenological Journal and Science of Health* for October, and find it filled with material at once lively, entertaining, crisp, instructive, and seasonable. The features which constitute this a scientific publication with a special department are prominent, but discussed in so pleasant a manner that we scarcely know that we are learning important principles as we read the attractive pages. First in the order of contents we notice a leading railroad man, Daniel L. Harris, and next there are some very pertinent remarks on Precocious Children, which we would advise all doting fathers and mothers to examine carefully. Then there is a pleasant little conversation on the nature of brain development, which knocks the under-pinning out of the common talk we hear about "bumps" and "bumpology." Dr. Wines provides a second letter on Prison Reform. A new installment of Brain and Mind, entitled the Physiologists and the Cerebellum, appears in this number, in the course of which the writer shows, with every appearance of candor, the merits of most of the literature nowadays current with regard to the functions of the cerebellum. We think that Phrenology has decidedly the advantage in the contest. Mr. Temple, in his third installment of The American Novelist, writes down some hard facts. A portrait is given of Chastine Cox, the murderer of Mrs. Hull, and a very frank consideration of his character as indicated by organization. Some hints are thrown out which are suggestive of new and reasonable views of the mental organism. Other topics of interest are The Women of Italy; House-cleaning; The Difference; The Tea Americans Drink; Soldier-bound. The department allotted to Correspondents is rich in interesting counsel, and indeed the whole number is worthy a careful, conscientious reading. The *Journal* is now published at the low price of $2,00 a year, with a valuable book premium worth $1.50, and the balance of this year (three months) free to new subscribers. A single number is 20 cents, but is offered to new subscribers "ON TRIAL" three months, including October number, for only 25 cents. Every reader of this paper should send 25 cents at once and see for themselves the peculiar merits and fascinating nature of this magazine. Letters should be addressed to S. R. WELLS & Co., Publishers, 737 Broadway, New York.

THE ENTOMOLOGISTS' EXCHANGE.—"*Vestigia Nulla Retrorsum.*" New Berlin, N. Y. Addison Ellsworth, editor. Monthly, at 25 cents a year. 4 pp., royal octavo. No. 5, vol. 1, for September, 1879, of this spicy little sheet has been placed on our table, and we consider it an interesting and useful contribution to the periodical entomological literature of the country. Every entomologist, at least, ought to have a copy of it in his library.

QUARTERLY REPORT of the Pennsylvania Board of Trade, for June, July and August, 1879. 22 pp. royal 8vo., containing lists of officers and members: State fairs, district fairs, county agricultural societies, with names and addresses of secretaries, and programme of coming fall meeting at Mercer, Mercer county, Pa., together with sundry enactments relating to agriculture, and other valuable and interesting matter.

BRYANT'S NURSERIES, established 1845. Retail price list and catalogue of fruit and ornamental trees, grapes, small fruits, forest trees, seeds, &c., for autumn of 1879 and spring of 1880. Princeton, Illinois. 22 pp., 12mo.

DEPARTMENT OF AGRICULTURE, Special Report, No. 17, upon the condition of crops to September 1, 1879. 22 pp. royal 8vo. The wheat crop of 1879 is 92 against 87 last year. We are "marching along."

MISCELLANEOUS.

Fine Engravings.

We have received from George Stinson & Co., Art Publishers, Portland, Maine, a proof copy of the magnificent steel engraving "La Madonna," after the celebrated painting by J. Sant; also a proof copy of a fine work of high art representing "Italy"—the land of art and music. This engraving is after a painting by the renowned artist Mr. R. H. Pelham. In our opinion these fine works of high art belong in the front rank, and are equal to any ever brought out by American Publishers. The plates were engraved in London for Messrs. Stinson & Co, by Mr. F. Bromley and C. Tompkins, two of the foremost engravers in the world, at an expense of two thousand pounds sterling, or ten thousand dollars.

This house publishes all descriptions of fine pictures. Those who wish to beautify their homes at moderate expense, should send for their Art Catalogue.

Consumption Cured.

An old physician, retired from practice, having had placed in his hands by an East Indian missionary the formula of a simple vegetable remedy for the speedy and permanent cure for Consumption, Bronchitis, Catarrh, Asthma, and all Throat and Lung Affections, also a positive and radical cure for Nervous Debility and all Nervous Complaints, after having tested its wonderful curative powers in thousands of cases, has felt it his duty to make it known to his suffering fellows. Actuated by this motive and a desire to relieve human suffering, I will send free of charge to all who desire it, this recipe, in German, French, or English, with full directions for preparing and using. Sent by mail by addressing with stamp, naming this paper, W. W. SHERAR, 149 *Powers' Block, Rochester, N. Y.* [oct-3m

The Poultry Exhibition.

The first annual exhibition of the Lancaster County Poultry Association will be held in Lancaster, in Loeher's building, Centre Square, on the 2d, 3d, 5th, 6th and 7th days of January, 1880. There will be five hundred dollars offered in premiums and this should certainly be an inducement to all who own fine poultry to put it on exhibition. This is the first effort of the Association and we trust that they will receive such encouragement as should be given to them. On and after November 15th the premium lists will be ready for distribution and can be had on application to the Secretary, J. B. Liehty, Lancaster, Pa. From the interest now manifested in the exhibition we have proof that it will certainly be a success.

Zahm's Corner.

As the holiday season is approaching and our readers are thinking of the presents they intend to buy for their friends, we desire to call attention to the full line of Jewelry, Silverware, Watches, etc., for sale by E. J. Zahm, Zahm's corner, Lancaster, Pa. Their advertisement appears in another column of THE FARMER, but they cannot in that tell our readers of all the magnificent goods they have suitable for presents, and the best plan will be when you want to buy anything in their line to call and see them. They will not allow themselves to be undersold, and their stock of Jewelry, etc. is as good as the best.

Fearless Railway Threshing Machine.

We call the attention of farmers and threshermen to the advertisement of the Fearless Horse-Power and Thresher and Cleaner, elsewhere in this number of our paper. This machine is the only one that received an Award on both Horse-Power and Thresher and Cleaner at the Centennial Exhibition, Philadelphia, and ranks as best of its class. An Ex-President of the New York State Agricultural Society said of Harder's Machines, "they are the best ever made," and the same testimony has been borne by equally good authority time and again.

For further information send to Minard Harder, Cobleskill, N. Y.

A Natural Fertilizer.

In another column of THE FARMER is the advertisement of D. P. Bitner, who is the agent for Lancaster county of "Fossil Marl of New Jersey." It is claimed that it is rich in dissolved bones, phosphoric acid, potash, and enriches every variety of soil, and insures good crops of wheat, corn, potatoes, vegetables and fruit. It is an excellent change for land after the continued use of lime, and the price is very low in comparison with other manures. Its history, analysis, application to different soils and crops, testimonials and other information regarding its uses, will be given on application to the agent. Our farmers should call to see him in regard to it.

Furniture.

One subscribers in need of anything in the furniture line, would do well to call on Wilmyer & Rieksecker, corner of East King and Duke streets. They have on hand a very large stock of furniture of all kinds and styles to select from and at such prices as can defy competition. They are an old firm, reliable and whatever representations are made in their establishment the buyer can depend on as being correct. Any one desiring any kind of furniture should call and see their stock and prices before purchasing.

Bicycle Tournament.

On Saturday, November 1st, there will be on the grounds of the Agricultural Park Association, a grand Bicycle Tournament, Velocipede Race and Balloon Ascension. Prof. Lippert, who is the manager, and who managed the last one, which was so great a success, is sparing no expense to make November 1st a "Grand Jubilee Day." The low rates of admission, 10 and 15 cents, makes it within the reach of all, and any one going can feel assured that they can spend a very pleasant afternoon at the Park

The Secret Key to Health.

The Science of Life, or Self-Preservation, 300 pages. Price, only $1. Contains fifty valuable prescriptions, either one of which is worth more than ten times the price of the book. Illustrated sample sent on receipt of 6 cents for postage. Address, Dr. W. H. Parker, 4 Bulfinch St., Boston, Mass. oct-3m

Watches and Clocks.

Ezra F. Bowman, East King street, opposite the Leopard Hotel, has as large an assortment of watches and clocks as is in the city, and if you are in need of a good timekeeper go and see him. He also deals in spectacles, eye glasses, chains and jewelers' materials.

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A MONTHLY JOURNAL,

Devoted to Agriculture, Horticulture, Domestic Economy and Miscellany.

Founded Under the Auspices of the Lancaster County Agricultural and Horticultural Society.

EDITED BY DR. S. S. RATHVON.

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All subscriptions will commence with the January number, unless otherwise ordered.

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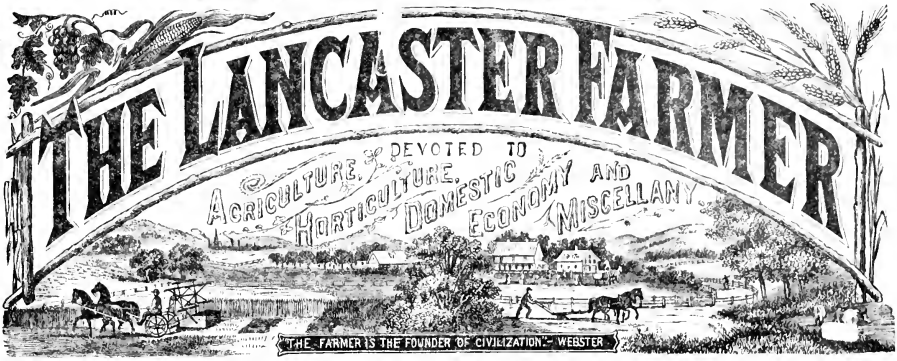

Dr. S. S. RATHVON, Editor. LANCASTER, PA., NOVEMBER, 1879. JOHN A. HIESTAND, Publisher.

Entered at the Post Office at Lancaster as Second Class Matter.

CONTENTS OF THIS NUMBER.

PENNSYLVANIA RAILROAD SCHEDULE.
Trains LEAVE the Depot in this city, as follows:

WESTWARD.	Leave Lancaster.	Arrive Harrisburg.
Pacific Express*.....	2:40 a. m.	4:05 a. m.
Way Passenger†	5:00 a. m.	7:50 a. m.
Niagara Express	10:05 a. m.	11:20 a. m.
Hanover Accommodation..	10:10 p. m.	Col. 10:40 a. m.
Mail train via Mt. Joy.....	11:05 a. m.	12:40 p. m.
No. 2 via Columbia.....	11:07 a. m.	12:55 p. m.
Sunday Mail.....	10:50 a. m.	12:40 p. m.
Fast Line*	2:10 p. m.	3:25 p. m.
Frederick Accommodation.	2:15 p. m.	Col., 2:45 p. m.
Harrisburg Accom.....	5:45 p. m.	7:40 p. m.
Columbia Accommodation..	7:20 p. m.	Col., 8:20 p. m.
Harrisburg Express	7:25 p. m.	8:40 p. m.
Pittsburg Express.....	8:50 p. m.	10:10 p. m.
Cincinnati Express*.....	11:50 p. m.	12:45 a. m.

EASTWARD.	Lancaster.	Philadelphia.
Atlantic Express*.....	12:25 a. m.	3:00 a. m.
Philadelphia Express†.....	4:10 a. m.	7:00 a. m.
Fast Line*.....	5:20 a. m.	7:40 a. m.
Harrisburg Express.....	7:35 a. m.	10:00 a. m.
Columbia Accommodation..	9:10 p. m.	12:01 p. m.
Pacific Express*.....	1:25 p. m.	5:40 p. m.
Sunday Mail.....	2:00 p. m.	5:00 p. m.
Johnstown Express	3:05 p. m.	5:30 p. m.
Day Express†.....	5:20 p. m.	7:29 p. m.
Harrisburg Accom.	6:25 p. m.	9:30 p. m.

The Hanover Accommodation, west, connects at Lancaster with Niagara Express, west, at 9:55 a. m., and will run through to Hanover.

The Frederick Accommodation, west, connects at Lancaster with Fast Line, west, at 2:10 p. m., and runs to Frederick.

The Pacific Express, east, on Sunday, when flagged, will stop at Middletown, Elizabethtown, Mount Joy and Landisville.

*The only trains which run daily.

†Runs daily, except Monday.

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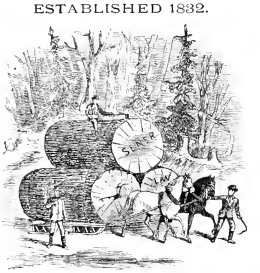

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The Lancaster Farmer.

Dr. S. S. RATHVON, Editor. LANCASTER, PA., NOVEMBER, 1879. Vol. XI. No. 11.

EDITORIAL.

ORGANIZATION.

Its Order, Its Organic Forms and Its Power.

It has often been written, and as often repeated, that "*Order is heaven's first law*," and, we might legitimately add, that true order cannot possibly exist without organization. The most obvious meaning of organization is simply the arrangement of the elementary parts and principles of things, in a consecutive series of order, and through the combined energies of this order those elementary principles are ultimated in visible forms. There are no energies within the realms of the created universe that are not subordinated to the principles of order through organic manipulations. The Creator of the universe himself works not arbitrarily, but by orderly means. Every created thing on the earth, in the waters "under the earth," and in the starry canopy above the earth, is obedient to the organic laws through which it was brought into sentient being, and which both stimulates and limits all its active energies. Every beast of the field, every fowl of the air, every fish of the sea, and the innumerable hosts of creeping things "that pass through the paths of the sea," are all in harmony with the order in which they were created, and their organic functions are a reflex of the organized energy through which they "live, and move, and have their being."

The inanimate world is equally subjected to such organic laws as are adapted to its development and perpetuation, and its progress is proportioned to its harmony with those organic laws. There is not a rock, a tree, a shrub, a flower or a perfume that is not the subject of organic laws, and they all find their highest development in their obedience to those laws; and so far all is "very good." But, there is one exception in the scale of creation, and that exception embraces the human family—the highest intelligence and the crowning work of the whole. Man alone is restive under the rules of order which have been instituted for his supremest good, both physically and morally. He alone, under the simulation of liberty, places himself in an attitude antagonistic to order; he alone, except for selfish or ulterior ends, is unwilling to subordinate himself to organic rule, he alone is indifferent to that unity which is the result of thorough organization. "I care for nobody and nobody cares for me," becomes the selfish motto of a large proportion of the human family; in the degree and to the extent that they imagine themselves independent of the ministrations of their fellow-men; a sentiment that is entirely opposed to the very spirit of creation—opposed to every law of preservation and perpetuation—opposed to social organization and progressive development—opposed to anything and everything that does not culminate in *self*.

In all the vast catalogue of created objects, there is no *one* thing that is entirely independent of all *other* things. Every single thing is immediately, mediately or remotely, dependent upon, and connected with some other thing, for its comfort, its convenience, and its progressive development. And, in the category of vast creation no subject assumes the attitude of isolated independence more pertinaciously than man, even when he may be in a condition of the most abject surveilence. On the one hand he may ignore or resist the restrictions of organic rule: whilst on the other hand he may be the veriest slave of impulse, or the victim of the most tyrannical habits. In a *quasi* political sense man may be said to be independent, but he is not so morally, socially, or physically, as he stands related to his Creator, or his fellowman. It is true, that man may be intrinsically free so far as that freedom relates to the exercise of his own moral and spiritual volition, but extrinsically, he is only in rational freedom in proportion as the *truth* makes him free. All liberty independent of, or beyond this standard, is liable to degenerate into selfishness, irresponsibility, recklessness and license, and these attributes are adverse to those organized forms of action, and those mutual concessions, so essential to healthy progress.

Destroy the cohesive attraction through which the physical universe is organized and continued in orderly sequence, and the whole structure would become disintegrated, and its component atoms would fly off in so many tangents through illimitable space. Destroy the social and fraternal cohesion through which the human race is bound together, and the column of human affiliation would topple over, and men would become moral and social "fugitives and vagabonds" on the earth. Nothing is really accomplished—no permanent and widely diffused progress is made through independent individual action alone: Even in cases where the outward appearance seems otherwise, there are unseen sympathies, aids and aspirations, which give impulse and energy to, and determine the quality of external actions. The greatest, the most potent and rapid strides in human progress, are those that are made in man's collective and organized capacity; and those are *most* effective where human energies are subordinated to those rules of order which are deemed essential to effective organization. The true principles of order involve energetic *unity*, and an abnegation of self for the sake of the common good. Where these principles prevail there is not an integer in the social compact that will become the subject of premeditated neglect. Every function will be exercised—every interest will be served; and whatever other reward may incidentally follow, the chiefest compensation will be the delight afforded in the performance of the use.

Social organization is deemed essential to the prosperous advancement of all the various interests which may distinguish social progress. All enterprises, all objects, and all pursuits avail themselves of the benefits of organization, and adopt general and special rules of order for their better government. In proportion as such rules are faithfully observed in their inherent integrity, in that same degree will the organization adopting them be successful. These principles of action do not contemplate, nor do they involve any species of coercion, any farther than the individual may feel disposed to impose such coercion, or self-compulsion, upon himself. But an acquiesence in them may be cultivated or become a habit. It is nothing to the credit or the happiness of any individual that he scorns organic rule—that he repudiates social government, or that he assumes an attitude of selfish independence. As well might any of the members of his body repudiate the vital energies of his heart—the centrestance of his very being—and proclaim its independent isolation.

This thing of regarding ourself as a mere looker on, and taking no interest at all in the various enterprises that are entered into among men for the advancement of their social and moral condition, or of withholding all sympathy from their efforts, is likely to narrow down the minds of men into selfish exclusiveness. This state of mind is the fruitful source of prejudices and aversions towards others, without an adequate cause. It does not realize our connection with the source from whence the whole family of man originated, nor the harmony of action and reaction. It does not seem to comprehend that there can be no *true* happiness where there is isolation and loneliness. When anything is separated from the part to which it belongs there is always more or less imperfect action and a tendency to unite again; and while that tendency continues there is more or less unrest and inefficiency. In social union there is the truest happiness, because there is then a freer circulation of all the vitalizing elements and properties that uplift and stimulate progress, and a more harmonious action of human unity is recognized. These sentiments, of course, do not contemplate those opposite extremes through which social union and sympathy degenerates into clanship, profligacy, and indolence or idleness.

But, intermediate between the true forms of order, and their absence altogether, is a condition which has been appropriately styled the "*order of disorder*," and this *status* is unconsciously assumed by many of the organizations of the country. It is true, that no one *wills* it so, and at heart all may desire the success of the organization in which they hold an irresponsible membership; but, in its outward manifestation such is the effect in all cases involving a unity of energy for their success. Look abroad in the world and see what has been accomplished by associated efforts and energies. From the smallest organized association—if it be only a partnership of two or three—up to the largest—as for instance an army—an efficient exercise of their functions is based upon an adhesion to the principles of order. In a certain sense every human being that has attained the age of civil, rational, and moral accountability, is a society in its least form, and from this individual form we pass up through the various degrees of associated organizations, until we embrace the entire universe; all are subject to the rules of order, and without such rules, things would be ever standing in each other's way, and nothing would be in process of successful accomplishment.

Political parties understand the potency of organization, and their general efficiency and often their success depends entirely upon their faithfulness to the rules that have been instituted for their government. Even when parties become disintegrated, or split up into factions, the first steps taken by the several factions are toward a reorganization of the various elements into separate parties; for they know full well that without organization they cannot contend with those who are antagonistic to them with any hope of success. The very church, all religious and educational institutions, manifest their powers through organization; and although all power upon earth is from the Deity alone, yet that Deity does not act arbitrarily and immediately, but through the medium of organic instrumentalities, and according to eternal principles of order.

All philanthropic movements; all financial enterprises; all great manufacturing establishments; all public improvements; all incorporated communities, and all scientific, historical and profession institutions may be included in the same category, and their practical efficiency will depend upon their unity, their energy, their integrity, and the perfection of their organization.

Amidst all this physical, political, mechanical, intellectual and moral machinery of the universe, is there no example in it fit for the imitation of the laborious tillers of the soil? Must that great and paramount human interest, which underlies, and fundamentally underpins the moral, civil and social structure of the world, continue to occupy a subordinate position, or to be kicked about like a football by all the others, for the want of effective organization, or because it cannot

subordinate itself to the simple rules of order that are necessary to its unity or its efficiency as a body politic? It is true, efforts towards a closer and more compact organization of the farming public have been made all over the union, but still the masses stand aloof. The masses refrain from taking hold of the various enterprises, and assist in bearing the responsibility. The masses seem to be restive under rules of order. If it be true that "order is heaven's first law," the inference would seem to be a rational one, that men should subordinate themselves to it, or bring themselves in harmony with it, as a preparation for those beatitudes in that world where order perpetually reigns—and selfish aspirations vanish away.

HERMAN STRECKER.

Stonecutter and Lepidopterist.

"There are a great many people in Reading who do not know that the finest collection of *Lepidoptera* (butterflies and moths) in America is in their own city. The gentleman who has brought together and preserved this magnificent array of lepidopterous insects is Mr. Herman Strecker, who among his fellow-citizens passes for a mechanic with artistic taste, but among scientists is recognized as an enthusiastic entomologist. He is a modest, unassuming man, whose studies have been in a field which a few patient, thoughtful, persevering specialists have all to themselves. Even the number of people who can take an interest in their work is comparatively small. Mr. Strecker earns his living by making memorial monuments, and those who have visited the Charles Evans Cemetery at Reading need not be told that he is a sculptor as well as a mechanic. He has devoted his leisure hours to the study of entomology and to the gathering of specimens of the different varieties of butterflies and moths from all parts of the earth, until he has a museum such as cannot be duplicated on the Western Continent. In this issue of *The Press* will be found an interesting sketch of Mr. Strecker and his museum."

We clip the above from the Philadelphia *Press*, and only regret that our limited space, and our peculiar specialty prevents us from inserting the long and interesting article alluded to in the above extract. Mr. Strecker is yet comparatively a young man (we were married two years before he was born) and is now presumably in the prime of life, although so far as *our* experience goes, the collection, care and keeping of a large cabinet of such fragile objects as Lepidopterous insects are is about as great an "elephant" as could possibly be committed to human hands, and if there were no compensations in the pursuit of such a subject itself, it involves a patient and persevering labor that the average of mankind will hardly ever appreciate or requite, and unless a man is endowed with more than ordinary powers of physical recuperation, there is sufficient "wear and tear" in it to make him prematurely old. It is unfortunate for such men, and also for science, that in so many instances they belong to that class who are compelled to follow incompatible secular occupations in order to sustain themselves and their families—burning the midnight oil, and laboring while others are resting or carousing in the lap of luxury, and "half the world is in solemn darkness hung." But "time makes all things even," and Providence "ruleth over all."

THE COLD SNAP.

Heavy Snow Storms Reported in the North. The Cold Weather Unprecedented.

"A despatch from White Hall, New York, says a heavy snow storm prevailed all day on Monday along the western shore of Lake Champlain. At Plattsburg about ten inches of snow has fallen; at Point Henry and Crown Point twelve inches; also ten inches at Kere. This is the most severe storm which has ever prevailed there at this season of the year.

There was also heavy snow in New England and Nova Scotia. In New Hampshire and Vermont the fall in places was from 15 to 20 inches, and railroad travel was delayed.

A despatch from Buffalo says the wind and snow storm on the lakes on Sunday night was very severe. Some minor disasters are reported.

A severe snow storm prevailed throughout Ontario on Sunday night and Monday morning, and in some sections there is one foot of snow on a level. The trains on the various routes are running on time.

A despatch from Winnipeg, Manitoba, says an ice bridge has been formed on the river there, and people are crossing on foot. The weather is clear and cold."

The foregoing gleanings from various newspaper and telegraphic sources, we clip from the columns of the *New Era* of the 4th inst., as indicative of the imitation of "bleak November." How very different from the character of "frosty October," which up to the 18th was not only unprecedentedly mild, but was absolutely warm, if not really hot. What the character of the weather may be before the month is out, we can tell better at its ending than we can now, but this fact has somewhat shaken our faith in those prognostications which so confidently presaged a "very mild November." Somehow both September and October "slipped through" without bringing the usual characteristic "equinoctials." Can it be possible that they have been transferred to November? At the meeting of the society on Monday the 3rd inst., one of the members reported that "the cold snap" had arrested the progress of the "Hessian-fly." This is then the good resulting from an autumnal cold snap, immediately following an unusually warm one. Not only the Hessian-fly, but also many other noxious insects may come to grief through the intervention of excessive cold, and if the farmer could now contrive to turn over the soil with the plough the benefit of the cold snap, in this respect, would be greatly increased. "It is an ill wind that blows nobody good," is an old saying, but is also a true one.

A GRAPE PHENOMENON.

Through our neighbor, Mr. David Hartman, of North Queen street, we were presented with two fine and luscious clusters of Concord grapes, from Mrs. Nathaniel Ellmaker, of Salisbury township, Gap, Lancaster county. For the 22d of October the freshness and flavor of these grapes were remarkably preserved. Although both of these clusters grew on the same vine, yet there was a marked difference in their size and also in the intensity of their taste and flavor. On the one cluster the berries were pretty uniformly three inches in circumference (a few were a trifle more and a few a trifle less,) whilst on the other cluster the berries did not average more than one and three-quarter inches in circumference. The smaller berries were the sweetest and the most pronounced in their flavor. This distinction has often been observed before, between large and small fruit of the same variety, in apples, peaches, pears and strawberries, as well as in grapes, and especially in the mammoth specimens cultivated in Kansas and California, when compared with the same varieties cultivated in Pennsylvania, and it has also been noticed in large and small specimens of the same variety in the same locality. In unusually large fruit—where it greatly exceeds the normal size—quantity is gained at the expense of quality. Volume is gained, but the inherent sweetness and flavor are in the same proportion diluted. The extra gain is mainly water, and although this may not always be the case, it is apt to be the case when the transition is sudden. But why the sudden difference in size? So far as we understand the representations made to us, the case is simply this. Last year, or last spring, Mr. Ellmaker laid down a lateral and covered it with earth for a distance of five or six feet from the base of the main vine, leaving a few buds above the ground at the end. From these three vigorous scions sprung, and he pruned the two weakest, letting the strongest one stand. This was practically a "survival of the fittest." This vigorous shoot bore a few clusters of abnormally large grapes, whilst the main vine bore its usual crops. The reasons for this are obvious. The layer, in addition to drawing upon the parent stem, at each joint made roots of its own, and thereby increased its supply of the sustaining and developmental elements. Moreover, buried in the surface mould, and more susceptible to the influence of heat and moisture, it had feeding opportunities not accorded to the parent vine, whose roots may have penetrated the less nutritious subsoil, or clay, or ground beneath. Separate that layer from the parent vine, and plant it elsewhere, with the usual volume of root, and it is very probable that its fruit may relapse to its normal size, although, with generous and judicious cultivation, it is possible that a larger variety may be developed. Cultivation has much to do in increasing the size and quantity of any variety of fruit, even where it does not enhance its quality. We are thankful for the grapes, and relished them all thd same, whether this be a true explanation of the phenomenon or not.

THE MEMORIES OF BEES.

No doubt bees remember where they once, or oftener, have been, and especially so when they have been able to make a "good find" of honey at such place, or places; but there is a grave question whether they have any appreciation of "probabilities"—whether they have any instinctive perception of *seasons*—whether beyond mere temperature, they can tell winter from summer. Let an unusually warm day occur, either in autumn, winter or spring, and the bees will seek the places they visited before the last "cold snap" in great numbers—the warmer and the more continuous the warmth, the greater the numbers—and freely and eagerly appropriate the saccharine matter such places afford; and this is especially the case about grocery stores, cider mills and presses, or warehouses where sugar and molasses is stored. As the first and last of these places furnish the mellifluous substance they are in search of all the year round, perhaps it requires very little sagacity on their part to find the way back to them as often as they are physically vivified by intervening warm days during the winter season. But we noticed them in considerable numbers in our leafless grape arbor on the 10th of this present November, just as we noticed them there during July, August and September, or as long as a single grape remained on the vines. It is not our purpose to discuss the question here, "Do bees sting grapes?" (of course, by this people mean, do bees cut the skins of grapes?) any farther then to say, that, notwithstanding all the testimony *pro* and *con* during the past two years, the question seems to be still in an unsettled state. Our grape arbor is forty-five in length and has a southern exposure. It is covered with vines from one end to the other, but on the 10th inst., it had hardly a dozen leaves on it, and these were crisp and ready to fall at the first blast of wind. About noon of said day the sun shown out warm and genial, and at 2 o'clock, when we made the observation, the bees were then exploring the naked vines from one of the arbors to the other, just as they had explored them when they were hanging full of ripe fruit, and they continued to do so for at least half an hour, or longer; and they seemed to be restive and chagrined, when they found their search a barren one. Now, it perhaps is not at all surprising that they should have remembered that they had found grapes there on former occasions, but that they should expect to find them there at this season, is little short of a reflection upon that instinctive quality which they in other respects so largely possess—about equivalent to a man taking his gun and going out to shoot bull-frogs on a mild day in December, January or February, months in which sportsmen have no expecta-

tion of finding that kind of game. Of course they also visited every belated flower, for in our garden flowers are blooming all winter (notably a Black Hellebore) but we have grapes only a few weeks in the year.

THE POULTRY SHOW.

What we would like the readers of THE FARMER to know, is that they should do all they can to encourage and assist the Poultry Association in their first exhibition, which is to be held in Locher's Building, Centre Square, Lancaster, on January, 2d, 3d, 5th, 6th and 7th, 1880. The members of the association are doing all they can to make the exhibition a success, and if it receives the encouragement from those outside of the society that it does by the members it will certainly be a success. We think it will, and trust our readers will help make it so. Don't think the only encouragement you can give is to go and see it; but if you have any poultry you think is good, enter it for a premium; make the exhibition a big one. If your neighbor has any fine poultry tell him to enter his. *The Poultry World*, says:

"Poultry raising to advantage is no longer a problem, as to its paying results, where the operator attends to his work sensibly, and gives to this undertaking the same care and judicious management that *any* business enterprise requires. Hundreds and thousands of our people have proved this all over the country, and at no time, within our knowledge, have the prospects been more promising for continuous prosperity in this direction than all the indications afford at the present time."

This is true, no doubt. Improve your stock, get better chickens and it will pay you better in the end. The way to do this is to visit the exhibition; see what is there; get eggs from the owners of some of the fine chickens; raise fine chickens yourselves and you will find that it will pay. The Society offers five hundred dollars in premiums, and besides a number of special premiums have been offered by various parties. Talk the show up; come and see it yourself; tell your neighbor to come, and see if a visit to it does not end in your improving your stock of poultry next year.

A QUEER FISH.

Golden Carp with a Double Caudal Appendage.

Mr. Jno. C. Long, of this city, is the possessor of not only a "queer fish," but also an extraordinary fish, and the extra consists in an unusual caudal development. It is a fine active specimen of the common Golden Carp, or "Gold Fish" (*Cyprinus auratus*,) and is provided with both a vertical, and a horizontal caudal fin, and from the adroit manner in which it manipulates this compound appendage, it seems to possess more than ordinary balancing and motive powers. The caudal fin or tail consists of three lobes, two of which are horizontal, and the third one is vertical, and is of the same length, and immediately in the middle between the other two. Of course this is an abnormal development, for we know of no species that normally possesses this rare combination, but our knowledge of fishes is too limited to say positively that there are none. But generally the caudal fin is vertical. It is rarely that we see an animal malformation so symmetrical. There must be some cause for this departure from the ordinary tail-type, but it would be useless to enter into speculations upon the subject, and therefore, like the five-legged frog and other animal monstrosities, we must record it as a *lusus nature*. Nor do we think that the fish itself has any reason to regret it (always provided that a fish has the attributes of reason or regret,) but on the contrary, if a fish is endowed with any degree of emotion, it must certainly be as proud of this caudal appendage as a "dog with two tails." If that fish should happen to die—which the Fates forefend—we should like to possess it immediately thereafter, as a contribution to the museum of the Linnæan Society. In any event, we trust that no attempt will be made to preserve it in vinegar, as was the case with the rare "five-legged frog" last summer; through which the bones were softened and the flesh reduced to a mass of incohesive pulp.

A NATURAL FERTILIZER.

Those of our patrons and readers who may be in want of a fertilizer to recuperate their soils, will be instructed what to get and when to get it, by consulting the advertisement of Mr. D. P. Bitner, which will be found in the third column on the second page of this number of our Journal. "The fossil Marl of New Jersey" is no "villainous compound," but is a natural product of the marl beds of New Jersey, and has an established and unquestionable reputation, of long standing and increased appreciation. The marls are rich in dissolved bone, phosphoric acid, potash, silicic acid and other fertilizing elements, and impart a permanent richness to the soils that receive them. Mr. Bitner is the agent for Lancaster county, and is too well known among its people to engage in an enterprise that would discredit the reputation which he has established as a fair business man. With our increasing population and enhanced production, the demands we make upon our soil cannot be honored without increased fertilization; therefore our farmers will be naturally looking about for the "cheapest and the best;" a rare combination which is more likely to be realized in a *native* element than in one that is artificial, under all circumstances. Even if it should be no better than others, the price at which it can be obtained, involves less risk and loss to make a trial of it, than any other fertilizer in the market. We commend the subject to the favorable consideration of our readers.

THE "LANCASTER FARMER."

This journal for October, 1879 (for reasons perhaps unavoidable,) comes to hand this month a little later than the usual time, but as its literature is mainly of a standard character, its issue a little earlier or a little later does not make any material difference. Although this number does not contain as much original matter as usual—which may be due more to the delinquency of contributors than to either editor or publisher—yet from the solid character of its selections and the interesting proceedings of our local societies, it is a number of more than usual interest to the farmer and to the housekeeper.

On the whole, it contains seventy-five articles, editorial, contributional, communicational and selected, the monthly proceedings of four local societies, twenty household receipts, and twelve literary notices, an amount of solid literary matter rarely found in a journal of its size. THE FARMER has no huge block-letters, no widely leaded editorials, and no unsightly advertisements distributed through its columns (in which self-interest is often more manifest than any consideration for the reader) on the contrary, it is compact all through, and when bound makes a respectable looking quarto volume, both inside and outside, which may be profitably perused at any time. It avoids as much as possible merely ephemeral literature, and desires to make a permanent record. It presents a rare opportunity for the intelligent and progressive farmers of Lancaster county to place themselves on record in a permanent form—a form easily preserved and easily referred to on any future occasion.

In publishing the proceedings of the different societies and clubs in Lancaster county, it is doing more to "uplift the *living* estimation" of the county, than any other journal published within its boundaries, and this is necessarily so from the fact that its contents and enunciations are reflected from no merely partisan plane; and through its medium nothing is sent abroad in relation to the county that reflects upon its moral, its political or its religious integrity. The man who reads THE FARMER twenty, fifty or a hundred years hence will not have to blush for the "crookedness" of his ancestry, but under the influence of those mysterious cycles which often characterize the progress of eventful time, he may rediscover something that is beneficial for him to know and which intervening generations may have neglected or forgotten.

"How is THE FARMER sustained?" is an inquiry more often and more anxiously made by people abroad than by those at home. Out of the one hundred and thirty thousand inhabitants of Lancaster county, the half of whom at least are farmers, the subscription list of their local journal should number *ten thousand* at least; and it will attain to that number as soon as the spirit of that query—"Is not this the carpenter's son?"—made nearly nineteen hundred years ago is dissipated, and men begin to look at home and within. The attitude of the agricultural interests of the county and country is assuming such a prominence that they cannot well afford to dispense with their local representative journals.—*Agricola in Examiner and Express.*

MONTHLY REMINDERS.

In the Middle States, the season for gardening is drawing to a close; indeed, it is limited to the preservation of roots, and the hardier vegetables for winter use, and such operations as may be preparatory to another season. Now is a good time to transplant fruit and ornamental trees, shrubery, &c. On loamy and light land, we prefer decidedly fall planting; on heavy soil, or where the subsoil is clay, thus retaining the moisture near the surface, Spring may be a more favorable season; and it is also generally esteemed the best for evergreens.

Asparagus beds, winter dress. Beets dig and store. Cabbages place in safe quarters. Carrots dig and store. Celery earth up finally, drain vacant grounds if needful. Horse-radish dig and store for convenience. Onions in store, examine. Parsnips dig for convenient access. Salisify ditto, &c. From the 1st to the 20th of this month, according to locality, the Winter supply of turnips should be cared for.—*Landreth's Rural Register.*

WE welcome to our columns again our esteemed contributor, A. B. K. of Safe-Harbor, who, through physical indisposition, has been absent from them for some months. We hope that his health has been permanently restored, and that he may be able to scatter abroad the seeds of agricultural knowledge for many years to come. We know his contributions have been much esteemed by our knowing readers, who will be equally grateful for his return. We sorrow, however, to think that the physically and intellectually strong men of our county are so remiss, and cast the burdens of literary responsibility upon the shoulders of the weak.

COMMUNICATIONS.

For THE LANCASTER FARMER.

A VISIT TO HERMAN STRECKER.

Being in the city of Reading, recently, I recollected that it was the home of Herman Strecker, whose name is known wherever the study of Natural Science is prosecuted or recognized. Yielding to the desire to see this indefatigable student of nature, I consulted a directory and found Herman Strecker, marble cutter, number and street of his residence designated. Upon inquiring at his house, we were directed to the marble yard, where we met him in working dress, much dusted with marble dust. He is tall, good figure, eyes blue-gray, heavy beard and moustache, two-thirds gray, though but forty-one years of age. He has made a speciality of the order *Lepidoptera*.

The butterflies and moths of this order must be ranked amongst the most elegant objects found in insect life, the delicacy of form of most of the species, the charming contrast of colors in the wings of others, while some seem studded with pearls, or gems, or gold or silver. None who have had the pleasure of seeing the almost unrivaled collection of this gentleman will wonder that he

is an enthusiast, a devotee. I was so fortunate as to be invited to inspect his treasures; his museum is quite private. Time with him is of the utmost value; he works ten hours every day for a salary; every evening is spent in the study, never retiring before one or two o'clock, and he has continued this practice for twenty-five years. He began to collect when a boy; his fascinating study became his ruling passion. Earns money to get the means to enrich his museum and library. He has expended twenty thousand dollars on his cabinets of specimens. The library is very valuable, containing the old and new in scientific works in Latin, Greek and English. Nothing has been paid for fine bindings, blue and gold, and gilt-edged volumes; many are in paper covers; the study is a small apartment and looks smaller from the way it is crammed. Books ranged on shelves from floor to ceiling around three sides of the room, the cases of drawers containing his specimens are ranged through the centre of the room, only space enough between to open the door; the foremost case encroaches on the writing-table so closely that a segment of a circle is cut out to admit of opening the door, the table being of white pine, without paint, baize or oil-cloth; no uselessly fine furniture has been spoiled, for the cost of it would procure some rare exotic of a moth. I was shown three specimens of *Papilio antenor*, which sometime since cost ninety dollars, and the pleasure derived from their possession is keener than so much money invested in Queen Anne styles of furniture. Some of the insects are interesting because of their rarity. A *Colias Boothii* was taken in the second Ross expedition. This is probably the only specimen extant; it is not very pretty; dun color with dots and markings of a darker shade. Every known or accessible part of the globe is represented: Finland, China, Japan, Africa, Australia, Central and South America. This collection numbers sixty thousand specimens, and is third largest in the world of the order *Lepidoptera* only. In the collection from China is seen those wonderful imitations of the leaves; the mimicry is quite startling; even the midrib and reticulated venation are preserved; what seems a twig to which a pair or two of dead leaves are attached, or small bunch of oak leaves, is a perfect insect: even the thighs are foliaceous, some are bright green. It is asserted by the natives where they are found that these insects are all green at first and change color with the foliage, but they are different species. They have the significant family name of *Phyllidæ*. The subject of this article, whose labors are very imperfectly noted, for his correspondence, home and foreign, is very large, and I have no list at hand of his publications—is a noteworthy example of what might be accomplished in a lifetime. Never one of leisure; engaged ten hours every day in the marble-yard, all this labor has been accomplished in the hours usually given to recreation and sleep. But how does his health stand this strain of eighteen hours out of twenty-four? Very much better than if addicted to nightly visits to the taproom. He says his health is perfectly sound. One sort of work seems to be an antidote against the exhaustion or fatigue of another.—*Lydia D. Zell, Oct.*, 1879.

COLORADO.—PITKIN AND ITS PROGRESS,

A New Mining Camp on the Western Slope of the Rockies that Rivals Leadville in Riches.

PITKIN, Colorado, Oct. 27, 1879.

This is a new mining camp of recent discovery, situated on Quartz creek, about five miles from its head, in the county of Gunnison, and about twenty-five miles northeast of Gunnison City. It is one of the most beautiful and convenient town sites on the western slope of the Rocky Mountains. Most of the discoveries in this region have been made since February last, some of which are exceedingly promising. The best mines discovered thus far, lie within a radius of about four miles. The character of the ore as far as developed, is remarkable, and exceeds in richness those of the famous Leadville Camp.

Among the most promising mines are the "Fairview," recently sold to Mr. Nathaniel Slaght, of Michigan, assays from which run up into the thousands, and the "Silver Islet," a new strike, showing wonderful mineral, at a few feet below the surface. There have been assays made from all parts of this wonderful vein, and the general average was found to be between 100 to 170 ounces to the ton. Among the other promising properties may be mentioned the "Silver Age," a continuation, or extension of the Silver Islet, a mine which will doubtless prove equal to the latter; the "Red Jacket," the "Black Cloud," the "New Dollar," the "Iron Cap," and the "Terrible;" the latter a lode rich in free gold, and carrying at the same time a remarkable rich vein of silver and galena.

The ores found thus far at Pitkin are easily treated, and are not what are properly termed "dry ores." A number of sites for smelting works have already been taken up, and there are parties here now who are going to put up a "smelter" this fall. One of the great advantages of this mining camp is its accessibility. All the roads to the south are open for travel, and loaded teams can come in and go out in every month in the year. According to present indications there is not a doubt but that we shall have a booming town here before the opening of the coming spring. About six miles from here are the "Hot Springs," equal in medicinal qualities to those of Arkansas. A wagon road is now being made to that point, and capitalists who visit Pitkin can avail themselves of a fine opportunity of enjoying the benefits of these springs. The owners of the hotel are also building a road from their mines down to town, and erecting buildings over their mines, so as to keep the work going all winter. The mines are at an elevation of about 12,000 feet above sea level. Prospecting will soon cease for the winter, and those who intend to remain in the mountains will soon get in the necessary supplies to last until spring, and work their prospects. In order to work a prospect during the winter it is absolutely necessary to have a good, comfortable house or cabin over the works. Judging by surface indications, this is said to far exceed any portion of the Gunnison country, and surpasses any portion of Colorado. The Fairville bids fair to be equal to anything in Colorado now, excepting the famous "Bassick," of Rasilea. What Leadville is to the Eastern Slope Pitkins will no doubt be to the Western.

When I arrived here last spring from Leadville, there was hardly half a dozen cabins, whilst now there are nearly a hundred, the larger number of which have been built since the first of August last. Since folks on the outside have convinced themselves of what is here, capital has made a path directly to us on all sides. The Denver and South Park Railroad made their survey through here some time ago, and their intention is to push the road through to Pitkin as quick as they possibly can.

About fourteen miles from Pitkin is the Fuonichi, which receives the waters of Quartz creek, and is also a tributary of the Gunnison. This is one of the finest hay bottoms in the Gunnison country, and its waters abound in trout. The stream is settled up from its mouth to its head by ranchmen, and they furnish butter and other farm produce of an excellent quality. Such game as deer, antelopes, bears and elk abound in considerable numbers, to say nothing about the feathered game.

At the present writing our camp, and those around Pitkin generally, are assuming a better appearance than they have had since their foundation. The way to reach Pitkin and our camp from Leadville, or the east, is by way of Alpine, across the main range.

It is presumed that every one at all posted in the geography of Colorado, knows that Pitkin was formerly called *Quartzville*, a name that was temporarily derived from *Quartz creek*, on which it is located.

From the rapid manner in which towns grow up in this State, when they are located in the vicinity of paying mines, and from present indications, it would not be irrational to prophesy that Pitkin, before long, will be a county seat, and literally a "city on a hill," having an altitude greater than any other in the American Union. H. A. R.

CONTRIBUTIONS.

For The Lancaster Farmer.

AN EXPERIENCE IN DRAINING.

The need and usefulness of draining low or wet soils is denied by none, and no doubt there are hundreds of acres in many sections that would have this desirable improvement made but for the difficulty of getting the drain tiles.

It seems to be one of the anomalies of business enterprises that drain tile makers do not advertise their wares. How many farmers have ever seen grain tiles advertised in their regular weekly paper? Even the agricultural papers seldom contain such advertisements.

There are many excellent works on draining, and it is very desirable before commencing operations to consult such a work, on account of the many hints which may be gathered. But with the exception of large areas of very level land it is not at all necessary to employ surveyors or engineer to set out stakes for the depth of the ditch or the course of the drain. Waring's "Draining for Profit and Health" is a cheap work and will answer every purpose of those of a higher price.

About an acre of our meadow was so low and swampy that nothing would grow on it except calamus and some coarse sedges. When we once attempted to plow a surface drain in order to lead off the water so that we could plow up this part and destroy the calamus the water ran in a stream after the plough, and we had quite a difficulty at some places, as the ground was so soft and yielding that the team became alarmed and did not want to cross such spots. We then concluded to drain it the succeeding spring.

The first difficulty we experienced was to gain an outlet of sufficient depth, as the brook that flows along the lower end of the meadow was scarcely eighteen inches below its surface, and a drain should be at least four feet deep to work to good advantage. The neighbor below us now came to our help by deepening his part of the brook to guard against an overflow, and we were enabled to start in at a depth of about three feet; this soon increased to the required depth as the ditch advanced.

We determined by eyesight the greatest depression, and run the drain along that, using stakes solely to give as much straight line as possible, and nothing to mark the depth. The slope of the bottom was gotten by digging a few feet of ditch nearly as deep as the bottom of that last finished, and then taking a good strong hoe and working out the bottom to nearly a dead level, allowing only slope enough to cause a gentle flow; after the ditch was four feet deep more slope was allowed, so as to keep at about this depth, or a little more, according as the surface varied, the object being to keep the slope of the bottom as uniform as possible, so as to facilitate the laying of the drain. The drain should be laid as fast as a sufficient length is dug or the banks may cave in, this caving being more difficult and more disagreeable to remove than the original excavation, as it in a short time becomes like mortar. The width of the ditch at the top was made about eighteen inches and the bottom about ten inches, though the top can be made as narrow as twelve inches and the bottom six or eight inches, but it is unpleasant to work in such narrow quarters.

It is often recommended that draining be

done in time of a drouth, and no doubt it is much pleasanter working in the ditch at such a time than in the spring when the soil is full of water. But unless you are one of the heroic sort, that determines what should be done and then does it, do the draining in the spring or any other time that the soil is full of water, for then you can tell exactly what is needed. If the draining is done in a drouth you may extend the drain only so far as to where water will cease to come into the ditch, and the next spring, or the first wet spell you will discover that your work has not been carried as far as it should have been.

Not being able to get drain tiles without much trouble, recourse was had to the following method:

A saw-miller was directed to rip some inch boards into three inch and four inch strips, and these were nailed together in the form of a sloped trough (V), nailing the strips so that the inside of the trough was three inches. Had the strips been laid on each other it would have made a tight joint which was to be guarded against. An old leather trace, less than a quarter of an inch thick was therefore cut into inch square pieces, and the pieces laid between the edges, thus leaving a place along the whole length of the trough for the water to enter. These troughs were then laid in the drain, sharp end down, at the places where two troughs came together to make a joint; short pieces of trough (twelve inches or less long) were laid under so that the ends of the main trough met about in the middle. This prevented either end from sinking below the level of its adjoining neighbor. Strips from five to six inches wide were used as a cover to these troughs, taking care that the joints of the cover did not meet those of the troughs, the idea being to always "break joints," as it is termed. As soon as this cover was on, the earth was filled back, and a drain was had that worked as nice as any drain ever made. The only objection against it is that it will rot out in the course of some years, while a drain made of earthen tiles is practically indestructible.

But why was the trough laid in with the sharp end down? Would it not be easier to lay down the wide board first and then invert the trough over this?

It would be easier to lay it in this manner but it was done in the other way for this purpose: If the broad board was laid down and the trough inverted on this, the surface of the bottom of the drain pipe—as it might be termed now—would be some 3 inches or more wide and when little or no rain had fallen for some time, the water would be extremely shallow on this bottom, and move very sluggishly, allowing all sand and other heavy foreign matter to sink to the bottom, and in time close up the drain. On the other hand with the sharp part down a very little water soon makes a brisk current and carries all such silt to the outlet.—*A. B. K.*

COPTIS TRIFOLIA, SALISB.

Three-leaved Gold Thread; Mouth Root.

This interesting little plant derives its name from the Greek word "*Koptō*," to cut, alluding to the divided leaves, and its common English name "Gold-thread," from its long, bright yellow, bitter fibres of the root. The leaves are evergreen, shining, obovate-wedge-form, sharply toothed, obscurely 3-lobed, scape 1-flowered, sepals 5-7, petal-like, deciduous. Petals 5-7, small, club-shaped, hollow at the apex, stamens 15-25. Pistils 3-7 on slender stalks. Pods divergent, with three parted root-leaves, flowers small, white. An old authority says the name Coptis is derived from the Greek word *scindo*, in reference to the cut leaves. Mr. Salisbury changed its generic name given it by Linnæus, which was *Helleborus trifolius*, differing, however, in having a caduceus corolla, &c., forming a new genus.

This plant, although much sought for, is rarely found outside of shady and cold boggy situations. I met with it at Rauch's Gap—above the cold springs and other sections of Lebanon co., Pa. We are informed that the dark sphagnous swamps, which in the northern parts of our continent are covered with a perpetual shade of firs, cedars and pines, are the favorite haunts of this elegant little evergreen. The oldest situations seem to favor its growth, and it flourishes alike in the morasses of Canada and Siberia. On our highest mountain tops it plants itself in little bogs and watery clefts of rock, and perfects its fructification in the short summer allowed in those situations. On Alpine regions of the White mountains foster it among the *Diapensia* and *Azaleas* of Lapland, the blue *Menziesia*, the fragrant Alpine *Bideas* and other plants of high northern latitudes; it forms the link of botanical connections between the two continents.

Here we have a delicate plant to all appearance, that will not abide hot-house culture, nor open sunshine but has to be sought for in solitary, damp and cold situations; hence I presume it is hard to raise or cultivate. Johnson in his Gardener's Dictionary says of Coptis—(the only mentioned species "trifolia,") "The roots of this plant are used in the United States medicinally, under the name of 'Gold Thread.' Hardy, herbaceous

perennial, division of the roots and seeds; sandy, peaty soil; requires the protection of a cold pit in winter." I cannot see why it should need such a protection. As to its medicinal properties, Dr. J. Bigelow in his American Medical Botany (1817) says: "The root of this plant is a pure intense bitter, scarcely modified by any other taste. In distillation it communicates no decided sensible quality to water. The constituent with which it most abounds is a bitter extractive matter; soluble both in water and alcohol. It seems destitute of resinous or gummy portions, since the residuum from an evaporated solution in alcohol is readily dissolved in water, and vice versa. It is devoid of astringency when chewed in the mouth, and it gives no indication of the presence of tannin or gallic acid, when tested with animal gelatin, or with sulphate of iron." Dr. B. gives other tests and experiments. "Of this article," says the Doctor, "larger quantities are sold in the druggists' shops in Boston, than of almost any indigenous production. The demand for it arises from its supposed efficacy as a local application in aphthous, and other ulcerations of the mouth. Its reputation, however, in this case is wholly unmerited, since it possesses no astringent or stimulating quality, by which it can act on the ulcerated spots." Now, there are sometimes other elements come in play that may be new to our experience; hence even a popular belief, usually has some foundation. He admits, however, that "As a pure tonic bitter, capable of strengthening the viscera and promoting digestion, it is entitled to rank with most articles of that kind now in use. Its character resembles that of *Gentian*, *Quassia* and *Columbo*, being a simple bitter, without aroma or astringency. The tincture, made by digesting half an ounce of the bruised root in eight ounces of diluted alcohol, forms a preparation of a fine yellow color, possessing the whole bitterness of the plant. In case of dyspepsia and convalescents it is very satisfactory. Ten to twenty grains in substance, is a dose and rests well on the stomach. Dr. Griffith says the *Coptis teeta* is peculiar to India, and is much esteemed among the natives as a tonic and stomachic, and from the experiments made with it by Mr. Twining, it would appear to justify the high character that has been bestowed upon it; and adds, it very closely resembles the *Coptis trifolia* in its sensible qualities and medical properties. This may appear of no special interest to farmers in general, but no one meeting this elegant little plant could help to notice it; and the beautifully golden yellow roots, when taken up, would arrest attention, and a desire to know more about it; to me, in my botanical rambles, known only from having seen it figured and described, so that when I met with it, it afforded me as much joy as if I had found an humble, worthy friend in a solitary place, of whom I had heard much, and desired to make him a personal acquaintence.

I assure you it was a welcome contribution to my dry garden and oh, how eagerly I gathered a number of specimens, and what satisfaction it afforded me to press and preserve the specimens, in my herbarium. Those who observe and seek to know the plants that haunt themselves by the wayside, or seek the solitude and reveal themselves only to those that seek them out, this description with its illustration may not be unacceptable as an object lesson.—*J. Stauffer.*

ESSAYS.

CALIFORNIA.

That the world moves is as manifest, if not more so, on the distant shores of the Pacific, as it is anywhere else on the continent. The people are infused with a goaheadtiveness, such as you fail to find in the East. It unquestionably is due to the extraordinary energy and perseverance of the people, that they have made such advances in the several industries, especially in the practical pursuit of agriculture.

Not more than a generation ago the now great State of California was yet a wilderness. Little did the pioneer then dream of how civilization would spread itself and in the near future convert the then almost unknown territory into the prospering and flourishing young empire which California really is to day.

Topographically speaking, California is the most peculiar State in the American Union to-day. No other State can boast of so many natural divisions.

California to-day contains within her geographical limits 99,900,000 acres—almost one hundred million acres. A piece of territory three and a half times as large as the State of Pennsylvania, large enough to make one hundred and sixty Lancaster counties. Although she is a small empire within herself in her extent of territory, there is no other spot of that size in the whole world that can boast of the same number of varied interests, that comprises so many natural divisions, interspersed by so many natural wonders and curiosities. This Empire State of the Pacific coast has

Read before the Lancaster County Agricultural and Horticultural Society, by John H. Landis.

her isolated volcanic peaks, her towering domes of granite, steep and awe-inspiring mountains, deep and fertile valleys, desolated plains, spacious bays, navigable rivers, beautiful waterfalls, inexhaustible mines, forests of giant trees, such as are nowhere else seen—these, all these are hers.

She is yet a youthful state, having been admitted into the Union in 1850, only 29 years ago. Although 29 years of age, she to-day has a population of 700,000 souls, over one-seventh of whom are Chinese. I have it from the best of authority that there are over 100,000 Chinese on the Pacific coast to-day. I have but a word to say of the Chinese. They are noted for their industry, economy, sobriety, are true to those in whose employ they are, are of a well behaved and peaceful disposition, kind in their manner, are very prompt in the payment of debts; and perhaps more than any other people, are disposed to interfere with or molest no one, and attend to their own business. There are 30,000 of them in San Francisco alone, mostly engaged in the laundry business and peddling fruit and vegetables. I'd put them up against the world as laundrymen. It is to John Chinaman that San Francisco owes it that she is the cleanest-collared and best starched-bosomed city on the continent. John is a perfect laundry. He is hard on the clothes however; he does not rub them as a Pennsylvania wash-woman does, but with a brush made of very stiff bristles he scrubs them, &c.

One morning I met an old "forty-niner, as he called himself; he came to California in 1849, and he told me that he had no idea then that in the red, sunburnt soil in that country, there could ever be raised either crops of grain or of vegetables. He said he stood there in a land of desolation, hundreds of miles beyond the pale of civilization, kicking the toe of his boot into the sand and wondering what such soil was made for anyhow. That very spot to-day is part of the richest valley on this continent. When the old forty-niner came there he never dreamt that in less than thirty years from then, in that same valley, he would see steam used as a motive power in ploughing the ground and threshing the splendid crops of grain. Would a man have told him then that would he live thirty years and visit that same place and there see machines that could head and thresh and clean and bag 2,000 bushels of wheat per day, he would without any hesitation have put down the man who told him so as a confirmed lunatic. And why should he not, when there are persons in this room here to-day who cannot help but doubt the truth of my assertion when I say that this is actually the case? Nevertheless it is true. The wheat is not cut close to the ground. The heads are merely taken off and the straw left on the field.

When the glad tidings of the discovery of gold reached the east, it gave a stimulus to immigration to that country. Since the day when the first particles of gold were discovered in the tail-race of Sutter's saw-mill, in the county of El Dorado, many of our most progressive, persevering and energetic young men in the land came here and cast their lot in this empire of mineral and agricultural richness, and have built up one of the wealthiest and greatest states in our union. During those thirty years California has minted millions of its gold, her farms have raised billions of bushels of wheat, corn and barley, and millions of bales of alfalfa. Her orchards annually yield in abundance the most luscious fruit the world produces, her vineyards cover thousands of acres in which grow the finest clusters of grapes found in the markets, and above all she raises a crop of boys and girls who in a few short years will merge into manhood and womanhood in whose countenances are visible such evidences of health as are seldom seen. It is no wonder indeed that California has escaped the effects of the recent panic of '73 as she has, and it is almost impossible for one to see how there could be any possible complaint of hard times, or how business could be depressed, the crazy statements and wild theories of the uncouth bellower of the "sand lots" to the contrary notwithstanding.

Plant the counties Alameda, Butte, Colusa, Contra Costa, El Dorado, Merad, San Joaquin, Santa Clara, Sonoma, Sutter and Yolo amid the glens of Scotland, among the Alps or the plains of Lombardy, within the dykes of Holland, and give to it a population of Germans, Swiss, Italians, Belgians or Austrians, make them the owners of the fee of the soil, and they would consider themselves immeasurably blessed with unthought of riches, and they would never dream to complain of hard times, as the people of the East are so apt to do when they are not only blessed with the necessities of life but are enjoying so many of its luxuries

Popular education is on the ascendent in California, although the adoption of the new constitution has given it a backset; yet I have reasons to believe that in the near future the constitution will again be revised, and steps will be taken to bring the thousands of children in the state who are growing up in utter ignorance into the schools and educated. It may surprise you how large a percentage of the children do not attend school at all. After I tell you, you will be still more surprised that Dennis Kearney has no more followers than the last election indicates. There are to-day 136,000 children of school age in California, of these 73,000 go to school, although some of them but a small portion of the year, while 63,000 do not attend school at all. Think of it, 63,000 children growing up in ignorance. Is it a wonder the brayer of the sand-lots has the following he has? Take those children into the schools, educate them, and you will make such citizens out of them that when they come to exercise their rights to the elective franchise they will sweep Kearneyism from their state and it will forever be a stranger in their midst.

Garden vegetables grow with a luxuriance that is not found elsewhere; beets, radishes, squashes, pumpkins, onions, cabbage, asparagus, melons, citrons, beans, peas and twice as many others which do not grow with us, and hence know very little of.

Cabbages weighing 15 lbs. are wonders in N. Y. In San Francisco they are common; whole fields of cabbage heads weighing 20 lbs, each have been grown, and hard solid heads with no loose leaves, weighing forty-five and forty-three lbs. each, are on record. One cabbage which did not make a head grew to be seven feet wide, throwing out leaves three and a half feet long on each side.

The largest squash produced in California weighed 260 lbs., and the vine which bore it had several others weighing over 100 lbs. each. Elsewhere 60 lbs. is a very large squash, and there is scarcely a record in the Atlantic States of a greater weight than 100 pounds, which has been frequently surpassed here. In 1857 one squash vine on the ranch of James Simmons, in Yuba county, produced 130 squashes weighing in all 2604 lbs. In the same year J. Q. A. Ballon, at San Jose, grew two squashes weighing 210 and 204 lbs. respectively.

The largest California onion weighed 47 ounces avoirdupois, and measured 22 inches in circumference.

The largest beet weighed 118 lbs—five feet long, and a foot in diameter. It was three years old. The first it grew so large that because of its size it was reserved for seed, but it disappointed its owner, and instead of producing seed the next year, merely kept on growing, and reached the size of 86 lbs., and the following year got to 118. Such beets can be grown in abundance. A beet of 20 lbs. is a wonder in New York or London; here it is too common to attract more than a glance. Beets are frequently from 3 to 4 feet long so that it requires no little trouble to dig them out.

The largest common turnip weighed 26 lbs; largest carrot 10 lbs.; largest watermelon 65 lbs.; largest tomato measured 26 inches in circumference.

Our vegetables grown in the open air are in the market during a greater part of the year than any other of the United States. We have cabbage, lettuce, turnips, beets, carrots, cauliflower, parsnips, radishes, horse-radish, celery, green onions, leeks, salsify and parsley throughout the year; green peas, beans, watermelons and cantaloupes from June to November, tomatoes from May to October; Lima beans and sweet potatoes from June to September; asparagus from March to July. Our tables are thus supplied with a great variety of fresh and wholesome vegetables throughout the year. Garden vegetables may be left in ground all winter. Potatoes are sometimes not dry until January, and turnips and beets are generally left in their beds until they are to be sent to the market; there is never enough cold to freeze them.

Fruits.—As a fruit growing State, California takes a high position. In no part of the world do fruit trees grow so rapidly, bear so early, so regularly and so abundantly, and produce fruit of such large size. Peaches, pears, apples, apricots, nectarines, plums, olives and strawberries are thrifty, healthy and productive.

In the California orchards fruit trees are trained low, the lower limbs being within a foot, or at most two feet of the ground. Men do not walk under the trees or climb after the fruit. The advantages of low training are that the trees bear earlier, the trunk is shaded and protected against the disease called sunscald; the earth about the roots is kept moist; and the trees are protected against the wind. The trees are planted much nearer together (only half as far apart) in most instances than in the Eastern States. This is an additional protection against the sun and wind. The ground is ploughed several every summer and is kept clean.

Fruit trees in California are generally as large at two years old as they are in New York at three or four years. The instances of unusually rapid growth here are without a parallel elsewhere. Cherry trees have grown to be fourteen feet high in one year, pear trees 10 feet, peach trees to have trunks from two to three inches in diameter. These were all from buds on yearly stocks, and were well provided with branches—not trimmed to gain height. At Petaluma, a cherry tree two years old from the graft, and three years old from the seed, had a trunk 7¾ inches in circumference, a plum tree three years from the seed was 11 feet high and had a trunk seven inches in circumference; and a peach tree one year from the bud was eight feet high and eight and a half inches in circumference.

Apple orchards begin to bear fruit the second or third year.

In Alameda county plum trees have grown twelve feet in one year from the bud.

Abundance of fruit.—Of the temperate fruit trees California has over 4,000,000. 1. 2,450-000 apple trees; 840,000 peach trees; 360,000 pear trees; 243,000 plum trees; 122,000 cherry trees; 31,000 nectarine trees, 78,000 apricot trees; 19,000 prune trees. Total 4,143,000.

2. Of the sub-tropical fruit and nut trees there are 252,000, including 60,000 almond trees; 58,000 English walnut trees; 50,000 fig trees; 39,000 orange trees; 38,000 olive trees; 7,000 lemon trees. Total 252,000.

3. Besides these, 30,000,000 grape vines, 14,000,000 strawberry plants, 1,000,000 raspberry bushes and 500,000 blackberry bushes. In all there are 44,500,000 trees, vines, plants and bushes bearing fruit or nuts, covering an area of more than 100,000 acres, or nearly half an acre in fruit for every man in the State.

4. The trees generally are in good condition; Cherries and plums are not troubled by the curculio, and apples are free from worms.

Grapes.—California is a favorite land of the grape. The grape vine supposed to be the largest in the world is at Montecito, near Santa Barbara. It is of the Los Angeles variety, was planted in 1795, has a trunk 15 inches in diameter and its branches are supported by an arbor 115 feet long and 78 feet wide. It has in

a favorable year borne four tons of grapes, but is now losing its vigor and will probably not live much longer. The state has a number of vines which bear 2000 bunches annually.

Oranges.—A good tree, ten years old, will bear 1000 oranges annually; and the average price of these, delivered at the orchard, varies from $10 to $30, or $500 to $1,500 per acre.

Strawberries are cultivated extensively in Santa Clara county for San Francisco market. The best fields of vines in their third or fourth year will yield from 4000 to 6000 pounds per acre, and the wholesale price in San Francisco is about 6 or 7 cents per pound, making a gross yield of $240 to $420 per acre. The cost of picking is 2 cents, of railroad freight ¼ cent, drayage in San Francisco ¼ cent, and commissions 8 per cent. The amount of strawberries received is sometimes from 60,000 to 70,000 pounds daily, indicating a lively consumption for a city of 180,000 inhabitants. Strawberries are usually grown on the shares by Chinamen, who give half the crop for the land. As the vines produce nothing the first year, and the Chinamen are poor, the landowner usually loans his credit for provisions, and clears $100 per acre. Six Chinamen do the work in ten acres of strawberries, except in the picking season, when three extra men are employed to the acre. Strawberry fields have fallen into the possession of the Chinese within the last five or six years, and the profits of the landlords are greater than under the old system of paying wages. It would be impossible to grow the berries profitably without Celestial help, and, except in a few moist spots, without irrigation.

Ornamental Gardens. Professional gardeners say that California is better fitted by nature than any part of Europe or the Atlantic slopes to have beautiful ornamental gardens. The shrubs are more numerous, grow larger, remain green longer, and have a longer blooming season than those of other States. The rose, daisy, pansy, oclyssum, clyanthus petunias, verbena, hollyhock, Ethopion lily, bloom here in the open air every month in the year. The honeysuckle and myrtle bloom from March to Christmas; the geranium and snowball from April to October; the violet from Oct. to May, and the camelia, japonica from January to May. Among the creeping vines grown in California is the Australian bean, which has a dense, bright, evergreen foliage, and abundant flowers throughout the year. It climbs strings, and is therefore well suited to shade verandahs and to grow in the front of porticoes.

The rose, honeysuckle, veronica, oleander, lanrastinus, japonica, verbenas, may safely be said to make twice as much wood in a year as they do on the Atlantic coast. The geraniums in San Francisco are almost trees. Rose sprouts often grow twenty feet in a season, and other plants in proportion.

Arboriculture. The cultivation of forest and shade trees is yet very limited in California. For timber purposes the blue gum or eucalyptus is preferred on account of the rapidity of its growth and the hardness and durability of its wood. The black locust grows rapidly but it gives trouble by the numerous sprouts that rise from its roots. The sycamore, cottonwood, Lombardy poplar, the ailanthus and California maple are used for shade. A distance from the coast, where the summers are not very warm and shade is not much needed, the Monterey cypress and the pine are preferred on account of their beauty and regularity of growth.

The largest vineyard of the State is that of the Bueno Vista Vinecultural Association, which has 300,000 vines near the town of Sonoma. B. D. Wilson, at San Gabriel, has 200,000 vines; L. J. Rose, near the same place, has 130,000; Matthew Keiler, at Los Angeles, 100,000. In Capo Valley, 36 miles west of Sacramento, there is one of 100,000; R. Chalmers, at Coloma, has 100,000; B. N. Bugbey, near Folsom, 100,000; S. L. Wilson, near Sacramento, 75,000. Most of these vineyards are planted with 700 or 800 vines to the acre.

Apples. Apple trees are generally planted from fourteen to eighteen feet apart. The reason is to prevent injury by the wind and to keep the earth moist by shading it against the sun. The fruit usually grows larger here than elsewhere. The Glorio Mundi, which seldom exceeds fourteen ounces in weight, in California frequently reaches twenty ounces and some have attained the great size of two and even two and a half pounds. The flavor of apples here is not quite equal to those grown in the Atlantic States. They are less juicy and more mealy. The best varieties, so far as ascertained, about the bay of San Francisco are the Summer Pearmain, Red Astrachen, June and Early Harvest, for early apples; the Porter, Gravenstein and Summer Queen for late summer apples; the Baldwin, Roxbury Russet and Rhode Island Greening for fall apples; the Golden Russet, Northern Spy, Yellow Newtown Pippin, White Winter Pearmain and the Spitzenberg for winter apples. The best cider apple is the Smith's Cider. In Sacramento Valley the Newtown Pippin, Swarr and Rawles Jeannette, are considered the best winter apple; on the slopes of the Sierra Nevada, from 1000 to 3000 feet above the sea, the Spitzenberg and Wine Sap are preferred. Of the apple trees in the State 1 200,000 are in Santa Clara county, 260,000 in Sonoma, 90,000 each in Alameda, Sacramento and El Dorado.

Peaches.—The varieties generally preferred are the Late and Early Crawford, Late Admirable and the Smock.

Apricots.—The apricots thrive well and bear abundantly. The apricot tree is more healthy than the peach, and produces more abundantly; its fruit supplies the place of the peach in many districts.

Pears.—The pear is the most healthy and productive of the fruit trees of California. It thrives in all parts of the State, and everywhere its fruit is delicate in flavor and large in size. There are pear trees at San Jose which produce 2500 pounds, or 40 bushels each, of fruit annually. The varieties most prized are the Madeline, Bloodgood, Diane d'ete, Deerborn's Seedling, Seckel and Bartlett for summer pears; and the Winter Nelis, Glout Morceau and Easter Beurre for winter.

California has 3,500,000 acres of cultivated land, upon which she raised last year, 17,000,000 bushels wheat; 6,100,000 bushels barley; 3,000,000 bushels corn; 1,400,000 bushels oats; 200,000 bushels rye; 10,000 bushels buckwheat; 1,000,000 bus. peas; 450,000 bus. beans; 220,000 tons Irish potatoes; 8,000 tons sweet potatoes; 200,000 bushels peanuts; 130,000 bushels onions; 900,000 tons hay, 30,000 tons beets; 3,000,000 pounds hops; 1,300,000 pounds flax; 300,000 pounds tobacco; 150,000 pounds cotton; 16,000,000 pounds wool; 1,500,000 pounds honey; 6,000,000 pounds butter; 3,000,000 pounds cheese; 6,200,000 gallons wine; 300,000 gallons brandy.

This is a great beer drinking state, but I am unable to give you the number of gallons of beer brewed. You can form a faint idea however, when I tell you that according to the returns filed in the United States internal revenue collector's office of the first district of California, which embraces the City of San Francisco only, there were 260,780 barrels of beer sold during the year 1878.

Mining.—The annual products of the mines of California may be thus stated: gold $20,000,000; quicksilver $3,000,000; silver $1,000,000; coal $800,000; lead $300,000; copper $100,000; borax $100,000; asphaltum $50,000; sulphur $50,000. Total $ 25,400,000.

Climate.—You frequently start out in the morning, chilly as December in Pennsylvania, at eight o'clock you unbutton the upper buttons of your coat, at nine you unbutton all the way down, at ten you take it off and put on a light one, at eleven you take off that one, at two it commences to grow a little cooler again, and you put on the light coat again, at three you take it off and put on your heavy coat, at four you button up again, at five you are buttoned up to your chin, and if you are out on the street you will be as cold as blazes until you get warm in bed, and you won't get warm there if you have a lighter cover than a heavy woolen blanket. Yet it is rarely that the thermometer falls as low as 32 degrees Fahrenheit (freezing point.) The number of cold nights in san Francisco, those in which the thermometer fell to 32 degrees, numbered seventy-four during twenty years, less than four to the year on the average. Of these seventy-four cold days, twenty-four occurred in December, thirty-three in January, eleven in February, four in March, one in April and one in May.

January is the coldest month in California, having an average temperature of forty-nine degrees. September is the warmest month, and has an average temperature of fifty-eight degrees. October is as warm as July, and some years it has been warmer. In June, July and August heavy, wet, cold mists, come up from the sea at six o'clock in the evening and continue until eight or nine o'clock in the morning. In the winter these fogs are very rare and in these respects winter is the pleasantest season of the year on the Pacific coast.

The average temperature of Spring is 54 degrees. The average temperature of Summer is 57 degrees. The average temperature of Autumn is 56 degrees. The average temperature of Winter is 50 degrees.

The following table indicates the average temperature each month in the year in the State of California.

	At sunrise.	At noon.
January,	44 degrees.	56 degrees.
February,	47 "	60 "
March,	48 "	63 "
April,	49 "	65 "
May,	50 "	64 "
June,	51 "	68 "
July,	52 "	67 "
August,	53 "	67 "
September,	53½ "	69 "
October,	53 "	68 "
November	49 "	62 "
December,	45 "	55 "
Average,	49½	63 7 10

SELECTIONS.

THE NEW YORK SEED LEAF MARKET.

The *Tobacco Journal* says of the market and last week's sales: "Pennsylvania of the '78 crop is slowly looming up again as an article of trade in our market. It will be dealt in vigorously before much time has elapsed. It must be bought because it is and will be wanted. Those that sold this week profess to have made no money out of it, a declaration which finds hardly any disbelievers. Ohio of the '78 crop also sold in limited quantities, while but little '78 Connecticut changed hands. In 1879 Connecticut purchases, a standstill is perceptible. Farmers claim that it is owing to the weather, which permits no examination of the crops. We claim that packers have come to their senses, and that in future they will not pay extraordinary high prices. We repeat our last week's remarks regarding the '79 Pennsylvania. Growers there need not give tobacco away—they can expect reasonable prices, but not such as they received last year. The crop is too large for that. Many of our exchanges, seemingly, are dissatisfied with the decisive way in which we offer our opinions and advice. We state the condition of things as we find them and draw such conclusions therefrom (which, as we need hardly say, are inevitably unbiased) as our long experience enables us to. Those that heretofore have taken our advice found as correct and gained by it. Last week's transactions sum up as follows:

Pennsylvania—Crop '77: 200 cases, small parcels, fillers. 13 cents, wrappers 40 to 50 cents.

Crop '78: 1,000 cases running; reported 14 to 16 cents (?)

Connecticut—Crop '78: 400 cases, 17 to 20 cents.

Ohio—Crop '78: 630 cases, 10 to 12½ cents, running.

Wisconsin—Crop '78: 72 cases, p. t.

Havana—Transactions in '79 arrivals continue brisk. Quotations for them in bond: Remedios, 47 to 48 cents; Partido, 46 to 50 cents; Vuelta Abajo, 55 to 65 cents. The remainder of 1877 stock sells easily at former figures; '78 moves in small parcels.

Sales for the week.

Sales of seed leaf tobacco reported by J. S. Gans's Son & Co., tobacco brokers, Nos. 84 and 86 Wall street, New York, for the week ending Nov. 10: 600 cases '78 Pennsylvania, fillers, 8½@9½c; assorted lots, 10@16c; 50 cases '77 Pennsylvania, wrappers, 18@30c; 400 cases '78 New England, 11@30c; 50 cases '78 state, p. t.; 1,500 cases '78 Ohio, 6@14c; 93 cases '78 Wisconsin, p. t.; 100 cases sundries, 9@17c. Total, 2,793 cases.

STARTING A FLOCK OF SHEEP.

The increasing interest in sheep husbandry, consequent upon the advance in wool, gives this industry more prominence among farmers than it has occupied for several years past. We would, however, advise caution and discretion in this, as in all other branches of farm economy. It is with this, as with other callings; a sharp upward turn in the price of a given product, often induces a stampede in that direction, and the result is, that it is soon overdone, prices fall by reason of over-production, entailing losses and disappointments, in greater or less degree, to those who rushed into the business without due consideration and judgment.

While we are certain that the present condition of the wool market is not due to speculation, but is on a substantial basis, and that prices will not only be maintained, but will very likely harden still more before another wool clip comes in, there is little doubt that there will be a large increase in the crop next spring. It is well to recollect that the stocks of woolen goods in the country before the rise in the staple last spring were very low. The prospects for fine crops and a market abroad for all of our surplus food products, together with a return of confidence upon the heel of resumption, caused a revival in all branches of business, and the woolen industry was among the first to feel its influence. A demand, strong and extensive, sprang up for woolens; which has been kept up, and will no doubt continue. Of course, the price of wool was stimulated and as long as the present rate of consumption of the staple continues it is not likely that it will decline. There is still room for many millions of pounds of home-grown wool to supply the requirements of our people for woolen goods and manufacturers, and besides, the foreign demand for mutton gives the subject of sheep husbandry additional importance, as the *American Stockman* has hitherto frequently pointed out. That more sheep will be raised is now certain, and we are gratified that an impetus has been given to the business. To get the best results, however, requires thought and care from first to last. Those who have had much experience in the business well understand this fact, but to such as have not hitherto given it much attention a few suggestions will hardly be taken amiss.

In the first place, it is important to start right. Loss of time, money and labor may be avoided by beginning with the right kind of stock. By this we do not refer to any particular breed; we mean that the foundation should be good, young, healthy, vigorous sheep. Every fall many common sheep are disposed of to the butcher for mutton, and among them are frequently found young ewes which are suitable for breeding to a good buck. In selecting them, uniformity in size, age—yearlings are old enough—and general characteristics should be kept in mind. This will give a uniformity in the flock and the progeny, which will be of great advantage in the outcome, as every experienced breeder knows.

When a sufficient number of such ewes have been obtained, they should be bred to a thoroughbred ram, *and no other*. Whatever breed may be the choice of the buyer,—whether Cotswold, Southdown, Merino, Leicester, Shropshirdown, or other sort,—let it be a pure-bred sheep by all means; and the best way to get such a ram is to go to an honest, well-known breeder of the kind wanted, who will not risk his reputation by selling a ram he represents as pure-bred, unless it is of undoubted purity. This course will secure an animal that will stamp his characteristics on his progeny. His valuable qualities will be transmitted to his get, and when he has been in use two years, the breeder should sell him and get another of the same kind, or better, but of course of the same breed. Rams should be changed every two years, and after breeding the ewes two years let them go also. Thus a very fine flock of sheep may be produced in a short time,—one which will be profitable to its owner as well as a credit to his intelligence and skill.

This, it is hardly necessary to say, is upon the supposition that the sheep are well taken care of, which includes proper feeding and good general management.

It may be thought that the price asked for thoroughbred rams is too high for the majority of farmers to pay, and fancy prices—or what may be called such—may deter some from purchasing a good ram. It may be well to ascertain the terms of a number of professional and well-known breeders, and to purchase where a good animal of undoubted purity of blood, vigorous and sound in every way, can be had for the least money; but no considerations of false economy should ever be allowed to weigh a feather between a good and bad ram. Good animals cannot be had for scrub prices; it has cost too much to produce them. They represent a value, so far as the future of the flock is concerned, so far above a scrub, or a grade, that a comparison is absurd.—*American Stockman*.

PASTURE FIELDS—THEIR RENOVATION.

Looking over an old pasture ground this fall, we are tempted to tell what its appearance told us. If it has not told the same tale to others, we are much mistaken, and when we see so many pastures as this one was, we suppose there must be many more deaf ears than attentive ones in the world. This particular piece said to us that it was really desirous of trying to turn its talents to some account, but that it was found to have rolled them up in a napkin. It called as to witness that at least four-fifths of its legitimate ground had been stolen from it by coarse weeds, that not a hungry cow would eat, and so much of what was free from these thieves was plastered over by the excrements of animals, as to make the product unfit for cattle food. And we found it so just now. On the higher parts of the ground the worst part of the herbage consisted of oxeye daisies and butter-cups, around which the cows had picked a bit here and there. In the bottom land most of the herbage consisted of asters, golden rods, iron weed, rushes and coarse sedges. The cows were almost hidden by the weeds' luxuriance, and low ever it could pay to keep such a pasture as this was a mystery to us. Yet this land, probably ten acres, was on a property which the owner held at four hundred dollars per acre. Now taking the whole utilized product of this lot as we saw it, it would certainly do no more than keep one cow for a year, so that the interest of four thousand dollars, besides labor and etceteras, went to support one cow. Our friend is one of those who believes that soiling cattle does not pay. There are some objections to this plan we know, and we have done our share in pointing them out, as the duty of weighing both sides which public journalism imposes on us calls for. But if such specimens as this was all the advocates of pasturing had to depend on, there would be no question as to which was the best side.

Our terrestrial informant clearly showed that with a very little care it was good land. The high needed a little manure at times and the lower needed ditching and draining. It would cost but little to do, and when done at the very lowest two tons of good hay to the acre would be the result. Now the product of this, at the lowest figure for hay, would be the interest of six thousand dollars at least, or considerably more than double that which it was. Not more than a quarter of this would have been required to keep a cow on the soiling plan, while another quarter would have been paid for the extra labor, the other half would have probably been profit. The simple breaking up of a lot like this, so as to clear out the coarse weeds, and the little improvement required to bring a good growth of grass, is equal to a saving of two hundred dollars a year, even at the owner's estimate of four hundred dollars an acre as the value of the ground.—*Germantown Telegraph*.

COMFORTABLE QUARTERS FOR STOCK.

The sharp frosts and trying winds which are common at this time of the year admonish us of the severe weather that will soon be upon us. A ride over a portion of country a day or two ago brought to mind the lack which exists on many farms of comfortable quarters for domestic animals. This is not so, however, in all cases. There are provident, humane farmers in all this region by scores who have provided warm stables and barns wherein to house their stock, and protect them from inclement weather. The contrast presented, however, in a neighborhood is striking. On one farm you will find barns and stables constructed so as to combine comfort and utility, having every convenience and appointment calculated to render the care of stock easy, expeditious and perfect. Nothing seemingly, has been overlooked, and there is an air of completeness and humanity about the premises which is pleasant to contemplate. We are forcibly reminded, in the language of the aphorism, that "a merciful man is merciful to his beast."

Humanity, in the first instance, should incite the owner of useful domestic animals to provide shelter and suitable food for them during the winter season; but on the score of economy a prudent man understands what is for his interest in this behalf. He knows that warmth and a sufficient quantity of good food given to his stock every day represents money. It has value in dollars and cents; it touches the pocket.

A decade has wrought a wonderful change in this behalf in most of the western states, but there are yet very many farms, we regret to admit, on which the old order of things may be seen. An old shed or two, or perhaps a rickety old stable or barn, with broken windows and wide cracks between boards, is the only protection there to keep out the piercing winds and driving snows; and in some other instances the lee side of a straw stack or a corn crib is the only protection afforded to the shivering, suffering brutes whose misfortune it is to belong to so pitiless an owner. In this climate it is a shame for any man who pretends to keep domestic animals to subject them to such treatment. Such a condition of things should never be found on the farm, nor should the miserable structures, such as we have referred to, which are a travesty and a burlesque upon the name of shelter, be tolerated. While we are glad to know that cases of this character are becoming fewer from year to year, it cannot be denied that they are far too common, and that there is considerable room for missionary work for our humane societies, whose specialty is the prevention of cruelty to animals.

It would appear that on the score of economy alone the necessity of providing proper shelter for stock would be apparent to every man. Warmth represents food, vitality and health, and in the case of young animals, growth also. Profit in live stock lies in the direction of improvement. Deterioration is loss, and it is a loss which represents more than is apparent at first view. When animals are kept in a healthy, thriving condition during the winter by proper food in kind and

quality, and good care in other respects, they come out of winter quarters in the spring and start off with the new season in a condition to realize to their owner all that can or may be gained; whereas, if they have been half-starved and pinched by the blasts and snows of winter, they are so reduced that weeks must elapse ere they reach a point approximating the condition which good care and management would have secured. It is a dead loss which represents time and money, in the case of each animal, and has an influence oftentimes in the progeny of such stock, which represents a value that cannot be computed.—*American Stockman.*

AMERICAN BUTTER AND CHEESE IN ENGLAND.

Col. Robt. M. Littler, of Davenport, Iowa, is the Secretary of the national Butter, Cheese and Egg Association. He is an intelligent, active, energetic man, fully alive to the importance of the great industries to which his time and talents are devoted, and a very valuable man to the interests which fortunately receive his services. He was a delegate from this country to the International Dairy Fair held in London this year, and kept his eyes and ears open not only while there, but during a somewhat extensive trip to several marts of trade in Great Britain. The other day he was at the Dairy Board of Trade in Elgin and gave some account of his trip. He returns home full of hope and enthusiasm in regard to the future of the butter and cheese interests of this country so far as the foreign trade is concerned, but exhorts dairymen to strive to make good articles of both; for that quality is the only kind that can be disposed of in Great Britain. We are pleased to know that Col. Littler emphasizes this point. He tells us plainly that poor goods are not wanted over there. It is idle to suppose that anything but loss and disappointment will attend the exportation of poor butter and cheese. There is always a demand for good goods, and the evidence of Col. Littler goes to show that the better the quality the quicker they sell. By making first class articles a far larger quantity of dairy products from this country can be disposed of in foreign countries at fair, remunerative prices. It is by no means complimentary to us that but about five per cent. of butter made in this country is of that grade.

Col. Littler visited stores and markets in several large cities, and found American cheese at all of them. It sells there from six to sixteen cents, according to quality. Since his return a marked improvement in prices has occurred. He was informed that the people there relished American cheese fully as well as the English article. We have said repeatedly that our export of dairy products can be vastly increased by raising the standard of quality of the bulk of our make, and this is now all that is required to render this industry one of the most profitable in which our people are engaged.

Col. Littler added a word at Elgin for the success of the International Dairy Fair, to be held in New York city in December next. We join in urging dairymen here and elsewhere to send samples of their products, as this fair will draw a large number of foreign buyers, and therefore an opportunity will be afforded for the inspection of goods which producers will do well to improve.

This fair will be held during the second and third weeks in December next. It will be the second exhibition of the association held in New York, and extensive preparations are being made to render it far more interesting and useful than its predecessor, or any similar exhibition which has occurred, at least, in this country. The entire American Institute has been engaged in order to provide ample room for the display of dairy products, utensils, etc. No facility will be lacking for the manufacture of butter and cheese on a large scale. In order that any machinery may be seen in motion which it is desirable to thus exhibit, ample motive power will be employed. Another feature, which is novel in connection with such exhibitions in America, has been arranged for, and that is a show of dairy cows, a provision for space having been made, and as a goodly number of breeders have signified their intention of being on hand with stock, it is more than probable that this department of the exhibition will be among its most interesting features. We understand that the prospects of a large and varied display of foreign dairy products are very good,—a result of the efforts of Col. Littler and other gentleman who have been abroad and enlisted foreigners in the enterprise.

The premium list has not yet been announced, but that it will be liberal and varied there is no room to doubt, embracing all classes of desirable goods. As usual, papers in connection with dairying will be read from eminent sources, and discussions held on prominent topics pertaining to this interest. Those who wish any information in regard to this exhibit, other than is here given, can address the secretary of the executive committee, Mr. T. Mortimer Seaver, 309 Greenwich street, New York city.—*American Stockman.*

MANAGEMENT OF HORSES.

The horse is, and will remain in this country, the main source of power on the farm. In some parts of Europe steam power is used on a few large estates, but the horse, after all, is the main dependence there as well as here. This noble animal has been the servant and the friend of man from a period beyond the records of history. In peace and in war he has alike been serviceable and, indeed, indispensable to the human race. His intelligence is greater, and his nature higher than any other species of the brute creation. Under varying conditions of treatment and care, he is found in various types and forms, adapted to every use in which his services are required, from the fleet Arabian, and the English thoroughbred, to the immense Percheron and Clydesdale. These diverse types and forms are the result of breeding and management, and demonstrates what may be done by systematic, careful breeding and management.

The mass of farmers in this country have hitherto pursued, at best, a wretched policy in rearing horse stock; or perhaps it would be nearer the truth to say that they have followed no policy at all, but adopted a haphazard, hit or miss, course in breeding with results which might have been foreseen. A want of judgment and discretion in coupling sire and dam has left a stock of nondescripts, of almost every form and disposition. It is but proper to say, however, that a marked improvement herein has been going on within a few years in the west, (and it is this portion of the country to which these remarks specially apply.) In the early days in this region the pioneers could only use such sires of horse stock as were within their reach, and the sons of these men followed in their footsteps until within a comparatively recent period. With such limited opportunities, of course, there could only result a mongrel class of horses, with now and then a fair animal in size, style and action. But, as we have said, within a few years a marked change has occurred and is now going on. With the rapid development of the country, the growth of towns and cities, bringing a demand for horses for various uses, this branch of rural economy has necessarily attracted more attention. The inquiry for horse stock in towns and cities is rapidly increasing. Driving horses, for buggies and carriages, fleet roadsters, and fine steppers are in demand, as are also heavy horses of great strength and good action. And this demand must always exist. The services of this useful animal are ever in demand and ever will be, and its magnitude gives this branch of stock raising a significance which, in its way, is as important as any other. We must have horses—horses for a variety of uses, requiring different types and styles. We must raise thoroughbreds—the blood horse proper, as distinguished from other breeds and the horse for general purposes; we must have light harness horses and roadsters, and heavier, stylish horses for carriages; we ought to raise and use more saddle horses; and last, but not least, heavy draft horses, whose weight, size and muscular power adapt them especially for heavy work. All these classes of horses can be produced of excellent form and style as easily as the mongrels that are now raised by thousands. We need not rely so much upon foreign countries, because already men of foresight, enterprise and means have imported and reared horses to breed from in large numbers. To these horses and their progeny we may look for a rapid improvement of the horse stock of the country, and especially of the West. But in this, as in every other branch of live stock husbandry, it is of prime importance to breed only from full blood sires, and to select dams well suited for breeding the style of animal desired. A few good top-crosses will give, if judiciously managed, a horse possessing the form and character of full blood animals, and thus in time and not a very long time either —the poor, abused inferior horses which are to be seen everywhere among western farmers may be supplemented by a class of horses of the various desirable breeds, which will add very materially to the wealth of the individual breeders, as well as to the aggregate wealth of the country.—*American Stockman.*

WHAT A DEED OF A FARM INCLUDES.

The following is from an address of Hon. Edmund H. Bennett, delivered before the Massachusetts State Board of Agriculture: "Of course every one knows it conveys all the fences standing on the farm, but all might not think it also included the fencing stuff, posts, rails, etc., which had once been used in the fence but had been taken down and piled up for future use again in the same place. But new fencing material just bought and never attached to the soil would not pass. So piles of hoop poles, stored away, if once used on the land have been considered a part of it; but loose boards or scadold poles laid closely across the beams of the barn and never fastened to it would not be and the seller of the farm might take them away. Standing trees, of course, also pass as part of the land; so do trees blown or cut down and still left in the woods where they fell, but not if cut and corded up for sale; the wood has then become personal property.

"If there be any manure in the barnyard or in a compost heap on the field, ready for immediate use, the buyer ordinarily takes that also as belonging to the farm, though it might not be so if the owner had previously sold it to some other party and had collected it together in a heap by itself. Growing crops also pass by the deed of a farm, unless they are expressly reserved, and when it is not intended to convey those, it should be so stated in the deed itself; a mere oral agreement to that effect would not be valid in law. Another mode is to stipulate that possession is not to be given until some future day, in which case the crops or manure may be removed before that time.

"As to the buildings on the farm, though generally mentioned in the deed, it is not absolutely necessary they should be. A deed of land ordinarily carries all the buildings on it belonging to the grantor, whether mentioned or not; and this rule includes the lumber and timber of any old building which has been taken down or blown down and been packed away for future use on the farm.

"But if there be any buildings on the farm built by some third person, with the farmer's leave, the deed would not convey these, since such buildings are personal property, and do not belong to the landowner to convey. The real owners thereof might move them off, although the purchaser of the farm supposed he was buying and paying for all the buildings on it. His only remedy in such a case would be against the party selling the premises.

As part of the buildings conveyed, of course the window blinds are included, even if they be at the same time taken off and carried to a painter's shop to be painted.

"It would be otherwise if they had been newly purchased and brought into the house but not yet attached to it. Lightning rods also go with the house; if a farmer has any on his house. A furnace in the cellar, brick or portable, is considered a part of the house, but an ordinary stove with a loose pipe running into the chimney is not, while a range set in brick work is. Mantel pieces so attached to the chimney as not to be removed without marring the plastering go with the house, but if merely resting on brackets they may be taken away by the former owner without legal liability. The pumps, sinks, etc., fastened to the building are a part of it in law, and so are the water-pipes connected therewith bringing water from a distant spring. If the farmer has iron kettles set in brickwork near his barn for cooking food for his stock, or other similar uses, the deed of his farm covers them also, as likewise a bell attached to his barn to call his men to dinner. If he indulges in ornamental statues, vases, etc., resting on the ground, by their own weight merely, and sells his estate, without reservation, these things go with the land."

WHEN TO SELL.

Every one who is engaged in any department of agriculture or manufacture is supposed to have from time to time something to sell or exchange. On the disposition of this surplus depends the supply of all articles that the person does not raise, embracing all implements and improvements of every kind that require an outlay. Hence it is a matter of moment that the sale of these thin s be made at the time the best price, all things considered, will be obtained. Is it possible to be certain of this time? In general, no. There are many articles that constitute exceptions. Those that cannot be conveniently preserved must, of course, be thrown on the market at once. Others that are in demand in certain seasons only, will be governed by the season's trade. But the most common and valuable products of human industry are always in market, and yet are subject to frequent fluctuations in price. Such are the leading products of the farm and most of the useful manufactures. As to these no fixed rule can be given, but the following suggestions will commend themselves to the prudent:

One should keep himself informed of the state of the market, especially in places accessible to him, and as far as practicable in places whose trade affects directly his local market. The best way to secure this, is to take and read good papers, that give not only the tabular market statements, but also intelligent and impartial comments and counsels. When necessity compels one to sell, he can only submit, regardless of prices; but in all other cases he ought to govern himself consistently by reasonable probabilities. Unless in the face of a comparative certainty that there will be no advance, economy plainly forbids the disposal of a commodity at a price that is not more than its cost to the producer. Business cannot live on losses. A certain farmer, who always prospered, made it a rule to sell everything he could spare as soon as it was in marketable condition. He never made much at one time; but he avoided all risks of rogues and fires, all injuries by vermin and weather, all the trouble and expense of protracted storage, all the reduction of shrinkage and incidental waste, and he was receiving money now and then through the year

It is safe advice to say that every one should be content to sell at a reasonable profit. To wait for very large prices is dangerous policy, and especially as to the necessaries of life, very bad morals. What man *must* have, his fellow-man should be willing to furnish at rates that are not exorbitant or oppressive. Business should never violate the principles of magnanimity and true charity.—*Rural New Yorker.*

OUR LOCAL ORGANIZATIONS.

LANCASTER COUNTY AGRICULTURAL AND HORTICULTURAL SOCIETY.

The regular monthly meeting of the Lancaster County Agricultural and Horticultural Society was held in their rooms in the City Hall, on Monday afternoon, November 3.

The meeting was called to order by the President, Calvin Cooper.

The following members and visitors were present: Calvin Cooper, Bird-in Hand; Joseph F. Witmer, Paradise; A. B. Groff, West Earl; Daniel Smeych, city; J. C. Linville, Gap; M. D. Kendig, Manor; Jacob Bollinger, Warwick; C. A. Gast, city; F. R. Diffenderffer, city; J. M. Johnston, city; C. H. Hostetter, Eden; John H. Landis, Manor; Mr. Broomeal, Christiana; Henry M. Engle, Marietta; Washington L. Hershey, Chickies; Amos Eshleman, Paradise; William McComsey, city; Peter Hershey, city; S. S. Rathvon, city, Johnson Miller, Warwick; Casper Hiller, Conestoga; Christian L. Hunsecker, Manheim; And. Frantz, Wabank; Webster L. Hershey, West Hempfield; Simon Hershey, Salunga.

On motion the reading of the minutes was dispensed with.

Mr. Peter Hershey was proposed and elected to membership. He signed the constitution.

Report on Artificial Fertilizers.

J. C. Linville, from the Committe on Artificial Fertilzers, said the committee had not yet met, but he had made some investigations for himself. He tried three kinds of fertilizers on wheat. They were the Star Phosphate, the High Grade Nitro and the Crop Grower. The application of the first named two gave good results. They were drilled in with wheat, about 200 pounds to the acre; the yield was six or seven bushels per acre more. That which was drilled in gave much better results than that which was harrowed in. When only a small quantity is used it seems much the best to drill it right along with the grain, so that it can reach the roots. The cost was $4 per acre. The Crop Grower proved a failure.

Calvin Cooper also sowed some of the Crop Grower fertilizer broadcast and derived no benefit from it.

Peter Hershey said his experience was like Mr. Linville's. He sowed phosphate on the surface but it did little good; on grass, however, it gave good results. When drilled in with wheat it increased the yield. This is the only way he has derived benefit from artificial fertilizers. He had been prejudiced against these manures, but has now changed his mind.

H. M. Engle applied fertilizers to corn for two seasons and the effect was marked. He used Nitro phosphate. This fall he used South Carolina phosphate on his wheat and the result, of course, cannot yet be foretold. He knows nothing about the Crop Grower, but he would not condemn it from one trial. On other soils it might have done better. He thinks the drill sowing may show more immediate effects and the broadcast better afterwards. We must know what our lands require. If we know that we cannot go far wrong in getting just the thing we want. Some ingredients produce their best effects in the spring and others in the fall. A single year's experiment is not sufficient. One may do well in one crop and not in another. These points must all be considered. He alluded to a report made by Prof. A. F. Allen before the State Board of Agriculture, at its recent meeting at Mercer, on this very subject, and to be published in the next Agricultural Society's report.

J. C. Linville thought the members ought to read a work by Joseph Harris on manures, a most valuable and exhaustive work. Farmers have not time nor money to try these experiments for themselves; they can avail themselves of the results obtained by others.

Peter Hershey said an Englishman raised wheat for thirty years successively off the same land by sowing about eight hundred pounds of fertilizers.

Weather Reports.

H. M. Engle said the cool weather has checked the ravages of the fly. The rain fall for October was $2\frac{3}{4}$ inches.

In Manor township the rain fall was $1\frac{1}{4}$ inches, as reported by M. D. Kendig.

An interesting discussion here ensued on rain-gauges in general, some contending that the ordinary gauge is not a true one.

California.

John H. Landis, who had been put down for an essay, read a very lengthy article on California, in which the various productions, diversified interests, people, climate and other things belonging to the Golden State were told.

On motion of M. D. Kendig, the thanks of the society were given to Mr. Landis for his essay.

In answer to a question he said there was no rain fall from June to September, and that the fields are irrigated by water pumped from wells and cisterns and conveyed to the fields by pipes.

Heading Trees Low.

M. Kendig asked why we do not head our trees low here, as is done in some other places.

H. M. Engle said it had several advantages. The trees were more shielded from the winds; the fruit was more easily picked, and the ground is not dried out so easily. Through the west trees are branched low.

Referred Quetions.

Ephraim Hoover, to whom was referred the question, "What kind of horses are most profitable to the farmer?" being personally absent, sent a brief essay on the subject, as follows:

"This question I shall try to answer from my own experience and observation. For the farmer to confine himself to a heavy stock of horses does not meet his ends for practical purposes. If, for instance, he selects heavy breeds, adapted for heavy draught only, and on the other hand, if he breeds from stock of light build and great speed entirely, they are not adapted for farm purposes. The suggestion then naturally comes, that we should select or breed such stock that combines both qualities. For instance, cross heavy stock with light stock, noted for speed and gentleness. This gives the farmer a stock of horses adapted both for roadsters and reasonably heavy draught, making a breed of horses that will do more work on a farm, move with more ease and also be more adapted to be taken from the heavier farm draught to a light pleasure carriage. I would, therefore, have a breed of horses for farm purposes that combine draught with speed—good size, well boned, with a cross of English blood—weight from eleven hundred to thirteen hundred. This is my idea of the horse for practical farm purposes, after a number of years of experience with the different breeds."

Joseph F. Witmer thought we needed fast walkers on our farms. They can easily be followed and get over the ground much more quickly than slow ones. He liked the Morgan horses as well as any.

H. M. Engle also thought we ought to have better walking horses. We either have slow or fast ones. The custom was to put colts into a four-horse team or into a plow to be broken, where they acquired a slow gait. This is wrong. Put them in a wagon and you will remedy the matter.

Dr. Rathvon, who was charged with the payment of the premiums won at the late fair, made his report. He made a report showing how much he had paid and how much remained unclaimed. All who have not lifted their premiums have forfeited them, the time for so doing having expired. The sum of $26.50 was accordingly paid into the treasury.

J. C. Linville thought a colt ought to be ridden to make fast walkers. Our farm horses are too small. We want larger, heavier horses; that is the kind we must raise if we want to sell them. We need large mares to breed from. We are apt to run after fast travelers. A good business can be done by growing heavy horses.

Jacob Bollinger agreed with Mr. Linville. It is our own fault that we have no fast walkers. He bought a slow horse and by riding him daily he increased his walking gait almost one hundred per cent. He believed in heavy horses. They cannot only walk fast but do heavy work better than light animals.

J. F. Witmer did not agree with the advocates of heavy horses. Besides they eat much more than smaller ones, and thus cost more for feed.

W. L. Hershey did not favor light horses. A heavy horse is to be relied on in emergencies. A good strong team is required to break up heavy sod. There is more demand at the present time for heavy horses. They sell better. They have more endurance. A horse for driving purposes should be kept, and he ought not as a rule to be used for heavy draught purposes.

H. M. Engle thought the time had gone by for large horses. He believed the four horse teams would soon be things of the past. In other States two horse teams are almost exclusively used. The day has gone by for heavy horses for farm purposes.

Calvin Cooper gave his experience in which a slow walker was taught by a companion to become a fast walker. He was opposed to heavy horses.

J. F. Witmer thought it did not pay most farmers to keep a roadster; they could not afford to keep one for that purpose alone.

The Most Profitable Crop.

"What branch of farming will pay best?" being referred to C. H. Hostetter, he admitted his inability to answer it. It could not be answered to suit all men.

C. L. Hunsecker said this depended on circumstances. Some make money out of hay, tobacco and wheat, but tobacco seems latterly to have been the most profitable. Some make money out of one thing, and others fail completely at the same thing. Out in Spring Garden there were twenty-eight still houses kept going by distilling apples, which made apple growing profitable; but that was many years ago.

Jacob Bollinger thought we ought to discuss this question thoroughly. Corn gave him the best results. He has never had less than 60 bushels and this year he got 69 bushels to the acre. Wheat does not give him so good a profit. If he could get any thing more profitable than corn he would grow it. He feeds nearly all his corn.

H. M. Engle said all depends upon circumstances. One can do best with one crop and his neighbor with another. Market gardening pays better even than tobacco.

New Business.

New business being in order, Casper Hiller said: Pearl Millet has with me during the past season by no means come up to what we were led to expect from the glowing accounts that seed dealers gave of it. It was said that in forty-five days after planting it would grow to seven feet high, that it could be mowed three times a season, and would aggregate from eighty to one hundred tons of grass fodder, that would cure fifteen tons of dry feed. In forty-five days after planting, mine was nearer seven inches than seven feet. But then it commenced to grow and by midsummer, at the time it was cut, it was about four feet high. The second growth was somewhat better, and was ready to cut about the 1st of October. I made no estimate of the quantity produced. The seed did not come up regular.

From my experience with the plant I would infer that two mowings a season is all that we can make. That with good seed and a good season it will yield more forage than any other millet, and probably more than Indian corn, and will besides be easier to handle than corn.

H. M. Engle agreed in part with Mr. Hiller about Pearl Millet; he will leave it alone hereafter; he does not believe it as good as corn fodder for stock.

Business for Next Meeting.

H. M. Engle proposed that all questions for discussion be first referred to some individual member.

The following referred questions were proposed for discussion at the next meeting:

"What constitutes high farming?" Referred to Henry M. Engle.

"What are the advantages of diversified farming?" Referred to Peter Hershey.

"Will dairy farming pay in Lancaster county?" Referred to J. C. Linville.

"Is stock raising profitable to the Lancaster county farmer?" Referred to M. D. Kendig.

Casper Hiller called attention to Blunt's prolific corn, of which he had a specimen, with four large ears on it, at hand. Hardly any of the stalks have less than two ears, many have four, while one had twelve. We must have a corn that is prolific in ears rather than large ears, if we want to grow big crops of corn. He also gave the results of some interesting experiments in root pruning practiced on corn. They were quite successful.

Fruits on Exhibition.

The Committee on Nomenclature made the following report:

Lawrence pears, from W. L. Hershey, fair; a seedling apple, by Daniel Smeych, large size, of good quality, worthy of propagation in case it proves a reliable bearer.

Also a fine apple above medium size from S. S. Spencer, quite showy and of excellent quality, name not known to committee.

Apples for a name, by W. L. Hershey, of good quality, but small. By same, apples named Kauffman's seedling, similar in size and quality to those for a name, both of which are not sufficiently valuable while there are so many varieties of superior value.

H. M. ENGLE,
M. D. KENDIG,
CASPER HILLER.

There being no further business, the Society adjourned.

POULTRY ASSOCIATION.

Adjourned Meeting.

A special meeting of the Poultry Society was held on Monday morning, Oct. 20, in the Society rooms, the President, Rev. D. C. Tobias, in the chair.

The following members were present: Rev. D. C. Tobias, Litiz; J. B. Lichty, city; Wm. Schoenberger, city; Charles F. Long, city; Charles Lippold, city; Frank R. Diffenderfer, city; H. H. Tshudy, Lititz; J. B. Long, city; T. D. Martin, New Haven; Frank B. Buch, Lititz; Jacob A. Buch, Lititz; G. A. Geyer, Spring Garden; J. A. Stober, Schenneck; Eli J. Barr, Lititz; J. R. Trissler, Lancaster; Obadiah Kendig, Lancaster; William Krump, Oregon; J. M. Johnston, city; David M. Brosy, Manheim; Miller Fraim, city.

On motion, the reading of the minutes of the last meeting was dispensed with.

Reports of Committees.

W. H. Schoenberger, reported having visited some of the landlords of the city relative to procuring subscriptions. He found a disinclination to do so. They prefer to take tickets when the proper time comes.

Rev. D. C. Tobias reported that efforts were in progress to secure proper and competent judges, but he was not ready to make a full report as yet.

Unfinished Business.

Charles E. Long read the list of all who had agreed to take tickets, and the amount of their subscriptions. Some of the members present who had not already subscribed did so now. The amount is such that the Executive Committee is now prepared to go ahead. The money on hand is sufficient to pay all the necessary charges, including the cost of coops, hall rent, printing and all other expenses, giving assurance that all winners of prizes will get their money and not be sent away disappointed, as has been done at other places that might be named.

Jacob B. Long moved that as there had been a sufficient amount subscribed, including what was in the treasury, to warrant us in going ahead, the Executive Committee be instructed to go ahead and have the tickets ready for distribution at the next meeting.

H. H. Tshudy seconded the motion, and accompanied it with assuring remarks, feeling satisfied there would not be a particle of risk.

Charles E. Long suggested that perhaps members might be willing to pay their yearly dues in December and thus strengthen the treasury against all possible contingencies.

New Members.

H. C. Demuth, John P. Weise, William Henderson, Henry S. Leibley, from the city, and Dr. J. H. Mayer, of Willow street; F. U. Gantz, Marietta; Pierson N. Eberly, Reamstown; Samuel Denlinger, Groff's Store; Martin Bowman and Adam Flowers, of Mt. Joy; Peter Hiller, of Conestoga; and Jacob H. Hershey, of Rohrerstown, were nominated to membership and on motion unanimously elected.

On motion the Secretary was instructed to notify all members of the next meeting and request their attendance, as very important business will undoubtedly come up, and a full meeting is desired.

A letter was read by the Secretary from H. H. Stoddard, Editor and Proprietor of the *Poultry World* and the *American Poultry Yard*, of Hartford, Ct., offering the above two periodicals, value $2.00, as special premiums for the best Light Brahma cockerel on exhibition at the show. In addition to the above, he made the same offer for a cockerel of each of the following varieties: Dark Brahma, Red Pile Game, White Pile Game, Black Game, Blue Game, Malay, Black Hamburg, White Leghorn, Brown Leghorn, Black Leghorn, Black Spanish, Andalusian, American Dominique, Plymouth Rock, White Crested, Black Polish, Crevecœur, La Fleche, Sultan, Silky, Y. D. Game Bantam, D. Pile Game Bantam, R. C. Black Bantam, best pair White Holland Turkey, African Geese, Wild Geese.

On motion, the above offer was accepted and the thanks of the Society were tendered to Mr. Stoddard for his offer.

Charles E. Long also moved that a special committee of three members be appointed to solicit other special premiums from citizens, to be offered for particular classes of birds. Carried. The President named the following members as the committee: Messrs. J. R. Trissler, J. B. Long, and John F. Reed.

There being no further business, the Society, on motion, adjourned.

Stated Meeting.

A stated meeting of the Poultry Association was held in the room of the Agricultural Society, on Monday morning, November 3, commencing at 10 o'clock.

The following members were present: Rev. D. C. Tobias, President, Litiz; J. B. Lichty, Secretary, city; Amos Ringwalt, city; Wm. Schoenberger, city; F. R. Diffenderffer, city; C. A. Gast, city; J. M. Johnston, city; Charles Lippold, city; Charles E. Long, city; H. H. Tshudy, Litiz; Geo. A. Geyer, Spring Garden; Henry Wissler, Columbia; S. P. Eby, city; J. A. Stober, Schenneck; S. N. Warfel, Strasburg; S. F. Stauffer, Adamstown; J. B. Long, city; P. M. Eberly, J. Hoffman Hershey, East Hempfield; John F. Reed, city; W. L. Hershey, Chickies.

J. B. Long, from the committee on special premiums, reported progress; he said he had called on several citizens, who had promised to offer special varieties of fowls to be named hereafter.

President Tobias reported that the executive committee had secured the services of John F. Diehl, of Beverly, N. J., and W. T. Rogers, of Doylestown, Pa., to act as judges at the coming poultry exhibition; and these gentlemen had very generously agreed to make a reduction in their usual charges if the society shall not have sufficient funds to pay them.

Mr. Lichty stated that he had waited on Mr. Sturgis and ordered fifty coops at $1.50 each, with privilege to have as many more as may be needed at the same rate.

Mr. C. E. Long suggested that at least one page of the premium list should be filled with special premiums to be offered by individuals.

The following special premiums were then volunteered:

S. E. Stauffer offers a trio of White Leghorns for best pair of white-faced Black Spanish fowls on exhibition.

Charles Lippold offers a pair of Antwerp Carriers for the best pair of white Calcutta Fantails.

Amos Ringwalt offers a trio of Golden-spangled Hamburgs for best Silver-penciled Hamburgs.

J. B. Long offers a trio of Plymouth Rock chickens for best pair of Light Brahmas.

Col. Wm. L. Peiper offers $3 for best pair of Plymouth Rocks.

Mr. Keiper offers a fine chromo for the heaviest chicken on exhibition.

Charles L. Gill offers a five pound feed lady-cake for the best pair of Black Leghorns.

Isaac Diller offers $2 for best pair of Malay Games.

Chas. E. Long offers a pair of White Calcutta Fantail pigeons, valued at $5, for best pair of Peacomb Partridge Cochins.

S. W. Hunsicker offers a collection of mixed gladiola bulbs for best pair of black-breasted red Game Bantams.

Rhoads & Reed offer a gold pen and holder for the best Brown Leghorns.

W. J. Kalteich offers a year's subscription to one of the Lancaster daily newspapers (to be selected by the winner) for the best pair of White Leghorns.

Mr. C. E. Long moved that the committee on premiums be authorized to place all special premiums not placed by the parties offering them. Adopted.

John F. Reed was unanimously elected a member of the Executive Committee vice Mr. Shreiner resigned.

The following gentlemen were nominated for membership, and were, on motion, elected by acclamation: Hon. D. W. Patterson, Hon. John T. MacGonigle, Hon. A. J. Steinman, Col. Wm. L. Peiper, Dr. H. K. Muhlenberg, John D. Skiles, John K. Bitner, B. J. McGrann, H. Z. Rhoads, D. P. Locher, Wm. D. Weaver, Esq., Charles Eden, G. W. Hull, John Hull, Philip S. Baker, Wm. Cox, A. F. Bosteter, Capt. E. McMellen, Samuel Groff, B. F. Eshleman, Esq., Jacob S. Shrine, John H. Zeller, Chas. B. Kauffman, Esq., Lawrence Knapp, Benj. P. Miller, James H. Marshall, Lewis S. Hartman, Peter S. Reist, Dr. S. A. Baudenbush, Adamstown; W. K. Seltzer, Esq., Ephrata.

On motion of F. R. Diffenderffer it was ordered that on payment of $1 by the above named members and of members previously elected, who have not yet paid their annual dues, they shall be credited not merely with this year's payment but with payment for the ensuing year.

On motion of S. P. Eby it was ordered that in the absence of the corresponding secretary (Colin Cameron,) the recording secretary (J. B. Lichty,) shall notify the members elect of their election.

Tickets of admission to the fair were distributed among the members who had subscribed and paid for the same.

Jacob H. Miller, of Mt. Joy, sent in a postal resigning his position as a member of the Executive Committee, because of his inability to attend the meetings regularly. His resignation was accepted and the vacancy will be filled at the next stated meeting.

THE BEEKEEPERS' ASSOCIATION.

The Lancaster County Beekeepers' Association met stedily at two o'clock Monday afternoon, November 10th, in the parlor of the Black Horse Hotel.

The following members and visitors were present. J. F. Hershey, Mount Joy; I. G. Martin, Earl township; F. C. Pyle, Drumore; Peter S. Reist, Litiz; Elias Hershey, Leaman Place; Frank R. Diffenderfer, city.

Reports.

Reports on the past bee season having been called for, the following members responded:

J. F. Hershey, of Mount Joy, who is one of the largest beekeepers in the county, said that the present season could not be regarded as a very successful one. In the early part of the season the conditions were favorable. There was an abundance of flowers and the bees stored it quite rapidly. This state of things lasted until haymaking, say about June 20, when the dry spell came on, and from that time until the present the little honey makers were unable to do much. The season is now over, and the honey crop has been gathered. It may be regarded as about half an average yield. This is not the case in Lancaster county alone, but seems to be the prevailing condition of things the whole country over.

But there has not only been a poor honey season, many colonies are in a poor condition to go into winter quarters. Cases are reported where colonies have already starved, not having gathered sufficient to last them until now. There is no question but that many beekeepers will have to feed at least a portion of their bees during the approaching winter. An average colony will consume about twenty pounds of honey or its equivalent between the time when the honey season closes and the first of May. Where a considerable number have to be fed this will be quite a tax on the owners.

The Italians as usual have done better than the native black bees. The former have in almost every instance filled the lower box and have again commenced work in the upper boxes, although in some instances the black bees have done the same.

The increase in new colonies with Mr. Hershey has averaged about 65 per cent., which is less than the average, but Mr. H. gives more attention to raising queens than to honey or swarming. He started with 62 colonies last spring. He reported having raised 200 queen bees, 150 of which were sold at an average of $1.50 each, realizing in all $225 from this source. He also got about 650 pounds of honey, and sold five swarms, and now has 72 colonies with which to go into winter quarters. All his own swarms have plenty of honey. He will winter them in the peculiar house, half underground, already described in our former reports. He also submitted the following remarks on

Wintering Bees.

This is one of the most important points in bee keeping. Each colony should be carefully examined before it is put into winter quarters, to ascertain whether it has honey enough and bees enough. If it is too weak in bees, then unite two swarms: if short in honey, feed it. Food is prepared by taking two pounds of ordinary coffee sugar and one pound of water, and bringing them to the boiling point.

Protect your bees from the north and west winds. Take off the honey boxes and put an old quilt or blanket on the top of the frames, and place on a cap of straw. Place a protector on the alighting board, to keep the sun off from the entrance when there is a loose snow on the ground; if there is no snow on the ground, leave the protector away from the entrance and let the bees have the full benefit of the sun's rays.

Never disturb bees when it is cold. If bees are long in continement when there there is a loose snow on the ground, and there comes a warm day—warm enough for the bees to fly—take away your protector from the entrance, to allow the warmth of the rays to fall directly on the entrance. Scatter straw in front of the hives on the snow, for the distance of about fifteen feet from the hives, for the bees to alight on, in case any should drop down from cold or other cause.

So soon as the weather becomes warm and bees fly freely, all swarms should be examined to see whether they have queens. If some are queenless, unite the colonies with weak ones that have a queen. Cage the queen about twelve hours after the colonies are united, as they will sometimes kill her when two swarms are put together. Colonies that are short in honey in the spring, ought to be fed, for they require a great deal of food to supply the brood in March and April. They consume more honey at that time than during the three winter months.

I. G. Martin, of Earl township, started into the honey season with twenty colonies. These have increased to thirty. From these he has taken 660 pounds of honey of excellent quality. His colonies are amply supplied with honey for the winter's consumption. He will put them into winter quarters on the summer stands, as is his usual custom, with a protection of chaff, as heretofore described.

He presented the following interesting paper:

Hints to Beginners.

In writing a few remarks upon bee culture I wish to state in the outset that I shall not perhaps present anything new to many of the members, but I will offer a few hints to beginners. The old opinion which ought by this time to be entirely exploded, that bees will take care of themselves and bring us large returns for little or no investment of capital or labor, is still a stumbling block to prosperous bee-keeping. Added to this are the misrepresentations of unscrupulous dealers, whose advertisements are sure to mislead the uninformed.

Some Mistakes.

None of us like to tell of our failures or of bad years before the public, and consequently the reports in the papers usually show only the bright side and large yields. Ignorance of the business then is the fault of a large proportion of ill sucess. What then is essential is a thorough knowledge of the business —plenty of application and hard work. Much useful information may be obtaiaed by reading the best works and papers on the subject, but actual practice in the apiary is indispensable. Many persons are naturally unfit for the business from carelessness and inaccuracy about their work. I know of no out-door work where so much depends on the right thing being done at the right time and in the right way.

When and How to Start an Apiary.

Avoid the common blunder of rushing into bee-keeping just after there have been one or two good seasons. The fact is that an extra good yield is usually followed by a very moderate or poor one. Beginners should purchase but a small number of colonies at first, and the bees will increase as fast as your knowledge will increase. Buy always the best that can be found, even if they cost more; for it will often pay you the first season. Spring is the best time to buy, for then they are through the winter and then you have not much risk, and they will then soon be a profit to you. Use some good movable frame hive, for with the box hive the best results cannot be obtained.

Don't be Afraid of Being Stung.

A very great hindrance to handling the bees is the fear of stings. Every beginner should supply himself or herself with a good bee veil, which will protect the face, and a good bellows smoker is as necessary for the beekeeper as a plow is for a farmer.

The extractor, for removing the honey from the comb without injuring them, is a very important implement, for then you can use the combs again, and it will increase your yield of honey.

Comb Foundation.

Use comb foundation for the brood-chamber, for it will insure all the workers comb, which is of great importance. A piece of drone comb, two inches square, in the center of the brood-chamber, is a small thing, yet it is a space in which every 21 days 200 worker bees might be raised, and in which they will raise a lot of drones, which are not producers, but consumers of honey.

I have but mentioned some of the necessary fixtures of a first-class apiary, without which success cannot be obtained. But do not make the mistake of thinking that if you get these fixtures you are sure of success. They are only aids and it will take work and knowledge yet to get the full benefit of your work.

Italian Bees.

The merit of the Italian bee are thoroughly established among enlightened beekeepers. I cannot now mention all their points of superiority, but I would advise all beginners to try the Italian.

Mr. Samuel Dillman, of New Holland, presents the most favorable report so far heard from in the county. He had 17 colonies last spring. He has by judicious swarming increased these to 24, and got besides 800 pounds of honey, nearly all comb honey.

W. B. Detwiler, of Mt. Joy, started with 75 colonies last spring. These have now increased through swarming to 100. He got from them about 800 pounds of honey. All his bees are in good condition to go into winter quarters.

Other beekeepers were reported as having done about the same as those who reported personally. Rev. S. S. Henry, of Hinkletown, began with two colonies last spring and by natural increase now has seven colonies. He increased their numbers largely, but the consequence was he got hardly any honey.

C. Sensenig, of Earl township, began the season with four swarms, which increased to 16, but he got no honey from them.

Another gentleman was reported as having taken 327 pounds of honey from 15 colonies; one of these alone yielded fifty-five pounds.

Honey Comb Foundation.

The following letter was addressed to the chairman of the association:

SPROUT BROOK, N. Y., Nov. 6, 1879.

Presuming all appliances tending to advance the interests of the beekeeping community will be welcomed at your meeting, we send you samples of flat-bottom honey comb foundation for distribution to your members. We have used the thin foundation this season in surplus boxes fullsized sheets one-sixteenth of an inch from the sides, and from one-quarter to one eighth of an inch from the bottom, adding thereby largely to the yield of honey, and also to its market value. The wired foundation has also been used with good satisfaction during the past season.

Respectfully yours.

J. VAN DEUSEN & SONS.

There being no further business, the society adjourned. The meeting was very pleasant and interesting, and it seems a pity that beekeepers, as a rule, take so little interest in these gatherings.

LINNÆAN SOCIETY.

A stated meeting of the Linnæan Society was held on Saturday, October 25, President Rev. J. S. Stahr in the chair. After attending to the preliminary duties, the donations to the museum were examined, and found to consist of two specimens of rattlesnake (*crotalus durissus*), one a large black snake (*Bascanion constrictor*), from Luzerne county, Pa. Also, a large and beautifully variegated snake from the Island of Cuba. This, like the venemous serpents, has the caudal and abdominal scutilla undivided, but no rattles—a class now under two divisions, those having no poison fangs, the genus Boa, (the Boa Constrictor is one of the largest serpents); the *Scytales* have fangs and are separated from the Boas, and no rattle distinct from crotalus. The snake in question comes very close to that described by Dr Russell as the *Boa paciata*, donated by Mr. George Kinzer, who has lately left this city. He also donated twelve specimens of silver, copper, lead and other ores and minerals from Virginia City, Nevada, and a fossil vegetable formation from Luzerne county, Pa., for which a vote of thanks was cordially given him. As also to Mr. Geo. Miller, of the restaurant, East King street, for a Mud puppy or Hell-bender (the *Menopoma Alleghenensis*). A spector insect or walking-stick, the *Spectrum femoratum*, per Lewis Haldy, city. C. A. Heinitsh, Esq., donated a copper spike given to his father, Mr. J. F. Heinitsh, in 1836, by Captain Budd. U. S. Navy, taken from the rudder of the United States frigate Constitution, (the old Ironsides,) while undergoing repairs at Boston; originally built in 1798. It is a valuable historical relic. Mr. Heinitsh also donated a very desirable case glass sash, placed on the attic for specimens. A cordial vote of thanks was given him for his liberal consideration. A sample box of glass-covered cells, containing 18 kinds of seeds, different kinds of wheat, corn, &c., under cultivation, and a large lump of the smoky mica, per J. Stauffer.

Additions to the Library.

Proceedings of the Davenport Academy of Natural Science, per the Corresponding Secretary; Reports of Explorations and Surveys in the department of Missouri, per Prof. Herman Strecker, Reading, Pa.; Report of Agriculture for 1877, per Hon. A. Herr Smith; Atlas of Ferns—Coal Flora, of Pennsylvania, by Leo Lesquereaux; second Geological Survey; Minerals of Pennsylvania, per William A. Ingham, Esq; annual reports on Railroads, Canals, etc., for 1878; Internal Affairs, industries and statistics for 1878; Inspectors of Mines; Penn Life Insuranee Reports for 1878, per H. C. Demuth, Esq., of this city; *Patent Office Gazette* up to October 21, 1879; THE LANCASTER FARMER for October, 1879; sundry book circulars; historical; two envelopes containing twenty-seven clippings of historical interest; a bogus fifty-cent coin as a specimen chip, per S. S. Rathvon.

Papers Read.

Dr. S. S. Rathvon read a paper, No. 530, on "Observations during the mild weather of October, inst., and the stir of insect life and vegetation."

The treasurer reported bills, $5 for subscription to the proceedings of the Academy of Natural Sciences, and $1 to George Flick, Esq., for mounting a flicker for the Society. Ordered to be paid. Mr. Heinitsh presented an article published, read by Mr. Stauffer, with regard to flowers being found on a corpse undisturbed for ten years, of a yellow color, with sepals, stamens, etc. This led to the observation of fungoid matters, sometimes found growing on living and dead matter, had been observed, but notwithstanding the Doctor's high position, the stamens may have been sporules in a split head raised on a stipe. This led to mention of other freaks of nature which are often past finding out. Mr. Stauffer referred to the buds of the abutilon clamping one of the pointed lobes of a leaf in numerous specimens, as witnessed in the yard of J. M. Johnston, No. 9 South Queen street, this city, and published in the *Intelligencer*. Rev. Mr. J. H. Dubbs, Stahr, Heinitsh and Hostetter had something of interest to impart under the head of scientific miscellaney. After a pleasant session the society adjourned.

FULTON FARMERS' CLUB.

The November meeting was held at the residence of G. A. King, on the 8th inst. The attendance was small.

Visitors: Will Moore, Alvin King and Alfred Wood in the forenoon, and Joseph Jenkins in the afternoon.

The President being absent, Day Wood was appointed for the day. The minutes of last meeting not being present were omitted.

Specimens for exhibition: E. Henry Haines, four varieties of apples; a visitor, Black Coal, Rhode Island Greening, Pinoch and Nottingham Browns; William P. Haines, beet, weighing 6¼ pounds, and a black winter radish.

Answering questions: Are winter radishes worth raising? No one present had any experience. They are to be sown with turnips. 2. Is it better to sell chickens at nine cents a pound live weight, or at thirteen cents per pound dressed, and pay a commission? Most of the members favored selling at nine cents, unless the feathers were an object. 3. Does the soapstone griddle do its work well or is it like some other things, useful for a time and then laid aside among the things that *were* useful? Some had used it and found that the particles of it ne wear off in the cakes and make them disagreeable. Some disliked the noise, &c. None of the ladies present kept them in constant use. One of the gentlemen suggested that it might not be safe at all times to put a stone in every woman's hand. 4. Do you think wheat will advance to $1.50 per bushel, or would you advise to sell at the present price? Some thought wheat would advance in May, and if you have a good place to store it, would keep it; others would sell now. 5. Would you sell pork at $5.00 per hundred at the present price of corn? No definite answers. 6. How many farmers can tell whether lime is paying? One of the members had put river lime on and thought it paid. Most of the others thought lime had made the land what it now is, but it now has lime enough in it, and needs something else. Some few, however, still stick to lime, probably for the good it has done.

Exceedingly Interesting.

Dinner being announced the club adjourned to the dining room, when the inner man was bountifully supplied with good things.

The gentlemen took their usual stroll over the farm, viewing the stock, &c.

Minutes of last meeting held at this place were read upon reassembling.

Expressing Opinions.

Criticisms were next called for. The corn crop tolerable; hogs look well, but their pen might be improved. There should be flowers in the front yard, some thought; others thought a well kept yard looks better without flowers, though the majority favored flowers; they tend to refinement. One of the ladies thought they were like children—they are a pleasant trouble.

Literary Exercises.

Recitation, "Good Old Farm," by Phebe King; Mabel A. Haines recited "An Incident," setting forth the different positions to which some are born, and how a little child was sent with a bottle to get filled with rum on a cold night, and was found by a lawyer, who had been musing and wondering why he was favored more than others. On going out he found this little creature almost dead. He tried to bring her to life, when she begged to be left to die saying, that even for her father, whom she dearly loved, she could not enter the dreadful *den*. And also showing it to be the duty of every man to vote for *prohibition*, and do everything in their power to banish intoxicating liquor. Mabel Haines read the "Woman Farmer," showing what a woman can do.

East or West, Which?

Regular question, "What advantages have the Western farmers over the Eastern?" The principal advantage was that no fertilizers are needed, but to balance this they get small prices for their produce, and they have to undergo many privations. If we are willing to live here as we have to in a new country, we would make money equally as fast. A farm in the West, where a person can live comfortably, costs almost as much as East, (a farm with all the improvements). The only advantage, if you must endure privations, is your neighbors are like you and here you would be alone. Many persons who go West do not succeed, most of them becoming discontented; upon the whole, we think the argument was in favor of staying East and improving the advantages we have. We do not have such severe storms and do not have so many destructive insects.

Programme for Next Meeting.

"Would the average farmer who owns a farm be justifiable in buying another of the same size, going into debt for the latter, the other being free, if he could get the money at five per cent?"

Literary appointments: Sadie A. Brown, Nettie Jackson, Mabel A. Haines, Phebe and Mary A. King, for recitations or selections.

Adjourned to meet at the residence of Josiah Brown, on the first Saturday of December.

MEETING OF THE STATE BOARD OF AGRICULTURE.

A meeting of the State Board of Agriculture was held at Mercer, October 17, 1879. Dr. Calder, President of the State College, read an essay, entitled, "Should Agricultural Text-Books be Introduced in the Common Schools?" Dr. Calder is too well known to question his ability to handle well any subject he undertakes. His arguments in the affirmative were strong, and were heartily endorsed by the meeting. A resolution was passed to that effect. I shall be disappointed if such a measure will not be carried into effect in the rural districts in the near future, as the head of the school department expressed not only his willingness but also his desire to give it his hearty co-operation.

An essay on potatoes, their culture and best varieties, was read by Hon. N. T. Underwood, of Wayne county. From his essay it was easily understood that he is no novice in potato culture. It was evident that we were in a potato region, as the essay elicited quite an interesting discussion, which placed prominent some varieties not extensively cultivated in your section. Early Vermont and Early Ohio were considered more desirable than Early Rose. Early Ohio was especially highly spoken of. Burbank's seedling was highly spoken of as a late variety, both as to quality and productiveness. Cuttings or whole potatoes for seed came in for a lively debate, but, as usual, may be considered a drawn game; nothing was proven except that both methods were best.

The Law of Trespass.

Mr. G. W. Hood, of Indiana county, read a paper on "The Laws of Trespass as They Relate to Agriculture." The gentleman is a lawyer by profession. He defined quite a number of laws which every farmer should know for himself, as it would, no doubt, prevent many litigations which are invariably much more expensive and unpleasant than a little study of common laws would be. The discussion upon this subject culminated in an apparently unanimous agreement that a small manual containing the matter referred to should be published and circulated, so as to be in reach of every farmer. Who, in the face of so many lawyers throughout the country will prepare such a work?

"What crops are most profitable on the cleared pine lands of Pennsylvania?" by Mr. J. A. Herr, of Clinton county, contained many excellent hints, which if put into practice would prove that there is room for thousands of farmers to purchase cheap lands that would pay good interest by proper management, without going 1,000 miles or more westward. Mr. Herr is of Lancaster county stock, and well posted generally.

A paper was read by Dr. Roland, of York, entitled, "The State Board of Agriculture," in which he reviewed the past, defined the present, and ventured some prediction of the usefulness of the Board in the future, if it continues to discharge the duties for which it was created.

The doctor's term expires with this year, and he does not expect to return, which is to be regretted, as he is one of the most efficient members of the Board.

Prof. F. A. Allen, of Tioga county, read an essay on "Experimental agriculture—its results and lessons," which was replete with many valuable hints of interest to farmers generally, but especially to such as are not afraid to step out of the old ruts. He advocated experimenting in agriculture, but not loosely, as is the very common practice, which is mostly guess work and is unreliable.

Mr. Allen experiments extensively, but is very cautious in drawing conclusions. He applies commercial fertilizers largely, and is quite successful in raising regular and large crops; but on being asked the effects of certain fertilizers, he almost invariably answered, "I don't know." His method is apparently to supply his land with fertilizing material, such as he knows crops generally require, without relying too much on specialities.

All the papers presented having been read and discussed, the meeting adjourned *sine die* on Thursday, 16th inst., at 2.30 p. m.

It is not the province of your correspondent to discuss the merits or demerits of the State Board, but he would direct the attention of every farmer in the State to its published volumes of 1877 and 1878, and the forthcoming one of 1879, which they should carefully compare with publications of the same kind, which will enable any fair-minded man to decide whether agriculture receives sufficient benefit to justify the continuation of the Board.

AGRICULTURE.

Summer Cultivation of Wheat.

The results of the experiments in the cultivation of wheat during the past year have not realized expectations; at least not in this section of the country. Several farmers in this and the adjoining county of Chester last autumn put in a small quantity of wheat, generally from one to three acres, with wide spaces between the drills, in which to harrow in the coming spring. Generally these were stirred three times and the grass-seed sown after the last dressing, all the cultivation being finished about the 10th or 15th of May.

And while the crop of wheat in this locality is not nearly so good as last year, when it was the largest grown for a great many years, it is still above the *average* of several years past, and the cultivated wheat sown alongside of wheat raised in the ordinary way in the same field and with the same manuring, is not so good, neither in straw nor grain. Several bushels of grain per acre seem generally to be the deficiency. This result causes us to inquire whether this method of raising wheat is adapted to our climate, or whether the *present* season had anything to do with it. In one instance at least in this county in other years—that of Groff's—the superiority of the cultivated was most marked and beyond dispute. Some will say it is contrary to the nature of wheat for the earth around the plant to be disturbed while growing; but this view I think can hardly be supported by any just analogy with other species of growth. It is not considered good farming to let our corn go unworked, no matter how thoroughly the ground was tilled previous to planting. In setting out a new orchard it is considered of the utmost importance to cultivate it until the trees are pretty well grown; and the belief is pretty general that even rank weeds will grow better when the earth is stirred around them than if left to become hard and compact. And I believe this theory is supported by the best English wheat-raisers who hoe their wheat in the month of May.

Now let not our progressive farmers be discouraged by the result of this experiment for only one year, but try again. 'Tis perseverance that unravels the secrets of nature and teaches the farmer useful things.—*T. Baker, Lancaster county, Pa., October, 1879, in Germantown Telegraph.*

A Mixture of Grasses.

It is a well known fact that mixed crops are more productive than those sown singly. Thus one acre sown to oats and barley, or oats and peas, will yield as much, or nearly as much, as two acres sown singly to either crop. So in grass lands, clover and timothy, mixed, will produce nearly twice as much as if the ground were seeded to one of these alone. It is also a well known fact, that our grass lands are not so productive as we could wish, and the reason of this may be, and probably is, that we have but one or two kinds of herbage in them. If we examine an old, thick, luxuriant sod, in a pasture or a meadow, it will be found to consist of a variety of grasses and other plants, each of which seems to vie with the other in occupying the soil for itself. This is the result of natural seeding, and gives us a lesson which we may well profit by. There is another reason why grasses should be mixed; this is that the periods of greatest vigor of different varieties occur at different times. We can therefore secure a succession of herbage for a long season by sowing a variety of grass seeds.

To give examples, we might mention that a mixture of orchard grass, red clover timothy and Kentucky blue grass will produce a pasture which will be in good condition for grazing from April, when the first mentioned grass is in fine condition, up to October, when the last is in its most vigorous state, the clover and timothy serving to fill up the interval. With one of these alone there would be but one month of good herbage, and that coarse if given the whole field to itself. In like manner, a quantity of rye grass added to a meadow would help to furnish a quick-growing herbage which rapidly and constantly recuperates after cutting or eating down.

The fact is, that we make much less of our advantages in regard to our meadows and pastures than we might.—On the average, seven acres of pasture are required to keep one cow through the pasturing season, when by the best management one acre, or at the most two, ought to be sufficient. This is due in great measure to the prevalent fashion of seeding down with but one variety of grass, with clover added sometimes; a fashion which, hereafter, experience teaches us should be more honored in the breach than in the observance.—*American Agriculturist.*

Changing Seed.

Much has been written on this subject, and much of it is true. A single fact has been brought to my notice this year, which illustrates the good effect of such change. Not having seed corn enough for a field, a dozen ears were bought—all there was of a choice sample of Dutton corn, a variety long grown in this neighborhood and well liked. This sample was planted in one corner of the field and marked. In its growth nothing particular was noticed. When we came to cut it up, the ears were better than on other portions. We selected twenty-four strings of two dozens ears each, a very choice sample for seed. The remainder was also nice. From no other part of the field of the same extent can one-half as much selected seed be picked. The land is no better, and only in one way can I account for such extra growth—a change of seed.—*Correspondence Country Gentleman.*

Bone Dust.

As a general rule when American farmers use bone dust they apply too small a quantity to show decisive results. Thus in improving pasture a hundred pounds or so might not show much good result, because the growth being removed daily the increase is not readily recognized. Only think, if a pasture season be considered one hundred and fifty days, then a ton increase of feed per acre is but about thirteen pounds a day over an acre. In England, where bone manuring is in favor, large quantities are used with advantage. Prof. Tanner recommends bone dust, applied at the rate of one ton per acre in the autumn, for the improvement of grass lands.—*Scientific Farmer.*

Fall Plowing for Corn.

Heavy clay soils that have a good covering of clover or grass sod may be plowed in September for a crop of corn next season. We would not plow the furrows flat, but set them on edge. In the spring a good harrowing, lengthwise the furrows, will give a sufficient depth of mellow soil for planting, leaving the decomposed sod just where the roots can reach it. A light application of artificial manure before the harrowing in the spring would be beneficial. The planting should immediately follow the harrow, while the soil is fresh. Light or mucky lands had better be left till spring, as this treatment is not proper for them.

Storing of Fodder-Corn.

The succulence of green corn-stalks renders them difficult to dry thoroughly. To stow away uncured corn-fodder in stacks or barns, without precautions to prevent moulding, is unsafe. A good plan is to shock the bundle in a convenient place, covering the top of the shock with a sheaf of straw, and binding the top tightly to exclude rain, and leaving the shocks out of doors until used. A few shocks may be brought in when needed, and will be found fresh, green and in the best order. Sweet cornfodder, with many small ears and nubbins on the stalks, may be covered and kept in this manner in the best condition.

THERE is probably no potato that is a better keeper than the Snowflake.

HORTICULTURE.

Care of Potatoes, Beets, Turnips, Carrots and Parsnips.

Much has been said and written about the cultivation, care and quality of the potato. I wish to add my testimony also. Being out from home a few days ago to dinner, and among other things on the table was some fried potatoes; it was about as much as I could do to eat them—so strong. The question came to my mind, what is the cause of so many strong potatoes? I find it is a general complaint. A friend writing me from an Eastern city, says: "The potatoes are so poor and strong." Now for the question. Does not light injure potatoes? They are amative of darkness—that is, they grow under ground—and if by chance any of them come to the surface they turn green by being exposed to the light. I have frequently seen in an Eastern city potatoes laying in the market from day to day and from week to week, exposed to the light; is not this one cause? And, furthermore, I sold a person once a load of potatoes for planting, and as his ground was not quite ready he left them exposed to the light, and also, I presume, to the sun for a period of time. I met him a few months after. He says to me, "Those potatoes I bought of you I planted and they never came up." I replied, that is very strange, for I planted out of the same lot and every one of mine grew. On inquiry I found the fact as above stated, that they had remained for two weeks exposed to the light and sun. A second case, a neighbor of mine carried out a number of bushels for planting, but his attention being called off to some other work the potatoes remained for one week exposed to the light and sun, and then he planted them, but they did not grow in those two cases; they were not only injured but killed. The way I do it, in this latitude, I never let them remain in the ground longer than the first week in October. If I have a large quantity I put a sufficient force to dig them at once, after letting them remain a very short time to dry. I remove at once to my dark cellar or root house, there to remain till called for. The result is I always have good potatoes.

I wish to say now something about the care of beets, carrots and parsnips: After digging them I remove to my cellar or root-house and pack them away in barrels or boxes, and cover them with dry sawdust and sand to the depth of six inches; as they are used the remainder is kept covered. In this way I keep carrots and beets till they come again. In this latitude parsnips are very liable to rot if they remain in the ground through the winter, and in order to make sure of them I dig them late in the fall and pack them the same as the beets and carrots, and then I put them in my wood-house or granary and let them freeze up and remain frozen through the winter and use them in a frozen state—they may not be quite as good, yet eatable, as left in the ground through the winter. If in early spring the beets and carrots should sprout I take them out and remove the sprouts and repack them.

Grafting Grape-vines.

Those who wish to graft their vines over with other vines should remember that winter and not spring is the time for it—and in this the grape is different from most other trees. It is different in this; that in the spring of the year there is such a tremendous pressure upwards by the ascending sap that the parts of the scion and stock, which to unite must of course touch one another, are forced by the sap apart. When the grafts are put in at this season there is little of this. The several cells granulate and heal, and when the sap is ready to flow upward strongly, it goes up through its regular channels in the graft without any tendency to break out through the junction.

How to graft grape-vines admits of many various replies. The best is probably that described years ago in our pages by Samuel Miller, then of Lebanon, in this state, now of Missouri, who was very successful as a grafter of the grape. He drew away the soil from the stock to be grafted, cut it down about two inches from the surface, then cut with a stout sharp knife a long and narrow wedge-shaped notch in the stock, and shaped the scion as a wedge to fit in the notch in the stock. The lips of the notch are then tied together and the earth drawn in and around the hole, leaving the upper eye of the graft above the ground.

We may say that it is very astonishing that grape grafting is not more generally practiced, and especially since the discovery that the greatest success of the Concord, Clinton and a few other grapes is not owing to any extra constitutional hardiness, but to the fact that the power to throw out numerous fibrous roots is greater in these kinds. If this be true, and it seems to be really the case, we may have the choicest and best of grapes by grafting them on these vigorous rooting stocks.

For once the French seem to have taken a start ahead of us in this matter. They sent an agent to this country some years ago—a shrewd, observing fellow—and he took the whole situation at once. The result has been that millions on millions of Concord and Clinton cuttings have been sent to France the past five or six years, and in future wines of that country may be brought to a higher grade of perfection than ever before.

Apples and Apple Trees.

Apples are much of the same nature as pears. While there are good crops in some sections, there are failures in others. We notice this the present season. Then again there are certain varieties that we are told will not produce any longer; the trees get sickly and after a time die. Newer varieties do better, though they are not equal in quality and do not sell so well. But the truth is the old kinds fail to do well because the vigor of the tree is exhausted, and they look bad because they have finished their course, and should be succeeded by an orchard of young trees. Indeed there should always be two orchards upon a farm—the young one to take the place of the old; in such case we fancy there would be little complaint. Smith's Cider, which continues to produce such fine crops, has only reached middle life, but it must be noticed that the oldest of them are beginning year after year to bear fruit of a reduced size. Even the White Doctor, which was supposed to have died out, bears well upon young trees. A farmer told us the other day that on a moderate-sized tree he had full ten bushels of the finest apples he had ever raised—large, smooth and uninjured by the worm.

Farmers should not therefore give up the good old kinds, which formerly were so popular; but when they get old and pruning is no longer of any avail, try new orchards of them. Of course they will go on planting all the new profitable varieties, but give the old a chance again, and see whether what we say is not correct.—*Germantown Telegraph.*

FLORICULTURE.

Care of Plants in Winter.

Slips should be cut smoothly from the plant just below a joint or where they join the main stem. Any time during the growing season will do, though July, August and September are the best months. Most slips stand well in the sand, or a mixture of half and half soil, kept wet. If wanted for the house in winter it is better to stand the slips in small pots sunk in the ground, as they can be left in the pots or transferred to larger ones without disturbing the roots. Oleanders, honeysuckles, southerwood and some other plants are best started by putting in a vial of water on a partly-shaded window sill, putting a piece of cotton around the stem at the neck of the vial, both to steady and protect the plant, and preventing too rapid evaporation. Plants for the house in winter will not do well in smaller than four or five inch pots. Place a saucer under each. Water every day, toward night putting on water till some of it runs through into the saucer. The water should always be tepid and once a week a few drops of ammonia or liquid manure should be added to each quart of water. Do not water if the soil is still moist; some plants do not need as much water as others. A little top-watering only does more hurt than good; the water should go to all the roots. After January they will need more water, as then they begin to grow; before that most plants simply live. Cactuses and aloes should have no water in the early winter: they must rest if you wish them to bloom well later. Keep callus standing in water. Keep the pots and leaves clean by frequent washing. Plants will not thrive if dusty. Some plants do better in glazed pots or wooden boxes, the common pots being so porous as to extract all the moisture from the roots. If you simply wish to keep slips for next year's garden fill a starch-box with sandy soil, set a number of slips in it, keep wet and in a sunny window.

The Abutilon.

One of our scientific contributors writes: J. M. Johnston, reporter of the *Intelligencer*, called my attention to a remarkable growth in the attachment of one of the prolonged and sharply toothed lobes of a leaf firmly clamped by the terminal combined sepals of the flower buds. I was astonished to see this peculiarity in every eight or nine buds out of ten. In the first place, I never saw a larger or finer plant of this species, the "*Abutilon striatum.*" The expanded flowers are truly beautiful, and altogether, as a plant, I question whether it would not carry the premium at any floral exhibition, as it now stands in his yard, No. 9 South Queen street.

The *Abutilon* belongs to the *Malvaceæ*, or "Mallow family." This species is properly called a greenhouse plant; it is also called *sida picta*. The *Abutilon striatum* is a native of Brazil, and half shrubby, with bell-shaped flowers of a bright yellow, strongly veined with scarlet, which hang down on slender stalks. Johnson, in his Gardener's Dictionary (Ed. London, 1870,) describes eleven species. The above and the *A. Venosum* seem almost identical. I can find no clue to account for the strange freak in this instance. If the leaf-bud and flower-bud were actually combined during the early stage of development, the entanglement of the long terminal point of one of the deep cut and toothed lobes of the leaf might account for it. On examination I found no actual union, by growth or mingling of the tissues, between the leaf and the green flower cup, usually five parted; in this stage, I noticed that the edges of three on one side and two on the other side of the flower were coherent to the point, like a simple two-parted flower-cup, as those in the poppy; but a slight force separated them into five parts. The leaf, on its petiole, is separated distinctly from the unexpanded flower-bud and a few inches off; still one point and often that on the opposite side of the leaf was turned over the body of the leaf and crumpled and clamped in or between the points of the calyx and flower actually clamped fast. It looked as though the point of the leaf had been attracted by and taken hold of between the points of the flowering-bud. A single case might be accounted for as an abnormal or accidental occurrence, but when it comes to the general character of the developments, some law in vegetable philosophy not yet understood, would seem to demand attention; hence I go to some length. Mr. Johnston can corroborate the fact, as any one else who will go and examine the bush. Has a similar case ever been noticed before? If so, let us hear of it, and how we can account for this cohesion of a leaf-lobe with the unexpanded bud? In some cases the flower cup was drawn off by the expansion of the leaf, and attached in a withered form to the end of the lobe or point. In short, I can offer no solution. I can trace no connection with it and insect interference, nor abnormal growth or development, other than the singular contact, and leave it for one more skilled in this particular than *J. S.*

The Quinine Flower.

The *American Garden*' quotes the following in regard to the "quinine flower," by Dr. Palmer, of Florida. From its description and effects we should consider it identical with what is well known as "boneset," a very valuable wild plant in cases of chills and fever, and malarious disease. It is an annual from twelve to eighteen inches high, has an erect green stem, linear leaves of from one-half to one inch in length, and small white flowers. The root consists of numerous slender fibres.

It is a native of Florida, and is found most abundantly in flat pine woods, in a moderately dry soil, making its appearance in March or April, and flowering from July to September. The specimens furnished me were gathered three or four miles south of Monticello, in Jefferson county. In the lower portions of the country it is very abundant, and is successfully employed by those living in its vicinity for the cure of different types of malarious fever, the whole plant being used, either in the form of decoction or extract, and is given ad libitum, or until the patient feels the effects of quinine in his head.

It is a curious fact, that persons brought under the influence of this remedy experience similar sensations, such as tension or fullness in the head, ringing in the ears, or partial deafness, as when under the influence of quinia and hence its name. Its reputation as an anti-periodic was established during the civil war, when owing to the scarcity of quinia every opportunity was offered for testing the relative value of the various substitutes.

The quinine flower is intensely and permanently bitter, yielding its properties to water and alcohol. A saturated tincture, in doses of one teaspoonful every two hours, was found sufficient to break the paroxysm of intermittent fever. Large quantities, however, may be given in obstinate cases, or in the remittent-form of the disease.

DOMESTIC ECONOMY.

Oatmeal in the Household.

In Great Britain children of all ranks are raised on an oatmeal diet alone, because it causes them to grow strong and healthful, and no better food can possibly be found for them. It is also quite as desirable for the student as the laborer, and for the delicate lady as for her hard-working sister; indeed, all classes would be greatly benefited by its use, and dyspepsia, with all its manifold annoyances, can be kept at a distance. Oatmeal is more substantial food, it is said, than veal, pork or lamb, and quite equal to beef or mutton, giving as much or more mental vigor, while its great desideratum consists in one's not becoming weary of it, for it is as welcome for breakfast or tea as is wheat or Grahom bread. It can be eaten with syrup and butter as hasty pudding, or with cream and sugar like rice. It is especially good for young mothers upon whose nervous forces too great a demand has been made, when they lose the equilibrium of the system and become depressed and dispirited. Oatmeal requires to be cooked slowly, and the water should be boiling hot when it is stirred in.

Inspect Your Cellars.

Many of our farmers who have no special place built for wintering vegetables and fruit, store them in the cellar of the dwelling-house. In order to keep them from freezing there, the cellars are banked up tightly in the fall. No ventilation is provided for, and the only way for the escape of the noxious gases arising from decaying vegetables, is through the openings in the floor into the living rooms above, where it is dealing disease and perchance death to the occupants. Is it surprising that diphtheria and scarlet fever, and every other fever, result from such total disregard of the laws of health? A person will pay this inattention to sanitary measures, and then if his children sicken and die he blames the weather, or murmurs and grumbles at the dispensation of Providence—cannot conceive why God should afflict him thus severely. The Almighty is not to be blamed at all in such instances; the fault lies at the man's own door, or rather in his cellar, and he ought to condemn himself, and mourn over his own neglect of duty, instead.

Hints for the Kitchen.

If your coal fire is low throw on a tablespoonful of salt and it will help it very much.

A little ginger put into sausage meat improves the flavor.

In boiling meat for soup use cold water to extract the juices. If the meat is wanted for itself alone plunge in boiling water at once.

You can get a bottle or barrel of oil off any carpet or woolen stuff by applying dry buckwheat plentifully. Never put water to such a grease spot, or liquid of any kind.

Broil steak without salting. Salt draws the juices in cooking; it is desirable to keep them in if possible. Cook over a hot fire, turning frequently, searing on both sides. Place on a platter; salt and pepper to taste.

Facts About Flour.

Flour is peculiarly sensitive to atmospheric influences, hence it should never be stored in a room with sour liquids, nor where onions or fish are kept, nor any article that taints the air of the room in which it is stored. Any smell perceptible to the sense will be absorbed by flour. Avoid damp cellars or lofts where a free circulation of air cannot be obtained. Keep in a cool, dry, airy room, and not exposed to a freezing temperature nor to intense summer or to artificial heat for any length of time above 70 to 72 degrees Fahrenheit. It should not come in contact with grain or other substances which are liable to heat. Flour should be sifted and the particles thoroughly disintegrated and then warmed before baking.

A Cheap Ice House.

In giving the following cheap plan for an ice house, the *Fruit Record* leaves one without excuse on the ground of expense. "If you have no house ready draw one hundred or more blocks of ice; pack them close together in a solid block on the north side of a building, where the drainage will be good. After the ice is all packed together build up around it a cheap board or rail fence, one foot away from the ice, packing the space between the sides and ice with straw; over the top throw a few inches of saw dust, and, putting over all a cheap roof, leave a good air hole in the top. Ice may be kept in this way until September or October."

Rest After Eating.

The digestion of a horse is governed by the same laws as that of a man; and as we know that it is not best for man to go at hard work the moment a hearty meal is eaten, so we should remember that a horse ought to have a little rest after his meal, while the stomach is most active in the process of digestion. Many a good horse has been ruined by injudicious haste in working him with a full stomach.

Household Recipes.

To Clean Wall Paper.—Sometimes spots will accidentally get upon papered walls that deface them badly. If it should be a grease spot, a paste of hot laundry starch, made very thick and spread on while boiling hot, quite thick over the surface of the spot, and left till dry, then rubbed off with a soft cloth, will remove all the grease and not deface the paper. An ink spot, or other dark stain can be cut out with a sharp pen-knife, pulled off, and a bit of new paper matched and pasted over, which may save the trouble and expense of repapering the whole room. When the paper is dingy with smoke, take a quart of wheat bran and tie up in a thin bag loosely, and rub the walls with it quite hard. Shake up the bran occasionally, and you will be quite surprised to see how clean and nice it makes the paper look, well paying for the labor of cleaning. When the edges of the paper start up, a little paste or starch applied with your finger to the under edge, and pressed down with the surface smooth, will keep the walls neat in appearance and well preserved.

Stewed Pigeons.—Truss and season the pigeons with pepper and salt, and having stuffed them with a mixture of their own livers, shred with beef suet, parsley, bread-crumbs, marjoram and two eggs, sew them up at both ends and put them into the jug, breast down, with half pound of butter; cover up the jug so that the steam cannot get out; then set them in a pot of water to stew. They will take two hours and more in doing, and they must boil all the time. When stewed enough to take them out of the gravy, skim off the fat, put in a spoonful of cream, a little lemon-peel, an anchovy shred, and a few mushrooms; add a little white wine to the gravy, and having thickened it with butter and flour, and dished up the pigeons, pour the sauce over them. Garnish with sliced lemon.

Rice Snowballs.—Ingredients—six ounces of rice, one quart of milk, flavoring of essence of almonds, sugar to taste, one pint of custard. Mode—boil the rice in the milk with sugar and a flavoring essence of almonds, until the former is tender, adding if necessary a little more milk should it dry away too much; when the rice is quite soft put it into teacups, or small round jars, and let it remain until cold. Then turn the rice out in a deep glass dish, pour over a custard, and on the top of each ball place a small piece of bright colored jelly. Lemon peel or vanilla may be boiled with the rice instead of the essence of almonds, but the flavoring of the custard must correspond with that of the rice.

Rolls.—Two quarts of flour, one-half cup of sugar, a piece of butter or beef drippings the size of an egg. Scald one pint of sweet milk and let it cool, then make a hole in the middle of the flour and pour in the milk and half a cup of yeast, a teaspoonful of salt, and set to rise in a warm place over night or until very light. Then knead it and let it rise again. When well risen cut the rolls half an inch thick, shape round, spread over each round a little melted butter, and double over so the roll is a half circle, then let rise very light and bake. Place the rolls in close contact in the baking pan so they may keep in shape.

Miss Parlon's Recipe for Angel Cake.—The whites of eleven eggs. One cup of flour after sifting, one teaspoonful of cream tartar. Sift the flour and cream tartar four times. Beat the eggs to a stiff froth, and then beat in one and one-half cup of sugar and a teaspoonful of vanilla. Add the flour and beat lightly but thoroughly. Bake in an ungreased pan, slowly, forty minutes. The pan should have a thin strip projecting above each corner, in order that when it is turned over to cool the air may circulate freely under it. Cut it out when cool.

Rabbit Cutlets.—Prepare the rabbits as you would for a stew; cut the different limbs into the size of cutlets—such as the shoulders cut in half, also the legs, with the ends of the bones chopped off. Have ready some bread-crumbs and the yolk of an egg beaten up. Drop each cutlet into the egg, and then cover with bread-crumbs, as for veal cutlets. Fry them a nice brown, and when you dish them pour around them some rich, brown gravy, which may be flavored with tomato sauce if approved, and put around them rolls of fried bacon.

Welsh Rare Bit.—Slice bread half an inch thick, and toast it very slightly on both sides, cutting off the crust. Then slice some rich cheese not quite so large as the toast, upon which lay the cheese in a toaster before the fire. Watch it, lest it burn or grow hard. Butter each piece slightly, and use in eating it mustard, pepper and salt.

Apple Jelly.—A very nice, firm, rich jelly made from the parings of apples and the cores. Cover them with water and let them boil until the water has wasted a little, and the appleskins are very soft; then strain them and add an equal quantity of sugar as there is liquid.

To Clean Black Lace.—Take the lace and wipe off all the dust carefully with a cambric hankerchief, then pin it out on a board, inserting a pin in each projecting point of lace. Wash it all over with table-beer, and do not remove the pins until perfectly dry. It will look fresh and new.

Ginger Snaps.—One cup lard, one cup sugar, one cup molasses, one-half cup water, salt, one tablespoonful ginger, one tablespoonful cream tartar, one tablespoonful soda, roll very thin; bake quick and you will have delicious ginger snaps.

Hair Invigorator.—Bay rum, one pint; alcohol, half a pint; castor oil, half ounce; tincture of cantharides, half ounce; mix them well. This mixture will promote the growth of the hair and prevent it from falling out.

A Nice Tea Cake.—One-half cup of butter or cream; one of sugar; one egg; one-half cup of thick milk or buttermilk; a teaspoonful of soda; a handful of currants. Use flour to make the proper thickness.

Lemon Cake.—One cup of sugar, four eggs, three tablespoonfuls of sweet milk, three tablespoonfuls of melted butter, three tablespoonfuls of baking powder and one cup of flour.

Baker's Gingerbread.—Three-quarters of a pound of flour, one quart of molasses, one-fourth of a pound of butter, one ounce of saleratus and one ounce of ginger.

Live Stock.

Straw as Food for Cattle.

To form a strictly fair comparison between the different descriptions of straw it would be necessary that each kind of straw should be cut at exactly the same stage of maturity. But, on the other hand, in practice we find that for the sake of the grain it is usual to allow one crop to attain a greater degree of ripeness than another. In the case of wheat, for example, it is better to cut the crop before it is quite ripe—and this is the custom of most good farmers. It is in this case quite feasible to take advantage of the superior conditions of the straw, in a slightly unripe condition, without in any way injuring or deteriorating the quality of the grain. But barley is usually considered more suitable for the purposes of the malster when in a well ripened condition, and barley is therefore usually allowed to stand ripening in the field for a comparatively longer period than wheat—and barley straw is, therefore, usually riper than wheat straw. Oats, again, are usually cut in an earlier stage of ripeness even than wheat, since the pendulous grain is liable to be taken out by the wind and so lost, if the crop is allowed to ripen too much.

Wheat straw, in an average condition, neither under nor over ripe, was found on analysis, by Dr. Voelcker, to contain between 1 and 2 per cent. of fatty matter, from 2 to 3 of nitrogenous compounds, about 4 to 6 per cent. of sugar and mucilaginous matter soluble in water, and about 20 per cent. of fibre in a sufficiently soft state to yield to the action of digestive liquids. Oat straw is somewhat similar in composition, as far as the proportions of oil and nitrogenous compounds are concerned, but it contains more sugar and extractive matter, and a much larger proportion of digestible fibre. While in the case of wheat straw rather more than one-fourth of the fibre is digestible, in the case of oat straw considerable more than one-half of the fibre is soluble in solutions corresponding in strength to the gastric juices. Oat straw is, therefore, as a rule, superior in feeding value to wheat straw, inasmuch as it contains a much larger proportion of digestible, fat-forming and heat-producing principles. Barley straw contains more nitrogenous matter than either wheat or oat straw, but in the ripe state, in which it is most often harvested, it contains but a very small proportion of sugar, more than nine-tenths of the fibre it contains being in a perfectly indigestible form. When less ripe, however, barley straw is of a much more digestible nature, and on account of its superior value as a flesh-former it must, in that case, be considered as better fodder than wheat straw. It is, however, rarely that barley straw is harvested in such a condition as to be equal in feeding value to good oat straw.

It is interesting to consider, side by side with straw of the cereals, the so-called "straw," or more properly speaking, the haulm, of peas. Pea straw contains from 6 to 9 per cent. of nitrogenous compounds and about 2 per cent. of oil, about 8 per cent. of sugar and soluble extractive matters, and about 60 per cent. of fibre, of which nearly one-third may be regarded as digestible. Its composition more nearly resembles that of hay than does that of any of the common cereal straws, and it is a justly-prized article for both sheep and cattle.

Feeding Cattle.

The theory of good stock is very simple and the mode apparently would suggest itself to any feeder who proposed to pursue the most profitable course, which is that the animal should be kept constantly in a growing, thrifty condition by having a full diet of nutritious food adapted to the growth and building up of the young animal frame. Muscle and bone are the constituents of all growing animals, while fat is the surplus accumulation of the matured beast. Fat is an unwholesome product of the young of all species, and adds nothing to the well-being and good health of the old. But the breeder of stock who allows it to stand still or not gain steadily in flesh, without over feeding to fatness, is losing sight of his own profit. J. D. Gillet, of Elkhart, Illinois, who exhibited the fat prize ox at the fat cattle show held at Chicago, last December, gives his mode of feeding young animals. He says:

"I feed my young cattle just enough to keep them strong through the winter months. After they are two and a half years old, commence feeding corn winter and summer until I send them to market. Attend to them closely and keep them improving from the time they are fed on corn to the time they leave the farm. Generally feed eight to twelve months on corn. Intend from this time to feed one year younger and send one year sooner to market. Think I can get my steer at thirty months old to weigh 1,700 lbs. This course will pay much better than to keep them until thirty-six to forty-two months, and get an average of 2,000 to 2,100 lbs out of the cattle."

This is a very brief and plain direction—so plain that it would seem that even a wayfarer could not err, and yet those who keep their stock, young and

old, on short rations through the winter under the mistaken notion of economy, are legion. Such feeders pursue the unwise policy of saving at the tap and letting run at the bung.

Sugar Beets for Fattening Swine.

An experiment was tried some time ago by a New England farmer in fattening a pig which fed largely on sugar beets. The animal was about a year old and the feeding on boiled sugar beets, tops and roots, began on the 16th of August, and was continued three times a day until the 1st of October, after which ground feed was given, consisting of two parts of corn and one of oats, three times a day until the animal was slaughtered, the meal being mixed with cold water. The result was, on the 15th of August, when sugar beet feeding was begun, that the weight was 306 pounds; September 1. 520 pounds, October 1, 450 pounds; November 1, 520 pounds. This is the substance of the statement given, by which we perceive that the increase the last of August, when fed on boiled sugar beets, was at the rate of two pounds per day; the rate of increase on the same food continued through September. When feed on ground corn and oats, made into cold slop, the gain for the next fifty days was less than a pound and a half per day.

POULTRY.

Winter Care of Fowls.

Now that the cold weather is coming on, those who keep poultry should see to it that everything practicable is done to make their fowls comfortable while the fall and winter last. I assume that professional poultry-raisers will attend to this matter without any advice or hints from others, but it is a fact that a great many people who keep hens and other fowls only as an accessory to their farming or other occupations, are accustomed to show some degree of neglect to their poultry during the winter, letting the hens, for the most part, take care of themselves and do the best they can, without being careful to furnish them with proper food and quarters. Now, if poultry is worth keeping at all it is worth keeping well, and no kind of livestock will pay better proportionally for proper care in winter weather than is the case with poultry.

To a certain extent, the warmer the quarters for the fowls the better. If it can possibly be helped they should never be kept in a place where water will freeze, and it would be all the better if their quarters could be kept ten or twelve degrees above zero all the time. It is shameful to keep poultry as some of our New England farmers do, in old, rickety barns, with chinks an inch wide or more between the boards, where the snow can drive in and the wind whistle through. In such cases the hens cannot do much, if anything, in the way of egg making. The man who expects that his hens will lay eggs when they are obliged to expend nearly all of their vital force in their effort to keep warm, and to stand on one leg in order to keep the other from freezing, will find himself sadly mistaken, and no little disappointed in the size of the egg-product. If you wish to have your hens lay in winter, above all things keep your hen houses warm, even if you have to burn a little wood in them on the coldest days. The good effects of warm quarters will be seen not only in winter but in spring as well, for it will not then take the poultry so long to recuperate from the injurious effects of the winter weather.

If the poultry-houses are warm enough it will not so much matter what kind of food the hens have, provided it is wholesome and adapted to egg-making. But it is well to occasionally feed them with warm mashed potatoes and boiled apples, which the hens will eat voraciously. If, however, the hen-houses are as warm as they should be, the necessity for furnishing the poultry with warm food will be so much the less, although it will do them good in any case. As to drinking, the hens should have all the water they need, but the quarters should be so warm that the water will never be in danger of freezing. Give the fowls good quarters, good feed and plenty of water, and they will amply repay you for your expenditure of time and money. Otherwise, you will probably find poultry keeping a dead loss in winter.—*American Cultivator.*

Poultry Habits.

Of all stock, hens are the most easily taught. The education of hens can be commenced at any age; but best while young. They should be housed and shut in every night, and not be allowed to roost on sheds, well-sweeps, or trees; even a neglect to shut the door on them for one night will cause the timid ones to seek a higher roost the next night, and that can only be found out of doors. This leads to laying out of doors—a great nuisance—and to constant loss from night enemies. At sunrise every morning call the hens around you, and scatter a full feed for them; let this always be done on the same spot of ground. Keep in a convenient place, a reservoir of fresh clean water, if you have no running stream. At certain and regular times in the day, you will find the whole flock there. Throw no scraps of food around the dwelling, or you will teach them to become a house nuisance. Burn all the egg shells, or you will teach the hens to eat eggs in the nests. If you coop your chicks, take hen and brood to the hen house as soon as the crop is dispensed with; otherwise, when winter sets in you will have to spend hours every night for a week before they will house well. Protect hens while sitting, by a light board or lattice cover to the nest, so that they shall not be annoyed by other hens wishing to lay with them. In fact, any bad habit, or any which does not suit your surroundings, may be entirely broken up and changed by reasonably preventive measures.—*Rural New Yorker.*

Salt for Poultry.

The question as to whether salt is injurious to poultry has often been mooted. To get at the facts, I have been feeding salt to all my poultry, young and old alike, and closely watching the result. I have fed it in cold mush and hot; in bran and everything else, all the spring and summer, so far, with the following result: The poultry will eat all kinds of salted food in preference to unsalted; they are better in general health; not a louse of any kind in young or old (the first year I have been able to say so), and they are beginning to molt, many of them laying as though not molting. Eggs are cheap now, and the hens will be ready for fall laying when the weather is cold and eggs scarce. This may or may not be the result of feeding salt, but I am compelled to believe this to be so, as are some other peculiarities. I have noticed one feature, which may not be in favor of salt—the hens have seemed to be more persistently inclined to sit, it being very difficult to break off the inclination; they sit much closer than usual. All seem voraciously fond of green food of any kind, and have eaten a large quantity of clover, grass, young corn and other similar food. My observations lead me to the conclusion that salt is a needed condiment for all our poultry, and in all points beneficial to them. Pigeons are excessively fond of salt in any form, and why should not our poultry also? Such being the status it behooves us to consider their needs and attend to them.

Eggs From Different Breeds.

A correspondent of the Ohio *Farmer* says: After repeated experiments with the different varieties of fowls, and comparisons with others who have experimented in the same direction, I have concluded that the laying capacity of the principal varieties is about as follows:

Light Brahmas and Partridge Cochins—eggs seven to the pound, lay 130 per annum.

Dark Brahmas—eight to the pound, 120 per annum.

Black, White and Buff Cochins—eight to the pound, 125 per annum.

Plymouth Rocks—eight to the pound, 115 per annum.

Houdans—same as Plymouth Rocks.

La Fleche—seven to the pound, 130 per annum.

Black Spanish—seven to the pound, 130 per annum.

Leghorn—nine to the pound, 160 per annum

Hamburgs—nine to the pound, 150 per annum.

Polish—nine to the pound, 125 per annum.

Bantams—sixteen to the pound, 90 per annum.

Whole Wheat for Fowls.

The *Poultry World* says: "There is more solid nutriment in whole wheat, as a feed for poultry, than in any of the cereals, weight for weight. It is an excellent kind of grain for this use, though somewhat more expensive than other sorts; but too much of this hearty feed is detrimental, particularly when carelessly fed to Cochins, Brahmas, etc. Fowls are very partial to wheat. It helps the laying capacity of hens, but it should not be used except with discretion as to the quantity allowed them daily. An excess of this raw grain will induce a looseness in the bowels very frequently. It is easy of digestion, and should be furnished in moderation, as a needful and most desirable variety, in conjunction with other dry grains, such as cracked corn, oats, barley, buckwheat, etc. If not more than one-third or one-fourth of wheat is allowed with the other cereals mentioned, for ordinary purposes in the laying season, hens will do quite as well, and they can thus be kept in better average condition than by a greater allowance."

LITERARY AND PERSONAL.

LAND AND HOME.—"For land owners and home lovers every where—farmers, gardeners, stockmen, village folks and city people with rural tastes." Terms $2.00 a year in advance, 37 Park Row, New York. No. 1, vol. 1 of this beautiful 16 page quarto monthly has reached our table. The quality of the paper and the typographical execution are faultless, and nothing has come within the focus of our vision for a number of years that is so easily read by those advanced in life. This may be no special merit with the young, but it is a mighty great one with the old. Single numbers may be obtained for five cents, and we feel satisfied that those who are interested in the line of its specialties cannot do a better thing than to send for a number and judge for themselves. The articles are crisp, short and able, and are on various subjects within its line of specialties. It is solid all through, in the style of THE FARMER, and has only one column more than a single page of advertisements. The great increase, emigration, and great expansion of our population would seem to indicate an opening for such a journal, and if there is, we deem *Land and Home* a worthy candidate for it.

THE NATURALISTS' DIRECTORY for 1879, containing the names, addresses, special departments of study, &c., of the naturalists, chemists, physicists, meteorologists and astronomers of North America. Edited by Samuel E. Cassino, Boston, Mass., 299 Washington street, S. E. Cassino, publisher. This useful little 12 mo. volume—which, only three years ago was only issued as a pamphlet—has already assumed the dimensions of a clever sized book of 278 printed pages, exclusive of a number of blank pages (for the purpose of filling in such names as may come to the knowledge of the possessor.) The edition 1879 contains 3139 names, together with a copious index arranged alphabetically in States. Price $1.00 in paper covers, and from $1.25 to $1.50 in other styles of binding. The army of naturalists seems to be increasing, or at least their whereabouts are becoming known, creating a community where there had previously only been isolation, and in this consists the main usefulness of the work, not only to naturalists themselves, but also to the public who may desire to be in communication with them.

ILLUSTRATED HOME ALMANAC FOR 1880.—Price 10 cents. Published by C. W. Leach, Concord, Mass. This is a remarkably well executed 12 mo. of 32 pages, containing the usual calculations adapted to the various latitudes in the United States and Canada, besides thirty interesting literary articles and fifteen finely executed illustrations, exclusive of an ornamental title page on the cover. How forcibly the illustrations on the cover represent two prominent periods in human life, both of which we have often experienced. Old Father *Time* is represented driving a horse and sleigh, with a single passenger in a seat behind him. In the first tablet he is accompanied by a youth, who is urging him forward and says, "Do drive on, Father Time, I never saw such a wretched old slow poke as you are in my life." In the second his passenger is an old man, and he says, "Hold on! hold on my friend, don't drive so fast, I am not in a hurry." Some of the other illustrations are equally characteristic, especially that entitled "April fool—Boys will be boys."

THE FRUIT RECORDER AND COTTAGE GARDENER.—"To till and keep, and of the fruit to eat, and the beautiful to enjoy." monthly at $1.00 per year, A. M. Purdy editor, Palmyra, New York, published at Rochester. This is a 16 page royal quarto, similar in style to the foregoing, and devotes eleven columns of the October number to "Questions and Answers," a very instructive feature where people are sufficiently inquisitive to ask the questions, which is not always the case. This journal is exclusively devoted to fruit and garden vegetation, and contains a great amount of practical information on these useful subjects. The question and answer department, which is even more extensive than that of the *Scientific American*, we regard as a most useful feature in horticultural literature.

THE JOURNAL OF SCIENCE.—An illustrated periodical of practical information, designed for popular reading and devoted to the diffusion of knowledge. A demi folio published monthly, at $1.00 a year in advance, by the "Journal of Science Publishing Company," Toledo, Ohio, E. H. Fitch, editor. A very handsome little paper and just what its title indicates it to be. Its matter is mainly original, and is written with scientific ability, and the illustrations are ample and of a superior order. Typographically it is faultless and easy to read; in this respect it is admirably adapted to the vision of the advanced in life, which is a great *desideratum.*

THE BEE-KEEPERS EXCHANGE.—A magazine devoted exclusively to the best interests of producers and consumers of honey. Published monthly at Canajoharie, New York State. J. H. Nellis editor and publisher. Seventy-five cents a year in advance with liberal deductions for clubs. This is an octavo of 14 pages, exclusive of tinted covers, and seems to cover the ground indicated by its title, and is liberally embellished. Its matter is practical and instructive.

ECLIPSE ERA.—"Something good for everybody." A demi-octavo of 24 pages. Published by Frick & Co., quarterly, at Waynesboro', Franklin county, Pa., "U. S. A." Contains, in a condensed form, a widely diversified *quantum* of solid literary matter. No. 5, Vol. 1, for October, has been laid on our table and we like it.

CASE'S BOTANICAL INDEX and illustrated Quarterly Botanical Magazine, Richmond, Indiana, comes laden with its usual freight of fruit and floral riches, 30 pp. 8vo., finely illustrated, and only $2.00 for five copies, or 15 cents for a single number.

MISCELLANEOUS.

Consumption Cured.

An old physician, retired from practice, having had placed in his hands by an East Indian missionary the formula of a simple vegetable remedy for the speedy and permanent cure for Consumption, Bronchitis, Catarrh, Asthma, and all Throat and Lung Affections, also a positive and radical cure for Nervous Debility and all Nervous Complaints, after having tested its wonderful curative powers in thousands of cases, has felt it his duty to make it known to his suffering fellows. Actuated by this motive and a desire to relieve human suffering, I will send free of charge to all who desire it, this recipe, in German, French, or English, with full directions for preparing and using. Sent by mail by addressing with stamp, naming this paper, W. W. SHERAR, 149 *Powers' Block, Rochester, N. Y.* [oct-3m

Worthy of Attention.

Each volume of the *American Agriculturist* gives some 800 original engravings, with descriptions of labor-saving and labor helping contrivances, of plants, fruits, flowers, animals, etc., including many large and pleasing, as well as instructive, pictures for young and old. The constant, systematic exposures of humbugs and swindling schemes by the *Agriculturist* are of great value to every one, and will save to most persons many times its cost. Altogether, it is one of the most valuable, as well as cheapest, journals any where to be found. The cost is only $1.50 a year, or four copies for $5. Single numbers 15 cents. Subscribe at once for 1880, and receive the rest of this year free, or send three-cent stamp for postage on a specimen copy. Address Orange Judd Company, Publishers, 245 Broadway, New York.

A New Book.

W. R. Bierly, Esq., of the Williamsport (Pa.) bar, has issued a new book, "The Rights and Duties of County and Township Officers." It contains all the acts and decisions in relation to the various county and township offices, is a complete hand-book for election officers, and treats the tax laws fully. Every officer and tax payer will buy one. It contains 300 pages, neatly printed, bound in cloth and gold, and sold at $2 per volume. The *Wellsboro' Agitator* says: "A book of this kind is badly needed by the local officers of the State, and we believe Mr. Bierly's compilation will be found of great service. Members of the bar commend it heartily."

Munn & Co's. Hand-book.

The Scientific Hand-book is the name of a work published by Munn & Co., New York, and is a valuable little book to inventors, authors, and in fact, almost every one. It is a treatise relating to patents, caveats, designs, trade marks, copyrights, labels, etc.

They are the publishers of *The Scientific American*, a large first-class weekly paper, 16 pp, profusely illustrated with engravings representing the newest inventions and the most recent advances in the arts and sciences.

Schum's New Store.

Philip Schum, Son & Co. have opened a store in the building formerly occupied by H. Z. Rhoads & Bro. as a jewelry establishment. They keep on hand of their own manufacture, quilts, coverlets, carpets, counterpanes, etc., besides ladies' furnishing goods and notions. They pay particular attention to the manufacture of customer rag carpets, besides doing dyeing and scouring of all kinds. Their store is a handsome one, and is well worth a visit.

The Examiner and Express.

The Weekly Examiner and Express is published every Wednesday at No. 9 North Queen street. It is a large four-page paper, with a supplement, and contains just the kind of reading matter to make it a desirable family newspaper. The subscription price is two dollars a year. Subscribe for it.

The Secret Key to Health.

The Science of Life, or Self-Preservation, 300 pages. Price, only $1. Contains fifty valuable prescriptions, either one of which is worth more than ten times the price of the book. Illustrated sample sent on receipt of 6 cents for postage. Address, Dr. W. H. Parker, 4 Bulfinch St., Boston, Mass. oct-3m

The Dentaphone.

The American Dentaphone Co., 287 Vine street, Cincinnati, Ohio, advertise in this issue of THE FARMER the Dentaphone. It is an instrument to take the place of the ear trumpet, and on application they will send a pamphlet explaining it.

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Dr. S. S. RATHVON, Editor. LANCASTER, PA., DECEMBER, 1879 JOHN A. HIESTAND, Publisher.

Entered at the Post Office at Lancaster as Second Class Matter.

CONTENTS OF THIS NUMBER.

PENNSYLVANIA RAILROAD SCHEDULE.
Trains LEAVE the Depot in this city, as follows:

	Leave Lancaster.	Arrive Harrisburg.
WESTWARD.		
Pacific Express*.....	2:40 a. m.	4:05 a. m.
Way Passenger†	5:00 a. m.	7:50 a. m.
Niagara Express.....	10:05 a. m.	11:20 a. m.
Hanover Accommodation..	10:10 p. m.	Col. 10:40 a. m.
Mail train via Mt. Joy.....	11:05 a. m.	12:40 p. m.
No. 2 via Columbia.....	11:07 a. m.	12:35 p. m.
Sunday Mail.....	10:50 a. m.	12:40 p. m.
Fast Line*.....	2:10 p. m	3:25 p. m.
Frederick Accommodation.	2:15 p. m.	Col. 2:45 p. m.
Harrisburg Accom..	5:45 p. m.	7:40 p. m.
Columbia Accommodation..	7:20 p. m.	Col. 8:20 p. m.
Harrisburg Express	7:25 p. m.	8:40 p. m.
Pittsburg Express	8:50 p. m.	10:10 p. m.
Cincinnati Express*.....	11:30 p. m.	12:45 a. m.
EASTWARD.	Lancaster.	Philadelphia.
Atlantic Express*.....	12:25 a. m.	3:00 a. m.
Philadelphia Express†.....	4:10 a. m.	7:00 a. m.
Fast Line*.....	5:20 a. m.	7:40 a. m.
Harrisburg Express.....	7:35 a. m.	10:00 a. m.
Columbia Accommodation..	9:10 p. m.	12:20 p. m.
Pacific Express*.....	1:25 p. m.	5:40 p. m.
Sunday Mail.....	2:00 p. m.	5:00 p. m.
Johnstown Express.....	3:05 p. m.	5:50 p. m.
Day Express*.....	5:20 p. m.	7:20 p. m.
Harrisburg Accom.....	6:25 p. m.	9:30 p. m.

The Hanover Accommodation, west, connects at Lancaster with Niagara Express, west, at 9:35 a. m., and will run through to Hanover.

The Frederick Accommodation, west, connects at Lancaster with Fast Line, west, at 2:10 p. m., and runs to Frederick.

The Pacific Express, east, on Sunday, when flagged, will stop at Middletown, Elizabethtown, Mount Joy and Landisville.

*Runs daily, except Sunday.
†Runs daily, except Monday.

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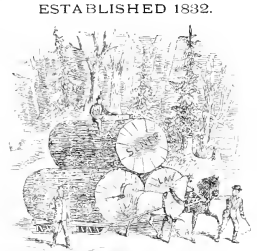

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Nov-1y

The Lancaster Farmer.

Dr. S. S. RATHVON, Editor. LANCASTER, PA., DECEMBER, 1879. Vol. XI. No. 12.

EDITORIAL.

TO OUR PATRONS.

This number concludes the *eleventh volume* of THE LANCASTER FARMER, and we tender to our patrons our annual Christmas greetings. We have struggled through another year, and we have done what little we could in advancing the material and social interests of the class we represent. That we have not done more may have been from a want of resources more than from a want of will. From the dark night of adversity through which we, in common with the great majority of our countrymen, have been passing for a series of eventful years, we trust that we now are emerging into the light of a brighter day, and that the facilities for a higher and more enlarged usefulness, on our part, may be speedily and amply developed. Time, circumstance, and home and foreign opinion, have only more firmly fixed in our mind and heart, that our great county cannot afford to be without a local exponent of her agricultural interests, whether she herself is cognizant, or ever will be cognizant, of that fact or not. Neither individuals nor communities are always the best judges of what *ought* to be. Progress is aggressive, reformation is aggressive, and so is social improvement. If it were left to the dictation and movement of the masses, there would be little, if any, either moral, social or mechanical progress. The minority, and often the few, stimulated by irresistible impulses of progress, harness themselves to the car of improvement, and pull it and push it through avenues and into places it never would be found, if it had to be accomplished by the voluntary and simultaneous efforts of the masses. Hence the whole newspaper and publishing machinery of our country, and all other civilized countries, has ever been an aggressive work. It has not stopped to cavil with the people, as to whether its presence has been a necessity or not, but it has labored to *make* itself a necessity, and slowly but surely the people are beginning to recognize its empire. Annihilate the press, and you seal the doom of civilization. The pregnant fact that the press is so amply sustained in our country, in the very face of its great abuse, is a living testimony of its use, as a lever of civilization. If this is true as a general proposition, it cannot be otherwise than true in its particular application. That community which most liberally sustains the press, must necessarily be endowed with a corresponding degree of mental culture, for it is the ignorant and illiterate who do not read. With these views as a preliminary, it must be apparent that the higher and more important the industrial interest, the greater need of a medium through which its principles and its progress may be brought before the people. Agriculture is not merely a secondary, or a third rate interest. It stands first and foremost, a head and shoulders higher than any other interest that can possibly engage the minds and hands of men. It is the base of our social structure, and it would be but a natural conclusion to expect that such an interest should have its literature, and its literary representative wherever it exists as a human occupation. Time was when there were no agricultural publications, but for the matter of that, there was a time when there were no publications of any kind. So also there was a time when there was no modern plow, reaper, thresher, and numerous other implements used in husbandry, which have been developed through the necessities pertaining to domestic economy. So also there was a time when there were no steam engine, no railroad, no telegraph, no gaslight, and many other things now included in the category of modern improvement; but, as true progress can make no step backward, it would be just as possible to dispense with all these things, as to dispense with newspapers and other literary publications, and especially those devoted to the interests of local agriculture. It is these considerations which have stimulated us in our efforts to build up in Lancaster county an agricultural journal, and this must be the apology for our long perseverence in that direction. Agriculture is a "fixed institution;" no degree of prosperity or adversity can diminish the demands of the human family upon the storehouse of its sustaining treasures. When many occupations become a *luxury* too expensive to be indulged in, agriculture still remains as an all-pervading and ever-present *necessity*.

We desire our patrons and the public to maturely ponder these things, and reflect whether the sphere of our journal cann t, and ought not, to be materially increased. The prospects now are that the American farmers will become the feeders of the world, and it is through the medium of the press that their interests, both at home and abroad, can be most effectively represented. The American farmers are now enjoying a degree of prosperity not enjoyed by any other occupation, nor by any other country in the world; they have a "sure thing" under any circumstances, and our wish is that they always shall have. Time is "marching along," and it is but meet that they should "keep step" and march abreast with it, if not in advance. A year of reasonable health and plenty to the farmer, is now coming to a close, and if there is no occasion for thankfulness and liberality now, then it is not likely such an epoch will ever occur. But before the advent of another year we will pass through that festive season which commemorates "peace on earth, good will towards men," and if there has been the least goodness or liberality hidden down in the will and affections, during the year, that could not be ultimated on account of the cares and anxieties of business life, the "coming event" will be likely to develop it then. That peace, friendship and good cheer may be the lot of all our friends and patrons is our greeting being their *Merry Christmas* holidays.

ANALYSIS OF THE FARMER.

In preparing the index of THE LANCASTER FARMER, for the year 1879, we were more than ordinarily impressed with the amount of labor the editing of our journal involved during the year, a labor of which few can form a just conception, until the matter is analytically and statistically brought to their notice. We find that volume eleven, of which the present is the concluding number, contains *one hundred and ten* editorial articles, from a quarter column to a full page or more in length. But this is not by any means the most laborious division of the work. We believe we but reflect the general sentiment of the editorial "craft," when we say that "conning" half a hundred monthly and semi-monthly exchanges, periodically, and making selections therefrom, adapted to any special locality, is more laborious, perplexing and fatiguing, that writing original papers. Of course this may not be universally the case, but it is measurably so, as far as *we* are concerned. Many people imagine that an editor ought to remember all that he has written during the year, and be able to recall it in detail, under any circumstance, and at any time or place; but as well might they expect a compositor to recall and repeat all that he has put in type during the year. In addition to the above number of editorials, *five* communications, *fifty-seven* contributions; *twenty-three* essays; *twenty-one* queries and answers, and *one hundred and twenty-two* personal and literary notices, have appeared among its original matter, making in the *aggregate three hundred and seventy* original papers, a little over one for each working day in the year. In addition to these we have published *eighty-seven* special selections, some of which covered more than a page; besides *eighty-three* excerpts on agriculture; *seventy-three* on horticulture; *seventeen* on floriculture; *seventy-two* on domestic economy; *fifty-eight* on live stock; *seventy-one* on poultry; *thirty-six* on insects, and *eighteen* on the apiary. We have also published the proceedings of *thirteen* meetings of the Agricultural and Horticultural Society; *twelve* of the Poultry Association; *four* of the Beekeepers' Society; *twelve* of the Linnæan Society; *seven* of the Fulton Farmers' Club; *four* of the Warwick Farmers' Club; *one* of the State Board of Agriculture; *one* of the State Miller's Association, and *one* of the Pennsylvania Fruit Growers' Society; besides *one hundred and fifty-eight* household receipts. All these literary items, numerically amounting to *ten hundred and fifty-eight*, whether original or selected, had to be carefully read, picked over letter by letter, and put into print, for the edification and instruction of the farming public. This literary feast has been furnished during the year 1879 for the small sum of *one dollar*. Our main object has been to furnish permanent and standard matter that will not "spoil" by being kept for future reference by posterity.

SPECIAL NOTICE.

We wish to impress it upon the memory of the subscribers of THE FARMER, that the editor has nothing whatever to do with the subscription list and book accounts, nor with the terms and tenure of the advertising department; those matters belong to the specific domain of the publisher and proprietor. It seems superfluous to make this statement here, for it is made in every number of THE FARMER throughout the year. But we are so often written to on subjects purely relating to the publishing department, that we feel compelled to admonish the patrons of the paper to read, think and act in accordance therewith in relation to this subject. Of course, when convenient, we hand these communications over to the publisher or his agents, but our residence is not in or near the printing office, and if we are too much engaged, the matter is likely to be forgotten before we may have occasion to visit the office. The functions of editor and publisher are entirely distinct; and it appears to us that no one of common intelligence could possibly make a mistake in this respect; and yet it is made over and over again.

EDITOR.

OUR CONTRIBUTORS.

We return our sincerest thanks to those friends who have contributed to our columns during the year 1879, and especially to those who have continued their contributions through "rain and shine," through "thick and thin," through "ill-report and good," those who have lifted themselves up, and only considered the advancement of our journal and the dignity of our community, without regard to person. While we are none the less thankful to all, no matter how brief their donations to our columns, or how "few and far between," we still must regret that those have almost ceased to "write for THE FARMER," whom we had flattered ourselves felt the deepest solicitude for its success. Of course we mean no rebuke, for every one is presumed to know his own business best, and how far it is within the scope of his time, convenience,

or ability to write. We admonish them however not to entirely forget us. The *status* of an agricultural journal is very much what its literary contributors make it. We hope to hear from them anon.

CONDENSED TRUTH.

"Every farmer of Lancaster county should subscribe for and read the LANCASTER FARMER, our home agricultural organ—and the many thousands of farmers elsewhere throughout the union would also find that by subscribing for THE FARMER they would be making a most judicious investment of a dollar, as it is published in the most advanced agricultural community in the land, and is thoroughly practical throughout. Farmers, try it for one year and be convinced of its value. J. A. Hiestand, publisher, Lancaster, Pa."—*New Holland Clarion, December* 13, 1879.

A great truth compressed into a very small space—indeed good things generally come in "small packages." The above is only one among the many testimonials to the excellence of the LANCASTER FARMER which we have received during the past year, and we prefer to make use of this because it comes from nearest to our own home. Our excellent contemporary knows whereof he speaks, and no more appropriate time could be taken advantage of to follow his wholesome advice than *just now*. If you wish to know the intrinsic excellence of a thing the best way to obtain that information is to ask those who are nearest related to it. If you wish to know the quality of a man, ask his wife, his children or his neighbors. Newspaper publications have their different spheres of operation, within which spheres nothing out of them can so effectually perform their special uses. The country press is much more than the country gives it credit for. Take any of our metropolitan journals and notice how largely they quote from the country press, and if that source of information was entirely suppressed they would be very dull things for general country reading. The LANCASTER FARMER is the only purely agricultural journal in Pennsylvania, outside of the city of Philadelphia, and is published in the centre of one of the most wealthy, prolific and intelligent districts in the State. As an advertising medium of any thing relating to its specialty, it has no superior in the county, if in the entire State, and it scatters its information in regions far beyond our State and county borders. What we ask for ourselves we also ask for other local journals, and especially for the *New Holland Clarion*, which has most deservedly become one of the fixed institutions of our county. May its lamp continue to burn, even if ours should be extinguished.

THE INCUBATOR.

How to Hatch Chickens Without Hens.

"The incubator which is to be in operation and on exhibition at the show of "The Lancaster County Poultry Association" has arrived here, and is now being put in operation at the house of Mr. J. B. Lichty, in order that the chicks may be coming out on the several days of the show, and for the present is under the care and management of Mr. John C. Burrowes.

At first view the incubator looks like a box with two drawers in the front, a hole with a valve in it, an electric battery with an electro-magnet and some clock-work on the top, and a lamp with a boiler on the end. When the drawers are opened, the bottom of which is wire netting, are seen a pyrometer and a thermometer. Under the egg-drawer there is a large, shallow pan filled with water; this is to keep the eggs moist. Between the pan and egg-drawer there are iron tubes with small holes in them, extending from side to side of the machine. These are to give a free circulation of fresh air. Directly above the eggs there is a tank extending over the whole top of the machine. This tank is in connection with the boiler at the end, and there is a circulation between them, so that all the water is kept at about the same temperature.

But what is the use of the electric apparatus? Well, when the heat gets up to a certain temperature it acts on the pyrometer, which is connected with the battery and the magnet, and completes the circuit. As soon as this is done, the magnet attracts the armature, and this starts the clock which opens the valve and lets in cool air until the pyrometer contracts and breaks the circuit, when the valve closes. In this way a very regular temperature is maintained. A great deal more might be said about this ingenious machine, but the above will do until the time of the exhibition, when all can go and see for themselves, and will be fully repaid for so doing."

We *clip* the above from the daily *Intelligencer* of the 13th inst., as an additional reminder to our readers (if such a thing be necessary) of the great poultry show to come off at Locher's building, corner of West King street and Centre Square, commencing January 2d, 1880. Everything indicates that this will be the greatest event of the season—indeed it bids fair to eclipse any thing ever gotten up in Lancaster heretofore. The statistics of the egg and chicken trade of our country are matters of great magnitude, and they are rapidly increasing. None of our readers should by any means fail to witness it or become exhibitors. The list of premiums is very liberal, and everything will be done to render ample justice to all who may feel disposed to participate in it. Therefore we say, "don't fail to *come and see*."

METEOROLOGICAL CONTRAST.

Unprecedentedly Cold Weather Throughout Europe.

"LONDON, Dec. 11.—The weather continues severe throughout the kingdom. In Paris the Seine is frozen over for the first time since 1861. Vienna reports hardest and most continuous frosts at this season of year since 1838. Snow in Sicily and Calabria still impedes communication. In Berlin the cold is still intense. In Upper Silesia, where famine prevails, the thermometer marked twelve below zero, Fahrenheit, Thursday."

From the foregoing paragraph it will be observed that the people of Europe are not favored in their meteorological conditions as we, thus far, have been in this western hemisphere of ours; and that instead of having unprecedentedly *cold* weather, it has been almost directly the reverse. On the 8th of December a pea-sprout, nearly two inches long, was given us, that had been found growing between two bricks in a paved yard, where it had no weather protection whatever. Now, young pea-plants are amongst the most delicate of our culinary vegetation. That the seed of the pea should have germinated and grown in such a situation, is an indication that our weather must have been very mild indeed—something like May or June. On the 9th of December we took a stroll down to the extreme southern extension of S. Duke street. The sun was very warm, although the air was bracing, and withall, exhilarating. Among other subjects of the vegetable kingdom, we found a "dandelion" (*Taraxacum dens-leonis*) in full bloom; a golden flower of which we plucked and brought in house with us. That fact must surely indicate a pleasant condition, contrasted with the physical condition of the poor distressed people of foreign countries. Two or three winters ago we found the dandelion in bloom every month, from November to May; therefore it would be difficult to determine whether our "find" on the 9th inst. was an immature one of 1879, or a premature one of 1880. It seems they are always ready to bloom when they have the necessary heat and light. On the 10th of December the bees were in our garden. The only plant in bloom was the "black hellebore," and the bees fairly reveled in its widely expanded flower-cups. Since then we have had warm rains, a "clear up," and a moderately "cold snap," and slight freezing.

SCIENTIFIC NOMENCLATURE.

The great similarity in scientific names often sorely taxes the mental energies of the novice or the amateur, especially if he has received no education in the languages. But, there are some of these names that seem so arbitrary and "far fetched" that if we even know their *roots* we find little or no analogy whatever between the specimen and the object or objects from which it derived its name. As many of the generic and family names of plants and animals are Greek compounds it is possible that in the long lapse of time since Greek was a living language the meaning of many words may have become contracted, corrupted or entirely changed. This must also be the case with many Latin names. We remember our disappointment when we consulted a Latin dictionary to find the definition of *Cicindela* (a name applied to a genus of "Tiger-beetles,") to find that it meant a "glow-worm;" because we had previously been familiar with the glow-worm as a species of LAMPYRIDÆ, a luminous insect having no more generic or family alliance with a *cicindela* than a goose has with a golden pheasant. It is not only the arbitrary alleged *roots* of names in natural history, but also their *similarity* that perplexes the student of nature. This is however unavoidable, for their volume, numerically, so increases that it is difficult for language to supply terms by which to designate them as fast as they are discovered. Moreover, the specific shades of difference are so slight that they only warrant a slight modification of the name. Below we adduce a few familiar examples out of the multitudes that exist.

LYCOPODIUM: this term is a Greek compound, and literally means "Wolf's-foot," from *Lykos*, a wolf and *pous*, a foot, and is applied to a family of mosses, (LYCOPODIACÆ) familiarly called "club-mosses." When this moss is in fruit the spikes look like diminutive "clubs," and a cluster of these spikes might, by a prolific exercise of the imagination, be contorted into the form of a wolf's foot. Notwithstanding these names may seem "far fetched," there is no help for it now, therefore, we must accept them as they are and make the best of them we can.

LYCOPERSICUM: this is also a Greek compound, and literally means "Wolf-peach," from *Lykos*, a wolf and *persicon*, a peach, and is applied to a genus belonging to the family SOLANACEÆ embracing the nightshades. There is but one plant belonging to the genus, and that is now known under the name of tomato, although formerly it was known as the "Love Apple." The potato, (*Solanum tuberosum*) belongs to this family, and as it bears an apple on its vines which contains seeds similar to those of the tomato this may have originally suggested the name of *apple* for the fruit of the tomato. But there is nothing in connection with the latter that could possibly suggest the ideas of *wolf* or *peach*, and therefore these names are entirely fanciful.

LYCOPERDON: this is another Greek compound, and litterally means "Wolf's-f—t., from *Lykos*, a wolf and *perdon*, to eructate or "break wind;" the latter of which may allude to the explosion which follows the pressure of a "puffball;" for this name is applied to a genus of Puffballs belonging to the family LYCOPERDACEÆ, which includes the spherical *fungi*. The objects in natural history are so numerous, and the poverty of human language is so manifest that we must bear with these remote, and in many instances, insignificant, derivations of names.

LYCOPERDINA: this is also a Greek compound, but it is not primitive in its character and significance. It is the name of a genus of small beetles that belong to the family EXOMYCHIDÆ. Possibly this genus may originally have been found feeding on puffballs, and received its name from that circumstance; just as *Boletophagus* derives its name from feeding on a species of fungus named *Boletus*.

LYCOPUS: another Greek compound, and

also meaning a wolf's foot, from *Lykos*, a wolf and *pous*, a foot, and is applied to a genus of plants belonging to the family LABIATÆ, which includes the Mints, Dittany Pennyroyal, Hoarhound, &c. As these plants are familiar to most readers, they will see how much any of them resemble a wolf's foot.

LYCOPSIS: a Greek compound, meaning a wolf's eye. Applied to a small genus of Borrageworts, (*Borraginaceæ*) including the Heliotropes, Borrages, Buglosses, Comfreys, &c. The name is suggested by the small blue flowers of *Lycopsis*, which fancy has likened to a wolf's eye.

The reader may be surprised that the wolf is so signally symbolized in naming the subjects of the vegetable kingdom, but he will remember that if it had not been for a wolf we probably should never have had a Romulus, nor a Rome.

QUERIES AND ANSWERS.

APHIS PERSICA.

H. R. F., Lancaster, Pa.—The peach branches sent us near the end of November, infested by a very large number of small brownish insects of different sizes were duly examined, and we think that the insects without a doubt are the last brood of the season of the "Peach-Louse" (*Aphis persicæ*.) They appeared to be male, female and young of various sizes and ages. Of course by this time they all have perished, but it is very likely the females have "bridged" the season by the deposition of many eggs, which will incubate and bring forth a numerous brood next spring, as soon as the weather becomes warm enough to hatch them out. We never saw so many aphids crowded together in the same space before at this season of the year, which, we think is due to the extraordinary warm weather we had during the past autumn. It would be difficult to say positively what would be good for them. So far as it concerns the aphids themselves, they are easily destroyed. White Hellebore, powdered, diluted Paris-green, lime, ashes, road dust or finely powdered tobacco, if applied after a shower, or when the trees or plants are covered with dew, or after an artificial shower, will effectually destroy them if the application reaches them. A tobacco decoction, common lye diluted, a solution of whale oil soap, besides many other liquid substances will have the same effect—indeed they are such delicate little creatures that millions are destroyed by a common shower of rain, especially if it be a cold rain. But from the fact that the eggs on the naked branches will endure the cold of the severest winter, even when the branches are covered for weeks with ice or frost, it must be apparent that the applications can have but little effect upon *them*. Well, what then? Why, so far as it can be judiciously done, prune away the branches that are known to have been infested and burn them, and begin early in the spring with your applications, or as soon as the young aphids emerge from the eggs. A little patient and persevering labor bestowed on trees and plants at that period will save a great deal of trouble during the summer and autumn following.

APHIDS.

LOUELLA P. O. Delaware co., Pa., November 18, 1879.

"S. S. RATHVON—*Dear Sir:* Enclosed I send you some insects gathered from carnations in my green-house. The plants are potted plants, and came from Schroyer's green-house, Lancaster, about a week ago. Other carnations from Schroyer's, taken from the garden about the same time show no signs of insects of any kind. Please enlighten me on the subject."—*Very truly yours, S. W. M.*

Your insects are also *aphids* or "plant-lice," but are of a different species from the above, and would yield to the same remedies. Being in the green-house you would be likely to have them all winter, and could apply the remedy or remedies at any time. We notice that a few of them (two or three) are infested by a parasite. If the temperature of the green-house was congenial to their development these parasites(CHALCIDÆ) might eventually destroy the aphids. Of course if you destroy the aphids you must involve the chalcids in the same destruction. The history of aphid life, habit and procreation is a very singular and complicated one. The development of the same species would be different in the open air from what it would be in the green-house, at least it would differ in its powers of continuation. The aphids that infest perennials also differ in their economies from those which infest annuals, or succulent vegetation. Those that infest trees and shrubbery, we may suppose, deposit their eggs on the branches, and are carried over from one season to another in that manner, the eggs hatching in the spring as soon as the leaves, the bloom and the young and tender scions appear.

It is not so easy to account for the appearance of those that infest plants. For instance, the seeds of plants of different kinds, may be sown and no aphids seen until they are pretty well advanced, or in bloom, as is often witnessed in cabbages, about the time they begin to "head," and in a very short time a whole "patch may be overrun with aphids, although none had been seen before. Some years ago the oat crop all over Lancaster county, and other parts of Pennsylvania, (in some localities also the young wheat, after the blooming season) was seriously infested by the "red-aphis" or oat aphis, (*Aphis mena*). There were millions upon millions of them, giving the fields a brick-red color, and diminishing the size and weight of the grain; in many instances reducing the crop to a merely straw value. We passed through oat fields of from ten to twenty acres in each, and found the aphids from the centre to the circumference of the fields, the stems and grains perfectly festooned with them, all engaged in pumping the very life out of the crop. It was during the war of the rebellion, and an extensive purchaser of supplies for the army informed us that much of the oats of that season only weighed from fourteen to sixteen pounds to the bushel, whereas the standard weight is from thirty-three to thirty-five pounds. After the depleted crop ripened, the aphids disappeared, and except in a few isolated instances, and in limited numbers, they have not since then reappeared. They were not noticed on the oats until after the bloom, and the grains began to fill. Now, the problem that needed solution, and is still unsolved, is, where had they or their eggs been secreted from the opening of spring until their appearance on the wheat and oats? It is very certain that had the aphids appeared in such vast numbers when the oats and wheat were only a few inches high, they would never have been able to put forth heads and form grains. On that occasion we noticed more "lady birds" and their larvæ, and also the larvæ of more "lace-wings," in one day, than we before or since have noticed in a whole year. We also noticed that the spaces between the fence rails on the windward sides of the fields there were more "cobwebs" than we ever before or since noticed, and these were densely covered with winged aphids, for both sexes of this species were amply provided with wings, which is not the case with all the species. Two years ago the cherry trees of this county were seriously infested by a dark brown or nearly black aphis, (*Aphis cerassi*) commonly known as the "black" or "cherry aphis," which were most numerous about the time the cherries began to ripen. On that occasion we found a young cherry tree about six feet high in the very centre of a twenty acre enclosure of a thickly wooded forest land, and that small tree was covered from the base to the apex of all its branches with these black aphids, and there was hardly a single sound leaf on it. About one in a hundred of these had wings. Although the underwood was dense, and there was much tall and succulent vegetation, yet we saw no aphids in the enclosure save those on the little cherry tree, and these were the same species as those found elsewhere on the cherry. This may illustrate that although there are species that feed indiscriminately on different sorts of vegetation, there are other species that confine themselves to one kind. The peculiarities of the history, habit and transformations of some species are not difficult to trace and observe if we have time and patience, but others are more or less enigmatical. For instance, out of the eggs deposited on the branches of the trees in the fall, a brood of fertile females will be produced the following spring. These will differ entirely from the parent that deposited the eggs from which they were developed; in short they are not *oviparous* but *viviparous*, and accordingly bring forth their young alive, and one at a time, just as a cow brings forth her calves; and this process will be continued "all summer," or, as some say, to the "fourteenth generation;" but *we* think, as long as the weather continues warm and genial, as we have observed them so bringing forth their young during warm "spells," as late as the middle of November.

But usually when the cool autumn weather approaches and the leaves begin to fall, and vegetation in general loses its succulency, a brood of males and females are produced, the former fertilizing the latter, which then become oviparous and deposit their eggs and then die. These eggs perpetuate the species, carrying them through the most rigid winter unharmed, and from these eggs the next season's crop is propogated. Now it has been demonstrated that if infested plants, trees and shrubbery are removed to a hot or green-house the aphids will continue in their viviparous condition, and in that manner continue reproducing, just as if no winter had intervened, especially in those species infesting perennials. Although there are distinct species of aphid that infect distinct species of plants, or more than one species found on the same vegetation, yet there is reason to believe that there are some species that are perfectly at home on various kinds of vegetation, especially if it be of the same family. For instance, the *Aphis brassicæ* or cabbage aphis would in the absence of cabbage be likely to infest the cauliflower, kale, broccoli, turnip, radish, mustard, or any other of the CRUCIFERÆ. Plants potted and left out in the garden with a view of subsequently removing them to a green-house, may become inoculated or infested from others in proximity to them before their removal, and by this means be carried into the green-house, where finding the temperature congenial they would rapidly increase, much more than they would outside, where they might be subjected to hindering casualties. It is not at all remarkable that plants in a green-house, where they receive a more careful and constant supervision, should be entirely clean, whilst those on the outside, subjected to contingent incursions, should be more or less infested.

There is perhaps not a tree, a shrub or a succulent plant that is not liable to aphideous infestation during some period of its development, either its, leaves its flowers, its tender branches or its roots, but there are many instances of their seemingly sudden appearance in immense numbers, in which it might be difficult to demonstrate where they came from or what became of them. Moreover, the eggs of all the species of *aphis* are exceedingly minute, not visible to the ordinary naked eye, and those that are deposited on the branches of trees, at least, are covered with a protecting mucilage, insoluble by water. We may infer therefore that the eggs of other species are similarly protected wherever they may have been deposited. For many years it had been supposed that the *Ailanthus* was entirely exempt from insect enemies of any kind, yet a few years ago we found them infested by millions of a large species of APHIDIDÆ, and it is well known

that the leaves of the same tree are fed upon by the *Attacus cynthia*. Analogous to the aphids in this respect, are the COCCIDÆ. We have had an orange tree in our possession ever since it was a foot high. For a long period it was perfectly clean, and we never discovered an insect on it of any kind, but after it was large and old enough to bloom we discovered that it was infested by the "orange coccus." (*Coccus hesperidum*) the same species that infests the oranges of Florida and Europe. These insects were first noticed in February or March, months after the tree had been appropriately housed. We know of no other tree in the near neighborhood. These insects are easily removable by a little time, patience and an old toothbrush. We cannot account for the presence of these *coccí* any more than we can for the presence of *aphids*, for although the males of the former have wings and are able to fly abroad, yet the females never have wings, but remain stationary during their lives after they are once located.

CICADA SEPTENDECIM.

Mr. J. T., Lancaster, Pa.—Your round-backed, clay-colored insect, with the large anterior feet, is the *larva* of *Cicada septendecim*, or seventeen-year locust, in the eleventh year of its development. It is therefore about two-thirds grown, and had six years work yet before it could celebrate its majority. It would be an interesting cabinet to have a collection of these larvæ from one year old up to seventeen years. Some one perhaps will do it *sometime*.

CONTRIBUTIONS.

For THE LANCASTER FARMER.

A CHRISTMAS GREETING.

A Happy Christmas to all, and may charity warm the hearts of all those who have food and fuel, toward those less fortunate, and yet equally deserving. "Remember the poor;" this is easily said, and each one may hope his neighbor may not neglect so great a duty. Individually, it is not so convenient to hunt them up that may be deemed truly deserving, and they, so situated, understand the selfishness of mankind, and know by sad experience, that charity is cold, and they would rather suffer than to be under obligations to those who preach their charity from the house top, and who, out of their abundance, do ostensibly manifest a spirit of charity. Well, thanks that even that much is done by them, but alas! they do not feel the sweet reward of a generous outgushing, sympathizing soul, that gives, and however little, with God's blessing enhancing its value, to accompany it. The recipient feels greatful for the trifle, realizing that the gush of pure fellowship of humanity is alive in that soul, and that all are not dead and barren. He thanks God and takes courage, for as Mrs. Hemans says:—

> We pine for kindred natures
> To mingle with our own;
> For communings more full and high,
> Than aught by mortals known."

We all crave sympathy in the hour of our misfortune, though a conscious pride and self-reliance may disguise it from the observer, but when like a sweet melody which touches the heart strings, so in the voice of a deep-felt sympathy, breathed gently, lovingly, into our souls," the cloistered, or pent up self-hood melts by the warmth of love, and owns the chord that binds humanity. So more especially if the Christlike spirit is deeply enshrined, it makes us akin to heaven, and quiets all our fears, drawing out our soul's adoration of love and trust in Him, whose advent is so generally held in grateful commemoration. To those it is indeed a Happy Christmas, and by a genuine faith, links happiness with all time to come, for time and eternity. But alas! each must be wise for himself, nor does it profit us much by an increase of knowledge, since our knowledge is simply what we accept; so we accept the 25th day of December as our feast day of the nativity of Jesus the Christ. That he was and is we know; yet while St. Chrysostom informs us that in primitive times the same day both feasts were celebrated the Christmas and Epiphany. This latter was, or may still be, a church festival, signifying the manifestation of Christ, and referring to the appearing of the star which announced his birth to the Gentiles. It is observed on January 6th, the twelfth day from Christmas. That Father also observes that it was but of a little while that Christmas had been celebrated at Antioch on the 25th of December as a distinct feast, and that the use thereof came from the west. The Armenians made but one feast of them, as low as the 12th century. It is commonly maintained that Pope Telesphorus was the first who ordered the feast of the nativity to be held on the 25th of December. John, Archbishop of Nice, in an epistle on this subject, relates that at the instance of St. Cyril of Jerusalem, Pope Julius procured a strict enquiry to be made into the day of our Saviour's nativity, which, being found to be on the 25 of December, they began thenceforth to celebrate the feast on that day. However, the precise day, or even the month, on which our Saviour was born, is extremely uncertain. Some, as Clemens Alexandrinus informs us, affixed it to the 25th of the month Pachon, corresponding to the 16th of May. But there are some circumstances which should rather lead us to conclude that he was born in autumn, as this was, in every respect, the most proper season of the year for a general assessment, which took place at the birth of Christ, and which required personal attendance; and as there were shepherds watching their flocks by night at the time when Christ was born, and therefore it is probable that the æra of the nativity was either in September or October.

After scanning the various epochs in chronology to find the difference between epoch and era, I find the doctrine and explanations very perplexing and extensive. The Jewish, Mohammedan, Greek Olympiads, that of the Romans, Persians, Nabonassar, &c., while it may have its use in calculating from certain data to other certain data, or supposed certain data, be they what they may, the fact remains. The Christian year or A. D., dates from his circumcision, that is from the first of January. This period being the 4713th of the Julian period, by adding 1879, the present A. D. to this, it would be the 6592d year of the Julian period. Now, so also, to find the same Julian period, when we read 752 before Christ, deduct this from 4713 and you have 3961, the Julian period of that date. But figures, if they do not lie, are nevertheless dry to the majority of readers, and as to years to measure duration, it is like a yard stick to measure space. Those who heard Proctor's lecture on astronomy, would find their head to swim in chaotic confusion, did they attempt to reason it out. Poor finite man, be he farmer or philosopher, has to plow and sow in faith, trustingly; that the seasons would be auspicious, he dare not withhold his hand, because he cannot overrule the rain or sunshine, or breathe fertility into the germ. But trust that the life is in the germ, and properly to prepare the soil, watch its development, remove obnoxious weeds, give it God's sunshine, and verily it will grow, blossom and yield its fruit, and reward you for the care bestowed upon it. So, however conflicting theories and systems may be, however antagonistic, yet with an eye single for the truth, an humble, trusting, filial love to Him from whom the vital breath of your life cometh, seek that the sun of righteousness may warm that God-given germ into life, culture it, let your soul stretch forth its tendrils, entwine them around the beloved, be in Him and He in you, as the branch is in the vine, and then will you realize the joy, the comfort, by the assurance of your knowledge and faith in Him who giveth liberally and upbraideth not. Such are still my humble thoughts and aspirations after all the learned contentions, materialistic suggestions and so-called heresies. There is a truth, a God, our father, love and final compensation—so let us all enjoy a Happy Christmas.—*J. Stauffer*

CISTERNS.

An article in the Lancaster *New Era* a short time ago set me to looking up a few facts on the above subject, and I now give them to the columns of THE FARMER.

Rain water cisterns will be often found useful even in many parts of the country where running water is close by or where wells are never-failing—as the advertisements run—because this rain water is soft. Where water soft enough for cleansing purposes can be reached by wells of not more than 30 feet deep, cisterns are of course needless.

In this section of the country rain water is very little used as a drinking water, as it is not "brisk" enough to the taste, being insipid and "flat" to those not used to it. Nor is it used much for culinary purposes, the women objecting to using it because of the sediments—dust, &c., washed from the roofs—and objecting, above all, to the "wrigglers" found in most rain water which has been standing for some days in the summer and early fall months. I must confess to a little squeamishness on this point myself. These so-called "wrigglers" are the larvæ of mosquitos, and can be prevented by making the cistern so tight everywhere that the mosquitos cannot enter and lay their eggs. The dirt from the roof can be nearly all avoided by making the entering movable and then moving the pipe aside *after* each rain, so as to lead the water away from the cistern; then when a rain comes on, the first water from the roof, and which contains the objectionable matter will be prevented from entering; as soon as the roof is washed clean the pipe can be turned into the cistern, and the result will be that no cleansing of the cistern will be required for years, and the water is as clean as any well water.

Thus far we have looked at rain water only as a household convenience; for the purpose of furnishing water to stock, cistern or well water is far superior to running water. In the winter it never gets that icy chill to which the latter is subject, and which even if it does not freeze over entirely often leaves the edges of the brooks so slippery as to endanger the limbs and lives of the stock.

In building a cistern it is an important point to find out the amount of water needed in three or four months, as we have had the experience in the last few years that sometimes it must be provided for that length of time. The amount that is usually needed for household purposes can be readily found out, but for the wants of stock it is not so easy to determine. Most farmers can tell about how much a horse will drink in a day, but when it comes to cattle, they have very vague ideas as to the amount consumed. The *American Agriculturist* states that for cattle the capacity of a cistern should be ten gallons for each head.

Below is given a table of the contents in gallons for the given diameter and depth in feet:

DIAMETER.	DEPTH.			
	6	8	10	12
5	893	1,157	1,447	1,736
6	1,250	1,607	2,084	2,500
7	1,701	2,288	2,836	3,403
8	2,222	2,963	3,704	4,400
9	2,841	3,748	4,686	5,623
10	3,472	4,630	5,788	6,954
12	5,000	6,667	8,334	10,000
15	7,813	10,418	13,023	15,627
20	13,891	18,521	23,152	27,782

Where accuracy is not essential the contents of any cistern can be found out by the following rule:

Multiply the square of the diameter (*i. e.* the diameter multiplied by itself,) by the depth and this product by 5¾. Thus a cistern 7 feet in diameter and 8 feet in depth would

hold 7x7x8x5], or 2254 gallons, which is some less than the actual quantity. The rule has the advantage of being short, easy to remember and easy to calculate.

Now if a family uses 100 gallons of water per week and want to make sure of a supply for four months, a cistern would be needed of a capacity of about 1700 gallons. One of 7 feet diameter and 6 feet deep will hold this. Where all household purposes must be supplied from the cistern, it should have a capacity of at least 4000 gallons. This would require one of 9 feet diameter and 9 feet deep.

In determining the size wanted it is well to remember that a cistern with the depth and diameter about the same will cost less, and take less work than one in which this is not the case. Thus a cistern 5 feet in diameter and 12 feet deep will hold about the same quantity as one 7 feet in diameter and 6 feet deep, but will take more than one-fourth more bricks than the latter. Except in very favorable soil a cistern should not be more than 12 feet deep, as the pressure of the water on the bottom is so great that leaks are apt to be sprung. With the water 12 feet deep, the pressure at the bottom is 700 pounds per square foot.

To make a good job out of it the cistern should be entirely under ground, and one built in a hillside, with one face out, as I have seen them, will try the patience of the best Job among us. Built in the latter manner a cistern will be always leaky from the heaving effects of frost. In northern localities it has become common to put them entirely under ground, bringing them only to within two or three feet of the surface, covering them with some durable timber and then filling earth on top of this, leaving a man-hole for the pump and as a place to enter if any cleaning or repairing is needed. Fixed in this manner no danger from frost need be apprehended, and the water will be nice and cool in summer. In view of the latter fact this is also one of the best ways to build for warm localites when it is intended to use as a drinking water.

Arches of brick may be used as a cover instead of timber, as they are more durable and will cost little if any more. In the smaller diameters the arch is made with the edge of the brick facing; in those of a larger size the ends of the bricks are made to face, and consequently the thickness of the arch is the length of a brick, or about nine inches. When the diameter is fifteen or twenty feet, a central column of about two feet in diameter should be made, and the arch sprung from this towards the sides.

In the construction stone may be used, but they should not be of as large a size as are used in common mason work, as they will not make a good job and the wall will be thicker than is needed. Hard burned bricks are the best material, but are more expensive, particularly where the distance they have to be hauled is considerable. In some places no wall is made at all, but the cement laid directly on the earth to the thickness of an inch or an inch and a half; this kind of a cistern is usually egg-shaped, being widest at the top. Walled cisterns have perpendicular sides and are usually round, but I have known of some that are square; the latter, when of the same capacity, cost more than the round ones, as they take considerable more material.

The number of bricks required for a cistern can be pretty closely found by the following rules: For the bottom, when the bricks are laid flat, multiply the diameter by itself and this product by 3; for the sides, when the edge faces, multiply the diameter by the depth and this product by 20; for the arch, if one is made, the edge of the brick facing, add one to the diameter, multiply this amount by itself and the resulting product by 7.

Thus in a cistern of 8 feet in diameter and 10 feet deep the following numbers of bricks would be needed: For the bottom, 8x8x3 = 192; for the side, 8x10x20 = 1600; for the arch, 8 + 1, or 9x9x7 = 567. Completed, without arch, about 1800; with arch, about 2350.

The waste pipe is an important part of a cistern, and should be placed at such a height as will keep the water from flooding any woodwork or running over top and endanger the sides by eating away the supporting earth. It should have at least the capacity of the entering pipe, or in a heavy rain it might not discharge the surplus water fast enough.

Where the cistern lies higher than the place where the water is mostly used a great saving of labor can be made by putting in a siphon with a stop-cock. The highest part of the siphon should be a little lower than the waste pipe, as then if the siphon is empty and the water raises until it flows out at the waste pipe the siphon will fill by mere opening the stop-cock. The submerged leg should not quite reach the bottom, or the sediments, if any, will be sucked up. Where there is a bank of only 6 or 8 feet thickness the siphon of course need not be used, but a hole can be drilled through the bank and a direct pipe laid at much less expense. To draw the water in this manner is very pleasant and easy and will be found particularly useful in the case of stock or wherever large quantities of water are used.

If a pump is used, three important points should be remembered in selecting the kind:

1. It should throw much water.
2. It should work very easy.
3. It should be durable and not liable to get out of order.

The common cucumber pump will do very well for common family use, but is not durable enough and does not throw water enough when large quantities are needed. Never put in a chain pump, as they are a great nuisance after they are used a year or two.

The tenor of the article looks to making the cistern large enough for all probable wants. But may not the cistern be built of a larger capacity than the amount of water from the roof needs. Taking the average of a number of years the depth of rain that falls is about 44 inches. Making it only 40 inches every 100 square feet of building sheds about 2,500 gallons of water per year; this, in a house of 20 by 30 feet, would give 15,000 gallons or nearly 300 gallons per week; if so much water as this was consumed, a cistern of 5,000 gallons would be needed. Some years the water falling on such a building as the one supposed would not amount to more than 12,000 gallons; in the years of a maximum amount of rain fall, more than 20,000 gallons could be gathered.

And then, as to the cost, a cistern of twice the capacity will not cost twice as much money. Thus, a cistern of nine feet diameter and ten feet deep will hold about 4,700 gallons; one of seven feet diameter and eight feet deep will hold about 2,300 gallons; the former takes less than 800 bricks more and holds 2,400 gallons more.

Cisterns as large as twenty feet in diameter are mostly used in irrigating vegetable and flower gardens.—*A. B. K.*

ERRATA: In November FARMER, page 165, first column, thirty-first line from top, put semicolon (;) after word *doors*; thirty-third line, after word *joint*, put comma (,). As it stands little or no sense can be made.

SELECTIONS.

WOOL MANUFACTURES AND SHEEP HUSBANDRY.

At a late meeting of woolen manufacturers in Philadelphia, the secretary, John L. Hayes, LL. D., read the annual report, which was very lengthy, and detailed the progress of the American wool industry since 1860. Referring first to what it termed the agricultural branch, it stated that in 1860 our wool production, according to census returns, was, in round numbers, 60,000,000 pounds. Careful estimates in 1836 placed the production at 42,000,000 pounds, a gain in the twenty-four years previous to 1860, of 18,000 pounds. The production in 1867 reached 147,000,000 pounds. In 1877 it had reached 208,000,000 pounds, an increase of 246 per cent. in eighteen years from 1860, as compared with an increase of but 44 per cent. in the twenty-four years previous to 1860. A more remarkable fact is that the product of 1867 was from 42,000,000 sheep, while the product of 1877 was from 35,000,000 sheep, the substitution of superior races, improvements in breeding, and a more advanced husbandry being the cause of the greatly increased average yield of fleece since 1836. There has been a constant decline in the number of sheep in the older states, so that, while the wool production in the whole country is five times as great as in 1836, there is now in the older states less than half the number of sheep than at that period. This has been compensated by the growth of sheep husbandry in the new states and territories. In 1862 Hollisher & Dibbles introduced four hundred pure Spanish Merino ewes to California. In twelve years the increase of pure stock from this flock was 28,000. The production from this single state has reached 50,000,000 pounds in one year.

Although Texas in 1845 had no sheep but native Mexicans, with a fleece almost valueless, and scarcely a sensible progress had been made before the war, since that period all the original stock has been ameliorated by the infusion of Merino blood.

Her sheep exceed 1,000,000; her produce of wool exceeds 11,000,000 pounds; and wool, but a few years ago regarded as the poorest in the market, much of it equals that of Ohio. Sheep husbandry is extending throughout the South, for which industry that section is admirably fitted. Mr. Hayes then referred to the worth of Merino sheep husbandry, saying the progress at the best recorded yield in Merinos in 1809 was 9½ per cent., and the heaviest fleece 27 pounds. In three rams bred in Vermont since 1873 the yield to live weight was 27¼ per cent. of unwashed wool, and the average weight of fleece 34¼ pounds, while, what is more remarkable, the finest of the fibre equaled that of the Saxon super-electa breeders in Australia and South America on importing these animals to improve their flocks.

The secretary of the National Wool Growers' Association, has this season carried 200 American sheep to Japan, each one among these in good condition, and Dr. Hayes received a letter from him in China, on his way to Mongolia, with the object, under the auspices of General Grant, who favored his mission and gave him letters to the high Chinese officials, of introducing American sheep in that distant quarter of the world.

Speaking of the improvements in manufacture, he said, in 1860 hand-combing prevailed in our few worsted mills. Since that period it has been displaced, first by the Lister comber for long wools, one machine doing the work of fifty men, followed by the Noble comber for fine wools, introducing a quality of yarn wholly unknown in our mills fifteen years ago. Carpet filling was spun by hand; it is now spun by power with a great gain of economy. In our cloth mills self-operating heads have been applied to the hand-spinning jacks, and self-operating mules have been introduced, effecting a saving of from 20 to 40 per cent., according to the fineness of yarn, in the cost of spinning. Self-feeders on the first breaker and finisher have been applied to card machines, dispensing, it is declared, with half the help in the card-room. Improved winders, dyers and cloth pressers give greatly increased rapidity to the processes of finishing. Looms also have been greatly perfected. The first and most important fact illustrative of progress is the cheapening of goods to the consumer, effected within the period under review by our manufacturers, and an increased supply of our domestic wool.

The second great fact is that the tastes and necessities of American consumers are not only cheaply but more adequately supplied by the improvement of old and the introduction of new fabrics, or those not previously made here. While we produce certain fabrics not made abroad, such as the fine blankets for bedding, and coarse ones for horse covering, the latter exported to England, and our indigo blue suitings, we make, with the exception of

certain especial fabrics, woven on hand looms, the last novelties in dress goods and upholsteries, the fine merinos and cashmeres, all the fabrics for popular consumption, made in the European mills, instantly adopt all the changes of style required by European fashions, preserving the cosmopolitan character which is the characteristic feature of the fabrics of this age.

The third great fact indicative of progress is the diminished consumption of foreign fabrics. In 1860 we imported in manufactures of wool, $37,937,190. In 1878, with a population increased at the lowest estimate not less than 12,000,000, we imported a value of $25,-230,154, a decline owing in part to commercial inactivity, but mainly to our increased capacity to supply our own consumption. The diminished importations in certain classes, even in later periods, are remarkable. Even so late as 1872 the value of our importations of carpets was $5,727,183. In 1878 the value of the importation was but $308,389. Our principal import is in dress goods, chiefly for wealthy consumers, amounting last year to $12,000,-000, though diminished $8,000,000 since 1872. This is the youngest branch of our wool manufacture, and presents the field in which the next victories over our foreign rivals are to be won.

In 1872 about five and a half million yards of carpets were imported into this country; in 1878 only two hundred and seventy thousand yards. We are making to-day six million more yards of carpets than we were 1872, and of a quality equal, if not superior, to any foreign carpets. It has often been asserted that in Philadelphia more yards of carpets were manufactured than in the whole of Great Britain. According to the latest statistics before us, it is now manufacturing fully twenty million yards of all kinds of carpets annually. The latest published statistics of the exports of the United Kingdom for the year 1878, are six million seven hundred and fifty thousand yards. Allowing the same quantity for their own home consumption, it gave Great Britain a producing capacity in 1878 of thirteen million five hundred thousand yards, while the city of Brotherly Love has an annual production of twenty millions. The Eastern States will swell the total to thirty million annually, showing that we manufacture and sell more than twice as many yards of carpets as the whole United Kingdom manufactured and sold in 1878. While these statements might appear incredible, they are, nevertheless, facts compiled from official documents. England, with a population of 30,000,000 of people, and her dependencies on which the sun never sets, with 400,000,000 more, cannot, nor do they consume one-half the quantity of carpets we do with a population scarcely one-tenth in number.

OUR GRAIN CAPACITY.

A Chicago journal says: The statement frequently made of late, that Western farming lands are becoming exhausted by constant cultivation, etc., is easily answered. It was long ago demonstrated that by rotation of crops, an occasional deep plowing and cropping with clover once in eight or ten years, the original fertility of the soil is not only preserved, but increased. The crops for the years 1877, 1878 and 1879 are the largest ever harvested, and this is true of the oldest as well as the newest cultivated land. The officers of the Illinois Agricultural Department estimate that when the level lands now in cultivation in Illinois are tile drained, the total average production of the entire State will increase something over thirty per cent. That work has begun in earnest, and is now being pushed forward rapidly.

The surface soil of the Illinois prairies is composed largely of vegetable loam, strongly impregnated with lime; it absorbs from the atmosphere readily ammonia and other fertilizing properties, and is so deep that fresh fertile soil may be thrown up from any depth at which it is possible to plow. There are no stones in the ground; hence the plowing is comparatively easy and costs the farmer but little. When the land becomes so valuable that owners can afford to bear the expense of enriching it with fertilizers, the yield of crops will be greater of course, but until that time comes, the production will be increased very largely by other agencies.

The Illinois wheat crop of 1879 is the largest, and largest average per acre ever grown in the State, being 45,714,661 bushels, against 33,883,399 in 1878, 32,490,556 in 1877, and 33,371,173 in 1864—the three largest preceding crops. It is claimed by some, especially the advocates of greenbacks ad libitum, that the farmers are making very little net profit, because of the low prices received for products, and instance that, although the Illinois wheat crop of 1879 is 17,000,000 bushels greater than that of 1867, the smaller crop had a greater money value by some $12,-000,000. How little there is in such a claim is easily understood when it is considered that in 1867 everything the farmer had to buy was from 100 to 300 per cent. higher; that the price paid for labor was fully double, and that freight rates were more than twice as high; for instance, in 1867 grain freights from, say Lincoln, Ill., to Chicago, were 28 cents per hundred, now they are little more than one-third as much.

Even as late as 1871 lumber from Chicago to Kansas City was $100 per car, now $40 would be regarded an outside rate; grain from Kansas City to the Atlantic was $1.05, now it is only from 33 to 35 cents per hundred. The carelessness and extravagance of those times added immensely to the cost of living, and, taking all the facts into account, it will be readily conceded that $1 has as great a value to the people now as $2.50 did then, but even at the rate of two to one, which is certainly far under the mark, the practical value of the wheat crop of 1879 is $78,861,278, as compared with $55,160,000 for 1867. The same rules that apply to the wheat are equally applicable to all other crops.

An important element to be considered in estimating future production is the financial condition of the State and the local government of localities from which the increase is anticipated. It is important to know whether the people, the producers, are now, or are likely to be, loaded with taxation which will paralyze their efforts and retard necessary public improvements, or whether their condition is such as will favor the making of needed expenditures and a liberal development of their resources. The farmers in these States have, as a class, accumulated wealth very rapidly; perhaps more so than any large agricultural community ever had before, and, as a natural consequence, much of extravagance and local abuse of credit has followed, but at the same time the financial affairs of the States and corporate subdivisions have, in the main, been well cared for, and are now, as a whole, in good condition; and there is but little taxation except in cities.

So far as the capacity of this country to produce grain and provisions in large quantities and deliver them cheaply at the sea-board is concerned, it may be safely assumed that the past was little more than preparatory to the future.

GEESE.

And Something About Them.

A farmhouse looks rather incomplete without its usual surroundings of poultry in the background, and nice well-kept poultry are rather an ornament than otherwise, and a variety is the charm, adding beauty and utility to the surroundings. None of our domestic birds are more hardy than the goose. They are thoroughly aquatic birds, yet they will thrive with only water sufficient to drink. The goose will endure almost any amount of cold without suffering, and subsist on coarse diet such as hay, frost-bitten grass and discarded vegetation, without injury, whereas our hens and chicks would perish. Still it is better to allow them some shelter from the winter's severity and driving storms, and to give a handful of corn each daily. In summer they will take care of themselves, and should be allowed some waste place on the farm—an unclaimed swamp or boggy marsh. In these places the grass springs up early in the season, and is fresh and tender—just the food desirable for young goslings. Goslings do not require much feeding if taken from the nest early in the season, while the grass is sweet and nourishing. They, however, need a little start with unsifted meal, moistened with water, adding a little salt. Goslings make rapid growth, and consequently are weak and require protection from pelting storms. A hard shower will destroy a whole brood of a month or six weeks' growth, simply from the beating of the rain on their uncovered backs. The wing feathers are slow in coming, and when once fully matured, entirely cover the back, the tenderest part of the goose.

From their peculiar habits, which lead them to inhabit places that are more or less subject to accidents, from the vermin which infest such grounds, they (especially the young) are exposed to much danger, and liable to injury, if not total extermination, by those enemies. If the birds are allowed to frequent a pond of water, the snapping-turtle also dwells there, and lurks beneath the smooth surface of the water, occasionally thrusting a head above. The unsuspecting goslings launch on the element which they are so well fitted by nature to navigate, and immediately, ten chances to one, a bird is seized by the leg, which is either broken, or if the bird be young it is swallowed entire. Many young are lost in this way, the prey of lurking enemies, which do not trouble the full grown. In order to be entirely successful with goslings, they should be kept from such places, and confined in grassy places or inclosures, and supplied with fresh water daily. When limited in their range, they must be fed. Give them a coarse kind of feed, such as cold, boiled samp, cooked until tender and salted. They thrive better on coarse diet than do chickens.

When full grown, if the feathers be regularly plucked throughout the season, they should be given a trough of water to bathe in. This practice of plucking feathers from the live birds may seem cruel, yet it has been followed for many years, and will continue to be, so long as people enjoy the luxury of feather beds. If done by an expert, and at a certain time, when the shaft is fully ripened, the plucking is rendered easy for both. The breast feathers are the principal ones desired, and these, on our common gray geese, come readily. If allowed to remain they will fall off, and thus be lost. Do not pluck the feathers under the wings, or many of those coarse ones growing on the thighs They are of small value, yet afford a support for the wings. In wrenching away the quills, draw only the primaries and leave the secondaries, as they cover the back, while the former fold under. Where there is any wild blood intermixed, the feathers come harder. As there is always a certain knowledge to be acquired in the performance of any labor, so also is there a method in picking geese. Confine the bird's legs, protect the beak (as some birds will bite) by drawing a stocking over and down the neck, lay the bird on the back across your lap, with the legs and tail under the left arm, and with the right forefinger and thumb proceed to the cruel business. If every one who now nightly occupies a feather bed were obliged to pluck each feather one by one from the breast of a live goose or gander, feather beds would be few and far between. Any one who has once plucked a live old gander, or even a goose, has had occasion perhaps to arrive at some approximate idea of the amount of strength they possess, more especially if a blow be received from the wings. The better way for tender-hearted and sensitive beings is to rear a large brood of goslings and slaughter them in the fall, and be satisfied with feather beds from young geese picked after death.—*C. B. in County Gentleman.*

REMEDY FOR DIPHTHERIA.

IMPERIAL RUSSIAN LEGATION,
WASHINGTON, Nov. 16, 1879.

In view of the increase of diphtheria in several places of the State of New York, I hasten to communicate to you for publicity a very simple remedy, which, having been used in Russia and Germany, may prove effective here. Out of several others, Dr. Letzerich, who made extensive experiments by the application of this remedy, has used it in twenty-seven cases, eight of which were of a very serious nature, all of which had a favorable result except in one case, when the child died from a complication of diseases. For children he prescribes the remedy, for internal use every one or two hours, as follows:

Nath. Benzoic. pur. 5 0 soly. in aq. distillat aq. menth. piper. ana 40 0 syr. cort. aur. 10 0.

For children from one to three years old he prescribed it from seven to eight grammes for 100 grammes of distilled water, with same syrup; for children from 3 to 7 years old he prescribed ten to fifteen grammes, and for grown persons from fifteen to twenty-five grammes for each 100 grammes.

Besides this he uses also with great success the insufflation on the diphtherial membrane through a glass tube in serious cases every three hours, in light cases three times a day of the natr. benzoic pulver. For grown people he prescribes for gargling a dilution of ten grammes of this pulver for 200 grammes of water.

The effect of the remedy is rapid. After twenty-four or thirty-six hours the feverish symptoms disappear completely and the temperature and pulse become moral. This remedy was used also with the same success by Dr. Brahm Brimm and Professor Klebs, in Prague; Dr. Senator in Cassel, and several other in Russia and Germany.

Hoping that the publication through your widely-spread paper will prove beneficial in the United States, Irema in, yours very truly,

—*F. Shishkin, Minister of Russia to the United States, to New York Herald.*

THE BEEFSTEAK FUNGUS.

The Article as an Edible.

At the last meeting of the West Chester Microscopical Society, there was exhibited an edible fungus, known to mycologists as Fistulina hepatica, or, where it is extensively used as an article of food in Europe, commonly known as "beefsteak fungus." It is found in our woods and clearings during the latter part of summer and in early autumn, growing on stumps and at the base of trees, particularly the chestnut, in some abraded or decaying portions of the tree. It grows rapidly in damp weather; and on the authority of Berkely, has been known to attain to the weight of nearly thirty pounds.

When fresh it is of a blood-red color, and advancing in age it bears a striking resemblance to liver—hence the specific name; and the term "liver steak" is sometimes employed as a designation. When cooked in the ordinary way of treating the common mushroom, the taste is very similar to the latter, although toughness (not a very commendable characteristic) might be mentioned as one of its qualities. A transverse section of the plant being shown, exhibited a streaked appearance not unfrequently observable in beefsteak.

By reference to the fourth volume of Chambers's Encyclopedia, under the head of Fistulina, this plant is well-figured. The writer observes: "This fungus is much esteemed in some parts of Europe as an esculent; it is wholesome and nutritious, and the abundance in which it may often be procured makes it the more worthy of regard, whilst there is almost no possibility of confounding it with any dangerous fungus. Its taste resembles that of the common mushroom, but is rather more acid. When grilled it is scarcely to be distinguished from broiled meat. It furnishes itself with abundance of sauce."

OATMEAL.

Its Value as an Article of Food.

Oatmeal is a food of great strength and nutrition, having claims to be better known and more widely used than it is at present. Of much service as a brain food, it contains phosphorus enough to keep a man doing an ordinary amount of brain-work in good health and vigor. All medical authorities unite in the opinion that, eaten with milk it is a perfect food, and, having all requisites for the development of the system, it is a pre-eminently useful food for growing children and the young generally. Oatmeal requires much cooking to effectually burst its starch-shells, but when it is well cooked it will thicken liquid much more than equal its weight in wheaten flour. The oats of this country are superior to those grown on the Continent and the southern part of England, but certainly inferior to the Scotch, where considerable pains is taken to cultivate them, and it is needless to point out that the Scotch are an example of a strong and thoroughly robust nation, which result is justly set down as being derived from the plentiful use of oatmeal. Dr. Guthrie has asserted that his countrymen have the largest heads of any nation in the world—not even the English have such large heads—which he attributes to the universal use of oatmeal, as universal it is, being found alike on the tables of the rich and on the tables of the poor—in the morning the porridge and in the evening the traditional cake. The two principal ways of cooking oatmeal are porridge and cake (bannock) which I will describe, and also some other modes of cooking, in order to afford an agreeable variety of dishes: First, then, we will commence with a recipe for porridge. To three pints of boiling water add a level teaspoonful of salt and a pint of coarse meal stirring while it is being slowly poured in; continue stirring until the meal is diffused through the water—about eight or ten minutes. Cover it closely then, and place it where it will simmer for an hour; avoid stirring during the whole of that time. Serve hot, with as little messing as possible, accompanied with milk, maple syrup or sugar and cream. To make oatmeal cake, place in a bowl a quart of meal, add to it as much cold water as will form it into a soft, light dough, cover it with a cloth fifteen minutes to allow it to swell, then dust the paste-board with meal, turn out the dough and give it a vigorous kneading. Cover it with the cloth a few minutes, and proceed at once to roll it out to an eighth of an inch in thickness; cut it in five pieces and partly cook them on a griddle, then finish them by toasting in front of the fire.

ICE-HOUSES.

And How to Build Them.

An ice-house simply to keep ice in for summer use may be a very simple affair. If straw is used for filling, the walls should be at least two feet apart. The interstices should be packed tightly whatever the material used. Straw is one of the poorest non-conductors, easily obtained, and sawdust one of the best. If tan bark is used, from ten to twelve inch space between the walls are left to be filled.

Two by four inch scantling are securely fastened by bed pieces in two regular lines, and about two feet apart, and of the required distance asunder required for the filling material. To these, rough boards are securely nailed. A house twelve feet square and twelve feet high will hold plenty of ice for family use, and for an ordinary family dairy. No ventilation is required except at the top, over the ice. The roof may be of boards and the gables may be of the same, with a window at each end for ventilation. Doors must be made at one end of the sides or end to allow the ice to be put in, and afterward be closed and filled with tan bark. The bottom must be provided with perfect drainage to allow the water from the melting ice to pass away. The first course of ice may be laid on boards, loosely laid on beams, placed closely enough together to prevent sagging. Pack the ice in perfectly square cakes, as closely together as possible, even with the plates. Cover with eighteen inches of slough hay, or twelve inches of fine wood shavings, and the ice should keep perfectly. Have no part of the ice-house underground. Any competent carpenter should be able to build it. If a cooling room is required under the ice, it will be altogether better to apply to an architect, since it will involve a very strong and substantial building, with scientific ventilation that cannot be well explained in the limits of a newspaper article. In fact, except a rough building such as we have described is to be built, and such a one will keep ice as well as the best, the work must be undertaken by a professional builder. A rough ice-house may be built by any one who can lay a foundation square, build vertical sides, saw boards square, and drive nails. For dairying or farm use we do not advise an expensive building, with cooling room underneath. An ample refrigerator, according to the quantity of goods required to be kept cool, may be cheaply built, and temperature kept down, by the use of ice from the ice-house. In answer to your question as to the proper depth at which water pipes are to be laid to prevent freezing, three feet will do, but three and a half feet deep will do better. Dig the ditch in which the pipes are to be laid, with vertical sides, and as narrow as possible, and pound the earth firmly, when it is filled up.

THE DUTY OF OUR FARMERS.

We have repeatedly directed the attention of farmers to the imperative necessity of exercising extreme caution to prevent the spread of the disease known as pleuro-pneumonia among the cattle of this country. But circumstances have come to our knowledge which impress us still more of the importance of bringing this matter before our farmers. Pleuro-pneumonia is one of the most contagious of diseases, and such being the case, the great importance of keeping infected members of a herd completely isolated is too apparent for further argument. Isolation and the killing of such as have reached the incurable stage of the disease have been found to be the only means of safety. This fact has again and again been impressed upon the public by Secretary Edge, of the State Board of Agriculture, and it cannot be too often reiterated.

It has come to our knowledge that, instead of diminishing, this dreaded disease is likely to increase in the lower end of this county. There has been in Colerain township for quite a time an infected herd of cattle belonging to Mr. Jas. F. Turner. The most effectual measures have been adopted by the State authorities to stamp it out on the very farm where it first developed itself, and there was every reason to believe the efforts adopted would prove successful. Some time ago, however, two farmers, neighbors to the owner of the diseased herd, had the misfortune to have their dairy, of some thirty cows, get into the meadow where the infected cattle were grazing, and now they have lost the first cow from the disease, and in all probability have an infected herd, which may give no little trouble, and cause no little loss before it is finally stamped out. No less than three of Mr. Turner's neighbors now have the disease on their farms. This may not be due to carelessness, but it may be a want of proper caution. Indeed, there seems to be no other way of accounting for the spread of the disease in Mr. Turner's neighborhood. In Montgomery county an entire herd has been lost by the introduction of the disease by means of a cow bought at a Philadelphia stock yard, and which was coughing at the time of purchase.

All these facts go to show that nothing but the utmost vigilance can prevent the introduction of the disease to other herds, in the neighborhood of an infected one. Cattle

should be kept as far from the diseased herds as possible. Under no circumstances ought healthy cattle be allowed to graze in fields or roads where diseased ones have been feeding. It is true that the State authorities have been very vigilant in the matter and have succeeded in keeping the disease in check, but unless their hands are strengthened and they have the active co-operation of farmers themselves, their efforts must prove comparatively futile. It is to the interest of farmers to immediately report manifestations of the disease. A timely effort may save the animal attacked. Should it be a very valuable one the farmer's pocket is at once nearly concerned. If it becomes necessary to kill infected cattle the State becomes responsible for the value of the destroyed ones, whereas it takes no note of those that die without having been reported to the authorities. The State is willing to do its utmost in furnishing gratuitously veterinary aid and in paying for the cattle it kills, but it demands co-operation from its citizens besides. Unless this is freely extended, its most strenuous efforts will be ineffectual to battle with this enemy. There should be no temporizing, no waiting to see how things will turn out, no reliance on doubtful remedies, but an immediate report to headquarters, and the employment of the measures recommended from thence.

THE INTELLIGENT FARMER.

The innumerable articles which appear continually on "How to make the farm pay" are enough to make a horse sick. People should know by this time that fortunes do not grow, but are made. Once in a while one may stumble over a fortune, as lighting strikes a tree; but these are providential occurrences and are not in the every day hands of man. A man may have the most fertile soil and raise the biggest kind of crops; but if he has not brains enough to know how to go about selling what he has to the best advantage, somebody else will reap the best profit, not he. Or he may have the best knowledge in the world as to where the best market is, and the best knack of finding out who will give the best prices; but if he has no judgment as to what crops to raise, or how to grow them, he does not get along. How to make the farm pay is altogether a matter of brains. It is no more of a practical question than how to make the mill pay, or how to make the store pay. Not more than half the men in the world have any brains to spare. The other half have more than they need. They spare a little for those that are short, but charge a big interest for the use thereof.

A piece of public work is to be done, and here are a hundred men to do the work, but ninety-nine don't know how to go about doing it. They can work when directed, but who is to direct? The one steps out and some of his brain is loaned to the other ninety-nine. He makes twenty-five or perhaps fifty cents a day on each—clearing twenty-five or perhaps fifty dollars a day. This is the percentage on the use of his brains. Without this the men could do nothing. They could not earn their salt. One dark-skinned friend was not far wrong when he indignantly denied that he had charged one dollar for killing the calf. It was only fifty cents for killing—the other was for the "know how."

If there be not more money made at farming than there is, we take it to be for the want of spare brains. Brains to loan out as capital to other men who have none.

There is a good deal of truth in the popular saying that no man can get rich by hard work. But this large grain of truth is only so when it has to pay a large tax to the brain that directs it. The employer generally works harder than the one he employs. After he works at hard manual labor for years, using his surplus brains to make a little more than his daily need, and to put that little away, and when the time comes to loan his surplus brains, he has to work early and late to keep business together; while the laborer knows just when his work is done. It is not that the employer has no hard work to do. It is not that he is making money by hard work. He is simply making money by the loan of his brains to those who have not enough of their own, or have not had time to lay by sufficient of their surplus brain earnings to loan to others in the same way.

To make the farm pay, then, one must be a capitalist—have brains to lend. Yet how many ever think of this? By one's own personal labor, a boy or man, or half a dozen horses only, how can one make much? We never could see why a farm might not be carried on as any other business is—by the employment of large numbers of men who have no idea how to manage themselves; or, what is the same thing, the larger use of machinery so as to do farming work on a large scale.

This is the basis of all the fortunes that are made. There is no other regular way to make them. We see perhaps a solitary man standing in his little office in a crowded city, handling bits of paper in some commercial transaction, employing no one. But he really has hundreds of men in the background paying their little tributes of a few cents only perhaps for the use of his brains, doing for them what they are unable to do for themselves.

And we are quite sure that those farmers who have made most money from their callings are those who have employed the most men, not recklessly and foolishly, but wisely and well. Business—the farming business included—is not a mere chance game. It is an art—an art like the art of war; and as in war, Providence generally smiles on the heaviest battalions. We want first a general with an abundance of brains; then the more men he has to loan them to the better for his cause. —*Germantown Telegraph.*

HOW TO COOK CHEESE.

Dainty Cheese Dishes for Luncheon and Dessert.

The first one, the best known, the most easily made, is stewed cheese. You remember that in the well-known Welsh rarebit, fresh cheese is cut into slices, put upon buttered toast and laid in a cheese toaster until it is melted. But if this plan were followed with cheese that was beginning to get dry it would not melt easily, and therefore cheese of this sort is better to be stewed. For this it should be cut into thin slices and put into a saucepan with a little old ale, then stirred over the fire until it is melted. The saucepan should then be taken off the fire for half a minute, and supposing there is a quarter of a pound of cheese, the yolk of one egg beaten up with half a teaspoonful of mustard and a little cayenne pepper should be stirred into the mixture, first off the fire and then on the fire for about two minutes. The preparation should then be turned into a very hot dish and served as hot as possible, little three-cornered pieces of dry toast being stuck into it here and there. If the cheese is not very rich a little butter may be put into it, and will help to soften it. I can assure you that very many people would highly appreciate cheese served in this way, but I am bound to tell you also that it is one of the most indigestible of all dishes.

Macaroni cheese, always so much liked by gentlemen, is much more wholesome. For this grate the cheese as you would grate nutmeg, only with a coarser grater, and take two ounces, weighed after it is grated with a little pepper and salt. Wash half a pound of Naples macaroni, break it up, throw it into boiling water with a lump of butter in it, and boil it till it is perfectly tender, but firm and not at all broken. It should be remembered that the commoner the macaroni the more quickly will it be done. The best will take about half an hour to boil. When tender drain it dry; melt an ounce of butter in a stewpan, mix with it over the fire an ounce of flour to make a smooth paste. This paste should be made smooth with the back of a wooden spoon. Add half a pint of cold milk and stir the sauce till it boils. Season it with salt and pepper and a pinch of cayenne if liked, or half a teaspoonful of mustard may be mixed with it; add half the grated cheese and the macaroni drained dry. Turn it upon a hot dish, sprinkle the rest of the cheese over it, and brown the top in front of the fire. Serve the preparation very hot. The best way to brown the top is to hold a red-hot salamander over it for a minute or two; that does the business both quickly and well; the only difficulty is that it is not every one who possesses a salamander; but an old iron fire shovel will answer the same purpose, and most people have that. All that is necessary is to make it thoroughly hot and hold it over the macaroni, moving it about so that the surface may be equally colored. I can assure you that if it is nicely made the macaroni cheese is sure to find favor. But now I must tell you of another excellent dish to be made with grated cheese, and that is cheux-fleur au gratin. It makes a capital dish for supper or luncheon, and is inexpensive. It can be made of a whole cauliflower, or, if preferred, the sprigs only of one or two vegetables can be used.

When it is well managed the cauliflower kept whole looks the best. It is, however, rather difficult to keep it compact, and when it is straggling all over the dish, it does not look very tidy. In order to avoid this, however, it is only necessary that the cook, just before she pours the sauce over it, should squeeze it together with a clean cloth held in both hands. For the sauce procure a moderate sized cauliflower, close and white. I need not say, be careful that there are no caterpillars in it. Cut the stalk quite close and trim away the outer withered leaves. Put it head downward into a large saucepan, with plenty of fast-boiling water, slightly salted, and let it boil until it is tender. It will take from a quarter of an hour to twenty minutes. If it turns over in the water, as it is very apt to do, it must be turned back again with a fork, for the flowers will be whiter if they are kept well under water. Care must be taken, too, to remove any scum that rises. When the centre of the flower yields readily to pressure, it is done. Take it up carefully with a slice and drain it on a sieve. But while it was boiling the sauce should have been prepared. You will need two ounces of grated cheese, grated as for the macaroni, half an ounce of butter, an ounce of flour, a quarter of a pint of cold water, a tablespoonful of cream, and as much cayenne pepper as would barely cover the flat surface of a split pea. Put the butter and the flour into a small stew-pan and mix them thoroughly, off the fire, with the back of a wooden spoon. Add a quarter of a pint of cold water and stir the sauce over the fire till it is thick and quite smooth; then add the cream and the cayenne and a pinch of salt. When the cauliflower is done enough to take it up, cut off the outside green leaves, place it on the dish on which it is to be served, and squeeze it together, as I said before, with a cloth held in both hands. Stir half the cheese into the sauce, and then pour it gently over the flour. Sprinkle the remainder of the cheese over the top and brown it as the macaroni was browned. Serve it very hot.

Crustades may be made some day when cook has been making pastry and has a few trimmings left. The pastry should be good, and should be rolled out very thin, after which small patty pans or moulds should be lined with it. Grate two ounces of Parmesan into a basin, and mix with it an ounce of warmed (but not oiled) butter, the yolks of two and the white of one egg, a saltspoonful of salt and a pinch of cayenne. Cayenne should always be used with preparations of cheese. If the eggs are small three yolks will be required instead of two. Put a small spoonful of the mixture into the lined moulds, and bake the crustades in a moderately-heated oven. When they are set and the pastry is lightly colored they are done enough. Their appearance will be improved if a single sprig of fried parsley is put on the top of each and grated cheese sprinkled over that.

Now for the cheese straws. Grate two

ounces of Parmesan into a bowl. Mix [illegible] with a pinch of salt, a little cayenne and two ounces of flour, and rub two ounces of butter into the mixture. Make the ingredients into a stiff paste with the yolk of one egg. Flour the pastry board and the rolling pin, and roll the pastry out rather thinly till it is about half a quarter of an inch thick. As the straws are to be about five inches long it will be well to roll the pastry to this width. Cut the pastry into fingers half a quarter of an inch wide; lift them carefully one by one upon a buttered baking sheet and bake them in a hot oven. When they are a pale brown color they are done enough; they will take about ten minutes. Sometimes small rings about the size of a penny piece are cut out of the paste and six or eight straws are put through each of these, in imitation of a bundle of sticks; or the straws are served piled on a dish in transverse rows. They are eaten cold. If put away in a tin they will keep awhile.

WHISKY.

Revenue List of the States.

In the whisky revenue list the following is the percentage of the thirteen leading States:

Illinois	30.5[illegible]
Ohio	21.40
Kentucky	10.38
Indiana	10.05
New York	6.90
Missouri	4.08
Pennsylvania	2.30
Massachusetts	2.23
Wisconsin	1.7[illegible]
Nebraska	1.49
Maryland	1.41
Tennessee	1.35
California	1.05

If Representative Stephens and Senator Conkling were right in supposing that the place where whisky is made and the tax on it is collected pays the tax, the foregoing table would make a frightful exhibition of some of the States. For the tax is really paid by the consumers. If Illinois, for instance, pays more than thirty per centum of the whole tax it follows that she drinks more than thirty per centum of the whole quantity of whisky swallowed in the United States. Upon this theory, Illinois, Ohio, Kentucky and Indiana drink more than three times as much whisky as the remaining thirty-four States. New York has been supposed to do her share of spirituous absorption, but upon this showing she drinks about about one fifth as much as Illinois, less than one-third as much as Ohio, and only three-fifths of the quantity guzzled by either Kentucky or Indiana. It is therefore in the interest of the good character and steady standing of the several States as well as of economic truth that Mr. Stephens and Mr. Conkling ought to revise their notions on this subject. The next time they refer to the matter in Congress let them remember to say that the New York toper who crawls out at daybreak for his morning dram, or the customary tippler who is seen wiping his mouth suspiciously about 11 o'clock in Wall or Broad street, or the man who evades the prohibition law in a dark closet in Maine contributes to the internal revenue whenever he raises his glass to his lips. In this way there will be a fair distribution of the whisky as well as the tax.

COFFEE.

A Coffee-field in Brazil.

From a very full account of the Brazilian Coffee Industry in *Scribner* for December, we take this description of the field-work, written from personal observation by Herbert H. Smith:

In southern Brazil, a coffee-field seldom lasts more than thirty years. The plantations are made on the fertile hill-side, where the forest has been growing thick and strong. But the soil here is never deep—six or eight inches of mould at the utmost. In the tropics there are no long winters with mats of dead vegetable matter rotting under the snow. The leaves fall singly, and dry up until they break into dust; logs and decaying branches in the shady woods are carried away by white ants and beetles; hence the mould bed increases very slowly; in twenty-five or thirty years, the strong-growing coffee-trees eat it all up. Most planters simply cut down the forest and leave the trees to dry in the sun for six or eight weeks, when they are burned. S——, more provident, lets the logs rot where they lie, which they do in a year or two; in the open sunlight they are saved from insects, and the ground receives a large accession to its strength.

Back of the house there are two yards or small fields, four acres, perhaps, together. The ground is covered with earthen pots set close together, only leaving little pathways at intervals. Each of the two hundred thousand pots contains a thriving young coffee-plant. The ground forms a gentle slope, and water is constantly running over it, so that it is always soaked. The pots, through orifices at the bottoms, draw up enough of this water to keep the roots moistened. The young plants are protected from the sun by mat screens stretched on poles above the ground.

This is a costly system. Most of the planters take root shoots at random from the old fields and set them at once into unprepared ground. Sr. S——'s experiment has cost him probably $20,000; the pots alone cost $11,000. But he will make at least $50,000 by the operation. In the first place, he gains a good year in the start that he gives to these young plants. Then they are not put back in the transplanting; the pots are simply inverted and the roots come out with the earth. They are set into mould or compost which has been prepared in deep holes. The tender rootlets catch hold of this at once, and in a day or two the plant is growing as well as ever.

The nurslings come from selected seeds of half a dozen varieties. Sr. S—— has them planted at first in small pots. A dozen slaves are engaged transplanting the six-inch high shoots to larger pots. Little tired-looking children carry them about on their shoulders, working on as steadily as the old ones, for they are well trained. Sr. S—— wants to make his plants last fifty years, so he is careful and tender with them. The little blacks will be free in 1892, so his policy is to get as much work as possible from them while he can.

The plants are set in rows, about ten feet apart. They grow, and thrive, and are happy, out on the hill-side. Warm sunshine caresses the leaves; generous rains feed the tender roots; the ground is kept free from intruding weeds and bushes, and the planter waits for his harvest. After four years, the trees are six feet high and begin to bear. By the sixth year, the crops are very large—three or even four pounds per tree at times. Meanwhile, corn and mandioca are planted between the rows. Often in a new plantation the expenses are nearly covered by these subsidiary crops.

In this month of November only a few of the slaves are in the new fields. November is the principal gathering month, and almost the whole force must be at work in the bearing orchards. From sunrise to sunset, men, women and children are gathering the berries in baskets, working silently and steadily under the overseer's eye. Every day, each slave gathers on the average berries enough to produce fifty pounds of dried coffee. The pickings are collected in carts and brought to the mill-house, where the seeds must be prepared for the market.

WASHING FOWLS

One of the correspondents who asked for this article, observed that he found his birds looking rather dirtier after his washing than before, which brings us face to face with the first difficulty and its remedy. The difficulty itself all consists in the fact that people at first have no idea *how thorough the washing of a fowl for exhibition has to be*. They give their birds a very mild soap over with a sponge, rinse them, and think they are washed. Not a bit of it. Think a little, about washing, say a pair of hands. If they are tolerably clean, and you plunge them into a [illegible] mud, they will come out black enough, but you can wash *this* dirt off with very little trouble. But suppose your hands have not been washed for a good while, and you have been in contact with a lot of things, including a [illegible] oil or grease for a [illegible], [illegible] fitter's hands, at the close of a day's work. Carefully wiped, they will show far less dirt than the muddy hands before washed; but *this kind* of dirt will take long and persistent scrubbing to remove. Now the dirt on a fowl is more or less like the last sort. It is old; it is well worked in, and it is incorporated with the oil of the plumage. And it takes downright *thorough* washing to get it off.

You must have a large tub, at least a foot deep, and fill it half full with water at, say 90°. Make this water into strong suds by rubbing a good large cake of soap into it till it lathers well. The suds must be good and strong, or it is no use. Then put your bird in, and with a good sponge drench it all over with suds, and rub it thoroughly, taking an occasional rub of the sponge on another piece of soap. You must never rub *up* the feather; but otherwise rub away freely, not only down, but a little across in both directions; not furiously, of course, but still as if you *meant* to clean the bird down to the skin. For the heads and legs you must take a brush, which brings out the freshness of the combs wonderfully, if there is any in them. Remember this one simple thing, that your birds may look rough and untidy because you are inexperienced in drying, but that if, after washing, they still look *dirty*, it is for no other reason than that you did not wash them *enough*.

When washed, lift into another tub of clean warm water, and with a clean sponge rinse out as thoroughly as possible. Here, too, people often think the soap is out when it is not; and when you see fowls with the plumage appearing to hang in filaments, instead of webbing out smooth as before, the reason is that soap has been left in. The first rinsing in the warm water will not get all out as it should be, but should get all the strong suds out. A third tub will get the bird pretty clear of soap; and, finally, we strongly recommend a thorough plunge—head, ears, and all—into a tub of clean *cold* water, or, in default of that, to turn on cold water from a hose.

The drying is a more ticklish matter. Stand the miserable looking object you have produced on a bench or the top of an empty basket, and with a sponge passed gently over the way of the feather, absorb all the water that a tightly wrung-out sponge will take up. Get off all you can this way, when the fowl is ready for the fire. It must be taken pretty near, but not exposed to fierce heat, which would blister the face and curl the feathers. Much depends on the room; but the object is to have the whole bird in a *very* warm but not fierce atmosphere. If attention can be given, the *best* plan is to carefully turn the bird round now and then, so that no part is exposed too long to direct heat; and there should be a screen to keep off the cold air. A large box with the open side turned to the fire, and bedded with clean well bruised oat straw, keeps the air warm round the fowls very well; and in such a hot chamber the fowls may be left with an occasional inspection; but to dry well care *must* be taken to turn any especially damp place towards the heat when needed. The great thing here is to dry as fast as possible without violent heat, but to dry *[illegible]*; otherwise the plumage is apt to get curled, or bent or twisted in a very prejudicial way. Whilst drying, the wings should be several times opened to get the heat. When only a sort of damp seems to remain, most people think it best to place each bird in a clean lined basket, bedded in *soft* straw, like oat straw, and leave this near the fire. The lining of the basket keeps in a gentle steam, which assists the feathers in webbing together. From "Washing Poultry for Exhibition," in *Fanciers' Journal* of December.

SEND in your subscriptions.

HOW TO KEEP FOWLS.

There are always a number of people living in large towns or in the suburbs, who would very much like to keep a few fowls for the sake of a new laid egg, and who at the same time would like to enter into the excitement of exhibiting their birds, but for want of sufficient room, and the absence of a grass run, are deterred from making a start. Now it is astonishing what a small space is sufficient to keep Spanish in the most perfect health and the brightest of plumage. A run only a few yards square will be ample if proper attention is paid to their wants, and they are kept clean, and their sleeping places well ventilated. When poultry can be kept, and even successfully exhibited under such conditions, it is not surprising that all the best Spanish are bred in or near to large towns, as there are so very few varieties of fowls which can be kept satisfactorily by an amateur not living in the country. We do not wish to mislead our readers, or for them to imagine that there are no difficulties in breeding and rearing these birds, and we will at once state that Spanish require more attention and care than any other variety we know of, that is, if a fancier intends to enter into successful competition; and unless he is endowed with an unusually large amount of patience and perseverance, and a real love for poultry, we should not advise him to attempt to keep them, as these qualities will be well tested when the birds get heavy in face, large in comb, and in trimming them for exhibition; but to the fancier who is found of being with his birds, and studying their habits, they will be a continual source of amusement and relaxation.

For eating, their flesh is somewhat drier, and wanting the luscious flavor of the Dorking, game and French breeds; but, as egg producers, there is not another fowl that can equal them, although they do not begin to lay quite so early in the season as some other varieties. Pullets, however, if well fed and cared for, will mostly commence to lay when about six or seven months old, and they will continue laying almost without intermission for eight months, producing from four to five eggs per week. Hens do not lay quite so freely, but with good feeding they will generally lay every other day for seven or eight months in the year; and when it is remembered that any one living in the midst of London can obtain a plentiful supply of very large new laid eggs, and can successfully compete for prizes, it is not surprising that Spanish are such great favorites with town fanciers.

To exhibit this variety with a degree of success, it is necessary that they should be sent out in the very best condition, for with Spanish this is of greater importance than most other breeds. Many times have I seen inferior birds carry off a prize entirely owing to the capital condition in which they were exhibited, although there were far better birds in the class. It is, therefore, absolutely necessary that these birds should be exhibited without being pinky or shabby in the face, and with a bright coral redness in the comb, hard, glossy appearance on the feathers, which can only be accomplished by having a house properly constructed for them. This must be so arranged that the birds are sheltered from the cold winds, the heat of the sun, and from damp or rain, but, more especially, from the effects of the sun during the summer when the weather is very hot; while in the winter they require to be kept moderately warm, though at the same time plenty of fresh air is most essential, or their combs will lose the ruddy appearance and turn pale. —From "The Spanish Fowl," in *Fanciers' Journal* of December.

THE GRAIN CROP.

The grain crop of the United States is greater this year than ever before. In Europe the total deficiency is estimated at 7,000,000 tons, viz.: Great Britain, 2,850,000 tons; France, 2,700,000 tons; Italy, 426,000 tons; Spain; 570,000 tons; Holland, 285,000 tons; Switzerland, 169,000 tons. To meet this deficiency there will be required supplies to the amount of 5,570,000 tons, which will be drawn from various countries in the following ratio: From the United States, 3,750,000 tons; Hungary, 180,000 tons; India, 280,000 tons; Australia, 500,000 tons; South Russia, 650,000 tons; Danubian Principalities, 140,000 tons; Egypt, 70,000 tons.

The crop of this country this year is said to be equal to 400,000,000 bushels, and, therefore, the foreign demand for 140,000,000 bushels can be easily met by us without causing a material increase of price at home. The deficiency to be supplied to Great Britain alone will amount in value to not less than $200,000,000; to France over $100,000,000; Holland, Belgium and Switzerland together $125,000,000; or a total of over $425,000,000, nearly four-fifths of which come from this country. These figures are not the mere guess of irresponsible persons, but are supplied by official authority, and may, therefore, be depended upon to be pretty nearly correct. They demonstrate, at least, one reason for belief in an advancing era of prosperity, for they show that our farmers are to find a good market and excellent prices for their grain, and, when the farmers do well, so do all the rest of the people.

COMPARATIVE VALUE OF WOODS.

It is a great convenience to know the comparative value of different kinds of wood for fuel. Shellbark hickory is regarded as the highest standard of our forest trees, and calling that 100, other trees will compare with it for real value as fuel for house purposes, as follows: Shellbark hickory, 100; pignut hickory, 92; white oak, 84; white ash, 77; dogwood, 75; scrub oak, 73; white hazel, 72; apple tree, 70; red oak, 67; white beech, 65; black birch, 62; yellow oak, 60; hard maple, 59; white elm, 58; red cedar, 56; wild cherry, 55; yellow pine, 54; chestnut, 52; yellow poplar, 54; butternut and white birch, 43; white pine, 30. It is worth bearing in mind, that in wood of the same species, there is a great difference according to the soil on which they grow. A tree that grows on a wet, low, rich ground will be less solid and less durable for fuel, and therefore of a less value than a tree of the same kind that grows on a dry and poor soil. To the ordinary purchaser, oak is oak and pine is pine, but for house use the tree grown on dry upland, and standing apart from all others, is worth a great deal more.

SUGAR

Sorghum and Corn Stalks Being Made to Yield an Excellent Crystallizable Syrup.

A leading feature of the report of the Commissioner of Agriculture will be a dissertation on the manufacture of sugar from sorghum and corn stalks.

The chemist of the Agricultural Department has been experimenting this year, in order to ascertain at what age the different varieties of plants give the best results. The Early Amber variety of sorghum proves to be the most profitable. Stalks of this plant were gathered on the 18th of July and cut in halves. The tops gave .0420 per cent of sucrose, or crystallizable syrup, and .0465 per cent of glucose, or uncrystallizable syrup. The experiments were continued with stalks gathered about once a week until August 30, when the seeds were just beginning to become dry. The sucrose or valuable matter at the last experiment had increased to .1482 per cent, and the glucose had decreased to .0115 per cent. The experiments made with the lower halves of the stalks gave .0465 per cent of the sucrose and .0288 of glucose on the 18th of July, and .1471 per cent of sucrose and .0150 of glucose on the 30th of August.

Commissioner Le Duc has just returned from the West, whither he went to inspect the processes of various sugar growing and manufacturing enterprises. He reports that the most promising results have already been obtained. He visited one manufactory in Illinois, where 43,000 pounds of sorghum sugar have been made this season, equal in every respect to the best product of the sugar cane; and this enterprise has been carried on under exceptional difficulties. He visited or received reports from many other localities to which he had sent sorghum seeds, all speaking in the most favorable terms of the prospects. Individual farmers in Texas, Minnesota, Virginia and intermediate States report having made, at very little expense, their own yearly supply of sugar from seeds supplied by the department.

"You may ridicule the project to your heart's content," said the Commissioner to a correspondent, "and call me as many names as you like; but I tell you that it will not be many years before this country will raise sugar to export."

STATISTICAL.

Our Agricultural Products.

Mr J. R. Dodge, the statistician of the Bureau of Agriculture at Washington, has prepared a table to show the quantity and value of our main products for the past ten years. The figures are startling in their enormous aggregates. The *average* quantities and values (at home) of our crops per year for ten years are as follows: Corn, 1,068,959,550 bushels; value, $525,211,602. Wheat, 273,831,746 bushels; value, $301,481,540. Rye, 18,016,030 bushels; value, $15,091,207. Oats, 291,036,670 bushels; value, $156,810,592. Barley, 30,606,609 bushels; value $25,385,459. Buckwheat, 10,968,070 bushels; value, $9,204,801. Hay, 35,000,000 tons; value, $300,000,000. Cotton, 4,000,000 tons; value, $360,000,000. The total annual products, reduced to pounds, aggregate 173,343,320,500 pounds; valued at $1,553,175,201, or nine-tenths of a cent per pound for all products. The aggregate value of the products for ten years is $15,637,752,010, or very nearly one-half of the total valuation of the country by the census of 1870. The improved lands of the country, which were 188,000,000 acres in 1870, now exceed 200,000,000 acres, and upon this basis the average product of each acre of arable land in cultivation is .43 of a ton of all sorts of agricultural returns, the average home value of the ton of products being $17, on the basis of a ten year valuation. By this it appears that the average annual product for ten years of improved lands in the United States has been $7.37 per acre, including of course, a good deal of produce consumed at home. The butter products this year are estimated at $170,000,000; cheese and milk, $130,000,000; beef and its products, $270,000,000; pork and its products, $250,000,000; cotton, $270,000,000; corn, $410,000,000; wheat, $410,000,000. The increase this year in production of cereals over the average of the past ten years promises to be about 28 per cent, but the aggregate value will not be greater.

OUR LOCAL ORGANIZATIONS.

LANCASTER COUNTY AGRICULTURAL AND HORTICULTURAL SOCIETY.

The stated meeting of the Lancaster county Agricultural and Horticultural Society was held in their rooms in City Hall, Monday afternoon, December 7, the following members being present:

Henry M. Engle, Marietta; Joseph F. Witmer, Paradise; Dr. S. S. Rathvon, city; John C. Linville, Salisbury; Casper Hiller, Conestoga; I. L. Landis, Manheim; George W. Mason, city; Jacob Bollinger, Warwick; Henry Kurtz, Mt. Joy; Levi S. Reist, Manheim; Johnson Miller, Warwick; John H. Landis, Manor; Wm. H. Brosius, Drumore; Ephraim S. Hoover, Manheim; J. M. Johnston, city; M. D. Kendig, Manor; W. W. Griest, city; Elias Hershey, Leaman Place; Harry G. Rush, Pequea; and John H. Moore, Donegal.

The President, Calvin Cooper, being absent, Vice President Henry M. Engle was called to the chair.

Crop Reports.

Casper Hiller said the growing wheat between Lancaster and Conestoga Centre looks well, with here and there a field slightly injured by the fly or

the drouth. He saw but one field that looks decidedly bad. The clover sowed in March last looks well, while that sowed in May is generally poorly set.

Henry Kurtz, of Mount Joy, said the late-planted wheat in his section of the county looks very well, while the early-planted, looks bushy and spotted, being injured by the fly. The young clover, sowed last spring, is very poor, and some of it is so bad that it will have to be turned under to make room for corn. Some tobacco has been sold in his neighborhood. One crop at 30 cents for wrappers, 15 for seconds and 5 for fillers—equal to about 27 cents round. He had heard of other sales at about the same figures, and had seen a telegram to Capt. Bricker, of Lititz, offering him for his crop 25, 16, 10 and 5, which offer, he heard, had been accepted.

Joseph F. Witmer, of Paradise, said that in his neighborhood the fall wheat looked very well indeed. A number of tobacco buyers had been in the neighborhood and sales had been made as low as 17 and 3, and as high as 29 and 5, these prices being regarded as very satisfactory by the growers. The young clover, though rather backward, is improving.

Wm. H. Brosius, of Drumore, said that in his neighborhood the wheat, considering the dry weather, looks very well. He saw but few fields well set in clover.

Henry M. Engle said that as far as he had seen the growing wheat looked very well; he had seen none that was seriously affected by the fly; he thinks the grain goes into winter quarters in remarkably good condition. The young grass is not so well set as it usually is, but it too looks pretty well, so that altogether there is cause for congratulation. A friend from the Cumberland valley told him that in some sections of the valley the wheat looks so bad that it is thought the farmers will not get as much grain as they sowed.

J. C. Linville, of Salisbury, said that in his neighborhood the young clover had failed entirely.

High Farming.

The question "What constitutes high farming, and will it pay?" was opened by Henry M. Engle, who said the question was a hard one to answer. Among eminent agriculturists there exists a great diversity of opinion. Some say that high farming consists in a heavy application of manures; others that high farming consists in making the farm yield the best paying crops. In this view tobacco growing in this county may be regarded as high farming as it undoubtedly pays just now better than any other crop. It should be remembered, however, that the tobacco gets the best land, the best manure, the best cultivation and the most unremitting care; while the potato patch in the adjoining field gets poorer soil, little or no manure, is but slightly cultivated, and is rankly overgrown with weeds. Where this state of affairs exits there is no high farming. As a general rule he would say there was high farming where everything is neat and clean and all the crops well cultivated; where buildings, fences, &c., are kept in good condition and where the farm products exceeded the farm expenses. The highest farming that has come under his observation was that of truck farming, where two or three crops are grown in a single season on the same ground and any one of the crops would pay expenses. In truck gardening he had known as much as $2,000 worth of products to be taken from a single acre. There is of course a system of high farming that does not pay. This system may be illustrated by the experience of Rev. Henry Ward Beecher, who when asked how he could afford to pay $600 per acre for land and get such indifferent crops, said he did it by putting a little more on the land than he took off. This kind of high farming may do for those who have a heavy bank account, and farm merely for show, but is not to be recommended to farmers who expect to live from their farms. High farming should result in having everything neat and tidy about the farm, in growing good crops at less expense than they will yield in return, save money to the farmer and leave the land in better condition than it was.

John C. Linville said there was a distinction to be made between high farming and good farming. By a prudent application of fertilizers and good cultivation, 40 bushels of wheat per acre might be grown. By extending $20 more per acre 50 bushels might be grown, but the extra ten bushels of wheat would not pay for the extra $20 expended. He agreed with Prof. Lowes, who classed that which will pay as "good farming" and the extra expenditures that will not pay as "high farming."

Henry Kurtz would not class the trucker as a farmer; it might be very easy to do with an acre what would be impracticable on a large farm. He only called those farmers who followed a system of rotation of crops, and the high farmer was he who made these crops pay. He mentioned several cases which he knew of tobacco farmers who rented land at $40 per acre and grew tobacco yielding $400 per acre. This he regarded as high farming and good farming.

Casper Hiller said we have had much high and profitable farming in Lancaster county. Thirty years ago the townships south of Lancaster did not yield half as much per acre as they do now. Men who were then tenants are now wealthy farmers, owning one, two or half a dozen farms. They farmed high, fertilized liberally, and had a regular rotation of crops, thus constantly improving the soil. His idea was that no farming is high farming that does not pay.

Mr. Brosius thought it would be difficult to determine where common farming ends and high farming begins. Good farming is that which is made to pay best by the exercise of good judgment, practice, experience and observation, whether it be by a liberal or economical use of fertilizers and other means. High farming, as he understood it, was the greatest possible amount, in bushels or pounds, from an acre, without regard to what the cost might be.

Dairy Farming.

"Will dairy farming pay in Lancaster county?" was the subject referred for an answer to John C. Linville. He said the solution of the question greatly depended on the location of the farm, the condition of the soil, and the water supply. The dairy business has languished in Chester county, where they have better facilities than we have. Our limestone land is not well suited to dairying. He did not believe it advisable to let cows run over land worth $300 per acre, if it could be put to more profitable uses. He estimated that it would cost $40 per year to feed a cow, and this, taken in connection with the high prices of good cows, their liability to abortion and other diseases, sometimes resulting fatally, would outweigh the profits. In the southern part of the county, where the land was cheaper and the grass better, dairying might pay; but even there it will be found the great competition will come from the Western states, where land is cheaper and where by the concentration of great numbers of cows in a single dairy butter can be made cheaper and better than in small dairies. Some of the best dairymen of Chester county say they cannot make butter the year round for less than 60 cents per pound.

Henry M. Engle said there were places no more eligibly located than some in Lancaster county where the dairy business was profitable. It must be remembered that the dairy business embraced milk-selling, butter-making and cheese-making. For milk the short-horn cows are the best; for cheese the Ayrshire, and for butter the Jerseys. Success depends in getting the kind of cow best suited to the several branches. As to the cost of keeping cows it had been demonstrated that it costs but little more than half as much to keep them by the soiling system—that is by stabling them and feeding them green food in summer—as it costs to let them run at large, while the yield of milk and butter will also be larger.

Levi S. Reist believed that dairying always pays near large towns and cities if it was properly attended to. He cited several cases of dairymen near Lancaster and Columbia who had become rich.

In answer to a question Mr. Linville said that the introduction of oleamargerine had not affected the market for first-class butter, but that it had greatly affected the market for low grades of butter. Indeed the oleamargerine is preferable to much of the low grade butter, and when good butter becomes very cheap, oleamargerine cannot compete in price with it, as it cannot be made for less than 15 cents per pound.

Stock Raising.

"Is stock raising profitable?" was the question referred for answer to M. D. Kendig. He estimated that a cow worth $40 will have cost by the time she comes into milking $57.50; and he estimated her yearly product in butter, milk, &c, at $62. To raise a calf for beef would in three years, at which time it should weigh 1,300 pounds, cost the farmer $70.81, or 5½ cents per pound. A western steer of the same weight might be bought for 4 or 4½ cents per pound. On the whole he thought stock raising unprofitable.

Joseph F. Witmer and Henry Kurtz thought that stock raising might be made profitable with proper care, and gave some instances in their own experience.

Ephraim S. Hoover said that the raising of cattle on our high priced tillable land would not pay but that it would pay to raise them on low, untillable land, where there were rank grasses or on other lands that were not tillable.

State Agricultural Society.

The secretary read a communication from the secretary of the State agricultural society stating that the term of membership of H. M. Engle was about to expire; that he had been an efficient and useful member of the society and that it would be a very satisfactory to the board to have him re-elected.

On motion of Mr. Engle the matter was deferred until next meeting.

Secretary Witmer called attention to the fact that the prizes awarded to Henry M. Engle and Casper Hiller for their essays on wheat culture had never been paid.

It was ordered that the treasurer be directed to pay them, and thereupon Mr. Engle donated his prize to the society. (Mr. Hiller was not present.)

Israel L. Landis presented a number of very large chestnuts sent to him by Mr. Samuel Potter, of Montgomery county. They were four times as large as the ordinary chestnut and equally sweet.

H. M. Engle urged the importance of introducing this variety into our county by grafting. He said there was more money in it than in planting choice fruit trees, while plenty of waste land on almost every farm may be found suitable for its growth.

John H. Landis exhibited some specimens of Georgia cotton bolls.

Business for Next Meeting.

The following questions were adopted for discussion at next meeting.

"Which is the better farmer—he who makes the most manure, or he who buys the most?" Referred to Eph. S. Hoover.

"Does it pay to raise trees for fencing purposes?" Referred to M. D. Kendig.

"Is there sufficient evidence that 'ensilage' is a successful method of preserving food for stock?" Referred to Joseph F. Witmer.

"Does it pay to cut dried corn fodder for stock?" Referred to William H. Brosius.

Adjourned.

POULTRY ASSOCIATION.

The Lancaster County Poultry Society met statedly in the City Hall, Monday morning, December 1st, at half-past 10 o'clock.

In the absence of the President, Rev. D. C. Tobias, the meeting was called to order by G. A. Geyer, the first Vice President.

Members Present

Mrs. Colin Cameron, Brickerville; David M. Brosey, Manheim; Tobias D. Martin, New Haven; W. J. Kafroth, West Earl; T. E. Evans, H. H. Tshudy, Peter S. Reist, Litiz; G. A. Geyer, J. H. Menaugh, L. G. Martin, Spring Garden; Chas. E. Long, Jacob B. Lichty, Charles Lippold, John C. Burrowes, Jacob B. Long, Joseph R. Trissler, Ferdinand Sheaffer, Charles Eden, Amos Ringwalt, Lancaster; Joseph F. Witmer, Paradise; J. M. Johnston, C. A. Gast, Frank Greist and Geo. W. Mason, Lancaster, reporters.

The Catalogue

Chas. E. Long suggested that all business except such as pertained to the approaching exhibition be postponed. He reported that Mr Lichty and himself had succeeded in getting 500 catalogues printed without any expense to the society for printing or mailing, the cost having been paid by inserting advertisements in the book.

Election of New Members.

Edwin Brackbill, Morris Bachman and John Hagens, of Strasburg; E. H. Burkholder and Rudy Frankhouser, of West Earl, were elected members of the Society.

Filling a Vacancy

Joseph R. Trissler, W. J. Katroth and Henry Wissler were nominated to fill the vacancy in the executive committee, caused by the resignation of J. H. Miller. The two latter named gentlemen declined, and Mr. Trissler was unanimously elected.

Securing and Incubator.

Secretary Lichty spoke of the importance of securing an incubator for the approaching exhibition, and stated that Mr. Reed had corresponded with a number of firms manufacturing the machine, and found that one could not be secured for exhibition for less than $25, and additional expense for expressage, etc.

Mr. Chas. E. Long read a letter from Mrs. Colin Cameron, in which the proposition was made that if the Society would purchase the "Eclipse" incubator, manufactured in Massachusetts, price $75, Mr. Cameron would take the incubator at $50. Mr. Long favored accepting Mrs. Cameron's proposition and said as the time was short, the Society should decide at once, so that the machine could be secured, and the eggs placed in it, in order that the chicks may be coming out during the exhibition.

Mr. Lichty thought the society should not hesitate about getting the incubator, as he believed it would prove of sufficient interest to draw enough people, who otherwise would not visit the exhibition, to pay all expenses.

Amos Ringwalt also favored getting the incubator, and said even if it didn't pay, a rich society like this should not be afraid to incur $20 expense.

Jacob B. Long offered to be one of a number to take $5 worth of tickets to insure the society that the additional expense would be made up.

T. F. Evans thought the society should not take the money out of the treasury to pay the cost, and argued that even if the members did take the amount in tickets, it would be the same thing as paying the money out of the treasury. He doubted the expediency of getting the incubator, and suggested that the society wait until its next exhibition to secure one.

Charles E. Long called on members who were willing to pay $2.50 a piece out of their pockets to cover additional expense, beyond that insured by Mr. Cameron, to rise in their places.

Mr. Lichty opposed this proposition. He was sure the exhibition would be a success. Already $25 was guaranteed, and he didn't believe in a few members paying out of their own pockets this money. He thought there were enough honorable gentleman in the society to make up any deficiency that might occur.

A number of members planked their dollars down on the table, and there was a long rambling discussion on various propositions to secure the machine. Finally, H. H. Tshudy moved that the Society accept the offer of Mr. and Mrs. Cameron, providing the cost does not exceed $20. This motion was carried. Mrs. Cameron stated that the expressage would be paid by her husband.

There having been considerable talk about the inability of some members to dispose of their ticket, Mr. Ringwalt suggested they be used as currency. He had adopted this plan and found it worked first-rate.

Eggs Wanted.

Mr. Long stated the 300 good, fresh eggs would be needed for the incubator, and asked members to donate the same. W. J. Kafroth said he would furnish 50, J. H. Menaugh guaranteed 100 from Spring Garden. Mrs. Cameron agreed to send some game eggs, but wanted them mixed with the others so that no person would be able to secure a flock of game chicks. Mr. Evans said Lititz would send 50. It is intended to sell the chicks hatched to visitors at the exhibition.

Miscellaneous.

Mr. Lichty moved that the treasurer be authorized to draw his check for $70, the price of the incubator, so that the machine could be at once sent for. Adopted.

H. H. Tshudy moved a vote of thanks be tendered the gentlemen who got up the catalogue for their labor in securing the printing without cost to the Society. Adopted.

Mr. Evans suggested members furnish corn, wheat, buckwheat, etc. for feeding the fowls at the exhibition.

Mr. Tshudy suggested and Charles E. Long moved that the secretary be authorized to employ some competent person to wait on the newly-elected members to the society in this city, and solicit their membership fee. It was adopted.

On motion of John R. Trissler, it was decided to hold the next meeting of the society on December 15, at 10½ o'clock a. m.

On motion of Mr. Johnston, the society adjourned.

SPECIAL MEETING.

A special meeting of the Lancaster County Poultry Society was held in their room in the City Hall, Monday morning, December 15.

The following members and visitors were present: Charles E. Long, city; Charles Lippold, city; William Shoenberger, city; Rev. D. C. Tobias, Litiz J. B. Lichty, city; S. N. Warfel, Strasburg; John A. Stober, Schoeneck; A. H. Hostetter, city; Frank R. Diffenderffer, city; C. A. Gast, city; George A. Geyer, Spring Garden; John Burrowes, city; H. H. Tshudy, Litiz; J. B. Long, city; W. J. Kafroth, West Earl; Ferdinand Shaeffer, city; John E. Schum, city; Eli J. Barr, Litiz.

On motion the reading of the minutes of the previous meeting was dispensed with.

Mr. Charles E. Long, from the Executive Committee, reported that the incubator had arrived, and was working very satisfactorily. The machine is at present at the residence of Mr. J. B. Lichty, who has charge of it. He thought the machine was going to prove a success. The eggs were placed in the incubator, and unless no unforseen accident should occur, chickens would be hatched every day during the show.

Mr. Warfel said there were a few features in poultry shows that are very interesting, and among these features he mentioned the exhibition of golden pheasants. He thought some of these fowls should be procured for exhibition, as they would add greatly to the show.

Mr. Lippold suggested that the society should buy a pair and place them on exhibition.

Mr. Long said there was no doubt these fowls would prove a valuable addition to the show. They were very expensive, however, and would require a very large cage in order to accommodate them. He also suggested that Mr. Warfel be instructed to correspond with Mr. Long, of New York, and make all the necessary arrangements.

Mr. Warfel respectfully declined the honor, and thought the affair could be attended to more promptly and with better success by the Executive Committee of the society, and he therefore moved that the secretary be instructed to procure the pheasants.

The motion was amended by providing that the cost shall not exceed $10. The motion as amended was carried, and the secretary was instructed to procure the birds.

Mr. Warfel said that Mr. Drexel, of Philadelphia, had some white peafowls, and he knew they could be procured by the society free of charge. He also thought they would be a valuable addition to the show.

Mr. Lippold said that the express charges would not be over $1.25, and he therefore moved that the matter be placed in the hands of the Executive Committee, with power to act. The motion was carried.

Mr. Lichty said that several entries had already been made for the exhibition; and he urged upon the members the necessity of making their entries as soon as possible, in order that should additional coops be required, they could be manufactured in time for the opening.

Mr. Lippold said that Mr. Lichty was kind enough to offer a silver cup for a match between Antwerp pigeons. He thought, however, that the distance the birds should fly should be announced in time to permit the birds to be trained somewhat.

Mr. Lichty said that he had purchased a cup for the purpose mentioned. The birds are to be placed on exhibition at the show. The birds are to fly from 10 to 15 miles and the winner to receive the cup. He would not mention the place from which the birds are to be flown, as it was his desire not to give the birds any practice. He was, however, willing to make the distance 25 miles.

Marcus G. Sener, of Lancaster, Aaron Good, of Elizabethtown, H. L. Stehman, of Rohrerstown, Samuel Engle, Marietta, B. J. McGrann, of Lancaster, J. Gust Zook, of Lancaster, and Samuel Eaby, of Elizabethtown, were elected members of the society.

Mr. Schoenberger thought it would be advisable to set apart a day for school children, and lower the price of admission to five cents on that day.

Mr. Long suggested that they be admitted on certain days for several hours for a reduced rate of admission.

On motion a committee was appointed to make nominations for officers to be elected at the meeting in January.

The following is the *committee*: Messrs. J. A. Stober, H. H. Tshudy and J. B. Long.

On motion of Mr. Kafroth, an invitation was extended to the Children's Home to visit the show at a convenient time.

On motion the society adjourned.

LINNÆAN SOCIETY.

On Saturday the 29th of November, the Linnæan Society met statedly, and on motion, Professor T. R. Baker took the chair. The preliminary opening being attended to, the donations to the museum for this month were examined and found to consist of a number of specimens sent to Dr. Rathvon, from California, per Mr. John Wittich, of Elkgrove, Sacramento county, California. Among them were the following:

Petrified wood from that geological wonder, the buried forests of California, lately illustrated and fully described. A large shell of the *Haliotis tuberculata* or ear shell. Mr. W. states they are called "Abalone;" that they adhere to the rocks so firmly that no one is able to pull them off with the hands only; that the flesh is as solid as a piece of pork and far better to the taste, as he speaks from experience. This specimen measures 6½ inches in width and 8 in length, and beautifully iridescent in its inner cavity. There are about one hundred species described Other shells of *Gasteropods* or "belly-footed Molluscous" animals, embracing eight orders, among which are specimens of *Fissurella*, shield-shaped, perforated at the summit, exterior surface ribbed. Nine species of the "Limpet" family, rather too water worn to decide the exact species. "A sea-urchin" or sea-egg of the family *Echinoida*, but broken into fragments on its way, not being protected by a tin or wooden box. A rather novel specimen of the "chiton family," which seems to be a species of *Trachydermon*. A most magnificent cluster of *Pollicipes*, having a tubular, tendinous, scaly peduncle, of which six species of each genus are described, and a specimen of each figured. This family of *Cirrhipeda* has ten genera, among which are the Barnacles *balanus*. Several native saline specimens, one of a white color, like a carbonate of soda; the other yellow, of a highly styptic taste, like sulphuret of iron combined with alumina. Minerals—A specimen of "Serpentine," one in appearance of black quartz; another, a kind of brown oxide of iron. Also among the lot a delicate algæ, and a skin of some rodent, allied to the squirrels. Mr. Wittich's diary was published in the October number of the Lancaster *Farmer*, which gives much information of interest. The Linnæan Society give their hearty thanks to Mr. Wittich, and hope others will do likewise. Thirty cents postage for a distance of 1,000 miles by mail, is a small item, while its benefit in a scientific point of view is great.

Mr. C. M. Hess, of Quarryville, left specimens of a micaceous oxide of iron found abundant near his place, to be analyzed by the State assayist at Harrisburg, Pa.

Another addition was a large specimen of the *Pseudotriton*, now under Rafinesque's name of *Spelerpes longicaudus*, Cave Salamander. Mr. Stauffer said of this: I would remark here, that I have the longicauda colored and figured, and named by Prof. Cope for me. Then I have another specimen figured which has a shorter and flattish tail like the tritons and is like the specimen figured, which has a shorter and flattish tail like the tritons and is like the specimen donated by Master D. Knight. Although alike in color and spots, I am inclined to think that it is an undescribed species, and confounded with the longicauda, and deserves further attention. H. L. Hendrickson donated a very large specimen of a water bug, the *Belostoma grandis*, captured in the Chickies. The follicles of the "sack-bearer" or "basket worm," unfortunately named "*Thyridopteryx ephemeræ formis*," taken from the arbor vitæ, by Mrs. Ellmaker, Gap, Lancaster county. A seventeen year locust (*Cicada septemdecim*), in its pupa state, at eleven years of age, dug out in September last by George O. Hensel. A fine specimen of a crustacean taken out or from among oysters, by Samuel Roadman.

Specimens of leaves of the Elm tree pasted on a card, to show the work of perforation by the Elm Beetle, *Galeruca Xanthamalena*, during this summer on our city shade trees. Also the leaves of the Maple (*Acer saccharum*) infested by *Pseudococcus aceris*, during October last, neatly pasted on cards with flocculent cottony masses adhering. A singular large oblong pellet of hog's hair packed together taken from the stomach of a fat hog owned and slaughtered by Mr. Aaron Zell, of Springville, Lancaster county, Nov. 24, 1879. A large puff-ball, *Lycoperdon*, from the office of the *New Era*.

Additions to the Library.

Report of the Department of Agriculture for 1878, with the compliments of the Commissioners, amply illustrated. Special report No. 18, an essay on tea culture in the United States, by William Saunders. Report of the Commissioners of Education, 1877. Pamphlet, Bibliotheca America. Book Catalogues. Patent Office *Gazette* up to November 25, 1879. The LANCASTER FARMER for November.

His orical Collections.

A fac simile of a petition, dated August 27, 1726, to the court of what was part of Chester county, for a license to open an ordinary (otherwise a brewery) at Donegal run, on the road leading from Marietta to Mount Joy; donated by Samuel Evans, Esq., of Columbia, Pa. About a year ago Squire Evans published short biographical notices of these signers, ministers, church members and farmers. The house is still standing and in good condition to last another century. A pin on a card, from an assessment roll dated 1751, per S. Evans, Esq. A photographic bird's-eye view of Paris and Exposition, 1879. An original bill dated October 18, 1787, against Jasper Yeates, Esq., debtor to Franklin College for one quarter's tuition for John, £1. Receipted and signed W. Reichenbach, per D. M. M. Stauffer. Eight European papers sent home per Mr. C. A. Heinitsh, druggist, during his visit in 1848; donated by Mr. Heinitsh. Three envelopes containing forty-three clippings of historical interest, by Dr. Rathvon.

Papers Read.

Dr. Rathvon read a paper on the California and other contributions, with notes and comments, No. 531. J. Stauffer read an illustrated paper, No. 532, on the crustacean given him by Mr. S. H. Roadman. It compares nearly in every particular with a species described in the United States Fish Commissioners' Report page 571-2. The *Nerocila Munda*, by Harger, the only specimen yet taken, found on the dorsal fin of a fish. On comparison with numerous others, it failed to agree generically, hence he considers it a species of *Nerocila*.

Under scientific miscellany, various topics were discussed. M. L. Davis, M. D., Millersville, deposited the remains of the skeleton of the five legged frog. The fifth leg seems to have been double in its long structure and the muscular portions adherent from the opposite sides only. The pelvic articulation was, however, higher up and to one side, without an osseous cavity; a cartilaginous ligature held it in place.

The Society adjourned to meet (annual) on Saturday the 27th of December next, 1879.

AGRICULTURE.

The Origin of Wheat in America.

It is difficult in the present day to realize the fact that wheat was at one time unkown in America; yet, prior to the discovery of that continent by Columbus there was no cereal in America approaching in nature to the wheat plant. It was not, observes the American *Miller*, until 1530 that wheat found its way into Mexico, and then only by chance. A slave of Cortez found a few grains of wheat in a parcel of rice and showed them to his master, who ordered them to be planted. The result showed that wheat would thrive well on Mexican soil; and to-day one of the finest wheat valleys in the world is near the Mexican capital. From Mexico the cereal found its way to Peru. Maria D'Escobar, wife of Don Diego De Chauves, carried a few grains to Lima, which were planted, the entire product being used for seed for several successive crops. At Quito, Ecuador, a monk of the Order of St. Francis, by the name of Fray Jodost Bixi, introduced the new cereal; and it is said that the jar which con-

tained the seeds is still preserved by the monks of Quito. Wheat was introduced into the present limits of the United States contemporaneously with the settlement of the country by the English and Dutch. *Pall Mall Gazette.*

A Senator's View of Farming.

Senator Chandler of Michigan, had lived many years in Washington, and is familiar with official life as it exists in the Senate and in the departments. What his opinion is of it when compared with farming may be learned from the following :

If I had a boy to-day, I would rather put him on an eighty-acre lot that never had a plow or an axe upon it, than place him in the best Government office in the land.

Make your houses pleasant. Make them so attractive that your sons and daughters will love their homes better than any other place on this earth. Make the business of farming so agreeable that your sons will see that it is the most healthful and profitable occupation in which they can engage. Build good houses and buy good implements. Don't get an old cracked cook-stove, but put in a good range. In fact, have every convenience that you can, so that your wives and daughters will deem it a pleasure to perform their household work.

In this way you can bring up your sons and daughters on the farm; but when you make the home repulsive, you drive them into clerkships and other menial positions, when they ought to be God's anointed lords of creation.

Depth of Sowing Wheat.

Farmers who are wide awake and given to investigation don't sow so much wheat per acre as they formerly did, and they don't sow it so deep. The great, heavy harrows of ten or twenty years ago are not now employed by them in covering seed, and the drill, which can be depended on better, is becoming universally popular. In broadcast sowing, after the ground is thoroughly prepared, the Thomas smoothing harrow covers the seed deep enough. A Wisconsin writer gives the results of an experiment in planting at different depths—on the surface, one-fourth inch, one-half inch, three-fourth inch and so on to several inches. That on the surface lay two weeks before sprouting; that one-fourth to three-fourth inches deep came up in four or five days, and so on, getting later as the depth increased. The last to come up was planted three-and-a-half inches deep, and was fourteen days in reaching the surface. None planted deeper ever reached the surface. At the end of six weeks that planted one-fourth to one-half inch deep stood far ahead of the rest.—*Record and Farmer.*

Wheat and Oats.

A number of agricultural journals have advocated sowing oats and wheat together. The leaves of the oats are supposed to keep the snow from blowing away, to prevent the sun from thawing the frozen ground and to make a good top-dressing for the growing wheat in the spring. But it seems plain that if wheat make a fair growth in the fall its own leaves will arrest the snow as well as oat leaves, while they would serve just as well to arrest the action of the sun upon the frozen ground. As a "top-dressing" we do not believe the wheat crop would be appreciably benefited. Not until the leaves were plowed under and rotted in the ground could any benefit be derived from them as a manure. So far as we can see, therefore, the oats, instead of benefiting the wheat, would simply exhaust the soil of nutriment and moisture.

Feeding Mowing Lands.

Of the many errors that farmers are likely to fall into there is none more prolific of injury than that of closely feeding those fields from which the hay crop has been taken, and from which it is expected in the future. During the late summer and early fall months, when the feed in pastures becomes short, and the flow of milk diminishing, with a field of good feed that has sprung up since cutting the crop of hay, the temptation is very strong to "turn in the cows" for a baiting. This may be all well enough if not persisted in; but when animals are allowed to feed in such fields until the whole is gnawed so closely as to be nearly as smooth as a house floor, such a field cannot be depended upon for much of a crop of hay the succeeding season, unless a liberal top-dressing of some sort of fertilizer is applied.

Plowing by Electricity.

Some interesting experiments of plowing by electricity took place the other day at Noisiel, in France, in the park of the well-known Deputy and chocolate maker, M. Menier. The motive power was supplied to the plow by a Gramme machine, itself set in motion by water power, which is abundant on M. Menier's estate. The plow did about the same work as if it were drawn by four oxen. It was a Fowler plow, with six shares. The motive power was supplied by a wire at a distance of nearly half a mile. To a profane looker-on it was amazing to see a plow propelled by an unseen agency without teams or steam. The Gramme machine employed was the same that supplied M. Menier's manufactory with electric light.

About Corn and Wheat.

Corn loses one-fifth by drying, and wheat one-fourteenth. From this the estimate is made that it is more profitable for farmers to sell unshelled corn in the fall at 75 cents than at $1 a bushel in the following summer, and that wheat at $1.25 in December is equal to $1.50 in the succeeding June. In the case of potatoes—taking those that rot and are otherwise lost—together with the shrinkage, there is but little doubt that between October and June the loss to the owner who holds them is not less than thirty-three per cent.

Rolling After Sewing Wheat Fields.

The objection to rolling wheat fields after being sown has been made that the snow will blow off or collect in drifts here and there. But if wheat is sown early the leaves should cover the entire sur-surface before winter, and we should suppose would hold the soil as well as a rough soil surface. Whether this supposition is well founded or not, we have this fall rolled five fields after the seed had been drilled in or sown broadcast, and another season will probably enable us to test the question.

HORTICULTURE.

Principles of Pruning.

Barry, in his "First Garden," rests the theory of pruning of fruit trees on six general principles :

First. The vigor of a tree subjected to pruning, depends in a great measure on the equal distribution of sap in all its branches. To accomplish this the following means are devised to be successively employed: (1) Prune the branches of the most vigorous parts very short, and those of the weak parts long. (2) Leave a large quantity of fruit on the strong part, and remove the whole or greater part from the feeble. (3) Bend the strong parts and keep the weak erect, and the more erect the branches are, the greater will be the flow of sap to the growing parts. This remedy is especially applied to espalier trees. (4) Remove the vigorous parts of the superfluous shoots, as early in the season as possible. (5) Pinch early the soft extremities of the shoots on the vigorous parts and as late as possible on the feeble parts, except always any shoots which may be too vigorous for their position. (6) Lay in the strong shoots on the trellis early, and leave the feeble parts loose as long as possible in espalier trees.

Second. The sap acts with greater force, and produces more vigorous growth on a branch or shoot pruned short than one pruned long; hence the practice of pruning short where wood branches are desired, and long for fruit branches.

Third. The sap tending always to the extremities of the shoots, causes the terminal bud to push with greater vigor than the laterals.

Fourth. The more the sap is obstructed in its circulation, the more likely it will be to produce fruit buds.

Fifth. The leaves serve to prepare the sap absorbed by the roots for the nourishment of the tree, and aid the formation on the shoots. All trees, therefore, deprived of their leaves, are liable to perish.

Sixth. When the buds of any shoot or branch do not develop before the age of two years, they can only be forced into activity by close pruning, and in some cases, notably the peach, this even will often fail.

Fruit Exports of the United States.

From a paper issued by the Agricultural Department at Washington, we find the following on the subject of dried fruit: "The European demand for American fruits increases with the supply, and proves to be very generally remunerative. There is enough fruit raised in the United States to supply both our own country and Europe. The first exportation of apples was made 30 years ago, when the apples commanded from six dollars to eight dollars a barrel in Liverpool. That city now receives 90,000 barrels of apples annually. The value of the fruit exported last year was $2,937,025. The exportation of canned fruit is rapidly increasing. The supply of dried fruit has never been equal to the demand. The extraordinary increase in the production of dried fruit in the last few years has been met by still greater consumption."

Fastening Zinc Labels on Trees.

Unless frequently examined, the wire used to fasten labels to trees, as recommended by "Griswold" in a late *Rural*, is apt to injure the tree by cutting into and sometimes girdling it. An improvement on this is to make and attach the labels as follows: A convenient size is five or six inches long, an inch wide at one end, tapering to a point at the other. Write the name, date of setting, and anything else of special interest in connection with the specimen, on the widest end with a common lead pencil, and wind the pointed end around a limb. As fast as the tree grows the flexible zinc unwinds without injuring the tree. The pencil marks unite chemically with the zinc, and soon become indelible. The best zinc for the purpose is that which is thin, old and corroded. I obtain them at the tin shops here, cut to order, for twenty-five cents per hundred.—*Correspondent of the Rural New Yorker.*

Cleaning Fruit Trees.

Autumn is the best time, says the *Rural New Yorker*, to cleanse fruit trees, and indeed, all plants, from scales and other insects. Now the fruit trees can be handled with less liability of breaking buds and spurs than in the spring, after the buds have begun to swell, and the work will be as effective now as then. Use strong soapsuds of whale oil soap. Apply it with a stiff brush; and do not confine the washing to the trunk, but go over all the small branches and everywhere on the tree where scales are found.

Manuring Fruit Trees.

Now is the time to mulch and manure fruit trees, and prepare them to endure and thrive under the severe cold of the coming winter. Well rotted barnyard manure, mixed with loam, is probably the best—but a sprinkling of wood ashes around each tree will have a good effect. Even coal ashes is better than nothing. The spread keeps the roots warm and moist, and keeps out the frost to a large extent. Fruit trees need manuring and care just as much as other plants and crops.

DOMESTIC ECONOMY.

Chickens to Boil.

Dress in the usual way, cut off the neck, legs, wings, and break the back in two; put into cold water till the animal heat is gone, then put into a kettle of cold water and boil till nearly done; salt and pepper and boil the water nearly out. If the fowl is not fat add a lump of butter when thoroughly done, and it is ready for the table. Or, a better way, after cooking as above, mix a spoonful of flour with one egg and a quart of milk; add to the chicken and boil one minute.

Fried Chicken.

Chickens must be young to fry well. If no larger than pigeons they may be fried whole; if larger, dissect as above, wash, rub salt on while wet, pepper and fry in butter or lard, keeping the dish covered. Mix one or two eggs with a spoonful of flour and a teacup of milk, and pour over the chicken when done, setting the frying-pan in the oven long enough to cook the egg.

Roasted Chicken or Fowl.

In dressing do not scald enough to shrink the skin; it is troublesome. Cut as little as possible in cleaning; remove the neck bone as low as you possibly can slip the skin down. Loosen the crop all around with one finger and draw it out at the neck. Hold something hard under and with a hammer break the bone an inch above the joint at which you cut off the leg, then you can easily remove it when it becomes bore and perhaps burnt by touching the oven. Rub salt outside and in while the fowl is wet, pepper, cut the neck, gizzard, liver and heart in small pieces; put in cold water enough to fill the fowl; boil half an hour, salt and pepper. Add as much old bread sliced thin as the water will wet; put in a little butter, stir well and put into the chicken; sew up with coarse thread; fill the neck and tie it. Put into the oven, keeping the bottom of the dripping-pan covered with water, which dip over the fowl occasionally, and turn carefully twice. Chickens eight months old will roast well in an hour, old fowls require half a day; they had better be boiled. When done take out the chicken, dip off most of the oil and make a gravy by adding a spoonful of flour and a pint of rich milk.

The above directions are good for turkey, goose or duck, except the two last especially, should be fat to be good, but not to be eaten. Remove all the fat you can easily both before and after cooking; enough will be left then.—*S. A. R. Lindsey, Susquehanna county, Pa.*

Roast Duck.

Pluck, singe and draw; blanch the feet and remove their skin; make a stuffing with sage, onions (previously blanched and chopped fine) and bread-crumbs, using twice as much onion as sage, and twice as much bread-crumbs as onion, add a little butter, pepper and salt to taste. When stuffed truss them, tie some thin slices of bacon over the breasts, roast for fifteen minutes before a brisk fire, basting well with butter; remove the bacon from the birds a minute or two before they are roasted. Serve with gravy in the dish, but not over the birds. —*Theresa, Germantown Telegraph.*

Our Receipt for Curing Meat.

As the season has arrived when curing meat is in order we publish, as of old, our famous receipt for curing beef, pork, mutton, hams, etc., as follows:

To one gallon of water take 1½ lbs. of salt, ½ lb. sugar, ½ oz. saltpetre and ½ oz. potash.

In this ratio the pickle can be increased to any quantity desired. Let these be boiled together until all the dirt from the sugar rises to the top and is skimmed off. Then throw it into a tub to cool, and when *cold* pour it over your beef or pork. The meat must be well covered with pickle, and should not be put down for at least two days after killing, during which time it should be slightly sprinkled with powdered saltpetre, which removes all the surface-blood, etc., leaving the meat fresh and clean. Some omit boiling the pickle and find it to answer well, though the operation of boiling purifies the pickle by throwing off the dirt always to be found in salt and sugar. If this receipt is strictly followed it will require only a single trial to prove its superiority over the common way, or most ways of putting down meat, and will not soon be abandoned for any other. The meat is unsurpassed for sweetness, delicacy and freshness of color.

Cough Mixture.

The whites of six fresh eggs beaten to a froth with half a teaspoonful of fine white sugar; add juice of four lemons, three tablespoonfuls pure honey, quarter ounce of laudanum; beat all together, bottle and cork tightly. Take a spoonful when the coughing comes on; shake well before taking; crushed sugar rolled fine with a roller is the best to use.

HOUSEHOLD RECIPES.

PIE PASTE.—To prevent pie paste from soaking the liquid contained in the filling of the pie, glaze the under crust with a beaten egg.

USEFUL ACCOMPLISHMENT.—To be able to solder basins and pots and pans is an accomplishment well worth the trouble of boys and girls to acquire, and the tools necessary for the work are few and inexpensive.

CLEANING TINWARE.—The best thing for cleaning tinware is common soda. Dampen a cloth and dip in soda, and rub the ware briskly, after which wipe dry. Any blackened or dirty ware can be made to look as well as new.

RICE PUDDING.—One scant half cup rice, one-third cup butter, two-thirds cup sugar, season with nutmeg; fill a three-pint basin or pudding dish two-thirds full of milk and water, half and half; bake slowly one and one-half hours.

INDIAN MEAL PANCAKES.—Beat 4 eggs, add a little milk and form into a paste with ten spoonfuls of Indian meal; add nearly a pint of milk and one teaspoonful of Royal baking powder; work smooth and fry, rolling them up with butter, sugar, nutmeg and lemon juice.

BEEFSTEAK OMELETTE.—Three pounds raw steak and one slice salt pork, chopped fine; then soda crackers rolled, one egg, half a cup of milk, small piece of butter, two teaspoonsful salt, one teaspoonful of sage, half teaspoonful of pepper; mix with the hands; pack in a mold and bake one hour and a half. When cold slice thin.

CREAM MUFFINS.—An excellent and well-tried recipe. One quart sweet milk—half cream, if you can get it—one heaping quart of Graham flour, six eggs, and salt to taste. Bake immediately in hot muffin rings. Your oven should be hot, and the muffins sent to the table as soon as they are taken up.

DELICATE CAKE.—Take half a pound of butter, one pound of sugar, one pound of flour, half a pint of sweet milk or water, four eggs. Beat the butter and sugar to a cream, then add the beaten eggs, then the milk or water, then the flour; mix thoroughly and put the butter into your pan; sift fine sugar over the top and bake immediately in a moderate oven.

JAPANNED WARE.—Do not pour boiling water over tea-trays, particularly if japanned, as it will make the varnish crack and peel off. Wet a sponge in warm water and dampen it over; then wipe off with a soft cloth. If a tray become spotted, take a bit of woolen cloth and dip into a little sweet oil, and rub it as hard as possible, and the marks (if effaceable) will disappear.

SOOTY CHIMNEYS CURED.—The accumulation of soot in chimneys is a great nuisance, and may be remedied by mixing considerable salt with the mortar with which the bricks composing the chimney are laid. The salt acts by absorbing moisture when ever it is damp and rainy, and the soot, becoming wet and heavy, falls into the fire below. This is an English idea, and is said to give very satisfactory results.

LEMON PIES.—Beat four eggs very light, add to them, gradually, a quarter of a pound of fine sugar, whisk these together for a few minutes, strewing lightly in one ounce of corn starch flour; then stir in by degrees three ounces of melted butter; beat the whole well together, and stir in the juice and grated yellow rind of one large lemon. Line your pie dish with a good puff paste rolled thin, fill them two-thirds full of the mixture, and bake for twenty minutes in a moderate oven.

CHICKEN CHEESE.—Boil two chickens till tender. Take out all the bones, and chop the meat fine; season with salt, pepper and butter. Boil down the liquor the chickens were boiled in, until there remains only enough to make the chopped meat quite moist. Put the meat into a mold of any shape that is desirable or convenient. When cold, turn out and cut into slices. It is excellent for picnics, or for a lunch when traveling.

MINCE PIES.—The following receipt for mince pies, which are now in season, is confidently recommended after using it for many years: Boil a fresh beef tongue tender, let it get cold, then chop it fine with one pound of suet, half peck of apples, two pounds of currants, picked and washed very carefully; pound of citron sliced, half an ounce each of powdered cloves, allspice, cinnamon and ginger, three pints of sweet cider, one pint of Madeira wine, half a pound of candy with enough sugar to sweeten to your taste. This will make a large jar full.

TO CURE HAMS.—This receipt is 50 years old, and I think it is the best. To each 20 pounds of green meat make a mixture of one-fourth of a pound of brown sugar, and a dessert spoonful of ground saltpetre; rub this well by hand into the meat; then with coarse salt cover the bottom of a barrel, say, to half an inch; put in the hams, and cover with half an inch of salt, and so on until the barrel is full; hams should remain in a cool place four weeks; when salted, wipe and dry them, and get some whole black pepper, which you must grind yourself, and pepper thoroughly, especially about the hock and bone; let the hams lie for two days; then smoke for eight weeks.—OLD MAN.

OAT-MEAL PUDDING.—Put in a basin a fourth of a pint of cold milk and mix into two ounces of finely ground oat-meal, then add to it a pint of boiling milk—mixing it this way prevents lumps; put it on the fire and let it boil 10 minutes; have some dried bread-crumbs, and, taking off the oatmeal, mix in the crumbs until the whole is rather stiff; chop two ounces of suet; cut up as fine as possible one small onion, beat up the whites and yolks of two eggs and a sprinkle of sage and marjoram, and mix these with the cold porridge; butter a pan, put in your mixture, and bake for an hour. When roast beef is scarce, oat-meal pudding, with a little gravy, ekes out the feast for many a—POOR SCOT.

PUMPKIN PUDDING.—Take one pint of pumpkin that has been stewed soft and pressed through a colander; melt in half a pint of warm milk, one quarter pound butter and the same quantity of sugar, stirring them well together; one pint of rich cream will be better than milk and butter; beat eight eggs very slight, and add them gradually to the other ingredients, alternately with the pumpkin; then stir in a wine-glass of rose water and two glasses of wine mixed together, a large teaspoonful of powdered mace and cinnamon mixed, and a grated nutmeg. Having stirred the whole very hard, put it into a buttered dish and bake three quarters of an hour. If you try it you will try it again.—*Polly. Whitemarsh, Montgomery county, Pa.*

TEA BISCUIT.—Sift four pounds of flour into a large wooden bowl; make a cavity in the centre of the flour, and stir in slowly one pint of lukewarm milk, with half a pint of good yeast, using just enough flour to make the yeast and milk into a batter of the consistency of rich cream. Cover this over and let it stand for two hours; then cut up one pound of good butter into one pint of warm milk, with a little salt; now mix all the ingredient together, work well, dust the top with flour and let stand one hour, after which make the dough into biscuits, about the size of an egg; butter the baking tins and lay the biscuits in rows about three inches apart; place in a warm situation to rise, and, as soon as light, bake them to a nice brown, in a hot oven; as soon as they are taken from the oven wash over the tops with a soft brush dipped in milk.

ORANGE PUDDING.—Peel and slice three or four oranges, and lay in a pudding dish with one-third cup of sugar; make a custard of one-pint of milk, the yolks of three eggs and one spoonful of corn starch; and one-third cup of sugar; when coald pour over the oranges; beat the whites of three eggs and one-third cup of pulverized sugar to a stiff froth and pour over; put in the oven a few minutes to brown. To be eaten cold. Another style—Stew six large apples and pass through a seive; rub together a quarter of a pound of butter and half a pound of sugar; stir in the apples while hot. After taking the skin and white pith from two large oranges, chop very fine and add to the other ingredients; beat the yolks of six eggs very light and add; reserve the whites for for the meringue. Bake in a rich paste. Flavor the meringue frosting with orange juice and a little finely grated rind.

LIVE STOCK.

Choosing Stock for the Farm.

This is a very important matter. The great variety of soils and of stocks enables us to make a close adaption of the two, and here is the foundation of profit. The kind of stock must be governed also by the variety of feed economically attainable, by the ability of the owner to house and care for them, and by the market to be supplied. If for beef, milk, butter, cheese, the breed must be exactly suitable to these points as well as those referred to above. Many serious mistakes are made for want of due previous consideration, and chances cannot be made without great loss of both time and money.

It is better to aim at some one point, some especial market and then select to suit as near as possible; but one point is essential—an animal that will utilize the most food. To secure this the stock must be healthy, hardy, quiet and of large frame, so that when necessary to be fattened off there shall be room for meat. If th s is not provided for a final loss—more than covering all previous profit—is a sure thing. A quiet animal will eat more, will assimilate closer, retain flesh easier, and fatten much quicker than one of uneasy disposition.

Of all the stock kept by farmers in this country it is safe to say that three-fourths of it is not really profitable, and one-fourth is not as valuable as it ought to be, or as it might be made to be.—*S. Rufus Mason, in Germantown Telegraph.*

Feeding Cows.

No rule can be made which will apply to all cows. Overfeeding for one would be semi-starvation for another. One cow, with a large frame and strong digestive powers, may need fifty or sixty per cent. more food than another which is small and dainty. The latter should have food of a good quality, and it should be given in as easily digestible form as possible, but neither one should be fed beyond its power to digest and assimilate the food. Cows which have an abundance of fresh air and regular exercise will eat and digest more food than they would if they were kept closely confined in their stables. Regularity of feeding and plenty of pure water also tend to keep the cows in good health, and allow them to use a liberal quantity of food without injury. Many men will buy a cow, feed her all the meal she can bear, and in two or three years sell her for beef. Up to a certain point high feeding pays, but it does not pay to try to make a cow produce fourteen pounds of butter per week when she is not capable of yielding more than ten. Old cows will bear this forcing process much better than those which are young, and in all cases high feeding should not be commenced before cows are six years of age.

Mixed Foods.

A mixture of feeding substances is always conducive to the health of animals. It operates as a change of food, and it is more convenient to mix several substances and to use them together, than to feed them separately. For horses, the basis of the grain feed should be oats or barley. It may be remarked here that barley is too much neglected as a feeding substance; it is nutritious and healthful even as a single food, while mixed with corn it reduces the heating character of the latter. Equal parts of oats, barley, corn, wheat or rye bran and linseed, ground together form a perfect food for horses, containing no element of nutrition in excess, and having the laxative effect of the oily linseed to keep the digestive organs in perfect order, the skin loose, and the coat smooth and glossy. For cows, the linseed may be changed for cotton seed meal, which has an excellent influence upon the milk and character of the butter.

A Few Suggestions to Horse Trainers.

Never try to beat a colt into doing a thing, for if nervous he may turn out a vicious horse, and if stupid he may become stubborn. Remember that by patience and gentleness he can be got to do anything that will not hurt him. When the horse shows signs of shying at an object do not beat him, but lead him up to it, allowing him to stand and look as he comes closer, and after he examines it a few times he will not fear anything of the kind again. In passing by hedges with a colt throw in stones and stop him until he takes no notice of the noise. Before putting on any article of harness let your colt smell it, and then rub it against his head, neck and body. Always start a horse with the voice, never with the cut of the whip. In starting turn a little to one side; in stopping when going up a hill do the same.

Hay as Food for Hogs.

Says the Nebraska *Farmer*: "But few men are aware of the fact that hay is very beneficial to hogs, but it is true nevertheless. Hogs need rough food as well as horses, cattle or the human race. To prepare it you should have a cutting box (or hay

cutter,) and the greener the hay the better. Cut the hay as short as oats, or shorter, and mix with bran shorts or middlings and feed as other food. Hogs soon learn to like it, and if soaked in swill, as other slop food, is highly relished by them. In winter use for the hogs the same hay as you feed to your horses, and you will find that while it saves bran, shorts or other food, it puts on flesh as rapidly as anything that can be given them. The use of hay can be commenced as early as the grass will do to cut, and when run through the cutting box can be used to advantage by simply soaking in fresh water until it sours."

Cracked Heels.

Exposure to wet and mud, scarcely avoidable in autumn, will surely produce cracked heels in horses, unless precautions are used. When the cracks are once formed, they are difficult to heal, because at every motion of the foot they are opened and the granulations are disturbed. Prevention consists in frequent cleansing of the feet by washing with clear water and wiping dry at once with a cloth or towel kept for the purpose. The drying of water upon the skin is injurious, and should be carefully avoided. A little of the veterinary cosmoline, or even crude petroleum, which is the basis of the cosmoline, applied in the morning before the horses are taken out, will prevent mischief, and the same remedy, with regular cleansing with soap and water, will cure cracks very rapidly. If the cracks are severe, from neglect or otherwise, the pastern should be protected by wrapping a bandage around it.

Unhorning Calves.

The horns of cows seem to be neither ornamental nor useful. As a means of warfare they can have consideration, but warfare and goring is precisely what we desire to keep away from the barnyard. English farmers, where herds are probably more precious and closer confined than in America, have introduced the practice of unhorning cattle by clipping the short projections in calves, when half an inch long, using simply a strong pair of shears. It is true it hurts the calves somewhat. There will be a little bleeding, but that will stop in an hour or two, and the calves will soon resume eating.

APIARY.

Dysentery as a Bee Disease.

At the late meeting of the National Bee Keepers' association at Chicago, Mr. E. Rood read an essay on this subject, which we give somewhat condensed:

Foul-brood I believe has often been conquered, and the bees, hives, combs and honey saved, but it is not one-thousandth part as destructive as dysentery. Let us endeavor to find the cause and cure of the latter disease. It is true that in the northern states there has been a coincidence with the extreme cold winters and the dysentery; but has this disease never made its appearance in mild winters or milder latitudes? Has it not been fully as destructive in scientifically protected apiaries as those on their summer stands without protection? Few will doubt that bees properly protected in winter are far more exempt from ordinary casualties. Many know that the best of atmospheric protection will not ward off this disease. If the extreme cold causes it, we must suppose that Maine, Vermont, Poland, Northern Russia and Siberia, must import fresh colonies every Spring, for those states have as long and continuously cold a winter every year as New York, Michigan and many other localities in similar thermal latitudes had last winter, and the winters that the disease visited us some few years since with such fatal and wide spread results.

Again, the disease has been charged to the juice of the apple; but is it not a fact that the disease prevailed in many apiaries out of the reach of cider mills? It has been supposed and asserted that it was caused by late-gathered thin honey, and that this soured before it was sufficiently evaporated to be capped over. With the splendid dry autumns in this latitude (especially that of last fall), is such a cause possible? I do not think so; but for the sake of the argument, suppose some honey of that kind is gathered. Is it not probable that every drop was consumed between the first killing frost and the time the weather was too cold for them to take purifying flights? Two other obstacles are presented to the theory and reasoning of the benefits of purifying flights, and capped or thick honey. We know, and assert without fear of successful contradiction, that they died as rapidly when being fed exclusively upon thick, capped honey, gathered in the preceding June and July, and with the purifying flights of from once in two weeks to every day, from the middle of March to the time of fruit bloom. I am giving facts that occurred under my own observation, at a cost of twenty colonies, strong, well packed with chaff, with proper ventilation, and on their summer stands.

We, as well as many others, have lost as large a proportion of our bees from dysentery, when housed in perfectly constructed and ventilated depositories, as when left on their summer stands. You, no doubt, expected me to give some preventive or remedy for this fearful disease. I know of none. I can guess that to extract all of their honey in the fall and feed them sufficient of sugar syrup they would winter well on it alone, or upon sugar candy, into which a proper proportion of rye meal, or some other substitute for pollen, was substituted; that they will live for at least six weeks upon plain sugar candy, placed in close contact and at the top of the cluster, I know; that all the honey gathered in the summer months, which is thick and capped over, is not good to prevent dysentery, I know; that the disease is caused by honey-dew, I suspect; that it may be caused by a condition of the atmosphere, is possible.

How Far Bees Will go for Honey

The precise distance that bees will fly in search of forage I am unable to state. Some consider three miles the extreme limit, while others place it as high as twelve. The most satisfactory results may be expected if abundant stores can be found within two miles. It is evident that they will work more freely upon blossoms at some little distance from the apiary than upon those close by. If I were to sow anything with a view to a supply of honey, I would prefer that it should not be in the immediate vicinity of the hives. Their flights are evidently modified by local conditions. During the large yield from basswood in 1874, as the blossoms failed in the valley, the bees continued bringing in the same quality of honey, following the basswood day by day, as it opened on the hills, until the first week in August, when they still came in heavily loaded but very tired from a long flight. I drove to the hills, six miles distant, and found that basswood was just there coming in bloom. I immediately moved 48 swarms to this location, and in the following week these 48 colonies gave me one ton of surplus honey, while the 71 swarms left at home did not secure one-half that amount, yet they continued working on the same ground during the entire period. This is a fine illustration of the advantage of obtaining forage within a reasonably short distance. I have never had direct proof to the effect (yet there is ground for the belief) that if honey could not be found nearer the bees would not fly the distance named without being gradually led along by newly-opening blossoms, as in the case mentioned.—*Quinby's New Bee-Keeping.*

Profitable Bees.

A well-known bee-keeper gives in the *American Bee Journal* a report of his profits from bee-keeping for the past seven years. He says:

"Our average yield for each colony in the spring of 1873, was 80 pounds; in 1874, a fraction of a pound less than a hundred; in 1875, a little over 106; in 1876, just 50; in 1877, a little less than 167; 1878, 71; and in 1879—the present season—58 pounds, making an average yield of a little over 90 pounds per colony for the term of seven years. By looking over our diary we ascertain that our honey was sold at an average price of $21\frac{1}{4}$ cents per pound, the highest price having been obtained ($28\frac{1}{2}$c.) in 1874, and the lowest ($10\frac{3}{4}$c.) in 1878.

"From past experience, we believe a thorough practical workingman can do all the work required to be done with 100 colonies of bees, and from the above he should obtain for an average term of years 9,000 pounds annually, which at $21\frac{1}{4}$c. per pound would bring him a yearly income of $1,912,50. Although the average yield per colony for seven years to come may be increased, yet the price during that time is likely to be lower, as the high prices caused by the war are passed, and unless we have some unforseen event to raise the price of honey; it will probably never bring 28 cents per pound again. Still, with a much lower price for honey than that averaged for the last seven years beekeeping ranks favorably with almost any other pursuit."

Wonderful Feats with Bees.

The Prince of Wales, who manifested so much interest in the honey recently exhibited in the Kilburn Show, has been presented with an American beehive. To Mr. Hodge, who explained the method of operating the hive, the Prince expressed an opinion that the stories recorded of Mr. Wildman's command over bees must, to a great extent, have been mythical; but Mr. Hodge assured his Royal Highness that he could demonstrate to him that they were quite possible, and, acting upon his assertion, he moved his hand about for a little while among the swarm of live bees which he had with him, when they began to cluster about his right hand, assuming the shape and appearance of a huge bunch of grapes. He then worked amongst the bees with his left hand, and at the word of command they began to shift and settle upon it, then placing a little tube, made of wire gauz, between his teeth, the bees began to accumulate about his face and hang like a long beard from his chin. He next coaxed the bees back into the hive. Mr. Thurber, the honey merchant, says that the secret of Mr. Hodge's and also Mr. Wildman's control over their bees, lies in securing the queen bee, which in Mr. Hodge's case was confined in a wire tube, which all the bees followed from one place to another.

POULTRY.

Fattening Turkeys.

It is a goodly sight, as the summer days wane, to see the flocks of turkeys coming home from the woods and pastures at nightfall with full crops. If the farm has not been over-stocked with these birds, they have very largely made their living upon grass hoppers, crickets, worms and other small fry. The regular food they have had has been rather to keep them wonted than to supply any lack of forage. As the cool nights come on and the supply of insects declines, the business of fattening properly commences. It should be remembered that plump, well dressed turkeys not only bring a higher price in market, but enhance the reputation of the producer, and make his market sure for future years. The turkey is one of the finished products of the farm and one of the greatest luxuries in the market. The farmer should do his best in preparing his flock for the shambles. The main business now is to lay on fat, and the bird should have every night and morning a full supply of nutritious and fattening food. Instinctively the turkey follows his feed, and if the supply is abundant at the farm yard he will not stroll far from home. Boiled potatoes, mashed and mixed with meal, and fed moderately warm, is a very excellent feed both to promote growth and to fatten. If the pigs can be robbed of a part of the hot potatoes and meal, it will very much improve the dish. It is very desirable to supply the place of insects with some kind of animal food, and butchers' scraps is one of the cheapest and most desirable forms of food for poultry. Grain should be given at least once a day with the soft and warm feed. Nothing is better than sound corn. The Northern corn is thought to contain more oil than that of Southern growth. Old corn should always be used for this purpose. The new corn keeps them too loose. In feeding only so much corn should be thrown out as the birds will eat up clean. Take a little time to feed them, and study æsthetics as you watch the iridescent hues upon the glossy plumage. There is nothing more charming upon the farm in the whole circle of the year than a hundred or two of these richly-bronzed turkeys feeding near the corn crib. You can afford to enjoy the disappearance of corn while the turkeys are increasing in weight.

Poultry Interests of America.

In speaking of the poultry interests, I refer principally to the breeding of pure bred stock for pleasure or profit. A glance at a few simple statistics will surprise even those who have heretofore considered themselves posted. Mark the change in a few years. Ten years ago not a paper in the country was published in the interests of poultry; to-day there are more than a dozen, with a combined circulation of upwards of thirty thousand subscribers. We can add to this nearly a hundred agricultural papers which devote a department to this now important branch of farm industry. A few years ago there might have been found a breeder here and there in the Eastern States; now they may be found in every part of the country, and are numbered by the tens of thousands. Then not an exhibition was made; to-day there already over forty advertised to be held in various parts of the country, and as many more will be held later on. Even Oregon holds its State exhibition. In every New England state there will be from two to half-a-dozen exhibitions, and in New York, Pennsylvania, Illinois and Indiana, there will be six to ten each, and sixteen states are represented in some way. The cash premiums alone at these exhibitions will exceed one hundred thousand dollars.

That this interest at the present time is growing more rapidly than ever before is apparent upon every side. With the improvement that is now taking place in business circles in every part of the country, the interest in fine stock, including poultry, will also secure a firmer hold. The good prices of the past will be fully maintained in the future, and really extra choice specimens will yet find purchasers at the figures obtained in England, where the "gold cup" prize Black Red Game cockerel at the Crystal Palace exhibition in 1877 sold for £100 10s, (nearly $500.) Within two months, $100 has been offered in New England for single birds of this season's breeding.—*J. F. F.*

Poultry Breeding.

Within the past few years public attention has been repeatedly called to the question of poultry breeding, and great surprise has been manifested at the figures given by those who speak with authority.

Every village and hamlet in our country has been reached by the "*fancy*," and the story is being everywhere told of fine feathers, large size, high scoring pedigree birds. To have claimed a pedigree for a hen ten years ago would have entitled a man to a certificate of admission to an insane asylum; yet to-day we find that among our most reliable breeders are those who keep an authentic pedigree of their stock.

Two results have been, and are being realized by the agitation of this subject: more attention is being given to the value of poultry, both for eggs and market, and more than all this, the value for production either for eggs or table has been materially advanced. Buyers of poultry for market state that they find the best specimens in those communities where the greatest interest is taken in breeding, and that the improvement all through the country is marked. Poultry is brought to market in better condition, in better shape, and attention is paid to growing that which will produce meat of best color and most evenly distributed over the body. All of these questions have been considered by the breeder in matching up his pens, and the result is manifest on every hand. The fact that more attention has been given to the care of poultry, their feed and health has given greater value to the eggs.

These things must enter into a consideration of the worth or magnitude of poultry breeding.

If what is claimed is true, that birds of better color and size are offered for sale in our markets, and that the average eggs are larger, and so of greater value than formerly, then the breeders have accomplished part of their mission.

There is work for the future. More attention must be given to the production of table fowl. There is room for improvement still, and while there is room we ought to labor.

One great obstacle is the law governing the sale of eggs. As long as a premium is put on small eggs, the breeds which produce them will be eagerly sought after. Let the law be repealed, and let eggs be sold by weight, and the small, unsightly, black meated, blue legged fowl will not long be seen in our markets.—*Zip, Town and County.*

Pure-Bred and Common Fowls.

The views of the *Poultry World* on this subject are expressed as follows: A certain writer discredits the claim that pure-bred fowls are better flesh and egg producers than common stock. While admitting that they do usually furnish more meat and eggs than are furnished by the farmer's flock, he thinks this is due to superior care and feeding. He says that a person who pays two or three dollars per dozen for eggs, or a higher price for fowls, will be very apt to give them extra care. There is, no doubt, much truth in the saying that "the breed is in the feed," but it is only the statement of a half truth. Good feeding and care will compel any flock of fowls to do their best; but, after all, the characteristic differences of the varieties remain, and cannot be changed by feeding. These differences are, in many cases, constitutional; that is, by a long course of selection and local influences, certain traits have become permanently fixed The blood of certain varieties is very strong, and will show itself for generations in each successive cross. The Game cock will transmit his game qualities, his proud carriage and closeness of feathering; the Leghorn his sprighly disposition and wonderful productiveness; the Asiatic indolent habits and tendency to lay on flesh and fat; all these being marked features of the breeds mentioned. Now, feeding will not affect these distinctive tendencies—at least not to any extent. They were formed by climate influences, operating for thousands of years, aided by a long process of selection, sometimes natural and sometimes guided by man. In late years we have taken in hand the several families of domestic fowls, and by careful selection and breeding have exaggerated, as it were, their peculiar traits, until they have become very strongly marked. To say, therefor, that the average dunghill fowl will lay as many eggs as a well-bred Leghorn, or will produce as much flesh as a Brahma will do in eight or nine months, is to affirm what a fair trial will show to be false.

Feeding Troughs for Poultry.

Feeding troughs for poultry, properly constructed, ought to be generally substituted for the wasteful practice of feeding from the ground. Where there is a scramble for the food that is thrown helters-kelter the weak are prevented by the strong from getting their share until the latter are satisfied and the food is trampled in the dirt. It is no advantage to fowls to eat sand, dirt or gravel mixed with their food. The gravel and other indigestible substances necessary to the proper trituration of their food in the gizzard can be given separately, and should be. A simple trough may be made, defended by slats placed vertically on a convenient angle, with spaces sufficient for the passage of the head, thus preventing the trampling and soiling of the food, which will not be wasted, as in the case where it is thrown carelessly on the ground.

Fatening Poultry for Market.

No foul over two years old should be kept in the poultry yard, except for some special reason. An extra good mother, or a finely feathered bird that is desirable as a breeder, may be preserved until 10 years old with advantage, or at least so long as she is serviceable. But ordinary hens and cocks should be fattened at the end of the second year for market. When there is a room or shed that can be closed, the fowls may be confined there. The floor should be covered with two or three inches of fine sawdust, dry earth, sifted coal ashes, or clean sand. The food should be given four times a day, and clean water be always before the fowls. A dozen or more fowls may be put at once in this apartment, so that there may not be too many ready to sell at one time. The best food for rapid fattening, for producing well-flavored flesh and rich fat, is buckwheat meal, mixed with sweet skimmed milk, into a thick mush. A teaspoonful of salt should be stirred in the food for a dozen fowls. Two weeks feeding is sufficient to fatten the fowls, when they should be shipped for sale without delay, and another lot put up for feeding. If the shed is kept dark and cool, as it should be, the fowls will fatted all the quicker for it.—*Cultivator.*

Eggs for Winter Use.

It is a foolish plan to be seeking the best methods for putting down eggs for the winter use. This used to be one of the first tests of thrifty housekeeping. But it is better and just as easy to have hens lay all the year around. If hens have a warm house and enough to eat, and of the right kind, they will lay in winter as well as in summer. Farmers always expect to feed some grain to the fowls, then if they would save all of the waste meat and scraps that accumulate from the table, and feed it to the hens in winter they would be repaid in fresh eggs. It is also a good plan to hatch out some early and some late chickens, as in that way the late ones will be laying when the older ones want to set.

LITERARY AND PERSONAL.

Farm Field and Fireside.—Devoted to agriculture, markets, live stock and home literature. A royal quarto of 16 pages, monthly at $1.00 yer year, Chicago, Illinois.

Fine paper, fine engravings, fine letterpress, fine editorials, and fine selections—in short, like all Chicago publications, this one is truly what its name indicates in the realm of journalism.

Atlas of the Coal Flora of Pennsylvania, and of the carbouiforous formation throughout the United States. By Leo Lesquereux, fossil botanist, Harrisburg. Published by the Board of Commissioners for the Second Geological Survey. We are indebted to Representative Demuth, of this city, for a copy of this the most creditable and best executed work ever published by the Commonwealth of Pennsylvania, 87 plates with explanations.

Department of Agriculture—Special report—No. 18, containing "Tea Culture as a Possible American Industry." By William Saunders, Superintendent of Gardens and Grounds, Department of Agriculture. Read before the New York Horticultural Society at its meeting in New York city, October 7, 1879. The subject is ably discussed, but it relates to an industry in which our latitu'e is not mechanically interested, and yet is in sympathy with its success wherever it can be made available.

Dominion Bazaar.—"Multum in Parvo." Toronto. Canada. "Published in the interest of society in general, and the publishers in particular. Office, No. 3 Adelaid street. This is a 4 paged demi-octavo, and is devoted to the dissemination of *Philatelic* knowledge, or, the history, collection, exchange, sale and preservation of *postage stamps.* Monthly, at 25 cents per annum. On the first page of the November number is an article entitled "Stamp Collecting Not so Foolish After All," which has more *point* than many people would suspect could be made on such a subject.

Holiday—Christmas.—"A Merry Christmas and a Happy New Year," 12 pages octavo, containing a beautiful poem, handsomely illustrated, published only by Rowley & Chew, Mo. 712 Chestnut street, Philadelphia, and specially intended for the Christmas and New Year trade, in which old Santa Claus figures very conspicuously, laden with his holiday gifts for the children. It is snowy and sleighy all through, and could only be fully realized on a snowy day. Its object is an advertising medium for holiday goods. 250 copies with bus ness card on front, $7.00; 500 copies, $12.00; 1,000 copies, $22.00, and 2,000 copies, $42.00. Beautiful winter scenes.

Mind and Matter.—"Physical Life—The primary department in the school of human progress," Philadelphia, No. 713 Sansom street, $2.15 per annum in advance, by the "Mind and Matter" Publishing house, J. M. Roberts, editor. A remarkably fair and well printed 8 page demi folio, devoted to spiritualistic philosophy. No. 1, vol. 2, contains a biographical sketch, and a well executed wood cut of Dr. James V Mansfield, the great medium. A very intellectual looking picture, and also a very positive looking one. The utterences of this journal are as positive as those of the Mormon faith, and time may demonstrate that either one cannot be crushed out by coercion any easier than the other can. *They are "either of God or of men."*

The Fanciers' Journal for December closes Vol. 6. The articles are varied and of interest to poultry and pigeon Fanciers. We have first the Dusky or Black Duck, so well known to American sportsmen. Next the new variety of bantam to be reported for the Standard for the first time next year. The Spanish Fowl, the conclusion of Exhibition Games, Rules for Management of Laying Hens, Washing Poultry for Exhibition, and a column of Poultry Shows fill the poultry bill of fare. Next follow Homing matters. In this, the *Journal* leads everything outside of Belgium. Two pages give the record and pedigree of the Homing bird's of the past season's flight. There is, further, a portrait of a champion bird, a chapter on the care of Homers, a page or more of flights of the past month, and Homing items. Fancy Pigeons are treated by J. C. Lyell of Scotland, J. Matthews Eaton and others. Show reports and notices, with a page of contributed matter upon poultry and pigeons, completes the number. $1.50 per annum: single copy 15 cents.—E. S. Starr, Editor and Proprietor, Springfield, Mass.

Southern Illinois Farmer.—"Devoted to Christian and political economy, statistics, commerce, agriculture, education, mechanicism, science, literature and news." "Independent in all things, neutral in nothing." J. P. M. Howard, A. M., editor, Effingham, Illinois, monthly, at $1.00 per year. This is a large quarto of 8 pages; a new enterprise, the number before us being the first of vol. 1, December, 1879.

It should have specifically included poetry in its catalogue of specialties, for nearly every editorial paragraph is prefaced with a poetical quotation. To us it very forcibly recalls the "Wag of Windsor."

"I'm alderman and sexton here,
My name is Caleb Quotum;
I'm painte , glazier, auctioneer,
In short I am *Factotum.*"

Its typography and the quality of the paper are fair averages of country journals in general, and its literary "make up" is spicy, entertaining and instructive. Indeed, having so many specialties, and consequently so many sources to draw from, it cannot well be otherwise than interesting and useful; and, therefore, we wish it "God speed." As its name implies, there is much more of its contents devoted to husbandry than to any other subject, which must make it a popular journal among the *reading* farming public.

Human Nature.—How to Study Phrenology: With Hints on Co-operative Observation and Practice; Directions for the Formation of Societies, with Constitution and By-Laws; References to the best Text-books, etc.; also, An Outline of the Principles of Phrenology, by H. S. Drayton, A.M., Editor of the *Phrenological Journal*, with forty illustrations.

This is the title of a pamphlet specially prepared for the use of students of this most valuable of human sciences, in answer to the question so many times asked by young and old, "How can I study Phrenology?" It will be found to answer the inquiry very fully, giving names of books recommended, and many suggestions to the student in regard to the general and special application of the subject.

The outline of "First Principles" supplies the reader with the name and definitions of the organs of the brain, and brief expositions of the functional relations of the several faculties in the action of the mind. Over forty illustrations add their interest to the text.

Price, in paper, only 10 cents. Send the price, in stamps, to the publishers, S. R. Wells & Co., 737 Broadway, New York.

Department of Agriculture.—Annual reports for the years 1877 and 1878. We are indebted to Hon. A. Herr Smith for a copy of the former, and to Commissioner Le Duc for a copy of the latter. These two volumes contain 1,200 octavo pages, and 98 full page plates, and many figures illustrating the various subjects treated of in the volumes; also, four folded maps, 168 pages of the letter press, and 32 of the plates are illustrative of the many phases of entomology, being the last report of Professor Glover, and the only annual report of Professor Riley during his brief incumbency of the office of United States Entomologist. Just exactly how much *use* an entomologist may be to a nation, a State, or to a local district, will depend entirely upon how much use the *people* make of his practical teachings—how much, and how understandingly they read, remember, and practice what they read. In the matter of remedies for the destruction of insects, and especially the traps and implements invented for their capture or extermination, a vast deal has been suggested and promulgated that speedily becomes obsolete; not always because they possess no merit, but because they are often expensive, unwieldy and undurable, or not of easy application. As a single instance, Peck's atomizer for the application of liquid Paris green cost $10.00, was burdensome, and required two very diverse motions in its operations; and now Peck has invented a hand implement, of far easier manipulation, which only costs 75 cents. Of course this must supplant his first invention, and remand it to the great infirmary of obsolete and superannuated implements. The people want something *cheap.*

MISCELLANEOUS.

Comsumption Cured.

An old physician, retired from practice, having had placed in his hands by an East Indian missionary the formula of a simple vegetable remedy for the speedy and permanent cure for Consumption, Bronchitis, Catarrh, Asthma, and all Throat and Lung Affections, also a positive and radical cure for Nervous Debility and all Nervous Complaints, after having tested its wonderful curative powers in thousands of cases, has felt it his duty to make it known to his suffering fellows. Actuated by this motive and a desire to relieve human suffering, I will send free of charge to all who desire it, this recipe, in German, French, or English, with full directions for preparing and using. Sent by mail by addressing with stamp, naming this paper, W. W. SHERAR, 149 *Powers' Block, Rochester, N. Y.* [oct-3m

A Novelty in Roses

Buds of the new striped Tea Rose, "American Banner," were worn for the first time in New York, by the ladies waiting on the tables at the great Fair of the Seventh Regiment, on the evening of Wednesday, December 3. This rarity among flowers, from its novelty and scarcity, is likely to become in great demand this winter; but as it can only yet be supplied in small quantities it will cost more than its weight in gold!

The Secret Key to Health.

The Science of Life, or Self-Preservation, 300 pages. Price, only $1. Contains fifty valuable prescriptions, either one of which is worth more than ten times the price of the book. Illustrated sample sent on receipt of 6 cents for postage. Address, Dr. W. H. Parker, 4 Bulfinch St., Boston, Mass. oct-3m

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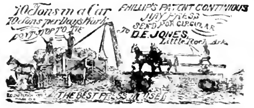

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