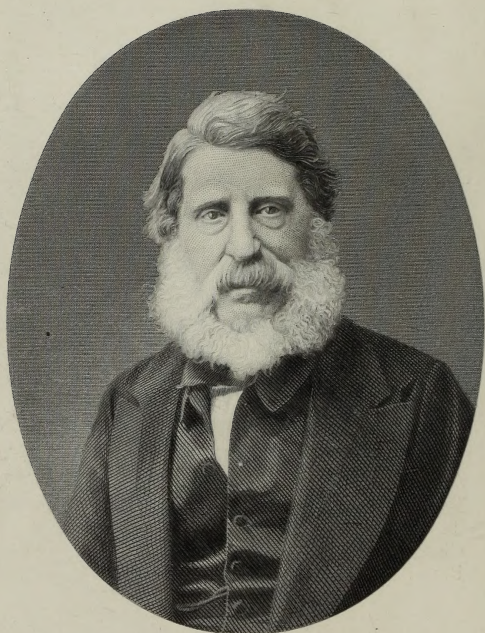


S. 16. Ab.





H. Adlard & Co.

George Tate

H I S T O R Y
OF THE
BERWICKSHIRE
NATURALISTS' CLUB.

INSTITUTED SEPTEMBER 23, 1831.

“MARE ET TELLUS, ET, QUOD TEGIT OMNIA, CÆLUM.”

1869—1872.



ALNWICK :

PRINTED FOR THE CLUB

BY HENRY HUNTER BLAIR, MARKET PLACE.

1872.

PROCEEDINGS

OF THE

BERWICKSHIRE NATURALISTS' CLUB.

Address delivered at Berwick, on the 30th of September, 1869. By Sir WALTER ELLIOT, K.C.S.I., of Wolfelee.

GENTLEMEN,

I WAS unfortunately prevented from attending the last Annual Meeting, at Chirnside, on the 24th of September, and from hearing the able address of your late President, Mr. Hardy, on resigning the chair. On that occasion you were pleased to nominate me as his successor—an honour wholly unexpected by me—and to which, as one of the youngest members of the Club, which I only joined in 1862, I should have felt it presumptuous to aspire. In accordance, however, with the standing rule, which allows no option in the matter, it only remains for me to return my grateful acknowledgment for this mark of your favour.

For an account of the proceedings of that day I am indebted to the copious notes of our Secretary, which he has kindly placed at my disposal.

161

“A wet, cold morning prevented many members from attending; yet sixteen were assembled to take part in the proceedings of the day, including the President Mr. James Hardy, the Secretary Mr. George Tate, Mr. D. Milne Home of Wedderburn, and Mr. Arch. Jerdon. The other members present were—Dr. C. Stuart, the Rev. Wm. Wilson, Chirnside; Mr. Wm. Stevenson, Mr. C. Watson, Mr. Wm. Crawford, Dunse; Mr. Roy Borthwick, Mr. Gilbert Stewart, Melrose; Mr. Heatley, Alnwick; Mr. G. B. Black, Prior Bank; Mr. J. Edward Friar, Grindon Ridge; Mr. J. Clay, Berwick; Dr. Paxton, Norham. After breakfast, the accounts, which show a good balance in favour of the Club, were passed. Seventeen new members were elected, among whom was Dr. Acland, the eminent Professor of Medicine in Oxford University, whom we had had the pleasure of seeing at our Meeting of the 27th of August, at Alnwick. A new rule was proposed by Dr. Douglas and seconded by Mr. George Tate, that ‘Corresponding members, who shall not be called upon to pay subscriptions, may be admitted into the Club; they may be nominated and seconded at any meeting prior to that held in September, and elected at the Annual Meeting by the votes of three-fourths of the members present; they shall be entitled to attend the meetings, to send communications, and to receive one copy of the yearly Proceedings.’ The resolution was unanimously adopted, and in accordance therewith, Mr. Wm. Shaw of Guns-green, and Mr. Anderson of Lintlaw-burn, were elected corresponding members. The following places of meeting for 1869, were then selected—Burnmouth, Lauder, Hawick or Castleton (to meet the Dumfriesshire Club) Howick, and Berwick.

“Mr. Gilbert Stewart read a remarkable paper giving an account of several new plants discovered on the banks of the Gala and the Tweed, many of which have been introduced into the district, from distant localities, by the fleeces of wool used in the manufacture on Gala water. Afterwards, fine specimens of red selenite and white fibrous gypsum from the Tuedian formation on the Whitadder were shown to the

meeting by Dr. Stuart of Chirnside. Dr. Paxton of Norham exhibited a carbonaceous shale, yielding gas and oil, from the Mountain Limestone formation at Allerdene, in Northumberland; and which, it may be observed, contains remains both of fishes and plants, as well as of the *Beyrichia multiloba*. One imperfect specimen of the rare Crustacean *Eulypterus Scouleri*, from the Tuedian formation at Kimmergham, was shown by Mr. William Stevenson. Dr. Stuart reported that the *Picus major*, the Greater Woodpecker, had been seen at Kyloe, Horncliff, and Monnynut; and Mr. Greet had found near Norham, in the Tweed, two stone balls, which would fit the bore of the Mons Meg. After discussing the several subjects brought before the meeting, the members visited the church, a mean-looking structure, but yet retaining characteristic remains of the old Norman edifice in its western doorway, near to which hang a few links of the *jougs* formerly used to punish scolding, swearing, drunkenness, and similar offences. They then, under the guidance of Dr. Stuart, strolled down the banks of the Whitadder; but the day was unfavourable for observations. Mr. Tate set off to examine the stone cover of an ancient British sepulchre, which was discovered a few years ago on Goat's-know, Edington hill, formed of upright slabs of sandstone, but in which nothing was found. The cist was broken up, but the cover was removed farther down the hill and there used for the outlet of a drain. This cover is an unhewn slab of the sandstone of the district, 4ft. 2in. long and 3ft. 1in. broad, and on its rough surface remain artificial markings, the principal form being a round hollow or cup, from which curves away a groove, extending into a wavy line 27in. long. From the upper part of this groove another short groove issues, ending in a small cup. Other cups and lines can be traced, but not distinctly, in other parts of the stone. The figures are undoubtedly the work of art, for the tool-marks are still visible. In Northumberland, similar figures are associated with concentric circles; and, though no such circles are traceable on the stone, we may yet regard the figures as belonging to the same rock symbols

as have been described by Mr. George Tate in the Proceedings of the Club, and by Sir James Simpson in a separate volume. They belong to a period when the inhabitants of Britain had advanced so far in art and civilization as to be acquainted with the use of bronze weapons and instruments, by means of which these sculpturings had probably been made.

After an excellent dinner at the Red Lion, Mr. Hardy's able address was read, and Sir Walter Elliot of Wolfelee was elected President for ensuing year."

The first meeting of the year was at Burnmouth, from which also I was absent, but Mr. Langland's notes have enabled me to supply an account of the events of the day.

"The meeting was not large, but numbered Mr. D. Milne Home, Mr. Hardie, Stoneshiels; Dr. Stuart, Chirnside; Dr. Brown, Mr. Shaw, Mr. Robert Douglas, Berwick; Mr. Wm. Stevenson, and Mr. Langlands. The party visited the old British camp at Habchesters, on some elevated ground about 3 miles south-east of Ayton, the height of which was determined by Mr. Milne Home to be 580 feet by the aneroid. This camp is surrounded by two very deep, circular trenches, exhibiting remains of strong masonry, and is divided into two portions by a wall through the middle. That on the north side has been for many years under tillage, but the line of the circular trench may still be traced. On the south side of the wall the works remain perfect, though it was noticed with regret that the level portion within has this year been ploughed up. The trenches are nearly 21 feet deep. The inner one is about 45 feet, the outer about 40 feet wide. There was probably a smaller mound beyond the trench, which may have been reduced by the plough. The diameter of the whole, from east to west, is about 340 yards, and that from north to south about 350 yards. Within the area are several hollows, indicating probably the sites of dwelling houses. The stones employed in constructing the mounds are freestone, brought from a distance.

"The party then proceeded by the old road over Lamberton moor to Lamberton kirk, the ruins of which are of little

interest. The eastern part of the wall, 21 by 35 feet, may possibly have been a portion of the ancient church; but the rest of the wall has evidently been recently erected to inclose some burial places. A number of tombstones are in the kirkyard, the oldest legible being to James Purdie of Paxton, 1730. Another of 1772 has the following inscription:—

“ Here lyes John Runciman
Kept within
A prison close in
Adam’s sin. But rests in
Glorious hope, that he
Shall by the second
Adam be set free.”

Another also of 1772 to John Trotter, has—

“ Vain world, farewell, enough I’ve had of thee,
For now I’m careless what thou say’st of me:
Thy smiles I want not, nor thy frowns do fear,
My cares are past, my bones lie quiet here,
My crimes conspicuous, vain man avoid!
Thine own heart search and then thou’lt be employed.”

The Campbell Renton family still bury here.

“ From thence the party went to the caves recently opened by Mr. Milne Home. The articles found in them were all of comparatively recent date. They were exhibited last year at the meeting of the Club at Eyemouth, and merely show that the place had been used as a distillery. In confirmation of this, there is a tradition that a man named William Lover sold spirits here about the year 1752. The caves have probably been formed by the action of the waves, at a former sea level. They are now 160 feet, by the aneroid, above the present tide mark. Immediately below is a circular dwelling at the foot of the cliff, partly cut out of the rock, partly built, and on the face of the rock may still be read, rudely carved, the names of W. Lover, 1763, and John Hankis, 1767.

“ From the caves the party walked along the highly interesting line of coast to Burnmouth, noting as they passed

the termination of the carboniferous rocks, where they become vertical at their junction with the other strata, after which they assembled—now reduced to six in number—at Ayton for dinner.

“The opinion was general that the alteration of the day of meeting from the usual course, has on this and other occasions been found disadvantageous.

“After dinner, the names of four new members were proposed, and Dr. Mitchell’s paper in the Transactions of the Anthropological Society on Blood Relationship in Marriage, as regarding the Burnmouth fishermen, was discussed. It was shown that they are a thriving, well-to-do class, and that they have larger proportionate accumulations in the Berwick Saving’s Bank than any of the neighbouring inhabitants. It was also observed that physically the men are a fine athletic race, and the women tall and stout. It is admitted that the care of the children is generally confided to those very little advanced above them in years, and that the *weaker* children are seldom reared.

“Mr. Stevenson exhibited two celts, one a very large stone specimen found at Winsheil.

“Among the plants noticed during the walk by Dr. Stuart and Mr. Shaw were—*Viola lutea* at Habchester camp; *Vicia sativa*, sea banks; *Asplenium marinum*; *Arabis hirsuta*, in seed, Burnmouth; *Glyceria rigida*; *Asplenium trichomanes*, abundant on Conglomerate rocks, near Flemington; *Botrychium lunaria*, one specimen only near Lamberton race course.”

The meeting at Lauder on the 24th June was very successful. Sixteen of the members and their friends sat down to breakfast, including the President, Mr. Wm. Boyd, (who, in the absence of Mr. Tate, detained at home by indisposition, undertook the duties of Secretary,) Mr. John Boyd, Drs. F. and C. Douglas, Messrs. A. Jerdon, Wm. Stevenson, C. Black; and as visitors, Col. Smith, Bengal Army, and Mr. Romanes, of Harryburn, who kindly acted as our guide during the day.

After breakfast, Mr. Romanes exhibited the silver girdle, celebrated in story, presented by the second Earl, afterwards

Duke of Lauderdale, to the gude wife of Tollies-hill, in acknowledgment of services rendered to him in the days of his adversity, and which was kindly lent for the occasion by her descendant, Mr. Thomas Simson of Blainslee. He also presented the members with printed copies of the Charter granted to Lauder by James IV., 1502, and of a printed memorandum of the Burgh property, together with an impression of the Burgh Seal, bearing a standing figure of the Virgin and child, and the legend, "Insignia Burgi de Lauder," but apparently of no great antiquity. Mr. Stevenson showed a fine specimen of a celt, of the Neolithic period, from the neighbourhood of Coldstream; after which Mr. Wm. Boyd read a communication from Lady John Scott, pointing out the objects of interest in the neighbourhood, which proved of great use in arranging the excursions of the day.

The Tollies-hill girdle, which was examined with much interest, is formed of silver wire, twisted in a double-curb pattern, attached to a round plate chased with arabesques of foliage, and having in the centre the letters B. C. The other extremity terminates in a silver cone, with a hook at the end fitting into an eye under the circular plate, and if need be, into rings at various lengths of the chain to meet the increasing rotundity of the dame's waist as she advanced in years. The length to the first ring is 25 in., and the next is 2 in. more, and so on by successive rings, the distances enlarging between each to $2\frac{1}{2}$, 3, 4, $5\frac{3}{4}$, and $6\frac{1}{2}$ in., making in all $51\frac{3}{4}$ in.; and with the plate, which is $2\frac{3}{4}$ in. in diameter and the cone $2\frac{1}{2}$ in. in length, a total of 57 in. The weight is 7 oz. 11 dwts.. The signification of the letters B. C. is not apparent, nor does the story afford a clue to their meaning. The Rev. J. Walker of Greenlaw, formerly incumbent of Legerwood parish, who was well acquainted with the Simson family informed me that these letters were believed to be the initials of her name, which could not therefore have been *Maggie*, and was probably a household or pet name. The incident was first mentioned by Chambers in his *Picture of Scotland*, on which Miss Margaret Corbet founded her story of "Muirside Maggie," communicated

to "Friendship's Offering" for 1829, and reprinted in Chambers's Journal, iii, 331. It was afterwards made the subject of one of Wilson's Border Tales, under the title of "Midside Maggie, or the Bannock of Tollies Hill." Both versions are largely embellished by the fancy of the writers, but divested of fiction, the simple story is sufficiently romantic. Thomas Hardie rented a portion of Tollies-hill in the skirts of Lammermoor, known as the Midside Farm. An unusually late winter told disastrously on his flocks. Many sheep perished in the snow; the survivors, weakened by starvation and hardship, contracted disease, and were still further diminished by deaths. Hardie was unable to make up his rent, and in their extremity his young and handsome wife went to Thirlestane and laid their unhappy case before the Earl, which she attributed mainly to the snows and frost of so high and exposed a situation as Tollies-hill. The Earl, to get rid of her importunity, promised to consider her petition if, as snow seemed so plentiful at Midside, she brought him a snowball in the month of June. She took him at his word, returned home, collected a large snow-heap in one of the secluded cleughs of Tollies-hill, beat it into a hard mass, and carefully covered it over to exclude air and sun. When the appointed time came round a goodly mass of snow remained, although it had disappeared from the surrounding hills. With this she repaired again to Thirlestane, and reminded her landlord of his promise. Surprised and pleased with her ingenuity and engaging address, he granted the necessary relief, by which Hardie recovered his prosperity and became a thriving and well-to-do tenant. Meantime, Lord Lauderdale, a determined royalist, espoused the cause of Charles II., and attended him to the fatal field of Worcester, where he was taken prisoner in 1651, and languished in confinement for nine years. During all this time the Hardies carefully laid by the rents, and at last Maggie resolving to show her gratitude, bethought her of a mode of conveying the accumulation to her benefactor by baking the gold pieces into a bannock, which she carried to London, and obtaining access

to the Tower, presented it with her own hand. Soon after, through the favour of Monk, the Earl obtained his release and repaired to Holland, where the timely supply of money, conveyed in the bannock, proved extremely useful. Shortly afterwards he returned with the King in May, 1660, and revisiting his estates in Scotland, he presented Maggie with the silver chain, and allowed herself and her children to sit free of rent for their lives,* accompanying the boon with the remark, which has since become proverbial, "Every bannock has its *mark*, but the bannock of Tollies-hill."

* The Hardies appear to have been tenants on the Lauderdale estate from an early period. Their name is found in the earliest accounts extant, viz., that of 1643.

In that year Thomas Hardie paid the parsonage teinds on his farm.

In 1647 £208 6s. 8d. were paid by Andrew Hardie and Bessie Lylestoun in Tollis-hill, and £325 fra Richard Hardie thair.

In 1648 Bessie Hardie's name occurs for £148 2s. 4d., "her Martinmas maile."

In the same year Richard and Bessie Hardie pay £149 10s. 8d. as maile.

In 1656-7 three separate leases of Tollis hill are entered in the names of Andw. Hardie, Richard and Thomas Hardie, and Alex. Hardie, for an aggregate of £1066 13s 4d., Scots, which continued to be the rent up to 1700, A. D.

In 1662 the Earl's commissioners, in their sederunt at Lechington, grant among other "abbaitments"—

"Item to the possessors of the lands of Tullis-hill three hundred fiftie fyve pound, therteen shilling, four pennies yearly, from Martimes, 1656, to Martimes, 1659, both inclusive, conform to the English ease, being three years and ane ha'f—£1244 16s 8d."

"Item to be abbaited, fiftie fyve pounds of pension yearlie, from Martimes, 1656, to Whitsunday, 1663, inclusive, be order from the Countes of Lauderdale, payable to James Wright and his wife in Addings'oun, to Bessie Hardie and Bessie Lylestoun in Thullieshiels for the said years—£285."

Similar entries occur in favour of members of the Hardie family down to 1700. One of the last in "Discharge" of 1699 is—"Item. Given down to the three tenants of Tullis-hill, from the Earl's verbal order and their receipts, dated 21st December, 1699—£313 6s. 8d."

The statement in the tales, that the name of the heroine was Margaret Lyleston, is so far borne out by the foregoing accounts, that it was borne by several members of the family, but there is nothing to show that it pertained to the heroine of the story. The last payment of a pension to Bessie Hardie occurs in 1672, at which time, Janet Watherstoun (who, from an entry in 1680, appears to have been a daughter of Margaret Hardie) Bessie Hardie, Bessie Lylestoun, and Janet Dewar, appear as recipients of a yearly pension of £87.

In 1700 Tullies hill was transferred to the Tweeddale family.

It is pleasant to meet with this trait of grateful generosity in a character usually painted in such dark colours as that of Lauderdale; it confirms the observation that, no one is so faultless as not to exhibit some failing, nor any so black as not to possess a redeeming point. But something more than this may be urged in favour of Lauderdale. He is chiefly known by the description given of him by his own countrymen, who remembering that in early life he had embraced the Covenant, and that afterwards he had become the willing and even zealous instrument of Charles II. in forcing episcopacy on his Scottish subjects, have held him responsible for all the cruelties perpetrated in that endeavour. But it must be borne in mind that he was warmly attached to the royal cause, that he risked life and fortune to uphold it, and that the severities of the Puritans provoked, in some degree, the excesses which followed the Restoration. In describing him recent historians rely almost entirely on Burnet, a personal enemy, who does not attempt to conceal his dislike; "He was the coldest friend and the violentest enemy," are his words, "I ever knew; I felt it too much not to know it;"* and then he brings together an assemblage of traits, many of them inconsistent with each other. Hume,† Macintosh,‡ and Macaulay,§ follow the Bishop implicitly, using even his very words. Without desiring to extenuate his harsh administration of Scottish affairs in execution of his royal master's policy, it should not be forgotten that he counselled toleration in the first instance, persuading Charles to discontinue the military occupation of the country and to maintain Presbyterianism.|| When commanded to pursue an opposite course, he obeyed unflinchingly. The rigorous and even cruel measures of repression which signalized his administration, repugnant as they are to modern ideas of humanity and toleration, were too much in conformity with the spirit of the times in which he lived.

* *Own Times*, I, 101, fol.

† *Hist.* VII., 460. VIII., 53, 54., 8vo., 1789.

‡ *Hist.* VII., 31, 306., Lard. Cyc.

§ *Hist.* I., 222, 281., ed. 1859.

|| Hume, VII., 364, 366.

Lady John Scott's paper directed the attention of the meeting more particularly "to the ancient site known as the Harefaulds, on the farm of Blythe, from which a rampart or wall, called Heritsdyke, formerly ran to the English Border, but of which the traces are now nearly obliterated. A camp above Channel Kirk* was also indicated, near which a stone circle formerly existed, but it has been destroyed and the materials used for building dykes within the last five or six years. Camps are also to be found at Admiston, at Hillhouse, above Longcroft or Dod's Head, and two on Thirlstane. Near Edgarshope is a curious place called the Barrow Stanes, which has never been examined; and a cave, hewn through the solid rock, was discovered some few years since at Brailshaw-rig, which has not been fully explored. A ruined gable at Thirlstane village, marks the site of Thirlstane Convent. The High Cross, where the old London road began to descend, is supposed to be the place where the convent first came in sight. On the hill behind Byre cleugh is a very curious and remarkably-shaped cairn called the Deil's Mitten, which, according to tradition, marks the burial place of a Pictish King." †

These places, embracing too large an area to be visited in one forenoon, it was arranged in communication with Mr. Romanes, that the party should proceed first to Thirlstane Castle, graciously thrown open by the noble proprietor,

* General Roy considers it to have been one of Agricola's temporary camps. *Mil. Antiq.* 61 and Pl. VI.

† This monument is deserving of more careful investigation. In the old Statistical report of the parish of Longformacus, it is described by the Rev. Selby Orde, as "a heap of stones 80 yards long, 25 broad, and 6 high, collected probably by some army, to perpetuate a victory or other remarkable event," Vol. I., 71. In the new Statistical report, the Rev. Henry Riddell observes "that a large heap of stones at Byre cleugh, 240 feet long, 76 broad, and 18 high, appears to attest a similar conflict. The stones have been carried to their present place from a crag half a mile distant. They have received the name of *meeting stones*, but there is no authentic account of the occasion that led to their accumulation." Vol. II., 94. In Towler's map of Berwickshire, 1826, they are called *the meeting stones*. Being far removed from the line of the excursion selected, it was impossible to explore the place, but it will be well worth a visit on some future occasion.

and then proceed to Blythe and the Harefaulds, to which attention had also been called by Mr. Milne Home. A short walk accordingly brought us to the castle, which stands in the precincts of the town, and offers a fine example of old national architecture, evidently built at various epochs. The family being absent, we walked through the various rooms, the ceilings of which are richly ornamented, and the walls covered with family portraits. Among the pictures is a good collection of Canaletti's paintings. The front, which is symmetrical, consists of a central square tower with projecting angles, five—and the middle portion six stories high, flanked by the circular turrets characteristic of Scottish architecture. A flight of steps leads up to the entrance door, and on either side are wings somewhat in advance of the centre, which are three stories high, with quadrangular pavilion-roofed towers at the angles. This appears to be the most recent part of the building. The oldest portions are seen at the back, particularly of the right wing, where the end gable probably formed part of the original structure. The building is not of high antiquity; the post appears to have been fortified about 1548 by order of Somerset the Protector, in the reign of Edward VI., when following up the hostile policy of Henry VIII. against Scotland, and the command of the garrison entrusted to Sir Hugh Willoughby, but from its vicinity to the more important fortresses of Dunbar and Haddington, Sir Hugh seems to have been little disturbed, until the Scots, with the assistance of their French auxiliaries, recovered their lost ground and besieged Lauder Fort in 1559. Ere many days elapsed, however, the preliminaries of a peace having been arranged at Boulogne, it was delivered up to the Scots. No further mention of the fort occurs in history.

In Pont's map of Lauderdale, 1662, it is noted as Lauder Fort. An elevation of the house as it then stood, but still without any change of name, is given in Slazer's *Theatrum Scotiæ*, 1673, (2nd ed., 1718), and represents it as restored by Chancellor Maitland, the first peer, and still farther

improved by his son the Duke, who died 1683. It was probably about this time that the Lauderdale family removed their permanent residence from their old family seat at Thirlstane, and transferred it together with the name to the castle, which was then greatly enlarged and assumed its present form.

Descending from the back of the house the party proceeded along a picturesque walk, shaded by fine trees, to the banks of the Lauder, where Mr. Romanes pointed out the ruins of the bridge, over the parapet of which the minions of James III. were hanged in 1442. The bridge no longer spans the stream, which has left its bed and now flows in another channel. The parapet at the end next the town alone remains, from which an old way, now obliterated, ran directly up to the Kirk Wynd, in which stood the old kirk, not far from the present site of the castle. It was in this sacred building, removed in 1617,* that the conspirators were plotting the seizure of the King, when Cochrane, his principal favourite, lately raised to the dignity of Earl of Mar, inopportunately for himself, ventured among them. He was instantly seized by Archibald Bell-the-Cat, stripped of his finery, and hurried off to the bridge. At the same time his companions, Roger, Hommill, Torphichen, Preston, Leonard, Andrews, and Ramsay, "musroomes sprung upe out of the drege of the comons," were seized in the King's tent, and all except the last, who was spared on account of his youth,† shared the same fate. Tradition states the bridge to have been near the castle, and in the old Statistical account of Lauder Parish, it is said that the house in which the King lodged was still pointed out, but this version, if it ever existed, has perished. All the cotemporary accounts

* Act of Parliament, 28th June. Chalmers II, 379.

† He is said to have clasped the King round the waist in the extremity of his ear. James afterwards knighted him, and conferred on him the Castle and Barony of Crichton, and he was summoned to Parliament by the title of Lord Bothwell. On the death of the King at the Battle of Sauchieburn, in 1468, he was proscribed and forfeited, and his estates and title assumed by Patrick Hepburn, Lord Hales, the leader of the insurgent lords, and grandfather of the notorious James, Earl of Bothwell. Ramsay died in obscurity in 1513.

refer to the encampment, to the seizure of the favourite in the King's tent, and to the gorgeous magnificence of Cochrane's pavilion, who in vain entreated to be hanged with one of its silken cords instead of the common hempen rope produced for the occasion. There is no record nor trace of any other bridge than the one of which the ruins still remain; and when it is considered that the army amounted to 50,000 men, the encampment must have occupied the whole space between the town and the Leader, the bridge across which, at the spot marked by the ruin, offered the readiest and most convenient place for completing the fell purposes of the conspirators. The vengeance, which involved these unhappy men in a common doom, was not aroused altogether by the anger of the haughty nobles at the elevation of a set of upstart favourites. The real purpose of the malcontents was the dethronement of the King, in furtherance of a plot set on foot by his brother Alexander, Duke of Albany, to secure the crown for himself, in pursuance of which design he had fled from Scotland and obtained the countenance and support of the English Court, always ready to favour any cause tending to establish their claim of superiority over the sister kingdom. James himself, though unwarlike, inherited his grandfather's enlightened tastes and love of literature so little suited to the age. His favourites, chosen not as ministers of his pleasures but as intellectual companions, were men of cultivated minds, whose society the King found more agreeable than that of his rude illiterate nobles.* Cochrane, an architect; Rogers, a musician of eminence; Schevez, Archdeacon of St. Andrews, and afterwards Archbishop, an able geometer; Ireland, an ecclesiastic of great learning, and a distinguished mathematician, educated in France, who had been sent by Louis XI. as his ambassador to the Scottish Court, were among those who received the largest share of the royal favour. Others, as Andrew, a physician, professing a knowledge of

* "He was one that loved solitariness and desert, and never to hear of wars, nor the fame thereof; but delighted more in music and policies of *bigging* than he did in the government of the realm." Lindsay of Pitscottie, p. 115, 3rd.

the occult sciences, studies at that time in great repute, were less entitled to respect, but several of the victims were doubtless deserving and innocent men, whose only crime was the favour of their prince.*

From the bridge the members proceeded to the East Lodge, where carriages were in waiting to convey them to Blythe, four or five miles distant on the Greenlaw road, which skirts the Boondreigh valley. Two miles brought us to Thirlstane, the original seat of the Maitland family, now a farm house by the river side. At the village or steading, close to the road, is the site of the convent, the only trace of which is an oblong ruin said to have been the chapel. Above Thirlstane rises the Hill of Boon, on which a pillar marks the site of the ancient alarm beacon, and a stone cross on the side of the hill points out the scene of some former crime. The family of Maitland, or as it was originally written Mautlant, have been settled here from a very early period. In the thirteenth century, Sir Richard Maitland, the third of that name on record, was in possession of Thirlstane, Blythe, Tullos (Tollis), and Hadderwick, during the reign of Alexander III. William, the eighth in succession, is designated of Thirlstane and Lethington (the latter being that by which they are most commonly distinguished), and held a charter from Archibald, Earl of Douglas, of the same lands, dated 1432. Sir Richard of Lethington and Thirlstane, the twelfth in the line, was not only a distinguished lawyer and judge, but a successful cultivator of the muses. On his resignation of his seat on the bench in 1582, James VI. wrote to him commending his zeal and integrity in the public service during four reigns, which would embrace a period of 70 years. Of his two sons, William Maitland, younger, of Lethington, better known as Secretary Lethington, played a conspicuous part in the troubled politics of the period, from the death of James V. to

* "Among these base men, there was one gentleman of good birth, but he seeing the King's inclination, had set himself to follow it in all things; wherefore he had given his daughter to Robert Cochrane in marriage, as a bond of friendship and societie; his name was Thomas Preston." Hume of Godscroft; Ho. of Doug. p. 222. See Tytler Hist., IV., 257-283. Ed. Tait, 1842.

the close of Queen Mary's reign, whose execution he did not live to witness, dying before his father. His younger brother John, also a distinguished judge and politician, succeeded to the estates. He was much trusted by James VI., who conferred on him the offices of Secretary of State and Lord High Chancellor of Scotland, after which he was created a peer and advanced to an Earldom. Of his son, the second Earl, elevated to a Dukedom, we have already treated. Having no male issue, the superior dignity lapsed with him. The family which still flourishes—the present representative being the eleventh Earl—has given numerous distinguished ornaments to the public service in every department of the state.

A little further on, the road to Blythe turns off to the left. In a field to the right is a cairn of no particular interest, which has been examined and rebuilt by Lady John Scott. At the farm house the party separated. The botanical section turning to the right proceeded in the direction of the Cromwell glen in the Spottiswood burn, but did not reach it. They were not rewarded by any discoveries of interest. The rest took the direction of the Harefaulds, distant about a mile to the left.

The place so called is a large inclosure, bounded by a ruined dry-stone wall, situated on a wild moorland, called the Scawart, which slopes from the north and north-west with an easy descent towards the Blythe burn, becoming more precipitous as it nears the stream, which here pursues a south-easterly course to its junction with the Whitburn, where their united waters become the Boondreigh. The site commands a fine view of the Cheviots to the south-east and of the Eildon hills on the west.

The outer wall, formed of unhewn, uncemented stones, encloses a space of nearly three acres, of an irregular oblong or oval shape, divided into two unequal portions by a smaller wall running east and west. A gateway or entrance opens into the upper portion from the east side. The walls, though well defined, are not perfect; for, unfortunately, they offered a convenient quarry for the construction of several stone

dykes recently erected in the neighbourhood, and the place has suffered grievous dilapidations in consequence. The fact of the fallen stones being quite free from any growth of vegetation shows the work of destruction to have been of recent date. The inner sides of the north and west ends appear to have been the inhabited portion, and exhibit numerous foundations of chambers more or less perfect, but not one entirely so. These chambers appear to have been circular, oval, or rounded, sometimes two or three opening into each other, with the remains of the doorway formed by two larger stones or jambs. The wall of the larger or southern division was slighter and had fewer remnants of dwellings. It was probably intended for cattle; but near the entrance on the lower side were the remains of a few chambers, and a smaller inner inclosure which may have been used by the herdsmen. A tracing, taken from the ordnance survey, shewing the general appearance of the place, was exhibited. It will be observed, that so late as the execution of that work, some of the cells on the north and west side appear to have been perfect. It is much to be regretted that the place had not been visited and described previous to the work of demolition. It may still be worth while to have a careful survey made of the ruins as they now exist.

Of the rampart called Herits-dyke, no remains were observed. A more deliberate search, had time permitted, might have discovered traces of it. Chalmers (*Caled. I., 243, II., 211.*) mentions it under the name of Herrits-dyke, and attributes it to the Romanized British tribe of Ottadini, who may have erected it as a defence against their northern enemies, in the same manner as the Cat-rail, of which he conjectures it may have formed a part. "About the middle of last century it could be traced 14 miles eastward" (running across the parish of Greenlaw, about a mile north of the town); "and, tradition says, it proceeded as far as Berwick. It is supposed to have extended westward to a place in the parish of Legerwood called Boon"—(Boon-hill opposite Thirlestane)—"a word, in the Celtic language, signifying 'boundary'

or 'termination.'” (Old Statistical account, XIV., 512.) Mr. Spottiswode, about the same period, according to Chalmers, traced it from the “British strength, called the Haerfaulds, on a hill two miles north-west of Spottiswode, throughout the country to the vicinity of Berwick, at which time it was in various places very discernible. In the ascertained track of this ancient fence are several British strengths, situated as usual on their several heights,” as at Chesters in Fogo parish, the fort called Black-castle-rings near Dogdenmoss, near which a silver chain was found many years ago and given to the last Earl of Marchmont,* and on our way back to Blythe we observed the faint traces of a strength not far from the farm house.

The two parties met again at the farm. The late tenant Sandie Stewart, appears to have been a character, and many good stories are current regarding him. Driving back to Lauder, the museum of a local naturalist was inspected. Walter Simson is the shepherd at the castle, and has collected a goodly number of birds, chiefly native, and some few exotic, together with some mammals and specimens of various sorts. Among the animals from the neighbourhood were good examples of a polecat, an otter, a white hare, &c., and of the birds, a fine buzzard from Edgarshope, a merlin, a hobby, a little auk, a Canadian goose, a dotterel, &c., all killed near Lauder. The Rev. Mr. Middleton, the clergyman of the parish, favoured the Club with his company at dinner. No papers were read, and after proposing Messrs. Romanes, Broomfield, Dr. Robertson, and the Rev. Jas. Middleton as new members, the party broke up highly gratified with the day's proceedings.

I cannot close this account of the meeting without expressing my thanks to Mr. Romanes for the assistance he has given

* I have been informed by our fellow member, the Rev. J. Walker, of Greenlaw, that this chain was found in the dyke near Greenlaw by a woman, and was so black and oxidized that she gave it to the smith named Matheson, thinking it to be iron. It lay in the smithy for some time, till Matheson took it to repair the *rig-widdy* or chain of a cart-harness, when its true nature was discovered, and it was sent to Lord Marchmont, who died in 1794. The son of the smith is still at Greenlaw.

me, not only by supplying information, but by procuring the photographs which have been exhibited.

The morning of the 26th June gave promise of an auspicious day for the concerted meeting of the Club, at Newcastleton, with the Dumfries and Galloway Natural History and Antiquarian Society. The summons issued by the Secretary met with a hearty response, and notwithstanding the scanty and imperfect means of communication, members from Northumberland,* Berwickshire, and Roxburghshire,† flocked to the rendezvous to welcome their brother naturalists from the west.‡ Several visitors favoured the meeting with their company.§ Upwards of thirty sat down to breakfast, at the conclusion of which it was arranged that one party should drive to Hermitage, whence Mr. Langlands and several of the Northumbrian members determined to walk to Riccarton junction, without coming back to dinner, as the only means by which they could catch the return train. Another party was to proceed on foot down the Liddel, under the guidance of Messrs. John Elliot and Adam Noble, of Newcastleton, and after inspecting some antiquarian remains near the town to separate into two divisions, one party investigating the botany and geology of the Tweeden glen, the other continuing their antiquarian researches.

The pedestrians accordingly were first directed to a fine old cross,|| a little above the road, said to mark the spot where

* From Northumberland—Mr. J. C. Langlands, Rev. J. Bigge, Rev. J. S. Green, Rev. P. M'Dowall, Mr. Heatley, Mr. Allen, Master Bigge.

† From Roxburghshire—Sir Walter Elliot, Dr. F. Douglas. Mr. Wm. Boyd, Dr. Robson Scott, Mr. Bor'hwick, Mr. Jerdon Mr. W. Dickson, Captain M'Pherson, Rev. J. P. Macmorland, Capt. Grant.

‡ From Dumfries—Sir Wm Jardine, Bart., President; Mr. Stark, of Troqueerholme, Vice-president; Provost Harkness, of Dumfries; Mr. Arch. Harkness, Dumfries; Major Bowden, Lockfield; Mr. Maxwell Witham, Kirkconnell; Mr. Witham, Kirkconnell; Dr. Gilchrist, Crighton; Dr. M'Nab, Dumfries; Mr. A. D. Murray, Secretary; Mr R. Murray, St. Catherines.

§ Visitors—Mr. R. Barclay, Secretary, Montrose Nat. Hist. and Antiq. Soc.; Mr. R. S. Murray, President, Hawick Archæological Soc; Rev K. Prescott, Ponteland; Mr. E. Lyon, of Windlesham Hall, Surrey.

|| It is called the Milnho'm Cross in the Statistical account; but Sir Walter Scott names the place Langraw. *Bord. Mins.*, I, lxvii.

the body of a former Armstrong of Mangerton, treacherously murdered by the Lord of Hermitage, was set down on its way to the churchyard of Ettleton higher up the hill. Tradition assigns the crime sometimes to a Soulis, sometimes to a Douglas, but nothing certain remains on record. The cross is of elegant design, and is badly figured in the old Statistical account of the parish (Vol XVI., 86.), by the Rev. James Arkle, minister in 1793, who states it to be 8 feet 4 in. high, set on a base 1 foot 4 in. high. A two-handed sword, 4 feet long, is sculptured on its south face, above which are some letters and apparently an arm, the heraldic distinction of the Armstrongs. The letters appeared to be $\frac{M}{A} \frac{A}{A}$ but it was difficult to decipher them on the moss-grown surface.

About 300 or 400 yards up the hill, is the churchyard of Ettleton, the burial place of the Armstrongs, some of whose tombstones, with armorial bearings and long inscriptions, were examined. On that of Thomas Armstrong, of New Strongerside (or Stonegarthside), obiit 1769, are three arms with several hearts, having reference apparently to their dependence on the Douglas family. Others exhibit only two and some one arm. According to Nisbet, the general blazon of the Armstrongs of the south, was "argent a dexter arm issuing from the sinister side, clothed, gules, holding a tree eradicated and broken at the top," or according to others "a sword." But to Armstrong of Mangerton he assigns, "argent, 3 tortreaux or pallets (*i.e.* cakes) azure, representing, according to John Fern, strength," and this is the shield painted on Sir Walter Scott's hall at Abbotsford, where the arms of the principal Border families are represented. The only remains of the church discernible are the foundations of a small oblong nave in the south-west corner of the inclosure, near to which lies a piscina lately turned up in digging a grave. A little to the north of the churchyard is a piece of ground called Silver-field, where coins are occasionally found, which may have been the site of the parsonage or of the old village of Ettleton, but there are no traces of building, nor is anything known on the subject. A solitary tree about half a mile

to the south-west marks the site of the old peel of Side, said to have been the residence of Jock of the Side, brother of the Laird of Mangerton.

Returning to the foot of the hill, the party separated at the little bridge over Ettleton burn, the botanical and geological section proceeding straight to the valley of the Tweeden on the opposite side of the river, whither Sir William Jardine (who had visited Ettleton the evening before) had preceded them. The rest likewise crossed the Liddell a little lower down, and inspected the ruined tower of Mangerton, the stronghold of the chief of the Armstrongs. All that now remains is the ruined lower story, in the west wall of which is a sculptured stone bearing the Armstrong effigy, not as stated by Nisbet, but the common one of an arm and two-handed sword, with the date 1580, and the letters S A and F E or E E, but the whole too much covered with lichens for the carvings to be easily distinguished. Sir Walter Scott refers the letters to the names of Simon Armstrong and Elizabeth Elliot.*

The archæologists, crossing over the high ground above the Liddel, joined the party which had preceded them at the head of the Tweeden burn, the rocky banks of which, clothed with natural wood, were much admired. They then returned together by a short cut to Castleton, not, however, before they were overtaken by a heavy shower, which brought cloaks and umbrellas into requisition. The glen of the Tweeden offers some good geological sections of the Mountain Limestone, in which Sir William Jardine recognised the following organisms:—*Rhynchonella pleurodon*, *Productus giganteus*, *Terebratula sacculus*, *Fenestella plebeia*, *Cerriopora rhombifera*, *Glaucanome pluma*, a *Polypora*, and some others; and is crossed at its upper end by a trap dyke running north and south. The waters percolating through the limestone are impregnated with calcareous matter in solution, which is deposited extensively on the twigs, grass, and foliage in the bed of the stream. Large quantities of this petrified deposit are carried off for ornamental gardening, several tons having been carted away this year.

* *Minstrelsy of the Border*, I., 167, first ed.

No new plants were discovered. *Typha latifolia* fringed the margin of the stream; *Polypodium phegopteris* and other ferns were observed. *Enanthe crocata*, which was growing in several places, attracted attention. Noble, one of the guides, stated that it was eaten by sheep, an assertion which, from the known acrid quality of the plant, was received with doubt. But he maintained the accuracy of his observation, and there are not wanting grounds to support its correctness. The poison of *Enanthe* resides in the root, and Dr. Johnston in his Flora observes that, "despite the warning of Gerard against such practice, modern physicians have given an infusion of the leaves, or the juice of the roots, in leprosy, with benefit."* And he adds "goats eat the plant with impunity." The same animal browses freely on the stalks of *Euphorbia tirucalli* in eastern countries, so the Border shepherd may be right after all.

Inquiry was made for the scene of the combat between one of the Armstrongs and an English champion, of which Sir Walter Scott has given a vivid description in his letter to Mr. F. M. Reynolds, editor of the *Keepsake*, of 1828.† But the spot lying farther down the valley, at a place near Flat, noted for games of chivalry, and called Turner (*quasi* Tourney) holm, where the Kershope burn joins the Liddel, was too far to visit. Sir Walter's version differs somewhat from the popular tradition, which makes the duel to have arisen out of a dispute about some land between William Armstrong of Greena, a mile lower down, and Forster of Stonegarthside, on the opposite side of the river. William borrowed his brother Jock o' the Side's famous sword, but was killed by his opponent, the popular voice says treacherously, for which Jock subsequently took vengeance. Sir Walter makes Armstrong the only son of the aged Jock, who, witnessing the fall of his boy and the loss of his cherished weapon, survived the combat only three days. The fact attested by the Ettleton

* Flora of Berwickshire. I., 70. Dr. Johnston had paid particular attention to this plant. Hist. of the Berwickshire Club, I., 55.

† Novels, ed. 1832, Vol. XLI., 377, and Border Min., II., 72.

tombstone of Stonegarthside, although in Cumberland, belonging to the Armstrongs, supports the local version.

The party from Hermitage, with the exception of those who had gone to Riccarton junction, got back to Castleton about the same time, but as the Dumfries train left at 3.45, most of them had to hurry away before dinner. They had explored the ruins of the castle, the old chapel, and burying ground, in which grows an ancient ash tree, which, after having been blown down by the wind, has thrown out fresh roots from the procumbent trunk and still maintains its vitality. Hard by is the grassy mound, 9 feet long, said to mark the grave of Lord Soulis' enemy, the Count of Keeldar, nefariously slain by him in the pool below, which also passes by his name.

The castle, which has been greatly enlarged and indeed rebuilt at different periods, consists of a square keep, to which four massive towers have been subsequently added. Under one of these is shown the dungeon in which the gallant Sir Alex. Ramsay was starved to death, by his old companion in arms, Sir William Douglas the knight of Liddelsdale. In the opposite angle is the kitchen and a fine large oven for baking, similar to those still in use in the south of England. Two sides of the exterior present the extraordinary appearance of large and handsome blind arches from 12 to 15 feet high, which, so far from strengthening the defence, would have only afforded cover for the assailants to mine or break through the wall.

It appears, however, that these are of very recent construction, and have been made in the course of the repairs, which the late Duke of Buccleugh, with a praise-worthy anxiety for the preservation of the ruin, caused to be executed about the beginning of the century. A sketch by Williams,* made before 1802, shows the condition of the ruin as it then existed; and another by William Scott, jun.,† made some years later,

* *Border Min.*, Vol. I., frontispiece. There is also a view of the castle from a sketch by H. Weber at the same period, in the *Border Antiquities*.

† William Scott, mason, *New Castleton*, author of *Border Exploits*, p. 357.

exhibits the farther progress of decay. A comparison of the latter with a sketch taken last year shows, that the arches occur at the very places where the breaches were greatest. Scott's father, a mason at Castleton, opened the vault or dungeon in which Ramsay perished some years before the Statistical account by Mr. Arkle was written, in 1793, and found the bridle and other articles mentioned by Sir Walter Scott.* His son, by desire of Lord Dalkeith, when encamped at Hermitage for shooting in 1806, made some farther excavations, in the course of which he uncovered a fine paved floor, and among the rubbish found the large key,† referred to by Leyden in the ballad of Lord Soulis. This, with an iron ladle discovered on a former occasion, is in possession of the Duke of Buccleugh. A silver ring with the Douglas heart and a quatrefoil alternating round its circumference, and a bugle horn found in the marsh outside, are probably at Abbotsford, and the bridle bit taken from Ramsay's dungeon was presented by Sir Walter Scott to Lord Dalhousie.‡

Considerable interest was manifested by the discovery of some marks on the stones forming the inner doorways, leading from the kitchen to the side chambers. These, which consisted chiefly of antique forms of the letter B, were considered to have some connection with the founder of the Hermitage, from which the place takes its name, Walter de Bolbeck, or perhaps from the Bothwells who probably repaired and enlarged the Castle. But Mr. Langlands more justly considered them to be masons' marks, and this view is confirmed by comparing them with the interesting series of such signs collected by Dr. John Alex. Smith,‡ in whose memoir several examples exactly similar are given from the old Abbeys and Castles of the Borders.

* Scott's Border Exploits, p. 357.

† Antiquities of the Borders, by Sir W. Scott, II., 167.

‡ Proc. Atiq. Soc. Scot., IV., p. 548. See plate XXI. South wall and transept of Melrose Abbey, and in Jedburgh, Arbroath, &c. The letters A and B both occur, sometimes upright, sometimes prostrate. In like manner those at Hermitage are found to be erect, reversed, and sometimes upside down.

So long as the sister kingdoms were distinct, the valley of the Liddel offered the readiest access from the one to the other through the Middle Marches. Hence the command of the passage was an important object to both parties, and led to the erection of several fortresses, held sometimes by English, sometimes by Scottish garrisons, as either side predominated. The strongest and most valuable of these was the castle at Hermitage, which was long the key to that pass. The other strengths were the original castle of Liddel, situated at the confluence of that river with the Esk, at a spot still known as "the moat;" a second castle of Liddel on a high bank overhanging the stream, a little above its junction with Hermitage water, from which the old village of Castleton took its name, and the castle of Clintwood or the Clints, in the fork of two streamlets, forming the Boghill-burn, which falls into the Liddel at Dinlabyre.

The earliest mention of these defences on record occurs early in the 12th century. At that time a close intercourse existed between England and Scotland, and many of the Norman barons held land in both realms and owed allegiance to both sovereigns.* Several of these were high in the favour of David I., and supported his cause at the battle of the Standard in 1138. Among them was Ranulph or Ralph de Sulis or Soulis, of Doddington, in Northamptonshire, to whom was made a grant of the valley of the Liddel, *circa* 1140-1. To secure his hold on his new possession he erected the fortress at the *moat*, which continued to be the residence of the family, until his nephew and successor of the same name was murdered by his servants in 1207. This tragic event probably influenced his son Fulk de Soulis in establishing a new residence at a wild spot on the banks of an affluent of the Liddel, called the Merching-burn, where a former baron, Walter de Bolbeck, had established a recluse named William of Merchingleye, in a cell dedicated to St. Mary, to pray for his soul and that of his wife Sybilla.†

* Redpath's Border History, 295.

† Chart. of Kelso I., 219, 264, 5, 6. The date of the endowment is not given;

The designation of the stream hence became changed to that of "the Hermitage-water," and the castle took the same name.*

The approximate date of the building is obtained from a notice of a threatened rupture between Henry III. and Alex. II. in 1244, at the instance of a Scotch renegade, when among other pretexts was urged the erection of two "frontier fortresses in Lothian and Liddisdale," the latter of which is stated by Fordun to have been that of Hermitage.†

The castle continued in the possession of the Soulises for nearly a century. The family rose to great eminence, and held the office of cup-bearer to the king (*pincerna regis*). Some of them were justiciaries of Lothian and sheriffs of Roxburghshire, and the last was styled *butelarius Scotiae*, a dignity similar to that of Lord High Steward. Nicholas, the son of Fulk, a man of high character, was a competitor for the Scottish crown in right of his descent from a natural daughter of Alexander II.,‡ a pretension which ultimately led to the ruin of the family. They had extensive possessions in the counties of Dumfries, Roxburgh, and the Lothians, where their name is still extant in the parish of Saltoun (*quasi* Soulis toun). An ancient cross at Deadrigs, in the parish of Eccles, sculptured with their arms,§ points to some connection with Berwickshire. William the sixth from Ranulph, after having united with the great barons, in the but Walter de Bolbeck appears as a witness to the first charter granted by David Earl of Cumberland (afterwards David I.), to the monastery of Selkirk in 1113.

* Merching-burn was probably a boundary between two estates in the same manner as the Tweeden-burn, said also to signify "boundary," divides the lands of Mangerton and Whithaugh.

† Scoto Chronicon B IX., ch. 61. "Propter quod coadunato Henricus Angliæ rex, exercitu suo copioso, commissurus bellum contra regem Scotiæ, Alexandrum, eo quoddam castellum erectum fuit per Scotos, in Marchiis inter Scotiam et Angliam in valle scilicet de Liddale quod appellatur Hermitage."

The Scottish traitor who strove to embroil the two sovereigns was William Bisset, Lord of Aboyne, who for the foul murder of Patrick, Earl of Athole, at Haddington in 1242, was forfeited and banished. Balfour Ann. I., 1, 53-5. Hailes Ann. I., 173.

‡ Hailes Ann. I., 180 and 232.

§ Ermine; 3 chevrons gules. Trans. Soc. Antiq. Scot. I., 269.

early part of 1320, in signing a protest to the pope declaring their resolve to uphold Robert Bruce as their sovereign against the usurping policy of England, was discovered in August of the same year to be engaged in a conspiracy against the life of the king, with the object, according to some, of securing the throne for himself. He was convicted of high treason, his estates forfeited, and from this time the name of the family disappears.*

It is to this William Lord Soulis, "the lord of gramarye," that the evil reputation for cruelty, sorcery, and avarice is attached by popular story. "The charge of magic," says Sir Walter Scott, "has been transferred from the ancient sorcerers to the object of popular resentment of every age. * * * Thus Lord Soulis, Archbishop Sharp, Grierson of Lagg, Graham of Claverhouse, and Viscount Dundee receive from tradition the same supernatural attributes." These traditions have been woven into the beautiful ballads of Lord Soulis and the Count of Keeldar by the muse of Leyden, where they will long survive the fast-fading stories and recollections of the Border.

The valley of the Liddel with Hermitage was then given to the king's natural son, who bore the same name, and on his death at the battle of Dupplin, in 1332, they reverted to the crown.

During the troubled times that followed the death of Robert Bruce,† and the minority of his son David II., of which Edward III. took advantage to renew his attempts against the independence of Scotland, Hermitage was held sometimes by one side, sometimes by the other, as success attended either party. At length it fell into the hands of the Douglasses, who long kept possession of it.

Sir William Douglas, warden of the Western Marches, having been taken prisoner in a skirmish near Lochmaben,‡ on the 28th March, 1332, was detained in rigorous confinement for three years by king Edward, who made many

* Hailes Ann. II., 108. Balfour Ann. I., 99.

† Orig. Paroch. I., 356-8.

‡ Rymers Fæd. IV., 552. Redpath's Bor. Hist., 302, 315.

attempts to gain him over to his cause. Recovering his liberty in 1335 he again engaged actively in the defence of his country. In 1338 he surprised an English convoy on its way to Hermitage, near Melrose, and following up his advantage, gained possession of the fortress, which he supplied with the English stores and garrisoned with his own men. From this time he is known in history as the knight of Liddisdale. The following year he recovered Edinburgh castle through a daring stratagem, devised by his friend and companion in arms, Sir William Bullock,* and from these gallant deeds earned the proud title of the Flower of Chivalry.

Meanwhile the other Scottish leaders were not idle. Lord William Douglas, nephew of the knight (afterwards the first earl),† and as chief of the clan, now lord of Jedworth, summoned his family retainers, the men of Teviotdale, and drove the invaders from Jed and Ettrick forests, while Sir Alexander Ramsay of Dalhousie, whose estates and influence lay in Lothian and near Edinburgh, maintained himself at the head of a band of followers in the neighbourhood of Roslin, even when the English were in possession of the capital. Issuing from his fastnesses he incessantly harassed the English, carrying his ravages even across the Border, and returning laden with booty. "His fame for chivalry was so high that no Scottish youth was held worthy of esteem unless he had proved his gallantry by riding for some time in Ramsay's band."‡ His crowning exploit was the surprise of Roxburgh castle on Easter eve, the 30th March, 1342, which he accomplished under the guidance of one Odo of Ednam, a man intimately acquainted with the works. Charmed with his gallantry, the young king, David II., who had recently § returned from France, appointed him governor

* Originally an English ecclesiastic, Bullock came to Scotland with Edward Baliol, and discarding his clerical character became a brave and enterprising soldier. The knight of Liddisdale seduced him from his English allegiance, and he attained to considerable distinction by his exploits in the cause of Scotland. Godscroft, 71, 76. Tytler's Hist., II., 57, 61. Redpath, 322, 329.

† Hailes Ann. II., 246.

‡ Sir Walter Scott's Hist. I., 192; also Tyler II., 55. Chalmers Caled.

§ On the 4th May, 1341.

of the castle, and (an office usually conjoined with it), sheriff of Teviotdale, to the great displeasure of the knight of Liddisdale, who considered his exploits had given him an equal claim.* Their rival pretensions † were appeased for the time by the interposition of mutual friends, but the reconciliation on the part of Douglas was outward only. Watching his opportunity he repaired to Hawick on the occasion of Ramsay holding his first court, about three months afterwards, and approaching him under the guise of friendship he suddenly assaulted him in St. Mary's Church on the 20th June, 1342, slew several of his slender following, and dragging him, wounded, from the judgment-seat, hurried him away to Hermitage. There thrusting him into the dungeon under the southern tower, without food, he left him to die miserably of hunger.‡

The king was justly incensed at such flagrant contempt of his authority, but found himself impotent to deal with so powerful an offender. For three years the knight remained in disgrace, safely secluded within the strong walls of Hermitage, whence he made occasional raids on the English Border.§ During this interval king Edward again made overtures to withdraw him from his allegiance, not altogether it was believed, without success. About the same time Bullock, his friend and companion in arms, who had been advanced to the post of Grand Chamberlain of Scotland, fell under similar suspicion and was seized by the king's command and committed to the charge of Sir David Berkley, by whom he was immured in the castle of Lochendorp, in Morayshire, and allowed to perish by starvation, in the same cruel manner as Sir Alexander Ramsay.||

* At the same time William (afterwards Earl of) Douglas received a grant of the Manor of Liddel, generally held separately from the valley of Liddel and Hermitage. Chalmers Caled. II., 119.

† Several writers state that the office of Sheriff was already held by Douglas, but this appears to be an error. There is no evidence of any such grant by competent authority, although it is probable enough that the knight had *assumed* the exercise of the sheriff's powers on his conquest of Liddisdale.

‡ Hailes Ann. II., 229.

§ Redpath, 335.

|| Tytler, II., 66. Hailes Ann., II., 230.

A cessation of hostilities between England and Scotland, followed by a two years' truce, had enabled Edward to prosecute his invasion of France where he was pushing the siege of Calais with vigour. The opportunity appeared to be favourable for an invasion of England, and David, pressed by his ally the King of France to make a diversion in his favour, resolved to break the truce. The need of Douglas' powerful assistance was now felt, and a reconciliation having been effected through Robert Stewart, the king's cousin, Douglas was recognised as the sheriff of Teviotdale, and appointed governor of Roxburgh castle. Three months after this humiliating concession, the Scottish army crossed the frontier, destroying Liddel castle, the original seat of the Soulis' family, which was razed to the ground, and proceeding onward to Durham, suffered a total defeat at the battle of Neville's cross, on the 17th October, 1346. The king, the knight of Liddesdale, and many of the Scottish nobility were taken prisoners, and the whole of the south of Scotland, including Hermitage, fell into the hands of the English.

The capture of Douglas gave Edward ample scope for again practising on his fidelity, and now with better success. The murder of Sir David Berkley at Aberdeen, in 1350, by a dependent of Douglas, named John St. Michael or Carmichael, was a symptom of his growing defection. The deed was universally attributed to his instigation in revenge for the death of Bullock, and of a John Douglas said to have been a brother either of the knight himself, or of his nephew Lord William.*

* The relations of the different members of the Douglas family at this period are involved in much obscurity. By some the Knight of Liddesdale is described as a natural son of the good Sir James. According to others he was the lawful son of Sir John Douglas of Dalkeith or Laudonia, ancestor of the Morton family. The confusion has been increased by the failure to distinguish on all occasions, between the Lordship of *the Valley* of Liddel and the *Castle* or *Manor* of Liddel, which were always held separately and generally by different persons.

The arguments on both sides are well stated by Chalmers in the *Caledonia*, vol. II., p. 117., *note v* supporting the first view, and by Riddell in his *Stewartiana*, p. 83, and Appendix III.; on the other hand, see too Sir Walter Scott's *Prov. Antiq.*, I., 58-59.

Whether he felt that Ramsay's death had never been forgiven and that he had still farther compromised himself by Berkley's assassination, must be left to conjecture. Certain it is that he now threw himself unreservedly into the English alliance and became the sworn vassal of Edward.

The indenture entered into on this occasion, "between the king on the one part and William Douglas his prisoner on the other," is given at length by Rymer. In it Douglas pledges himself, on being set free "pour lui et pour ses Heirs de servir au Rou et ses Heirs en totes leur Guerres contre toutes Gentz and en qui conque Pay et dete, sauf contre sa Nacion d'Escoce, en la terre d'Escoce, *s'il ne soit do son bon gree*. Et serra touzjours le dit Willaume, prest et apparelez au garnisement d'un mois apres le recette des Lettres quales seront lessees, au manoir de l'Hermitage."*

In another instrument he bound himself never to give aid or counsel against the king of England, either secretly or openly, on behalf of his own nation or any other; also to allow the English at all times free passage through his country, and farther to renounce all claim to the castle of Liddel. And farther he was to make oath for the due performance of all these conditions, under pain of being held to be a disloyal and perjured man and a false liar, and he agreed to give his daughter and nearest male heir to be kept as hostages for two years in England.

With singular inconsistency after having thus traitorously yielded every possible concession to the enemy of his sovereign and his country, he intimates his intention of remaining dutiful to his natural liege-lord as far as possible! "C'est l'entencion que le dit Mons. William puisse touzjours faire son devoir devers son seigneur lige en totes choses que ne sout contraires a cestes alliances!" One hesitates whether to admire most the hypocrisy or the baseness of such a resolution. Alas! for the Flower of Chivalry.

Accordingly on the 24th July, 1352, Edward granted him investiture, "quod idem Willielmus habet Terram vocatam

* Rymer, Fæd, V., 738.

l' Ermytage in Scotia, una cum quibusdam aliis Terris et Locis* ibidem prout indenturæ, &c.," and further directed that "eodem Williélmo castrum et manerium de l' Ermytage, cum pertinentibus, &c., * * * liberatis."

He did not long enjoy the fruits of his treason. Suspected already of disloyalty, it was not likely that this transaction should long remain concealed. Too powerful to be dealt with openly, he was way-laid when hunting in Ettrick forest, and slain at the instance of his nephew and godson Lord William, the following year, in the month of August, 1353. There is little doubt that the deed had the approval, perhaps the injunction, of the king, as the only mode by which his treason could be punished. Lord William, moreover, as warden of the Middle Marches, must have felt himself powerless to prevent the incursions of the English so long as Hermitage was virtually in their hands, and its possessor pledged to allow them free passage at all times. An ancient monument, no longer in existance, marked the spot where he fell, but the site of William's cross, on Williamshope, is still pointed out near the Glenkinning-burn, which runs into the Yarrow.† His body was carried to Lindean church below Selkirk, and was afterwards interred in Melrose abbey.

As soon as the news reached king Edward he took steps to secure possession of Hermitage. On the 14th October Henry de Percy and Ralph de Neville were appointed commissioners to treat with Elizabeth, Douglas' widow, for the surrender of the castle and the valley of Liddel, on the release of the hostages, conformably to the indenture executed by her husband.‡ The negotiations were not concluded till

* Viz, half the town of Moffatt, Granton, Polbothy, and other lands in Dumfriesshire, which seem to have constituted his original estate before he established himself in Liddisda'e.

† Godscroft, p. 197 and 81, followed by other writers, as Balfour I., 115, Tytler, II., 82, gives the names of the place as Galsewood or Gladwood, but Sir Walter Scott, who knew the country well, has rightly named it. He gives the date 13th July, 1354, on what authority is not stated. Hist. I., 203. The tale alluded to by Godscroft of an intrigue between the knight and the countess of Douglas seems to be quite unfounded.

‡ Rymer 760. Who this lady was is not known. Her Christian name only is preserved in the papers recorded in the *Fœdera* and *Rotuli Scotiæ*.

the following year, when it was settled that she should receive a grant of "the castle of Ermytage and the valley of Liddel" for her life, with remainder, if she married an Englishman, to the offspring, if any, of such marriage; failing which they were to revert to the crown, thus ignoring the children of her late husband altogether. Meantime she was to receive an English garrison and an English governor selected by the commissioners, and to restore the original grant made to her husband, receiving in return an indenture in the terms now concluded, upon which the nephew and daughter of her late husband, who were detained as hostages, were to be delivered up.*

In less than a year afterwards she married Lord Dacre's brother, Hugo de Dacre, equerry (*valettus*) to king Edward, who thereupon appointed him keeper of the castle, renewing the grant in their joint names.†

This arrangement continued for about three years, when in 1358 we find Lord William (now created earl) Douglas in possession; for on the 6th June in that year king Edward issued a commission to Thomas Musgrove, Thomas Gray, and William Heron to inquire whether the castle of Hermitage had been taken by William de Douglas during the period of a truce that had been agreed upon.‡ Redpath adds, that by 1384 he had recovered all the Border strengths except Roxburgh.§ He died the same year, and was succeeded by his eldest son, James 2nd earl, in the Douglas estates, while his second son George inherited the Angus title and property in right of his mother.

The Border possessions appear to have gone to the Angus branch soon afterwards; for although James is styled "Lord of Lydalysdale" in 1380-1, during his father's life time, it is certain that Jed and Ettrick forests, Bonjedworth, the lordship of Liddel, the sheriffdom and keeping of Roxburgh castle, &c., are all included in a charter granted by

* Rot. Scot I. 771-2. The instrument is dated 8th Oct., 1354.

† Rot. Scot I. 779, dated 1st July, 1355.

‡ Rot. Scot I. 826.

§ P. 354.

Robert III. to George, earl of Angus, on his marriage with the king's daughter, Mary Stewart, in 1397-8.*

From this time Hermitage appears to have belonged to the house of Angus with few interruptions for near a century. In 1427-33 William, second earl, was warden of the Middle Marches by special commission, † and "Lord of the valley of Ledell," Godscroft quotes ‡ a bond granted to his son James, the third earl, by Robert Fleming of Cambernauld, an old dependent of the family, in which he binds himself "to enter within the iron gate of the castle of Tantallon or Hermitage, under pain of 2000 marks, upon eight days warning * * because he had burnt the earl's corne within the baronie of North Berwick, and taken away his cattell there on Fasting even or Shrove Tuesday." George, fourth earl, and brother of the second, adhered to his sovereign, James II., in his feud with the Douglasses. He was warden of the East and Middle Marches, and in 1452 "took measures for keeping good order in his Countrey of Liddesdale, and to keep his castle of Hermitage safe" for the king. "He had for this purpose made Sir Archibald Douglas of Cavers (sheriffe of Roxbrough), and William his sonne, Bailiffs of Liddesdale and keepers of the castle."§ For these services he was created lord Douglas, and took an active part in supporting the minor son of James II. after the king's death at the siege of Roxburgh castle. No change appears to have taken place in the reign of James III., during which, Archibald the fifth earl, better known by his soubriquet of Bell-the-Cat, possessed Liddisdale and Hermitage; but on the accession of James IV., that youthful prince, remembering the dangerous power and influence of the house of Douglas in by-past times,|| seized the occasion of a casual outrage¶ to require the

* Douglas Peerage I. 432. Orig. Par. I. 358.

† Douglas Peerage.

‡ P. 210, 213.

§ Godscroft, 213, 215.

|| Godscroft, 221.

¶ This outrage was a duel fought between Angus and Spens of Kilsperdie, of which a graphic description is given by Godscroft, p. 235. Spens was slain.

earl, who was chancellor of the kingdom and high in the royal favour, amicably to resign his possessions, including Liddisdale and Hermitage, to the crown in 1488. But though he immediately afterwards conferred them on George, master of Angus, the earl's eldest son, he ultimately brought about a permanent exchange between him and Patrick Hepburn, earl Bothwell and lord High Admiral, who exchanged the lands and castle of Bothwell for those of Liddisdale and Hermitage, an arrangement confirmed by Parliament in 1492.* The connection of the Bothwell family with Hermitage continued without interruption till 1538, and did not finally cease till 1567.

For some years after the fatal disaster of Flodden, during the long minority of James V., the Borders were the scene of the most lawless disorder. The Scottish nobles were split into parties, struggling to obtain the lead in the national councils, and seeking for external support, some from France, some from England. The duke of Albany, cousin to the late king, was at the head of the French party; the earl of Angus, who married the queen mother, was the leader of the English faction. Lord Dacre, the English warden, fomented these feuds to the utmost, and under colour of supporting the English party, made repeated inroads into Scotland, burning, plundering, and destroying without mercy. Boasting of his success in stirring up strife, Dacre writes to Wolsey on the 23rd August, 1516: "I have secret messages from the earl of Angus and others * * * and also 400 outlaws (and giveth them rewards) that burneth and destroyeth daily Scotland; all being Scotsmen that should be under the obedience of Scotland."† And shortly before he had boasted to Henry VIII., "there never was so mekyll myscheffe, robbry, spoiling, and vengeance in Scotland than there is now,

"Tell my gossip the king," said Angus to his attendant, "that here was nothing but fair play. I know my gossip will be offended; but I will get me into Liddisdale and bide in the Hermitage till his anger be abated."

* Reg., Great Seal XII., 344, dated 6th March, 1492. Orig. Par. I., 358.

† Ellis' Orig. Letters, 1st series, I, 132. Tytler's Hist. V. 187.

without hope of remedye; which I pray our Lord God to continue!"* The unhappy inhabitants of the Borders, abandoned to their fate, nevertheless defended themselves bravely. "I assure your Grace," writes the earl of Surrey to Wolsey, in 1523, "I found the Scots at this tyme the boldest men and the hottest that ever I sawe any nation; and all the jorney, upon all parts of the army, kept us with so contynuall skymyshe that I never saw the lyke. If they myght assemble 40,000 as good men, as I now saw 1500 or 2000, it wolde be an hard encounter to mete them."† But this could not last. Dacre at length reports the desolation to be complete. "Nothing was left on the frontiers of Scotland without it be part of old houses whereof the thatch and coverings are taken away by reason whereof they cannot be burnt."‡ All the inhabitants fled inland, so that the English forays had to be carried 20 miles inland to find booty. The Liddisdale clans appear to have retired to the estates of the laird of Buccleugh, who was powerful enough to defend his own lands; and hence began that connection which was never afterwards severed, and accounts for the presence of the Liddisdale men in Buccleugh's force, when attempting to deliver the young king from the Douglasses two years later. Of Hermitage we hear nothing during this turbulent period. It was probably held by Bothwell's garrison, who was powerless to interfere.

On the accession of James V., his first act was to introduce order into the distracted districts. As a preliminary step Patrick 3rd earl of Bothwell and the other chiefs were seized and put in ward, whilst the king with a strong force proceeded to the frontier and made such severe examples of the freebooters as to secure a momentary return of order and security. But it was of short duration.§ The weakness of James' authority did not allow him to confirm or consolidate

* Tyt. V. 93.

† Ellis' Orig. Letters, 1st series, I 214, dated 27th Sept. 1523.

‡ Dacre to Wolsey, 11th June, 1524. Ellis, I. 248.

§ Bothwell appears to have given a bond to preserve order at this time. See Pitcairn Crim. Tri. I. 245. After a detention of six months he was released on a bail of £20,000 to return to prison when required.

his power. New disorders broke out on the Borders. English and Scotch commissioners were appointed to meet at Berwick,* who agreed that unless the excesses of the men of Liddisdale were redressed by a certain date, it should be lawful for the king of England to issue letters of marque to enable his subjects to make reprisals until redress was obtained; but a special exception was made in favour of Hermitage, which the English were not to besiege or take.

These measures were deeply resented both by the Borderers and their chiefs, who thought their former exertions in behalf of the king deserved more consideration. Bothwell in particular was highly incensed, and entered into a treasonable correspondence with the earl of Northumberland. A secret meeting was arranged, to which he repaired with three attendants, one of whom was Robert Elwolde (Elliot) of the Armytage, probably the captain of the hold, whence it may be concluded that the party set out from the castle. In a letter to king Henry, of the 27th December, 1531, Northumberland gives a curious account of the interview, in which Bothwell, "for revenging of his displeasure or relieving of his hart and stomach against the Skottes king," engages to serve in the wars against Scotland with 1000 gentlemen and 6000 commons, and ends by expressing his expectation that through such means and the help of Angus they should "crowne your Grace in the town of Edinburg within brief time."† On these practices reaching the king's ears Bothwell was again committed to ward, and remained in confinement for some years, after which he went into exile. In 1538 he was compelled to resign into the king's hands the lordship of Liddel as being a nest of free-booters, to be held for the future by the king. By an Act of Parliament passed in 1540, "the Landes and lordship of Liddisdale, with the castle of Armytage," were formally annexed to the crown. But it appears to have been virtually under royal control from the time of the earl's imprisonment; for in the Lord High Treasurer's accounts ‡

* Redpath, 529. See too 475, Rymer, XII, 275.

† Tytler Hist., V., 200. note.

‡ Pitcairn, Crim. Tri. I. 294.

there is an entry dated 21st October, 1534, of £700 to lord Maxwell * “for keping the House of Armytage and Rewling of the inhabitants of Liddisdale be y^e space of seven months;” and on the 14th February, 1540, a farther sum of £100 is given to him “for beting and mending of y^e castle of Hermitage.”

The king’s premature death in 1542 allowed Bothwell to return to Scotland, where he resumed his place in the Parliament of 1542-3 and procured a reversal of the compulsory resignation of his estates. The long minority of the infant princess Mary gave rise to a repetition of the disorders that had proved so fruitful of calamity during her father’s non-age. Henry VIII. was anxious to bring about a marriage between the heiress of Scotland and his son Edward, and with this object secured a strong party among the Scottish nobility. But he was foiled by the opposition of Cardinal Beaton, to whom Bothwell attached himself. Incensed at the failure of this cherished scheme, Henry resolved to attack Scotland in force, and whilst preparations were making he ordered the wardens of the Marches to organize a plan of retaliation and plunder until the main army was ready to move. One of these officers, Sir Thomas Wharton, accordingly reported † that, “upon the Middle Marches, they trust to burn and make waste all the dwellers in Liddisdale except within the castle of Hermitage, as also to compel the dwellers without the said castle to do service to the King’s Highness.” This policy was so well carried out that most of the Liddisdale clans were compelled ‡ to take part in the English

* Robert, fifth lord Maxwell, one of the king’s most faithful and trusted nobles had married Agnes Stewart, Bothwell’s mother.

† See State Papers, V. 345. “The opinions of Sir Thos. Wharton, Sir J. Louthier, Jno. Leigh, and Edward Agtionby for annoyance, as they trust to God shall be done to Scotland this winter by the Marches.” Dated 23rd Sept., 1543.

‡ The Armstrongs, who were the most influential clan in the valley below Hermitage, appear to have suffered especially at the hands of the English, for Henry ordered Sir Thos. Wharton at this time to liberate the chiefs of the name who were then his prisoners . on condition of their ravaging the estates of the Scottish lords opposed to him.

Letters of the duke of Suffolk to lord Wm. Parr, dated 10th and 11th Sept., 1543, quoted by Tytler, V. 289, 310.

forays, and to wear the red cross badge of England. That they did not do so from any love of England was proved by their conduct at the battle of Ancrum moor two years later (February, 1535), where 600 Border lances tore off their red crosses and passed over to their countrymen.* But this transient gleam of success produced little change in the fortunes of the Border. Even after the death of Henry VIII. the same policy was pursued by Somerset the Protector, who, under his former title of earl of Hertford, had wrought such skaith in previous years. His success in gaining over the nobles opposed to Cardinal Beaton was proved by a list of two hundred men of note, bound secretly to the service of England, which was found in the castle of St. Andrew's, when the murderers of that prelate were taken. Among these the name of Bothwell held a prominent place. He engaged to deliver up Hermitage and to renounce his allegiance to the earl of Arran, now governor of the kingdom, during the queen's minority, in reward for which he was to receive in marriage the duchess of Suffolk, aunt to the English monarch.† He was immediately thrown into prison, but was released the day after the battle of Pinkie, 10th September, 1547. The first use he made of his liberty was to join the Protector and openly espouse the English cause. A pension of 3000 crowns to keep up 100 horsemen, with whom to serve against his countrymen, was conferred on him, and he was guaranteed against any loss of his Scottish lands incurred thereby.‡ His treason does not seem to have prospered. The Protector's schemes were foiled by the French auxiliaries sent to Scotland, and Bothwell, not daring to return, died in exile in 1556.§

His son, James the fourth earl, attached himself to the queen mother, now regent and head of the Roman Catholic

* Tytler V. 317. The same thing happened to Wharton in February, 1547, when checked by the earl of Angus in a raid on the Western Marches; *ib.* VI. 40.

† Tytler, V. 16, quoting letter to the Protector Somerset, of 18 August, 1547, in State Paper Office.

‡ Rymer Fæd. III. 173.

§ Douglass peerage, I. 228.

as opposed to the Protestant party. He was appointed by the queen and the dauphin, with Ker of Cessford and Lethington, to settle the affairs of the Borders, on the 8th Aug., 1559.* The following year he repaired to the court of the young queen at Paris, and was one of seven lords appointed by her to be commissioners, for summoning the Parliament and preparing for her return to Scotland. In 1662 an accusation of treasonable intentions against lord James Stewart, the queen's brother (afterwards regent Murray), was preferred against him by the earl of Arran, who proved to be insane. Nevertheless, Bothwell was confined in the castle of St. Andrew's in March, brought under a guard to Edinburgh on the 4th of May, but made his escape from the castle on the 29th of August, and took refuge in Hermitage, and eventually escaped to France. There he remained three years, and returning in 1665 found Murray still opposed to him, but was reconciled to him through the queen's exertions. On her rupture with her brother, after Rizzio's murder, Bothwell rose rapidly in favour. He was in the palace on the night of that crime, escaped through the window, and repaired to the queen at Dunbar, where on the 17th March he received a grant of the abbey of Haddington, which had been held by her late secretary. On the 7th October the queen went to Roxburghshire, ostensibly to hold an assize at Jedburgh, but in reality to strengthen her influence against the lords of the congregation, for which purpose Bothwell had been sent to his Liddisdale estates some time before, with a commission of warden of all the marches. The Border clans, however, which had of late been left too much to provide for their own safety, entertained a lively remembrance of English vengeance, and prudently held aloof. Bothwell therefore tried more stringent measures. Summoning the leading men of the Elliot clan, who occupied the country nearest to Hermitage, he detained them in the castle; but one of the most influential of their number, John Elliot of Park, having failed to appear,

* Diurnal of Occurents, 53. News letter from Scotland to Cecil, dated 10th Nov., 1559, Tytler, VI., 389.

Bothwell, on the same day that the queen left Edinburgh, rode over to Park,* a distance of about eight miles, to induce him to come in. What occurred is told in the words of a cotemporary annalist:—

“ Upoun the samyn day, James erle Bothwell, lord Hailis of Crychtoun, being send be our soverenis to bring in certane thevis and malefactouris of Liddisdail to the justice air, to be puneist for thair demeritis, and he being serchand the feildis about the Hermitage, eftir that he had takin certane of the saidis thevis and had put thame in the place of the said Hermitage, in presoun, chancit upon ane theif callit Johne Eluat of the Park. And eftir he had takin him, the said Johne speirits gif he wald saif his lyff; the said erle Bothwill said, gif ane assyiss wald mak him clene, he was hertlie contentit, bot he behuvit to pas to the quenis grace. The said Johne heirand thay wordis, slipis fra his horse to have rin away; bot in the lychting, the said erle schot him with ane dag† in the body and lychtit down to have taken him agane; and followand feirsellie upon the said theif, the said erle slipit owre ane souch and tomlit down the same, quhair throw he was sa hurt that he swownit. The said Johne persaveand himself schot and the erle fallin, he geid to him quhair he lay and gaif him thric woundis, ane in the bodie, ane in the heid, and ane in the hand; and my lord gaif him twa straikis with ane quhingar at the paip and the said theif depairtit; and my lord lay in a swoun. quhill his servantes come and caryit him to the Hermitage. At his cuming thairto, the saidis thevis quhilk was in presoun in the said Hermitage, had gotten furth thairof and was maisteris of the said place, and wald not let my lord Bothwill in, quhill ane callit Robert Elliot of the Schaw come and said, that gif thay wald let in my lord Bothwill, he wold saif all thair lyvis, and let thame gang hame; and sua thay leit my lord in; and gif he had not gottin in at that tyme, he and all his company haid bene

* The peel of Park stood on the site now occupied by the Railway station at Newcastleton.

† Pistol.

slane. And the said theif that hurt my lord Bothwill de-
ceissit within ane myle, upon ane hill, of the woundis gottin
fra my lord Bothwill of befoir.”*

Eight days later, or on the 15th October, queen Mary paid her celebrated visit to the wounded warden. The distance from Jedburgh to the castle is $22\frac{1}{2}$ or 23 miles as the crow flies. It has been supposed that she took a somewhat circuitous road by Hawick;† but there is no evidence of this. I am inclined to believe that she proceeded by the most direct line, which even now a horseman acquainted with the country would follow. Thus leaving Jedburgh by the town-head and passing the castle, she would proceed along the base of the Dunion across Swinnie-moor into Rule water, thence across the Earlside-moor to Colifort-hill, crossing the Slitrig below Stobs and leaving Hawick considerably to the right. The path would then pass Whitlaw, Flex, and Priesthaugh, and on between Greatmoor and Caldeleugh-hills to the head of the Braidlee-burn, where is the morass into which her palfrey sank, still called the Queen's-mire. From Braidlee-burn is but a short and easy descent into the Hermitage valley. The whole distance must be considerably over thirty miles, and when it is remembered that Mary returned to Jedburgh the same evening, and that the shortness of the days at that season allowed her little time to rest, it is not surprising that such great fatigue, three months after her confinement, brought on a dangerous illness. Favourable symptoms appearing on the 22nd and 23rd, her secretary, Lethington, wrote to Cecil on the 24th, reporting her convalescence,‡ but on the 25th she had a relapse, and lay from

* Diurnal of Occurrents, 100.

† The way by Hawick would have taken her considerably more to the westward, crossing the Dunion to Bedrule and skirting Ruberslaw to the valley of the Teviot, which she would reach between Denholm and Cavers. Her course would then lie along the river through Hawick to the Allan water, following which to the Dod-rig she would reach the Queen's mire.

The route by Rule water, skirting Windburgh to Langburn-shiels, Whitterhope, and Ninestane-rig, though very direct would not strike the Queen's mire, and the only other line by the Knot-i'-the-Gate is too far to the eastward.

‡ This letter is given by Sir Henry James in his Fac-similes of National

9 a.m. to 1 p.m. in a state of insensibility, from which she was only restored by the care and attention of Master Nawe or Nau, her physician. She did not return to Edinburgh till the 7th December, after which Darnley's murder, her seizure by Bothwell, her marriage and the close of her reign at Carberry, which drove Bothwell into exile with the forfeiture of his estates and dignities, again brought Hermitage into the possession of the crown, 29th December, 1567.

Twenty years later James VI. conferred the forfeited Bothwell titles and estates on his cousin Francis Stewart,* who by his mother was likewise the nephew of the late earl. He repaid his benefactor by the grossest ingratitude, and after a succession of seditious outbreaks and more than one attempt to seize the king's person, he also was attainted † and fled the kingdom. He had married lady Margaret Douglas, widow of Sir Walter Scott of Buccleugh, and in consequence of this alliance is said to have made over his Liddisdale estates to his step-son before entering on his treasonable courses. Certain it is that Liddisdale and Hermitage next came into the possession of the Buccleugh family, with which they still remain.

On the accession of James VI. to the throne of England, the hostility of the Border clans gradually gave way to habits of peace and goodwill, and Hermitage, ceasing to be a place of importance, was abandoned as a post of defence and fell to decay. It gave the title of viscount to Henry, third son of Anne duchess of Buccleugh and Monmouth, created earl of Delorain, viscount Hermitage, &c., by queen Anne on the 29th March, 1706, which became extinct on the death of the fourth earl in 1807.

Time did not permit us to visit the site of the old castle and church, about 3 miles above the present town, which our guides

MSS., part 3, No. lvii. The transcript prints the place from which it is dated as "Indbrough," whereas it is clearly "Jedbrough," and this is the more remarkable as several of Maitland's letters, really written from Edinburgh, and occurring both before and after No. lvii., have the name distinctly spelt "Edinbrough."

* Charter under the Great Seal, 29th July, 1587.

† 21 July, 1593, Acts of Parl., IV., 8.

described as possessing considerable interest. They informed us that Cromwell encamped there and halted some days, during which his soldiers, who had no love for the Presbyterians, did great damage, destroying the building and carrying off the church-bell to Stanwick, in Cumberland. This tradition is confirmed by the following extract from the kirk-session records given in the Old Statistical account of the parish :—

“ 17th January, 1649. The English army commanded by Colonels Bright and Pride, and under the conduct of General Cromwell, on their return to England, did lie at the kirk of Castletoun several nights, in which time they brak down and burnt the communion tables and the seats of the kirk ; and at their removing, carried away the minister’s books, to the value of 1000 merks, and above, and also the books of session, with which they lighted their tobacco-pipes, the baptism, marriage, and examination rolls, from October, 1612, to September, 1648, all which were lost and destroyed.”*

Notwithstanding the many defections caused by the inexorable railway trains, a large party sat down to dinner, the President and Sir William Jardine occupying either end of the table. After dinner an interesting conversation took place with reference to the early history of the club, of which Sir William is one of the earliest members. He stated that he expected to find Dr. Baird at his house on his return, and all regretted that he had not come in time to attend this meeting of the club, of which he and Mr. Embleton are now the oldest surviving members.

Our last meeting at Longhoughton, on Thursday the 26th August, was extremely interesting. The day was beautiful, the attendance large, and everything combined to render the occasion one of the most successful of the season. Pursuant to the invitation of the Rev. R. W. Bosanquet, the members assembled at the ancient manor house of Rock hall, where they partook of an excellent breakfast, after which they

* Vol. XVI., 68.

proceeded, under the guidance of Mr. C. P. Bosanquet and the Rev. Mr. Cooley, to examine the remains of the old tower now incorporated with the mansion house, and the fine old Norman church hard by, which has recently been restored by Mr. F. R. Wilson, who was also present to explain the noteworthy features of the architecture. These, together with the monumental slabs of the interior, commemorating the families of De Swinhoe, Salkeld, and others, were examined with much interest. Particular attention was attracted by an ancient and somewhat defaced monument on the floor near the entrance, exhibiting a two-handed sword and a foliated cross of peculiar form. The stem of the latter was interrupted in the middle, and appeared to pass behind a broad band stretching quite across the slab and bearing the hilt and upper portion of the sword. Below the transverse band or division the lower limb of the cross again appeared, and at the bottom seemed to rest on two carved scrolls or feet.

Returning to the house the party assembled in the library, where Mr Bosanquet read an interesting memoir on the history and fortunes of Rock and its chapel, describing the various families which had successively possessed the manor, and the vicissitudes and changes through which they had passed. To these I need not further refer, as the paper itself will appear in this number of our transactions.

The thanks of the club having been communicated through the President to Mr Bosanquet, for his hospitable entertainment and valuable information, the party drove to Dunstanburgh by Craster tower and Proctor stead, where a short halt was made to enable Mr. F. R. Wilson to point out some architectural peculiarities in the latter, of which he has since been good enough to favour me with the following memorandum:—

“Near Dunstan is a group of buildings of some interest called Proctor steads. To the casual observer it consists only of a modest mansion of some antiquity adjoining an older tower; but on closer examination remains of three different

constructions are found in it. The first stage of the tower is built of the local basaltic stone, and is of much older date than the super-structure, which consists of three stages of Edwardian freestone ashlar masonry, of the same character as that at Dunstanburgh castle. Two of these stages are perfect, but the third has, in modern times, been frayed away, course by course, in steps to form lean-to gables, and roofed over with slates. The window openings are small and rectangular, and there are projecting corbels on the eastern side which originally carried the machicolated defence of the entrance now blocked up. The old pele measures 18 ft. 8 in. by 14 ft. 9 in. externally, and the walls are four feet thick. Against one side of it, and extending beyond it to a length of 36 feet, wing fashion, is a low two-storied Jacobean building having a third story in the red-tiled roof, very pleasing looking in contrast to the stern old tower. Looking on to the north front it will be seen that several courses of good Edwardian masonry have been used up in it, which were doubtless taken at the time from the ruins of the castle. Thus we may read that in the days of Duns Scotus there stood an ancient pele tower; upon the lower story of which were added, in a style of architecture corresponding with the period of his life, three stages in the same material as that then being used in the construction of the castle close by; and after a lapse of three centuries, when the castle was standing deserted and decaying, the owner of the tower built a comfortable dwelling house attached to it; and as he used up several courses of old Edwardian ashlar, we shall probably not be doing much injustice to his memory if we assume that he found them ready to his hand, as many builders in the neighbourhood have likewise, in the dismantled castle."

Of the former occupants of this fortalice no information was obtained, but the name seems to connect them with the family mentioned by Mr. Bosanquet as one of the late owners of Rock. On the lintel of the doorway are the letters J. P. and the date 1652, but very indistinct and worn from the effects of the weather.

Continuing the drive to Dunstanburgh, and alighting at the foot of the rocky eminence on which it stands, the party proceeded to explore the ruins of the fortress, and then seating themselves on the broken fragments or reclining on the green sward in the great court under the shade of the lofty gatehouse, listened to a memoir read by Mr. Geo. Tate, descriptive of the building and its fortunes from its foundation in 1313, and of the barony of Embleton to which it was attached, together with notices of the geology of its site, and of an old legend connected with it, which has been celebrated by a local poet, James Service, of Chatton.

Having completed their survey of this interesting remnant of feudal times, the party walked along the rocky shore to Howick, examining the instructive geological section presented by it, the distinctive features of which were pointed out by Mr. Tate.

“Dunstanburgh stands on the Basaltic whin sill, which ranges northward by Embleton, Newton, Bamburgh, and Belford, to Kyloe, and southward by Craster to Cullernose, where it leaves the coast and pursues a south-westward course, by Howick hall, Ratcheugh, and Greensfield, to the extremity of the county at Glenwhelt. This basalt rises in rude columns in some parts, as at Cullernose, 100 feet in height; its relation to the stratified rocks is seen at Dunstanburgh, where it overlies sandstones, shales, limestones, and coal of the Mountain Limestone formation; and patches of metamorphosed shales and sandstones also appear above it. A singular mass of limestone is in the Rumble-churn partly enveloped in the basalt, and converted into white crystalline marble. Great displacements of strata at Cullernose evidence the mechanical effect of this basaltic eruption. From Cullernose southward there is a good section of the characteristic beds of the calcareous division of the Mountain Limestone. Among the numerous fossils are curious marine worms in sandstone, which were examined with much interest, and trilobites, which have been described by Mr. Tate.* A small

* Proc. of Ber. Nat. Club., Vol. III. 234, Vol. IV. 163-107.

basaltic dike cuts perpendicularly through the strata ; and appears like an artificial wall ; and a great fault, near the village of Howick, has thrown upward the strata on the north side several hundred feet above those on the south side."

Leaving the coast the members again mounted their carriages and drove to Howick hall, courteously thrown open to their inspection by earl Grey. The entrance hall contains a striking marble statue of the late earl. They were conducted through the suite of public rooms, examining the family portraits and several fine pictures, and ended with the conservatory, which is large and filled with choice plants.

From Howick the party drove back to Longhoughton to the Blue Bell, where thirty-two sat down to an excellent dinner, prepared by the landlord, Mr. Murray.

After the customary toasts, the secretary made a statement of what had been done in the exploration of Edin's hall or Etn's hold, in Berwickshire, a curious pre-Roman fort, similar to that of Greaves Ash, but resembling also some of the Burghs or Broughs of Scotland ; several intra-mural cells had been cleared—an intra-mural stair-case, apparently leading to upper cells had been discovered—a cannel-coal ring, an amber bead, and a small perforated stone had been found. The expense of the explorations would be defrayed by subscriptions, towards which the club gave £5. A report of the results will be given by Mr. D. Milne Home. Mr. Middleton Dand sent for inspection an iron spear head, recently found in the Haddon burn, two feet below the present bed, which, he thought, might be a relic of the skirmish at Haddon rig, on August 25th, 1542, between the earl of Huntly and sir Robert Bowes. A pewter cup, with a curious flat handle of open work, was shown by Mr. Bolam, which had been in the possession of a family in the neighbourhood of Wooler for some years. Various speculations were hazarded regarding its origin, some supposing, from a fancied resemblance of certain indistinct figures on the handle to the Somerset arms, that it might belong to the early part of last century, but

Mr. Wilson suggested with more probability, from its resemblance to similar vessels in general use in Holland, that it may have been brought over by a trading vessel from the opposite coast.

Thanks having been voted to earl Grey for his kindness in giving access to his house and grounds, the meeting broke up highly pleased with the events of a very agreeable day.

There were present on this occasion—Sir Walter Elliot, president; Mr. George Tate, secretary; Messrs. C. P. Bosanquet, Rock; J. C. Langlands, Old Bewick; Robert Bolam, Weetwood; J. Wheldon, London; Wm. Boyd, Ormiston; G. Allen, Berwick; James Grey and Wm. Forster, Longhoughton; Dr. Bruce, Newcastle; Dr. M'Kenzie, Kelso; Revs. W. Darnell, Bamburgh, W. L. J. Cooley, Rennington; W. Meggison and J. Marshall, Alnwick, R. Henniker, South Charlton, P. M'Alister, J. Huie, Wooler, P. G. M'Dougal, Kirknewton, G. Thomson, Acklington; Drs. Wilson and M'Vail; and Messrs. Robert Middlemas. H. Hunter, E. Allen, F. R. Wilson, T. Gibb, T. Tate, and J. P. Turnbull, Alnwick, &c.

It remains to notice a few matters of interest within our limits, in the investigation of which the club had no direct share.

The further excavations at Edin's hall have already been adverted to. Several parties have lately been formed to view the results of the committee's labours, at one of which, in company with Mr Milne Home, I was present. After examining the immediate locality, we walked up to the top of Cockburn law, distant from 2000 to 2500 yards, the summit of which has been strongly fortified, especially on the more open side, which is defended by a triple rampart and ditch. Between this height and the hall numerous traces of inclosures, mounds, and hut circles were observed, leading to the conclusion that the intermediate space had at one time been occupied by inhabitants. I took the liberty of suggesting to Mr. Turnbull, the convener of the exploration committee, that an accurate plan should be made by a competent

surveyor, of the environs of the hall, within a semicircular radius of $1\frac{1}{2}$ or 2 miles from the river, which might be accomplished at trifling cost, on a sheet of the 25-inch ordnance survey. This would probably throw light on the origin of the principal edifice, and lead to inferences indicative of the purpose for which it was erected.

The most remarkable relic discovered in clearing out the ruins is an octagonal bronze fibula or brooch with a chased pattern, which has been submitted for the opinion of Mr. Albert Way.

Several ancient burial places have been examined during the season in the neighbourhood of Hawick. In February last Dr. Brydon of Hawick, assisted by Lord Rosehill and some members of the Hawick Archæological Society, opened some ancient burial places on the farm of Tiendside, on the Teviot, about five miles above the town. Their examination, which was prosecuted on two several occasions, disclosed a group of four regular cists, and a fifth of somewhat different form. In one of the former only the remains of a human skeleton were found, which had been deposited in a sitting posture, with some bits of charcoal. In a second they met with a *terra cotta* vessel about six inches high, incinerated bones of some animal, a flint chip or arrow head, a piece of radiated iron pyrites, and some black mould. Of the contents of the third and fourth cists, little was discovered to show the purpose for which they had been used. The whole four occupied a semicircular space, at the back of which was the last-mentioned cavity, containing a large quantity of charcoal and burnt bones, among which were five human teeth in good preservation, part of a pelvis and a thigh-bone, which crumbled to pieces, a small flint knife and some flint chippings, the fragments of an earthen vessel, &c. "The whole floor was paved with flint stones, which were covered with a continuous layer of charcoal. From this it appears that the body, having been surrounded by firewood, was burned in a sitting posture."*

* Trans. Hawick Arch, Soc. for April, 1869.

In July and August Dr. Brydon explored a second and more remarkable deposit at the farm of Shaws, in the confines of Selkirkshire. In front of the farm-house is an eminence called the Middle hill, overlooking the lochs forming the sources of the Ale; and on this is a mound known by the name of the Sleepy knowe, which was resorted to by some workmen, about four years ago, in search of stones to build a march-dyke. On breaking into the mound they came upon a cist containing a skeleton, on which Mr. Gibson, who occupies the farm, at once, with a rare, and therefore the more praiseworthy, intelligence put a stop to the work. It remained in this state till Dr. Brydon, becoming acquainted with the circumstance, resolved to prosecute the search.

The Knowe, as its name implies, was a circular mound, 108 feet in circumference and 5 to 6 feet high, covered with fine short grass. On removing the soil the structure was found to be formed of 3 to 4 tiers of large stones "sloping inwards and downwards, like a low wall all round," on the edge of which rested "another layer of unequal thickness, the direction of which was inwards and upwards." The general character of the edifice appears to have been that of a rude vaulted dome, paved throughout with large water-worn stones, resting on what appeared to be a layer of peat ashes. The interior was occupied by several cists and smaller cavities, at different depths, separated from each other by large stones apparently cast in without any regularity. Above the whole was a layer of larger water-worn stones, surmounted by smaller shingle, completing the structure. There seem to have been three sepulchral cists; the first, which was opened four years ago, was inches $24+18 \times 21$, and appears to have contained the skeleton of an adult male in a recumbent or crouching posture; the second, in which was found the fragments of a large, coarse earthen vessel, which probably filled the whole cavity, was of oblong form, inches $20 \times 12 \times 38$. This urn, which had a beaded rim and cord-drawn lines, seems to have covered a heap of burnt bones, among which was found the frontal bone of a dog. The third cist was

empty. Besides these there was a vaulted chamber in the centre of the mound, in which was found a sculptured square slab, inches $39 \times 21 \times 10$, supported by three stones resting on the floor. The upper surface exhibited several incised lines and cavities, the former covering a space of inches $6 \times 2\frac{1}{2}$, three of them being parallel and joined at either end by an oblique line. On the under surface were "five incomplete cavities," and round the four sides a series of cups, 3, 4, 4 and 2. There was also found a large, flat, upright stone, imbedded in the natural soil, which was conjectured to have stood there before the erection of the barrow. Near it were an antler and fragments of palmated deer horns. Several deposits of bones of animals, with black mould, broken pottery, and charcoal, were met with in the course of the excavation, and near the top the fragments of a human skull, with the mastoid portion of one of the occipital bones in a good state of preservation. No implements or weapons of any kind were seen.*

Among the papers published by kindred societies, which possess a local interest, may be instanced

"On the aculeate Hymenoptera of Northumberland and Durham. By J. Bold. *Nat. Hist. Trans. Northumb. and Durh.*, iii."

"On the Crustacean Fauna of the salt marshes of Northumberland and Durham, 2 plates. *Nat. Hist. Trans. North. and Durh.*, iii.

"Notes on various species of *Ctenodus* obtained from the Northumberland Coal fields, 3 plates; remains of some reptiles and fishes from the same. *Nat. Hist. Trans. North. and Durh.*, iii. By A. Hancock and T. Athey."

On a new Labyrinthodont Amphibian from the Northumberland Coal field; two papers;—on some curious fossil Fungi from the black shale of the Northumberland Coal field, 2 plates;—on the generic identity of *Climaxodus* and *Janessa*, two fossil fishes related to the Rays, 1 plate. *Ann. Nat. Hist.*, 4th series, iv."

* Abridged from the *Trans. Hawick Arch. Soc.* for Oct., 1869.

As a subject possessing a general interest for our botanical members, I may refer to "a monograph of British roses, by J. G. Baker, F.L.S.," in which he reviews the numerous varieties of the genus *Rosa* described as distinct, reducing the whole to 12 species, and eliminating the numerous synonyms appertaining to each. Proc. Linn. Soc. xi. 179.*

The club continues to flourish with unabated vigour. The list of members last year included—

Ordinary Members,	Honorary Do.	Corresponding Do.
228	4	2

During the year two vacancies have been caused by death, and five members have resigned. At the meeting this morning 12 new members were elected, together with one honorary and one corresponding member, leaving the total members as follows :—

Ordinary Members.	Honorary Do.	Corresponding Do.
233	5	3

Of those who have been taken from us by death, a tribute is due to the late Rev. Martin Carr, vicar of St. Paul's, Alnwick, to which he had been presented only a few months before. Cut off in the prime of manhood, his untimely loss has been deeply felt by the many friends to whom he was endeared by his genial temperament, his playful wit, and his liberality of mind.

* Since this address was delivered, I have observed a notice of the occurrence of the wild cat in the Keeldar district, during the present century, and of their fierceness and courage in attacking man. Gentlemen's Mag. for Jan. 7.

I may take this opportunity for adding that, with reference to Mr. George Tate's notice of the recent introduction of the squirrel into the Border districts, I have ascertained that the first individual seen in Rule water was discovered by James Notman, now 42 years of age, a hedger at Wolfelee, in 1829. He observed a new form of animal, to which he gave chase, and being joined by the gamekeeper and others, it was pursued and taken, to the surprise of all who had never seen one before.

PLATE I.—View of Hermitage castle, showing its ruined condition at the beginning of the present century.

PLATE II.—View of Hermitage castle after the repairs executed by order of the Duke of Buccleugh.

On Carex Muricata. By JAMES HARDY.

Carex muricata, from being a member of both the Edinburgh and Northumberland and Durham Floras, might be expected also to belong to the country intervenient. In Winch's time, its known distribution was restricted to the vicinity of Darlington; but the editors of the "New Flora" inform us that it is "frequent on dry banks," in all the subdivisions of the district. For my part, I have not found it so prevalent, or may have overlooked it; having neither observed it on the magnesian limestone of the sea-coast of Durham; nor near Newcastle, and other places which I have visited. For some years I have observed it as a Berwickshire plant, growing, but not in quantity, in dry fissures of greywacke rocks in the dean near St. Helen's church, Oldcambus. Again, in Northumberland, it is pretty abundant in Hazelton-rig wood, above Alnham, on the bare gravelly out-crop of porphyry, at about the height in which Mr. Baker gathered it at Alwinton, viz., 750 feet. Another station is on the road-side going to Langleyford, near the foot of the bank, below Middleton Hall shepherd's house; and there is a *Carex* with similar foliage among dry rocks, near the Pin well, behind Wooler. It is thus represented in the Border Flora on both sides of the Tweed.

Carex muricata is an old constituted species, having been first indicated, but not thus named, by Caspar Bauhin in his "Pinax," "Prodromus," and "Theatrum Botanicum;" and he comprehended under it four varieties. He had remarked it near Basil before 1578, for in that year he found it for the third instance in moist places at Padua. He was then in the eighteenth year of his age. Padua, where he studied anatomy and botany 1577-8, was then much resorted to for its University, "famous for Physitians, who had here a garden for Simples;" the garden having been established in 1533. The superintendent of the physic garden, at this period, was Guilandinus or Wieland, a distinguished man, who had travelled over the Levant as well as Europe, cut his name upon the Pyramids, and been redeemed from Moorish captivity; who had supplemented his hard bought experience with all the recondite lore of the age; and was thus capacitated to speak with authority, as was then the fashion, on the medical plants of the ancients. Our eager student brought the *Carex* to his professor, and was told that it was the

Ischæmon of Pliny (Hist. Nat. Lib. xxv. c. 45 or c. 8 in old editions); an unfortunate decision, from which Bauhin takes care to express his dissent. Guilandinus was rather headstrong. "Audaculus," says Haller, "neque absque erroribus." The Ischæmon, a Thracian plant, was thus named from its property of stanching blood, and was "an herb like a Mylet or Hirse,* having sharp leaves and mossie." On Sprengel's authority it is the *Andropogon Ischæmum* of Linnæus, Syst. Plant, 1483, 16; the "Gramen Dactylon spicis villosis" of C. Bauhin, &c. The superstitious old Romans wore about the person portions of the Italian sort as an amulet against hæmorrhage. In the subsequent year, 1579, Bauhin proceeded to Provence and Languedoc, and in the marshes near Montpellier (he mentions having been there in the beginning of summer), he again detected a smaller state of his "Gramen Cyperoides;" this name being given to it by the learned men there. Montpellier was also a noted University "for the study of Physick, and for that happily seated, the country round about affording great variety of medicinal herbs."† With whom Bauhin conferred there on plants does not appear. Rondelet, the first lecturer on Dioscorides in that seminary, died in 1566.‡ He imbued his pupils with his own zest for botanical research. Among the more eminent were Rauwolf, the Oriental traveller; J. Molinæus, the coadjutor of J. Dalechampius, in the ponderous Herbal "Historia Lugdunensis;" and Peter Pena, conjunct author with Lobel of the "Adversaria."§ P. Pena mentions "quibusdam non parum eruditis Medicis, ut Rondeletio et Assatio præceptoribus exercitatissimis," who were of opinion that Ischæmon was the grass, now known as *Panicum sanguinale*, L. These may have been the notables of the Montpellier school; the Mospelians, elsewhere referred to by him, and by both the Bauhins. The Montpellier physic garden was not established till 1598, and was first presided over by Peter Richier de Belleval, an Italian, who published a catalogue of its contents in that year; but this was nearly twenty years posterior to Bauhin's visit.||

* "Serpit à terra millo similis, foliis asperis et lanuginosis."—*Plin.* "It coucheth and creepeth low by the ground, and is like unto Millet, but that the leaves be rough and hairie." *Phil. Holland.*

† Peylyn's *Cosmography* by Bohun, p. 176. London, 1703, fol.

‡ Tournefort *Isagoge* in *Rem Herb.*, p. 31.

§ *Stirpium Adversaria Nova*. p. 4. Antwerp, 1576, fol.

|| Tournefort's *Isagoge*, in *Inst. Rei Herb.* p. 42. Halæ Bibliotheca Botanica, I. p. 322.

Magnol (*Botanicum Mospelienses*, p. 117, 1688) merely confirms Bauhin's statement.

The transition is abrupt in the pursuit in the history of a harsh, uncomely grass, from the rude wilds of the Border-side, and the ever-circling present, back to the dawn of modern culture and scientific ideas, three hundred years ago, in the grand old cities of Italy and France, "where all good literature was professed." But there are other plants of as little mark or likelihood, if we were to follow them through the heavy tomes in which they are recorded, that have a lifetime not less lengthened and varied; intermingling with the course of great events, and the actions and thoughts of wise and venerated men: and with places and tracts of country that form some of the stand-points of history, share some of the interest and a reflection from their glory.

Linnaeus in the "*Flora Suecica*," gives Pigg Starr, *i.e.*, prickly sedge, as the Swedish name of this *Carex*. *Starr*, in Swedish, is strong, robust, hard; and in this country, in the North of England, is still used for stiff; in which sense it also occurs in Gawin Douglas. Still more interesting it is to know that the term, as a substantive, is still, in Lancashire, applied to sand-reeds, and apparently likewise, to rough kinds of sedge. "*Stare*, sedge, grass of the fens." (Halliwell's *Archaic and Prov. Words*, II. p. 798). "*Bent* or *starr*, on the north-west coast of England, and especially in Lancashire, is a coarse, reedy shrub—like ours perhaps—of some importance formerly, if not now, on the sandy blowing lands of those counties. Its fibrous roots give some cohesion to the siliceous soil. By the 15 and 16 Geo. II., c. 33rd, 'plucking up and carrying away *starr* or bent, or having it in possession, within five miles of the sand hills, was punishable by fine, imprisonment, and whipping.'" (*Moor's Suffolk Words*).

Our plant is not typical of *C. muricata*, in its luxuriant state, but is a dwarf form, the Var. of Smith, *Flora Brit.*, and *Eng. Flora*; represented in Micheli and Scheuchzer's figures, there cited; and the term "*Greater Prickly Carex*," got, I suppose, from its resemblance to *C. vulpina* (*Great Carex*), is inapplicable to any of the examples.

The herbage of *C. muricata*, being more green and succulent than in most sedges, is cropped both by cows and sheep. This happens also to *C. vulpina*, which, in sheep pastures on the sea-coast, is often entirely eaten down.

Rock Hall. By the Rev. R. W. BOSANQUET, A.M.

THE remarks I have to make on this old place I will divide into two portions, viz. :—

1. That which relates to the building, the actual structure of what I believe to be properly called “The Old Hall.”

2. That which concerns the inhabitants of the same, from time to time, during several centuries.

I have some notes by me relating to the ancient Norman chapel and the apparent changes in the constitution of the chapelry, but they cannot conveniently be brought within the compass of the present paper.

PART I.

About the nature of the actual structure of the Old Hall at Rock, what it has been and at what time probably formed, I cannot find in any of the lists of castles or towers which are to be met with in Mr. Hodgson’s History of Northumberland and in other places, that there ever was either castle or tower registered as such at Rock; and Mr. Tate’s experience on this point, I believe, is the same as my own. So far as I know, Greenwood’s large map of Northumberland, published previously to the Ordnance Survey having been made, is the principal or the best known place in which the name of Rock *castle* is to be found. I also find that Sir Bernard Burke, in his Pedigree of Lawson of Brough, speaks of Swinhoe of Rock castle; but in a point not bearing upon pedigree, I should not consider that circumstance of any great weight. I do not recollect ever to have heard the inhabitants of the country, either gentry or labourers, speak of Rock *castle*, and had there really been a castle here the tradition would have hardly died out. Well, then, if the old building has not been, and is not either a tower or a castle, what is it? and what is the date of it? I think there is every reason to believe that it is a very ancient mansion; and considering first, its position with respect to the Scottish Border, and secondly the solidity of the central, which is the most ancient, portion of the structure, that it was built with a view to self-defence. It is quite probable that in very ancient times there was here one of those solid rectangular pele towers, with which the Border country was studded till after the union of the crowns; but that having been early added to, and having become the constant residence of a

gentleman's family, it lost its peculiar character as a Border tower in that of a mansion. There are indications of its having been inhabited by good families at so early a date, that it is probable that its foundation took place in the time of the Norman kings. Though I do not at this moment enter upon the history of any inhabitant of the place, I will just mention that, in the 6th year of Edward I. (1278), I find the name of Thomas de Rock in a list of good names of persons holding 20 librates of land, some *in capite* (as tenants in chief under the king), and some not,* "all of whom ought to be knights and are not;" and "all of whom are obliged to find sureties† for their becoming knights before the following Xmas." Therefore we may conclude that Rock at that time was respectably inhabited; and the first of the extracts with which Mr. Tate has kindly furnished me from the Testa de Neville, shews that in the *first* half of the same 13th century, between 1219 and 1252, "William de Rok held Rock under William de Vescy" (who was tenant *in capite* and held direct from the king) "by service of half a knight's fee of ancient feoffment (that is a feoffment prior to 1135, the time of the death of Henry I.) This throws the first valuation of Rock back quite to the time of the Norman kings, and there is no reason to suppose that it was not inhabited as a mansion at that early date; for the service by which it was held, viz., half a knight's fee, appears to have remained the same down to the time of Thomas de Rock, 1278, when Rock was worth £20 a year, and Thomas ought to have been a knight and was not. My only object in mentioning these individual tenants of Rock is to support my notion that there was probably a mansion existing and inhabited here, even in the time of the later Norman kings, say Stephen, and that there certainly was so not long afterwards.

My mention of the time of Stephen as a Norman date reminds me of a very strong argument in favour of the probability of there having been a mansion at Rock in those early times. I have been accustomed to hear it said, by persons of architectural skill and knowledge, that the west door of our little church here, with portions of the mason work in its vicinity up to the string course, and considerable portions of the side walls, are probably not of a later date than Stephen,

* The names of two of Thomas de Rock's sureties are "Ivo Rockard of Rock, and John, son of Ralph, of the same.

† Hodg. Hinde's vol. of History, p. 296, from the Harleian collection.

who is usually considered the last of the Norman kings. Now, it appears to me very improbable that a chapel of so finished and ornamented a kind as this must have been when first it was built, should have been placed in so poor and insignificant a hamlet as Rock, unless there had been an inhabited mansion here by which the population would be increased, and additional population encouraged, as well as architectural beauty in the chapel appreciated and valued. We must not go off to the subject of the chapel at present, but one may, I think, observe that the quality of the building of ecclesiastical edifices is in almost all instances influenced by the wealth and taste of those for whose use they are designed; and Rock chapel in its pristine beauty must have indicated the vicinity of some who had both money and taste to bestow upon it.

Now, to return for a short time to our mansion, I am well aware that professional architects, and others who have a good knowledge of the different styles of ancient buildings, are of opinion that there is nothing in the distinctive architectural features of "The Old Hall" that indicates any great antiquity. I am told that, neither the door-head and jambs of the low door on the east side, over which the Salkeld arms and legend are placed, nor the corresponding parts in the principal doorway by which we now enter, indicate any greater antiquity than the time of Elizabeth; and that if we were to judge of the date of the whole by those marks, *that* must be taken to be the date of the mansion.

Having already stated reasons for believing that there was a mansion here at a very early date, I will not go into that subject again, but I will just observe that there is a great reason to suppose from the fact of the Salkelds, probably Col. Salkeld himself, having placed their arms and legend over the head of the low door on the east front, and having also placed at least three sun-dials, each of them bearing their arms and a date, on the different fronts of the house, that they made considerable improvements, if not additions, to the house; and the style of those ornamental portions to which I have alluded, points them out as especially likely to have been added by them. The Salkeld family appear to have reigned from 1620 to 1705, and though the colonel himself, as we shall have occasion to notice more particularly presently, was out in the Civil war of the period for many years, and, as his monument tells us, went over to Ireland

and there fought for king Charles the 2nd for ten years after the Restoration ; yet it appears that he had subsequently a permanent residence here of 35 years, from 1670 to 1705, in the course of which, so active a man may well be supposed to have employed himself in building and planting and other domestic works ; as, indeed, either he or some other of the family must have done in the course of that century, otherwise the very old trees which my father was obliged to cut down, to the number of nearly 1000, I believe, mostly ash-trees, when he first came down, and which were even then too old for good use, as well as those pretty numerous old trees which still remain, could never have been planted. They certainly were not planted in the course of the last century, for the place was a desert.

A word or two may be added here upon the more recent history of the mansion, *i. e.*, since the death of Col. Salkeld in 1705. He was succeeded by the family of Proctor, then of Shawdon. John Proctor was the head of the family ; and he appears to have carried out a marriage in 1695 between his own eldest son Thomas, and Elizabeth the grand-daughter of Col. Salkeld ; at which time it also appears that the Proctors nearly or quite bought out Col. Salkeld's interest in the Rock estate, excepting so far as his possession of the mansion and a provision for himself during his life were concerned ; and they also got power to settle the estate upon themselves in tail male, in the place of Shawdon, which they then no doubt released. Thomas Proctor had nine children ; he states himself to have greatly improved the estate, viz., from £330, which was its annual value in 1695, to above £600 annual value in 1715, the time at which the act was applied for. (See the Act of Parliament).* However, he seems very

* Amongst the papers connected with the Rock estates there is the copy of an Act of Parliament "to enable Thomas Proctor of Rock, in the County of Northumberland, Esqr., to raise the sum of four thousand pounds for payment of his debts and making provision for his younger children," in the preamble of which it is recited that "in the year 1695, in consideration of a marriage then lately had and solemnized between Thomas Proctor, and Elizabeth grand-daughter of the said John Salkeld, and of the sum of two thousand pounds, advanced and paid by the said John Proctor to or for the said John Salkeld, and other considerations therein mentioned. * * * John Salkeld, late of Rock, in the County of Northumberland, Esqr, John Proctor, late of Shawdon, in the said county, gentleman, Martin Fenwick of Eglington, in the said county, gentleman, and Elizabeth his wife, did grant and convey unto John Clennel and John Story, gentlemen," the Mansion and Estate of Rock for different temporary uses, the result of which would be the entailing of the whole on the heirs male of Thomas Proctor and Thomas Fenwick.

soon after this to have got into serious difficulties ; and the end of it was that the mansion was deserted (I am unable to say in what year), and in 1732 the whole of the estate (which was by that time deeply mortgaged) was sold to lord Jersey, at which time it was worth £600 or £700 a year. Though the mansion, however, was deserted (I do not find any reason to suppose that lord Jersey ever visited it), yet it was not, so far as I know, injured, until the fire broke out in it, which reduced it to the state of a ruin ; therefore, the sketch of the Old Hall in the corner of the old parchment plan of the estate is probably a fair general representation of the nature of the building, though it is divested of ornament, and is decidedly not picturesque. About twenty years, however, after the property had changed hands from the Proctors to lord Jersey, a great misfortune befel our "Old Hall ;" for it was so nearly destroyed by fire that it became a ruin, and it so remained about seventy years, during which time the walls got saturated with wet, and the ivy grew upon it in the form in which it was about five and forty years ago. That which has now taken possession of the walls is, for the most part, Irish ivy, which was first introduced by ourselves, and which has assumed a somewhat different appearance to that which characterized the old ivy.

The only published account I have seen of the fire is "Richardson's Local Historian's Table Book," in which, under the date of May 15th, 1752, it is stated that a "fire broke out in Rock Hall, near Alnwick, formerly the seat of Proctor, Esq., but at that time tenanted by some farmers, by which it was entirely consumed, and some of the families escaped with their lives so narrowly that they saved nothing but their shirts upon their backs." *Vol. II. p. 43.*

From that time it remained in a ruined state, till it occurred to my father, Mr. Charles Bosanquet, after he had divided the estate into farms, and in some degree put it in order, which was about the year 1819, that it would be desirable, instead of building a mansion upon a new site, to fit up so many rooms in the old ruin as would enable the proprietor to lodge there when he came down to look after his estate ; which idea he proceeded very gradually, in the course of years, to carry out. Meanwhile, the estate had again changed hands, having been bought of lord Jersey in 1794 by my grandfather Mr. Peter Holford, of Gloucestershire, a Master in Chancery, who never saw it, I believe, and who, about ten years after

the purchase, made it over to my mother as an addition to her previous marriage settlement.

PART II.

We ought now to revert to such historical notices as may be found scattered through local records concerning the inhabitants, from time to time, of our old mansion. And in this part of the paper Mr. Tate has relieved me of a great deal of labour by furnishing me with notes relating to our subject, extracted from the "Testa de Neville," the "Inquisitiones post mortem," and other mediæval sources; and these notes I will insert without interruption down to "William Lawson, son of Margery and Robert Lawson, who inherited Rock, and who appears in the Heraldic Visitation of 1575."

NOTES REGARDING ROCK.

"The earliest notice I find of Rock is in the Testa de Neville, in which it is said that, between 1219 and 1252,

William de Rok held Rok under William de Vesey, Baron of Alnwick, by service of half a knight's fee of ancient feoffment (that is prior to 1135). (Hist. of Alnwick, Vol. I. p. 73).

1289.—*Thomas de Rocke* held Rocke under John de Vesey, by service of half a fee and an yearly rent of 6s. 8d.; it was worth £20 a year, and was assigned (as dower) to Lady Agnes de Vesey. (Inquisition. Hist. of Alnwick, Vol. I. p. 89).

1314.—*Thomas de Rokk* held the vill of Rokk by service of half a fee, and by yearly payment of 6s. 8d. for Castle Ward; it was worth yearly £30. (Inquisition). Roger de Roke and Henry de Swynnton were jurors at this Inquisition.

1346.—*Robert de Tughalle* held the vill of Roke by service of a quarter of a fee, and by payment for Castle Ward of 6s. 8d.; the yearly value was 100s. (Inquisition).

1352.—*Robert de Tughalle* held Roke as in 1346. (Inquisition).

1368.—*Robert de Tughalle* held Rock by service of one fee, and payment for Castle Ward of 13s. 4d. (Inquisition. Hist. of Alnwick, Vol. I. p. 139).

1359.—Bishop Hatfield gave permission to Robert de Tughale to cause divine service to be performed in his Oratories of Rock and Scremerston. *Raine's North Durham*, p. 236. In 1320 Bishop Beaumont confirmed to Robert de Tughale a sixth part of the Manor of Scremerston, which he had acquired from Richard de Scremerston; and in 1355 Henry, son of Henry de Langton, remitted to Robert de Tughale his interest in the lands of Scremerston, which the said Robert had acquired from Henry Langton, his father. In 1386 William de Swynhoe died seized of the whole vill of Scremerston, and as his grandson Robert de Swynhoe is,

in an inquisition, described as of Scremerston and Rock, it is probable that the Swynhoe family obtained Rock through the heiress of Robert De Tughale marrying William de Swynhoe,* (see *Raine*, p. 236). Rock continued in the possession of the Swynhows till about 1537, when John Swynhoe of Rock and Scremerston died without issue, and Rock passed to Margery, his sister, who had as her first husband Edmund Lawson of Newcastle (of the family of Cramlington), and as her second husband Robert Lawson of Usworth, who was afterwards of Rock, and who died in 1565.† William Lawson, son of Margery and Robert Lawson, inherited Rock, and appears in the *Heraldic Visitation* of 1575. The name of "Robert Lawson of Rock" appears in a list of gentlemen living in Bamboroshire in 1560, extracted from the second volume of Sir Ralph Sadler's *State Papers*, by Hodgson Hinde, in his *Vol. of History*, p. 374.

Thus we bring down the notice of the Lawson family to William Lawson, the son of Margery and Robert Lawson, who inherited Rock, and who appears in the *Heraldic Visitation* of 1575. But a good deal of change appears to have taken place in the Lawson family between 1575 and 1620; for though no connexion can be traced between the families of Edmund Lawson, of Newcastle, of the Cramlington family, Margery Swinhoe's first husband, and Robert Lawson, of Usworth, her second husband; and though William, the son of Robert Lawson, of Usworth, inherited Rock and appears in the *Heraldic Visitation* of 1575, yet by the year 1620 the property appears to have reverted to the other family, the family of Edmund Lawson, *olim* of Cramlington; for in that year the manor of Rock and all its appurtenances were conveyed by "Sir Raphe Lawson of Burgh (or Brough) in the county of York, Knight," (he was knighted in the first year of James the First), "Marmaduke Lawson of the same place Esquier, and Thomas Fenwick of West Matfen in the County of Northumberland gent.," to "John Salkeld the younger of Hull Abbey in the County of Northumberland." Ralph Lawson was, (as I am informed by Sir William Lawson from

* See the *Vol. of Wills and Inventories*, published by the Surtees Society in 1835, at p. 116, speaking of an unpublished marriage settlement of the family of Grey of Horton, the editor speaks of the lady as of a young lady of rank, and adds, "she was of the great family of Swinhoe of Rock Castle."

† Sir William Lawson of Brough, in a paper which he sent me on the subject of the pedigree of his family in 1863, says, "I have taken great pains to connect the Lawsons, *olim* of Cramlington and subsequently of Brough, with the Lawsons of *Usworth* (from whom the Lawsons of Cumberland, Baronets, descended), but I cannot make out any connexion."

his family papers), the second son of Edmund Lawson, Margery's first husband, and became his father's heir by the death of his eldest brother James. He married Elizabeth, sole daughter and heiress of Roger Burgh of Brough, and appears from the family papers to have had four sons, of whom the eldest, Roger, married Dorothy, daughter of Sir Henry Constable, of Burton, in the County of York, and the fourth, Marmaduke, joins in the conveyance of Rock.

The man to whom the Rock estate is conveyed by the Lawsons is described in the deed as "John Salkeld, of Hull Abbey, in the County of Northumberland, gent.;" and I see in the schedule of "Rentals and Rates" of the year 1663, given in the fifth volume of Hodgson's Hist. of Northumberland, p. 339, a John Salkeld answered both for Rock and Hull abbey, paying upon £200 a year for Rock and £60 for Hull abbey. However, this is not the man who bought the estate of the Lawsons; for we learn from a brass in the church, which is unfortunately all that remains of his monument, that John Salkeld died on the 10th of November, 1629, nine years after the date of the conveyance, at which time, the man who was known afterwards as Col. Salkeld, and who is represented in the inscription upon his monument as having been an active soldier until ten years after the Restoration, was a boy of only 13 years old; for we learn from the same source that he died at the age of 89, in the year 1705; he must, therefore, have been born in the year 1616. As the inscription on the monument of Col. Salkeld, to which I allude, is of rather a quaint character, and states one or two facts which may not be generally known, I will transcribe it in this place:

"Here lies in hope of a blessed Resurrec the body of ye truly valiant and loyal Gent. Col. John Salkeld, w^o serv'd King Charles y^e 1st with a constant, dangerous, and expensive loyalty as voluntier Captain and Collonell of horse. And for the service of his King and Country he took in Berwick-upon-Tweed and Carlile, which was a rice to the warr of 48. He afterwards served in Ireland under King Charles, and King James y^e 2nd as Lieutenant Coll. He was Justice of y^e Peace 35 years, and aged 89 he departed this life June the 2nd, 1705."

Now, with regard to the taking or taking in of Berwick-upon-Tweed and Carlile, which the inscription seems to claim as the colonel's own doing, and which is said to have given a *rice*, or a *rise* as we should call it, to the war of 1648, it is

perfectly true, as we learn from Rushworth's collections, relating to the year 1648, that on the 2nd of May "came letters" (to the House of Commons) to the effect that Berwick was surprised by Sir Marmaduke Langdale and Sir Charles Lucas with a party of 120 horse, who pretended a commission from the prince of Wales for that purpose. The mayor endeavoured to get strength to oppose them, but could not; so that they have possession of the whole town." And under date of May 8th, of the same year, we learn from the same authority that "letters from the North signify that Sir M. Langdale has taken Berwick and Sir Thomas Glenham and Sir Phil. Musgrove Carlile." * * * Then a little further on "Langdale pretends to be general (by commission from prince Charles) of the five northern counties, where he is now arming and giving commissions. Colonel Grey is to be Lieut.-General; several gentlemen of the county are made Colonels." This is coming pretty near home, and John Salkeld may easily have been made colonel, either by his own merits or by the influence of the new lieut.-general. *Rushworth's Collections*, 1646 to 1648, *Vol. VI.* p. 387, 389.*

With regard to these enterprises against the towns of Berwick and Carlisle having been a "rise to the warr of '48," I find in a life Cromwell, published in 1725, that the war of 1648 was spoken and treated of as "*the second civil war*," and in speaking of its commencement the following passage soon occurs. "But the fiercest storm threatened from preparations in the north, where Sir Marmaduke Langdale and others of the king's party having surprized the strong town of Berwick, and Sir Thomas Glenham that of Carlisle, had raised a considerable body to join with the Scots, were now about to enter England with a powerful army." *The Life of Oliver Cromwell, &c. collected from the best historians, second edition, London, 1725, see pp. 79-80.*

It may not appear to be a very important question whether this Col. Salkeld, whose epitaph we are considering, was the son or the grandson of that John Salkeld the younger, who bought the estate in 1620, and died in 1629; but it so happens that the question bears upon a piece of antiquity of some little interest, viz., the foundation stone of what used

* These passages from Rushworth and the life of Cromwell, which elucidate the meaning of certain expressions in the epitaph on Col. Salkeld's monument, were brought to my notice by my son, Mr. C. B. P. Bosanquet.

to be called "the Middle Hall," which, till the year 1855, stood as nearly as possible upon the site and in the position of the present Sunday school, only it had a bed-room floor above, which could only be approached by an outside stone staircase, and some cottages attached to it at the north-east end, which may at some time have been used as offices to the main building.

This building having become quite ruinous, at the time I speak of, had to be taken down to prevent its falling in. There was then a sun-dial on the south front, the very same which occupies the corresponding position on the south front of the Sunday school; and, on removing the sun-dial, there was found, about six inches behind it, that stone and inscription which is now set up over the door head of the Sunday school. The stone, being nearly square, is divided by lines into three parts, the upper part being occupied by the date, 1623, the middle by the initials TS||AS, and the lower part by an ornamental design resembling niches $\cap\cap\cap\cap$. That date was three years after Mr. John Salkeld bought the estate; and we conceive that this old house, the Middle Hall, may have been put in order or even built (but it had never been well built) by Mr John Salkeld for his eldest son, whose name may have been Thomas, and who may have been the father of the Col. John Salkeld of the monument. We are all aware that it has been a very generally prevailing custom for grandsons to bear the Christian name of their grandfather, but of course in this case, whether it was or not, must simply be conjectural.

There are still some notes of very considerable interest of a historical nature connected with Rock, and, like the others, communicated by Mr. Tate, which I will introduce here, though the first two of them will take us a little way back in point of date :

1538.—Rock sent 19 men to the military muster on Abberwick Moor. Hist. of Alnwick, I. p. 225.

1552.—The town of North Charlton and Rock to keep watch with three men nightly at the Hinding Gate. Hist. I p. 220.

The town of Stanford and Rock to keep watch with three men nightly at the Scotts Close-nooke. *Ibid.*

1664.—John Salkeld of Rock was a free tenant of the Manor. Hist of Alnwick, p. 349.

1702.—Rock paid 8d. yearly to the Lord of the Barony for Bondage work. P. 334.

1704.—John Proctor of Rock and John Salkeld of Rock were free Tenants. (Court Rolls).

In 1681 Ralph Thoresby, “a woollen draper, an antiquary, and the historian of Leeds” had property at Rock, which caused him occasionally to visit the district. He has a note to this effect :

“By Rock where I found the old Tenants repenting their unkind feelings, and continual murmurings for abatements, which hastened the sale of the Estate, and now they would gladly have the same lands at the ordinary advancement.”

It is difficult to reconcile this statement with what we know of the possession of Rock by John Salkeld in 1663, as shewn by the Rentals and Rates for that year, and again in 1695, when after the marriage of Thomas Proctor with Elizabeth the grand-daughter of Col. Salkeld, the settlement of the estate took place in favour of the Proctors.

In the Miscellanea relating to Capheaton, published by Hodgson in the 2nd part of Vol. I. of the History of Northumberland, there is a very strange account of the murder of Mr. John Swynburne, of Capheaton, near the Gates of Meldon by Captain John Salkeld, of Rock, under the date of Feb. 13th, 1643, which, as it is in some degree illustrative of the manners of those times, it may be worth while to extract.

14 a. Feb. 13, 1643.—“Wee, Jurors p’sent upon oath, that upon the thirteenth day of February in the eighteenth yeare of our Sovereign Lord King Charles about three of the clocke in the afternoon of the same day, Captain John Salkeld of Rock did out of p’meditated malice assault Mr. John Swynburn of Capheaton, Gent., at a place nigh unto Meldon-gates, in the County aforesaid, and with a rapier sword in his right hand to the value of five shillings sterlinge, did then and there give unto the said Mr. John Swynburn one mortall wound in the right side of his belly of the depth of an inch or two, and in breadth about an inch, of which mortall wound the aforesaid John Swynburn did languish, and languishing, lived from the aforesaid day untill the fifteenth day of the said month of February, beinge Wednesday, and then and there at Meldon aforesaid hee the said John Swynburn died about 12 of the clocke in the afternoone: and thus wee find Mr. John Swynburn to bee wilfully murdered by the said Captain John Salkeld in maner and forme aforesaid at the time and place aforesaid, and noe otherwise. In cujus rei Testimonium etc.,

Noia Juratorum.

Alex. Forster, Coron.”

14 d.—“Henry Brown deposeth that he was present with others at Meldon when Mr. Swynburn was slane by Mr. Salkeld. Mr.

Swinburn being riding upon his hors at Meldon Gaits, intending to ride home after his wife who was gone a little afore to Capheton, Salkeld stept afore him and would have him to light and drinke more. Mr. Swinburn refused. Salkeld told him he should light and dringe a cup more; but still Mr. Swinburn refused, whereupon Salkeld stept afore him and drew his raper; made a thurst at him and hurt his horse: whereupon Mr. Swinburn seeing his hors hurt alighted, and as he was letting his cloike fall from him, profering to lay his hand on his sword, where upon I being present and his servant, run in hastely fearing my Master Mr. Swinburn should have drawn his sword. I cacht hould of him, and in y^e intrem Salkeld came running in and thurst him in the belly, which wound was his death.”

H. BROWN.”

“It: he is gilte of murder since.

It: there was a former quarrel. witness D. Wilson.

It: he fled y^t night into another Counte.

It: he is found guilty of murder by the Co. quest. Mem. to send for H. Lambert and for W. Mostrope.”—other persons were present at the transaction, whose depositions were taken.

It is hardly possible to doubt that the Captain John Salkeld, of Rock, here referred to, is the man who was afterwards known as Col. Salkeld, and who lived to the age of 89; he would have been 27 years of age at the date of this transaction. It is indeed marvellous that the murder of so important a person as Mr. Swinburn should have passed off unavenged, but there is no mention in the Miscellanea of Salkeld's having been taken; and the mention of the precise value of the rapier in the verdict of the coroner's jury, looks as if they thought that a deadand would be exacted, as was usual till a much later period in cases of manslaughter or death by misadventure. It is also to be observed that “he fled that night into another Counte,” which in those days was often a prelude to an escape altogether. Still an explanation upon the subject is much wanted.

In a copy I have of the second edition of Patten's History of the Rebellion in 1715, there is inserted at the end a manuscript note by a later hand, relating at length a serious occurrence which is only shortly mentioned in the book itself, in which two individuals closely connected with this county, one Fenwick, of Rock (or stated to be of Rock), and one of the Forsters, of Bamborough lost their lives. “In the Assize week of the year 1701, when William Ramsay was mayor and William Boutflower sheriffe, on the 22nd of the month

of August, when the principle gentry of the county were assembled at Newcastle, John Fenwick of Rock, in the County of Northumberland, killed Ferdinand Forster, one of the Members in Parliament, and youngest son of —— Forster, of Bamborough.* It appeared that Fenwick had long had an inveterate enmity against Forster relative to some family matters, and while the latter was at a late dinner or supper at the principle inn of the town, the Black Horse in Newgate Street, John Hall, of Otterburn called Forster out. Forster returning said, Hall has just brought a challenge from that villain Fenwick who thirsts after my blood: I may as well meet him now, which he did, and the company following (by the light of the moon) saw Fenwick standing near the White Cross, about half way between that and a thorn tree which grew in the said street. He drew his sword and Forster the same, but slipping his foot he fell on his back, and Fenwick stabbed him through the heart when lying on the ground. Fenwick made off, but was soon taken, for which there was an order of the Common Council, 1701, to pay 40 shillings to the officers that apprehended him. He was tried, and was executed at the White Cross for the crime on the 25th of September following. During the execution all the gates of the town were shut, for fear of a rescue from the people of the North, with whom the name of Fenwick was held in great veneration. Mrs. Fenwick, wife of T. Fenwick, was in court at the trial; though great with child, she threw herself at the judge's feet begging her husband's life. The judge raised her up saying, 'Madam, I am sorry for you, but it cannot be granted; we are not to have our members of Parliament murdered in our streets unnoticed.'"

There is an entry in St. Andrew's register concerning this unfortunate business; and Brand in his History of Newcastle, Vol. II. p. 104, mentions it.

Amongst the papers connected with the business of the estate in the course of the last century, there are a few which may possess some interest, either to the geologist or to the general observer of habits and manners. Amongst the first may be placed a "Report on lord Jersey's lead mine at Rock, dated August 22nd, 1767." A colliery had been worked for

* No Christian name is given in the manuscript note, but it appears from the pedigree of Forsters, in Raine's History, that he was the third son of Sir William Forster, of Bamborough and Blanchland.

many years before that date between this house and Rock Moor house, which is entered in all the schedules of Rentals and Rates in the course of the 17th century, and of course levels had been run to carry off the water from the lower parts of the colliery, which are the levels herein alluded to.

“The vein or Dyke discovered at Rock in Lord Jersey’s Estate is a vein of tolerable strength running pritty near south-west and north-east, is discovered in working the Coal upon a bed of Stone, called in that country the Thill (i.e) a grey Hazel or freestone sill, and is in a place one would not have expected any Ore would have been found, being too near the coal. The beds above the Thill, as far as I could see and learn from the nature of them, are not likely to bear Ore where she is discovered, and the Thill is under water. Yet I think if his lordship would let a lease of the Vein for Twenty-one years, containing twelve hundred yards in length, and forty yards in breadth on each side of the said vein, subject to the payment of one eight of all the Ore raised in it, well washed, and fit for smelting, it might be worth while for people to venture to work the vein upon those terms. Though two things are very discouraging, viz., the beds or sills the Ore is to be expected in are under water (or level), and the veins in a country where lead has never been found but in trifling quantities. The vein may perhaps deserve a higher duty, but it is more probable it will not. So I would advise his Lordship to offer the above terms, as twelve hundred yards in length will take up but a small part of his Lordship’s liberty, and he may let the rest higher if this turns out well. The ore does not yield lead well (affording only ten ounces of lead from sixteen ounces of ore made perfectly clean and essayed) and scarce any silver at all.”

Viewed Augt 22nd, 1767, by

WM. WESTGARTH.

I find from a letter of Lord Jersey’s that some parties applied for a lease, and appear to have agreed in the first instance to the terms above mentioned; but before the works were actually commenced they begged to be relieved of their bargain, and as far as I know nothing farther was done in the matter.

For the general observer of the progress of habits and accommodations as connected especially with the labouring classes, the following may have some interest:

“Memorandum for Mr. Craster concerning the Rock Estate,” by Lord Jersey; date about the middle of last century.

“Lord Jersey thinks that the cottages should be thatched instead of covered with turf, the weight of which was thought to break in the roof; but this Lord Jersey will leave to Mr. George Craster’s determination.”

In Mr. Craster's reply to various questions in the memorandum is the following:—"In regard to covering the Cottages, wd advise *Turf* and *rushes* instead of Thatch, provided it" (be) "well done, the weight not being any consideration, yr Lordship having wood sufficient (and as straw is very scarce in the North), nor do they understand thatching so well as in the South."

In an answer to a query about the state of the mansion, it is shortly stated that "The Old Hall is too ruinous to be examined." This answer may probably have been given not long after the fire, when some of the walls which had been shaken by it had not ceased to crumble down or shew symptoms of falling.

Botanical Notes on Central Berwickshire. By CHARLES STUART, M.D., Chirnside.

BEING desirous of seeing the *Linnæa borealis*, that most interesting of Northern plants, when in flower, in its Berwickshire habitat, I took the rail to Gordon station on the morning of the 2nd July; walked across the moors to the farm of Lightfield, and pushed on to a Scotch fir wood, which appeared to be the station indicated in the Natural History of the Eastern Borders. I had no idea as to the exact spot where it is said to grow, and consequently had to find it out for myself after a hot walk of four hours. I was on the point of giving up my search when I fortunately walked into the middle of a very extensive patch of it, having passed and repassed the locality more than once.

While searching for the *Linnæa* I came upon several specimens of that somewhat rare Orchid, the *Goodyera repens*, and, as far as I know, this station is a new one in the county for this plant.

The *Linnæa* was in full flower, and the ground was carpeted with its elegant prostrate trailing stems for a space of eighty paces in circumference. This is undoubtedly the sweetest and loveliest of our native flowers, and is esteemed alike for its beauty and its rarity. The whole plant is so level with the ground, and so curiously trailing among the moss, that it may easily be overlooked notwithstanding its profusion. The leaves are in pairs and opposite; and the peduncles are axillary, long, and erect; and the flowers in pairs. The corolla is pinkish, tinged with yellow inside,

bell-shaped, graceful, fragrant, and drooping. The foliage seems almost evergreen from its glossiness. No description which I can give can come up to the exceeding beauty of this plant, as I had the good fortune to see it on the 2nd of July; and I will not deny that I felt a certain degree of botanical enthusiasm when resting on the occasion, after a fatiguing walk, among its fragrance, and calling to mind the associations connected with its name. Linnæus selected this little Northern plant, "long overlooked, depressed, abject, flowering early," as most appropriate to transmit his name to posterity.

Associated with Dr. Maclagan we visited Gordon a fortnight afterwards, and found the *Linnæa* still in flower but beginning to fade. We subjected the fir wood to a close examination, and again found the *Goodyera repens* in profusion, and also the *Listera cordata* in company with its relative in abundance. The *Listera cordata* is by no means a common plant anywhere, but in this wood it seems to be more plentiful than in any other station I am acquainted with. After a long walk in the woods we set out to examine the Gordon bogs, where a number of good plants were obtained, a list of which I have appended. Mr. Hardy informs me that the moors between Gordon and Lauder have never been carefully explored, and are well worthy of farther examination. In another season some notes from that quarter may prove interesting.

LIST OF PLANTS.

Linnæa borealis, *Listera cordata*, and *Goodyera repens* in a fir wood due south of the farm-house of Lightfield. In the bogs to the north of the farm-house and along the sides of the railway are to be found :—

<i>Ranunculus sceleratus</i>	<i>Pinguicula vulgaris</i>
<i>R. hederaceus</i>	<i>Myosotis palustris</i>
<i>R. flammula</i>	<i>M. sylvatica</i>
<i>R. aquatilis</i>	<i>Mentha hirsuta</i>
<i>Hippuris vulgaris</i>	<i>Eleocharis palustris</i>
<i>Stellaria glauca</i>	<i>E. pauciflora</i>
<i>Genista anglica</i>	<i>Parnassia palustris</i>
<i>Montia fontana</i>	<i>Hypochæris radicata</i>
<i>Cnicus palustris</i>	<i>Viola palustris</i>
<i>Comarum palustre</i>	<i>Habenaria bifolia</i>
<i>Crepis paludosa</i>	<i>Orchis latifolia</i>
<i>Sparganium natans</i>	<i>O. mascula</i>

Sparganium simplex	Glyceria aquatica
S. ramosum	Triglochin palustre
Briza media	Narthecium ossifragum
Melica cœrulea	Carex glauca
Typha latifolia	C. lævigata. Gordon bogs
Potamogeton oblongum	C. teretiuscula. Allanton banks
P. natans	C. riparia. Do.
Hydrocotyle vulgaris	C. pulicaris. Gordon
Menyanthes trifoliata	C. cœspitosa. Gordon
Phragmites communis	

From the foregoing list it will be perceived what a good botanical field the central district of Berwickshire affords, and I feel convinced that, with still farther research, many rarities are yet in store to the man with "the keen cryptogamic eye." In conclusion I found the *Epipactis latifolia* in tolerable abundance in the Blackadder woods this summer, and Dr. Maclagan found the same plant at Broadmeadows, in the parish of Hutton, both new stations for this plant in Berwickshire. I picked two specimens of the *Trollius Europæus* near Broomdykes; but I am sorry that the plant is now all but exterminated from a place where the late Dr. Johnston reports it associated with the *Galium boreale* in his Natural History of the Eastern Borders. The latter plant is still plentiful.

Account of some rare Genera and Species of Plants found by the sides of the Tweed and Gala, in 1868. By G. C. A. STUART, Student of Medicine, Edinburgh University.

(Read at the Chirnside Meeting, September 24th, 1868).

During the course of my botanical rambles round Melrose I have found a considerable number of plants, which have not been recorded as occurring in the district, and amongst these several, which one would not expect to find here, but which, in fact, must have been recently introduced. Reserving the more extended list of Phanerogamous plants and Ferns for publication in another year, I shall in this paper give an account of the strange plants of recent introduction.

MEDICAGO.—Mr. A. Jerdon in July last found *Medicago denticulata* at Highfield among gravel, which I believe had been brought from the Tweed; and subsequently Mr. A. Curle, along with Mr. Wm. Boyd, found *Medicago maculata*

below Melrose cauld, and stated that, in his opinion, the bur-like pods had been brought from the south and from other countries to the district along with the wool manufactured at Galashiels and elsewhere. This view was strongly supported by the fact that these plants occurred only in the bed or on the banks of the stream; and, considering the number which has been since found in like situations on the Gala, Tweed, Ettrick, Teviot, and Jed, I have no hesitation in saying that this opinion or theory is correct. Afterwards, when walking along the banks of the Tweed and Gala, I picked up what I took to be another species of *Medicago*; but Professor Balfour tells me, that Mr. Bentham agrees with him in considering it only a small and peculiar variety of *M. denticulata*; its habit and appearance, however, even when growing, are very different from the normal form, and it may probably be the variety, *M. apiculata*, although the spines are a little hooked. I have looked over all the English *Medicagos* in the Edinburgh University Herbarium, and seen nothing there in the least resembling it. I found also both the other *Medicagos* in great abundance, and though the peculiar one mustered in great force in some places, it was not quite so abundant as either of the others.

XANTHIUM SPINOSUM I found below the cauld at Melrose. This plant was so determined by Professor Balfour; and on reference to English Botany, Vol. V., it appears to have been found before at Hereford by Dr. H. Bull and Mr. G. S. Wintle, and by the first named gentleman in Wales. Professor Balfour and his party found it this year at Dumfries. Mr. Syme, F.L.S., says, "it is too tender to have any chance of becoming permanently naturalised in Britain."

TILLÆA.—In two or three places on the banks of the Gala I found a plant agreeing in every respect with this genus. It has 4 sepals united at the base; corolla of 4 petals, free from each other; stamens 4; I cannot distinguish any hypogynous scales at the base of the carpels, but as I have not had it under any glass more powerful than an ordinary lens, they may still possibly be present; however, as they are not a constant character, their presence or absence is immaterial; follicles 4, distinct, 2 or many seeded.

There is only one British species, viz., *Tillæa muscosa*, L., a very rare plant found only in one or two places in the south of England; but as my plants differ in many respects from the descriptions of *muscosa* which I have seen, and also from the

plant figured on plate No. 524, in Sowerby's English Botany, I have come to the conclusion that it is an exotic.

The principal points of difference between the plant described by Babington and Syme and the plant I have found, may be shortly enumerated. *Tillæa muscosa* has its stem branched only at the base; the stem of *my plant* is branched throughout. The flowers of *muscosa* are axillary, sessile, solitary, and trimerous, *rarely tetramerous*; those of *my plant* are axillary, stalked, one or more together, and *always tetramerous*. Babington says that *muscosa* is about an inch long, *my plant* is nearly three inches in length. The leaves of *muscosa* are opposite, oblong, connate, apiculate, on *my plant* they are opposite, narrowly oblong, sub-sessile, blunt without a mucro-point. The seeds, instead of 2 in each follicle as in *muscosa*, vary in numbers from 2 to 5 or 6. Taking then into consideration all these differences, it would appear to be a foreign species.

LYTHRUM HYSSOPIFOLIUM, L., I found on the banks of the Gala. It has, I believe, never been found in Scotland before. Mr. Syme says it is very rare, and gives near Rochester, Kent, several places in Cambridgeshire, "Cholsey," Berks (Soc. Bot. Ed.), and Wallingford, Oxford, as the only localities he knows for it.

SETARIA VIRIDIS, Beauv., grows in considerable quantity on the river banks all the way between Melrose and Gala-shiels. It has never been found in Scotland before, and the only stations given for it in England are London, Mitcham, and Norwich. I have myself gathered it at the two first mentioned places.

A HERNIARIA, which I at first thought might be *ciliata*, I gathered in the same locality; but subsequent examination shewed that it did not completely agree with any described British species. It partakes to a certain extent of the characters both of *ciliata* and *hirsuta*, combining the habit, colour, and ciliations of the former, with the bur-like calyx, and almost the leaves of the latter. The hairs on the stem, too, are intermediate between those of *ciliata* and *hirsuta*, being neither completely straight as in *hirsuta*, nor decurved as much as they should be in *ciliata*.

AN ILLECEBRUM I picked up, but it also is an exotic, differing very considerably from *verticillatum*, which is the only British species. The stem is certainly procumbent and filiform, as in *verticillatum*, but it is not at the same time

glabrous as in that plant; and the leaves, though very variable in size, being often as one to four or more, are never shorter than the flowers, and instead of being roundish as in *verticillatum* they are oblong-lanceolate in form, and generally about three times as long as broad.

PHALARIS CANARIENSIS, *L.*, grows in great abundance at Melrose, Galashiels, Selkirk, and Hawick. This belongs to the same category as the others.

APERA SPICA-VENTI, *Beauv.*, (*Spreading silky bent*), a rare English grass I have found in profusion in some places near Galashiels; it is exceedingly pretty, and as it has never been found in Scotland before, it is a most interesting addition to our Flora. It is remarkable for its long awns, they being many times as long as the spikelet. It is found chiefly in sandy fields near London; and I once gathered it before at Thames Ditton, in company with Mr. Naylor, when it was pointed out to us by Mr. Watson, author of the *Cybele Britannica*.

POLYPOGON MONSPELIENSIS, *Desf.*, a light and elegant grass, I found in abundance all the way from Melrose to Galashiels, growing along with *Setaria viridis*; but it is much more abundant than the last named grass. Ann Pratt says: "its dense silky panicle is, in July and August, beautifully tinted with different shades of green and pale greyish purple, and is one or two inches long, on a stem about a foot high. It has slender hairy leaves, and is a very common grass in southern Europe." She adds: "it is found only in a few moist meadows near the sea, in Hampshire, Essex, and a few other counties." Babington gives it in salt marshes near the sea, both in England and Scotland.

ERYSIMUM ORIENTALE, *R. Brown*, I picked up when in company with Mr. Borthwick, but it had been very much destroyed by the water, the river having been flooded a day or two previously. It is a plant, which is said by Mr. Syme, to be scarcely naturalised even in England; but it has been found on cliffs and fields near the sea, at Harwich, as also at Bawdsey, near Orford, Suffolk, in fields near Godstone and Marshfield, Sussex (*Huds.*); and it is also said to have come up spontaneously in a field that had been ploughed to form a garden, in the centre of the new square at Plymouth.

LEPIDIUM RUDERALE, *L.*, I found growing in two different places in the bed of the Gala. It is rather uncommon, though not quite new to Scotland, having been frequently

seen on ballast hills on the Fife coast, in which county I have myself gathered it at Elie. As the name denotes, it is generally found growing amongst rubbish, and so is quite at home on a ballast hill; and, were it not for the frequent floods by which the places I found it on must be devastated, I doubt not it would make a permanent residence amongst us, for looking to its 'rubbish' requirements only, no place could be more suitable than the bed of the Gala.

LEPIDIUM SATIVUM, *L.*, is not unfrequent about Melrose and Galashiels; at the latter place it is in fact common, and appears to be quite naturalised in the bed of the stream. It is a native of the East, but is now quite established in many places in this country. I have gathered two varieties of it this year:—1. The ordinary plain-leaved variety grown in gardens as a salad. 2. The curled-leaved variety, which is principally used as a garnish.

MALACHIUM AQUATICUM, *Fr.*, I found in one place only on the north bank of the Tweed a little above Bridge End. Mr. Syme says: "it is rather uncommon. Pretty widely distributed in England as far north as Yorkshire and Cheshire, but not known to occur in Scotland." (S.E.B.) I find, however, that it is included in the list of plants found in Roxburghshire, which is published in Jeffrey's History of that county; but the writer of the list says that he never saw it himself, and he adds "if it exists at all it must be very rare."

This plant resembles *Stellaria nemorum* at first sight pretty closely, and it is also not unlike some of the larger forms of *Stellaria media*, but by the generic characters it can be at once distinguished from either of these plants. Besides the scientific characters there are some empirical ones which may be given. From *Stellaria nemorum* it may be distinguished by its *smaller* flowers; by its prostrate stem, which is much branched; by its shorter barren shoots, and by its having more of its leaves sessile. From *Stellaria media* on the other hand it is known by its *larger* flowers, by its always having ten stamens, and by the stem being usually hairy all round. The hairs are gland tipped in *Malachium*, and are not articulated as in *Stellaria*.

ERODIUM MOSCHATUM, *Sm.*, was found by Mr. Borthwick and myself in a field among rubbish, not far below Galashiels. It bears a considerable resemblance to its congener *cicutarium*, but is a larger and coarser plant, checked though it be by our crabbed northern climate. In the south of England and in the

Isle of Wight, where I have also gathered it, it attains to two or three times the size it reaches here. In the month of August, when I first found it, it was in seed; but in the month of September it came again into full flower, and, notwithstanding all the frost and cold weather we have had, it was still, on October 20th, as healthy and strong and as fully in flower as it was in the warmest part of this exceedingly warm summer. Should the place on which it at present grows remain untouched by the improver's hand, it is, I feel confident, certain to become permanent in this district; in fact it has all the appearance of an established plant already, there being at present several hundreds of good strong plants bearing flowers and fruit. It has not, I believe, been gathered in Scotland before; and Mr. Syme says: "it is probably only truly wild in the south-west of England and in Ireland, though it has been found as far north as Yorkshire."

DAUCUS GUMMIFER, L., I have found by the river side here; it is a very rare plant growing on the sea shore of the south of England; it is unlikely that it will become permanent with us.

Of *GALIAM ANGLICUM, Huds.*, Dr. Dewar and myself found one specimen growing among the shingle by the side of the Tweed on Low Wood estate. It is a rare plant, apparently confined to the counties of Kent., Essex, Suffolk, Norfolk, and Cambridge.

Of *VALERIANELLA ERIOCARPA, Desv.*, I found a solitary specimen in the bed of the Gala a little below Galashiels. Mr. Syme says: "it is very rare, and perhaps only accidentally introduced into Britain." Babington and Sowerby give only one place for it, viz., Henley castle and Barnard Green, Worcestershire.

CENTAUREA SOLSTITIALIS, L., I found growing among willow bushes on the banks of the Tweed, not far from Melrose. There were but two plants, the larger being at least two feet high, but neither of them unfortunately was fully in flower. It has never been seen in Scotland before, and though found in two or three of the southern counties of England, Kent is the only one where it is persistent. Babington says, "probably introduced."

SOLANUM NIGRUM, L., I found in two places in this district; once on the banks of the Tweed not far from Melrose, and again on the Gala not from Galashiels. Mr. Syme says

that it is "rare in Scotland, and apparently confined to the sea shore in Wigtonshire and Ayrshire." He adds, "it has also been found in Fife, but no doubt introduced."

AMARANTHUS BLITUM, *L.*, was found by Mr. Borthwick and myself in two or three places on the banks of the Gala. As it is an annual and not indigenous to this country, though sometimes found about waste places near houses in England, I am afraid it has little chance of becoming permanent in this district. It has not been recorded in Scotland before, however, and so possesses some slight interest.

POLYCARPON TETRAPHYLLUM, *L.*, Mr. Jerdon found, about the beginning of August, growing as a weed in his garden, at Highfield, Darnick. Ten or twelve days afterwards Mr. Borthwick and I came upon two fine plants of it not far from the mouth of the Gala. It is stated in English Botany to be rare. "Confined to the south-west of England, where it occurs in the counties of Cornwall, Devon, and Dorset. It has also been reported from Glamorganshire; but this extension of its northern limit requires confirmation." It is the only known plant of the genus.

POLYPOGON LITTORALIS, *Sm.*, I found in the bed of the Gala. I believe it is quite new to Scotland. Its habitat is in muddy salt marshes in the south of England. It is very rare.

CARDUUS BENEDICTI I gathered a little below Galashiels. It is a native of southern Europe, and is found abundantly on the coast of the Mediterranean. It is not of course likely to become permanent here.

GASTRIDIDIUM LENDIGERUM, *Gaud.*, was gathered by Mr. Borthwick and myself in two or three places near Galashiels. This very rare grass, which has not been found in Scotland before, is confined, I believe, to the maritime county of Cornwall and to the Isle of Wight.

Of ERIGERON ACRIS, *L.*, I found one plant near Galashiels. It is common in England, but in Scotland it is not known to occur except on the sands of Barrie and Arbroath links, Forfarshire. (E. B.)

CHENOPODIUM MURALE, *L.*, is quite common about the river side near Melrose. Babington gives it as found in E. S. I., but I have never seen it in Scotland, and it is not included in Balfour's Flora of Edinburgh.

Of CAMELINA SATIVA, one plant was gathered near Galashiels.

FESTUCA UNIGLUMIS, *Sol.*, was by no means uncommon in the beds of the Gala and Tweed this season; whether it will become permanent or not, another year will shew; but, as it is an annual, it is by no means unlikely that it may disappear. It has not been gathered in Scotland before, and is, I believe, found only on the sandy sea shores of England and Ireland.

CANNIBIS SATIVA. Melrose and Galashiels.

ATRIPLEX DELTOIDEA, *Bab.* Joppa.

RUMEX SCUTATUS, *L.* Galashiels.

ARTEMISIA COMPACTA. Tweedside, Melrose.

ASTER SALIGNIS. Tweedside, Melrose.

On some Turnip Insects, and other Entomological Notices for 1869. By JAMES HARDY.

IN the beginning of October, Mr. Langlands informed me that his attention had been drawn to some disagreeable looking insects that had attacked his Swedish turnips. At Old Bewick they were confined to the headlands, and affected the Swedes in large round patches, and destroyed the leaves, giving the plants the appearance of dying off—the bulbs becoming dry. To prevent them from spreading, Mr. Langlands covered them with quick lime and lime water, which made an end of them; and at the close of November, the plants thus treated were still living and attempting to throw out fresh shoots. The same kind of insects had prevailed in many places around, occasioning numerous withered patches in open fields, as well as by the sides of the field. The turnips, notwithstanding, especially the Swedes are, this season, a heavy crop in that quarter. On obtaining from Mr. Langlands examples of the insects, I found they admitted of some variety. The most prevalent, and at the same time the most disgusting, was a bluish green, white powdered *Aphis*, clustered in a vast association of all ages and sizes beneath the leaf. This was the *Aphis brassicæ*. It frequents cabbages, but its wild plant hereabouts is the *Raphanus raphanistrum*, or “runch.” More scattered in its diffusion was a green or pink *Aphis*, which was the *Aphis dianthi*. Like other vagabond species it delights in aliases; it is *Aphis rapæ*, *A. vastator*, *A. vulgaris*, &c.; but *Aphis dianthi* is the oldest and most legitimate nomenclature; and it is likewise the “Green Fly” of the conservatory. Although the child of heat, it rises to a higher altitude than the other,

being found in some seasons in very exposed upland fields on turnips of all sorts. Closely applied to the leaf, and placed among the densely packed myriads of Aphides, were several leech-like larvæ. These "Aphis-lions," for such in effect they are, although blind, grope about, seize hold of the lazy Aphides and suck them to death; never leaving off exhausting victim after victim till they are full grown. Afterwards they take the form of a straw-coloured tumour; and finally develop a gayly banded fly of the genus *Syrphus*; a fly often seen hovering in the sunshine over the summer wild flowers. Useful as they are, they are quite inadequate to keep within bounds the swarms of living young at the inordinate rate with which the Aphides increase. At the period when I received them, the Aphides had arrived at the last living generation for the season. They were acquiring wings preparatory for migration; and that winged race deposits eggs, and not living offspring, to perpetuate the species. They and all the wingless forms perish in the early frosts. In my own vicinity there has been a scarcity of Aphides; and what is somewhat singular we have had no autumnal migratory flights of any kind of these insects.

The other occupants of the leaves were the caterpillars of the common Cabbage Butterfly (*Pontia brassicæ*), and the green caterpillar of the small White Butterfly (*Pontia rapæ*). From the monthly notices in the "Entomologist," it appears that the large White Butterfly has been scarce this summer in the south of England. There was no deficiency hereabouts; but the caterpillars were more numerous in 1868 than in 1869. About the beginning of harvest there suddenly appeared large numbers of the *Pontia rapæ* in the turnip-fields. They left a few caterpillars, but little damage resulted. This had not been an instance of local increase, for my friend Mr. Bold writes me from the neighbourhood of Newcastle: "On the 24th August we had a sudden appearance of hosts of small White Butterflies, all *Pontia rapæ*. The gardeners turned to and slew them in thousands; my brother killed all day, and said that a hundred individuals were often in view at one time in one small garden."

We were not affected this year with the small green caterpillars of the Diamond Moth (*Plutella cruciferarum*), which make such havoc on the leaves, by cutting them up into small holes during the drought of summer, when growth is at a stand. I have remarked that, about that period flocks

of Lapwings begin to frequent the turnip-fields, which doubtless do good service in thinning this as well as other concealed vermiform marauders on our green crops.

With regard to Butterflies: of the Painted Lady, a periodical species, I did not see a single instance. In 1868 I observed it on the summit of Eildon hills and along many of the sea-cliffs; and elsewhere it was general. This season common Blues were numerous; Artaxerxes less common, being confined to the region of its food-plant, the dwarf Cistus (near Coldingham lough and on the Ale water); small Copper, scarce; Tortoise-shell, abundant; Red Admiral, very rare; Fritillaries, almost nowhere; Alsus, not seen; Wood Argus, frequent in woods on the Ale; Grayling, Ringlet, Meadow Brown, and Heath, copiously.

In August I noted a new fact about the food of *Steropus madidus*, a beetle reckoned pre-eminently carnivorous. But on this occasion it was engaged eating into the pith of a green but full grown bean which had been crushed, a pod having fallen on a pathway and been trod upon.

Acanthosoma dentatum, one of the finest of the larger tree-bugs, was taken in autumn, under trees overhanging the public road at Old Bewick. I have another Northumbrian example, I believe from the Wooler district.

Autalia puncticollis of Sharp, a Staphylinid new to the district, was gathered in the Dunsdale ravine, Cheviot. Hitherto it has only been found in Scotland.

Caterpillars of the Death's Head Moth have occurred in various localities. A Migratory Locust was captured at Coldingham.

NOTE ON p. 55.—P. Richer de Bellaival was a native of France, not an Italian. I was misled by Tournefort's indefinite term "Campanum." He belonged to "Catalauno-Companiensi," *i.e.*, Chalons in Champagne. (Sprengel, *Hist. Rei. Herb.* II. p. 107).

Notices, Botanical and Ornithological. By JAMES HARDY.

I.—BOTANICAL.

1. *On some knobs at the roots of an Equisetum.*—In a recent part of the Club's Transactions, I called attention to some excrescences, black without and white and fleshy within, and about the size of a hazel nut, attached to the roots of an *Equisetum*, in a section of one of the clayey banks of the Common burn, in the Cheviots. In May, 1869, I was enabled to trace these to *Equisetum arvense*. They are probably reservoirs of nutriment in a soil subject to drought, as although backed by a marsh this clay is during summer, being based on a rock with intervening streaks of gravel.

In searching for them, as yet unsuccessfully, in other sections of clay, I have been struck with the resemblance between these dark *Equisetum* roots, as well as the close net-work woven in clay by those of the common bracken, to fossils of the coal formation. Another similarity of the kind is presented by the kelp sea-weeds, when spread for manure on clayey soil. They do not rapidly waste and disappear like the Tangles and Floridææ, but are ploughed up, not greatly altered after lying a year imbedded in the pale coloured clay, having all the black, broken appearance seen in a slab inlaid with fossils. May not one hence infer, that the original colour of many fossil plants was peculiarly lurid? and that it is owing to this as much as the effects of carbonization, that so many fossil vegetables are inky hued? in other words, that the coal formation, even in its infancy, was as now—a “region of horror” and of “doleful shades.”

2. *Floating Sea-borne Reeds, &c.*—In the winter months (December, January) long streams of broken reeds, bull-rushes, and stalks of reed-mace, mingled with remains of land plants, are drifted by the sea upon several parts of the Berwickshire coast. There are certain landing places where most of this light freight gets embayed, to remain and frotter away during the summer; where if it were to be silted up, and a section afterwards laid bare, the false appearance of a local lacustrine deposit would be presented; whereas it is wholly marine, and the plants that would compose it had grown in lakes and marshes traversed by the Tay and other Highland rivers, many leagues across the sea. Estuaries are thus in the condition of land-locked lakes, the waves and currents intermix the productions of opposite shores.

II.—ORNITHOLOGICAL.

1. *Disappearance of Hirundo Urbica*.—I formerly noticed the disappearance of the Martins from the rocks on the sea-coast here, which they had frequented for ages (one of the cliffs being named from them), owing, I believe, to a colony of Jackdaws having taken possession of the rocks on all sides of them. For the two years bygone their visits to their old haunts have entirely ceased. Amidst such deliberate pilferers of eggs, the poor Martins had little chance to thrive. Had the raven and the peregrine-falcon remained to build here as they did in times past, they might have kept their domain private from intruders, while their lively summer visitants might have thriven disregarded by them in their helplessness; but the Jackdaw is an ignoble rogue who permits of no retainers, even although gentle and playful as butterflies.

2. *Larus minutus, or Pigmy Gull*.—Mr. Andrew Wilson writes me, that a specimen of this rare occasional winter visitant was procured at Coldingham, during the stormy weather in the end of December, 1869, and is now in his collection. This gull is only a castaway on the British coast; its native country being the east of Europe and the north-east of Asia, having been first described by Pallas. In winter it frequents the shores of the Caspian sea and the banks of its affluents; migrating in summer up the Volga, northwards (Gmelin), where it reaches the tributaries of the Baltic. In Britain a solitary instance now and then occurs. The first Scottish specimen is that presented by Dr. Neill to the Edinburgh Museum, "shot in autumn, 1824, on the shore of the Solway Firth." (Fleming Brit. Animals). In the 1st Vol. of the Club's Transactions, p. 232, Mr. Embleton records and describes a young example, "shot on the beach at Embleton, during severe weather in the beginning of 1838;" and Mr. Selby notices (p. 262) a specimen killed at Holy Island, October, 1840. In the "Mag. of Zoology and Botany," I. p. 491, Mr. Albany Hancock notifies a bird in the first plumage, killed at the mouth of the river Tyne, September 1836. In April, 1847, one of Mr. C. St. John's sons killed one near Loch Spynie, the only instance of its being seen in the district of Moray. (Nat. Hist. and Sport in Moray, p. 112). These appear to be the examples of more immediate interest to us. In England it has occurred at Yarmouth and elsewhere (Jenyns); in the Thames (Montagu); and in Cornwall, "two or three specimens in the plumage of the first year." (Couch).

Dunstanburgh Castle. By GEORGE TATE, F.G.S., &c.

(Read at the meeting at Dunstanburgh Castle, August 26th, 1869).

Dunstanburgh Castle, though having but a short history, and being now but a ruin, has nevertheless many attractions to the archæologist; and standing on pillared basaltic rocks, rising one hundred feet above the shore, it forms a picturesque scene, which has been idealised by the genius of Turner.

This basalt is part of the Whin Sill, which, in its course southward, curves inland from Newton Point, and sweeping round by Embleton appears in great crags at Dunstanburgh, with high cliffs on the north and west, and a rapid slope into the sea on the east; it extends southward along the shore for two miles as far as Cullernose, where it bids adieu to the coast, and passing by Howick Hall, Longhoughton, and Ratcheugh, pursues a south-westward course through the county of Northumberland.

When of considerable thickness, this basalt has a rude columnar structure, which is well shewn in the northern cliff, in the detached pillars on the west side, and in the gut of the Rumble-churn on the east, where the columns are so distinct, as to resemble the more regular forms at Staffa and the Giant's Causeway. Crystals of quartz, some white and transparent and others of a violet hue, have occasionally been found in cavities of the rock in the eastern part; and, as such minerals are not common in Northumberland, they are popularly celebrated as Dunstanburgh diamonds and amethysts.

The relation of the basalt to the stratified rocks is shewn in the northern cliff, where the columnar basalt, which is above forty feet in thickness, overlies beds of sandstone, shale, and coal, belonging to the Mountain Limestone formation. A little northward of the cliff on the sea shore there is a contorted limestone, which has a sharp anticlinal axis, and has hence been called the *Saddle-rock*; it dips away south-eastward towards the basaltic cliff, under which it passes; and it extends also to the sea bank, where it is covered by the Boulder Clay, in which are large glaciated blocks, and where its upper surface is polished, striated, and grooved, some of the grooves being a quarter of an inch in breadth and running in parallel lines in the direction of north-west to south-east.

Both the chemical and mechanical action of the basalt on adjacent rocks is seen here; in the Rumble-churn the basalt

covers and indurates sandstones and shales; and a mass of limestone, nearly enveloped in the basalt, is converted into white crystalline marble. On the top of the basalt, too, are patches of indurated shales and sandstones; and near the east point of the cliff there is a fissure, filled with highly inclined metamorphosed shales. At Cullernose, however, more extensive displacements of strata have been effected by this basaltic eruption. Bamburgh Castle stands on a similar craggy eminence of basalt, which is there 75 feet in thickness, overlying strata of sandstone.

Leaving the geology of the place we turn to its history. Dunstan was a member of the barony of Emeldon, or as it is now erroneously written Embleton, which was granted to the family of le Visconte by Henry I. by service of three knights' fees;* and in that family it continued till the death of John le Visconte in 1244, when it passed to his daughter and heir, Ramet, the wife of Everard Teutonicus.† After his death, she along with her second husband, Hereward de Marisco, sold the barony to Simon de Montfort, the great earl of Leicester; ‡ with whom, however, it did not long remain, for, rebelling against the king, his estates were forfeited and the barony of Emeldon was granted to Edmund, younger son of Henry III., who created him earl of Lancaster. Thomas, the eldest son of Edmund, succeeded to his father's estates in 1294, and by him Dunstanburgh Castle was built. From the name Dunstan, which may mean, the *stone fortress*, it has been supposed that there had been on the site an Ancient British Camp; but of this there are no traces, and the name most probably signifies *stony hill*.

The hamlet of Dunstan has the honour of having been the birth-place of John Duns, who was called *Scotus*, because he

* Testa de Neville, p. 383. The barony then included Emeldon, Burton, Warnham (*Warenton* near Belford), Craster, and Dunstan

† Rot Fin. I. 28., II. 104.

‡ The Court of the Manor was held at Staunford or Stamford, "to which town came Sir Richard Marin and in the presence of Ramet and of her husband Everard de Marisco and of the whole court of Staunford took possession of the whole barony of Emeldon, on the behalf of Simon de Montford Earl of Leicester, to whom they released the barony." According to the Fscheats, 30 Edw. III., Stamford Manor included Emeldon, Dunstan, Burton, Warndam, Shipp'ey, Crauncestre, Fenton, Newton-on-the-Moor, and Cartington. At the present time it comprises Warenton, Cocklaw, Cartington, Whittle, Dunstan, Criston Fank, Embleton, Low Newton, Shipley, Newton-by-the-sea, Dunstan Hill, and Stamford; and it is singular, one house in Alnwick is within this manor, and the owners of it were regularly summoned to attend the Courts of Stamford.

was, it is said, descended from Scotch parents. He was educated at Merton College, Oxford, to which the tithes of Embleton and the patronage of the church belong at the present time. Of that college he became a fellow; and so proficient was he in logic and school divinity, and so great was his fame, that, when professor in Oxford University, incredible numbers attended his lectures. He was the founder of the sect of Scotists. Few men have been more extravagantly lauded; he could, it is said, have invented philosophy, if it had not existed before; his knowledge of the mysteries of religion was rather intuitive certainty than belief; and he was the most ingenious, acute, and subtle of the sons of men. He died on November 8th, 1308; and, as it was believed that he had been buried before he died, it was quaintly said: "he rendered all things dubious while he lived, and died in a dubious condition, but death put his case out of doubt." That Dunstan was his birth-place rests on the authority of a note at the end of one of his own manuscripts in the library of Merton college: "Here endeth the lecture of John Duns, called the subtile Doctor in the university of Paris, who was born in a certain hamlet of the parish of Emildon called Dunston in the county of Northumberland, belonging to the house of the scholars of Merton-hall in Oxford."*

From documents among the public records the date of the building of Dunstanburgh Castle is known to a year; and this is of some archæological value; for as the remains left belong to the original structure, its architectural characters are a key to the determination of the age of some other castles, regarding which there is not documentary evidence. When the Edwardian portion of Alnwick Castle was about to be restored by Algernon duke of Northumberland, the characteristic features of Dunstanburgh were carefully studied and copied. A *Compotus*,† or an account, was rendered before auditors at Pontefract by William Galun, the bailiff and receiver of Emeldon; and from this we learn that the building of the castle was commenced in 1313, and was still in progress in the following year. Some of the particulars are of interest and indicate the character of the structure. For making sixteen perches of the foss, of the breadth of eighty feet and depth of eighteen feet, between the site of the

* Camden Britannia, 4th ed. II. p 213.

† Printed in Hartshorn's Feudal Castles Appendix, p. cxxxv.

castle and the field of Emeldon on the west, and for four perches of the same foss, in breadth forty feet and in depth four feet, £21 19s. 7d. are charged; wages for various persons for quarrying and carrying stones amount to £20 16s. 1½d.; two cart horses cost 22s.; for 49 stones of Spanish iron 48s. 5½d. were paid; wages of carters amount to £7 19s. 8d; hay and corn for horses and oxen cost £12 5s. 11¼d.; 159 stones of Spanish iron for hatchets, trowels, chisels, &c., amount to £4 13s.; other expenses are for lime, coals, &c.; and £65 10s. were paid to Master Elia, the mason, in part payment of £254, for making the gate-house of the height of eighty feet, with one tower on each side of the gate. There is no mention of a dongeon or keep. Three years after the commencement of the building the earl, in 1316, obtained a license from Edward II. to crenelate or fortify his mansion of Dunstanburgh;* and soon after this the whole had been completed. At the same period, or it may be three or four years earlier, Alnwick Castle was repaired and partly rebuilt by the first lord Percy of Alnwick, in the style of the period; and indeed it seems that, part at least of both, had been built by the same masons; for many of the masons' marks on the stones are, according to Hartshorn, the same in both castles.

The builder of Dunstanburgh was an important historic personage—of royal descent, and distinguished above all subjects by the extent of his possessions, as he held, at the same time, the earldoms of Lancaster, Salisbury, Leicester, and Derby, besides being the lord of Pontefract Castle. He became, however, a keen opponent of the weak favouritism of Edward II.; and joining other barons to drive the Spencers from power, he was made general of the confederate army; but being defeated by the king at Burton-on-Trent in 1321, he endeavoured to seek refuge in his castle of Dunstanburgh, in hope of receiving aid from Scotland. Intercepted in his northward march at Borough-bridge, he was taken prisoner in March, 1322, by Sir Samuel Ward and Sir Andrew

* Cal. Rot. Pat. 9 Edw. II. m. 25, p. 79. The following is a copy:—*Pro Thoma Comite Lancastriæ.—Rex omnibus ad quos etc. salutem. Sciatis quod de gratia nostra speciali concessimus pro nobis et hæredibus nostris dilecto consanguineo et fideli nostro Thomæ comiti Lancastriæ, quod ipse mansum suum de Dunstanburgh in com. Northumbr. muro de petra et calce firmare et Kernellare, et illud sic firmatum et Kernellatum tenere possit sibi et hæredibus suis imperpetuum, sine occasione nostri vel hæredum nostrorum, ballivorum seu ministrorum nostrorum quorumcumque. In cujus, etc. T. R. apud Linc- [olniam], 21 die Aug.*

Harekla, and was conducted to his own castle of Pontefract, where he was condemned of treason and executed. Venerated by some as a martyr, he was canonised about half a century after his death, and the hill on which he was executed was called St. Thomas' hill.

Soon afterwards the custody of the castle and of all the lands and tenements, which belonged to the earl in Northumberland, was committed to Richard de Emeldon;* and Roger de Horsele was commanded to deliver up to him Dunstanburgh castle. In the same year the new custodier sent sixty-eight hobelars, part of the garrison, to aid the king in his expedition against Scotland. John de Lilleburn and Roger Manduyt were then constables of the castle; and from the former it is probable that the Lilburn tower took its name. He had been a person of importance in the north; for when the king, in 1326, ordered Dunstanburgh, along with other ports, to provide ships against the attacks of the French, he was one of the commissioners to superintend this business.

On a petition to Parliament, the castle and other possessions of the earl of Lancaster were, in the reign of Edward III., restored to his brother Henry; and from him they passed to his son Henry, who died without male issue; but his estates were divided between his daughters Blanch and Maud, the former of whom obtained, as part of her share, the barony with Dunstanburgh. She married John of Gaunt, earl of Richmond, who was created duke of Lancaster; and her possessions descending to their son Henry of Bolingbroke, who was afterwards king Henry IV., the castle became the property of the crown.

During the latter period of the reign of Henry VI., Dunstanburgh figures in the page of history, in connection with the war of the Roses. After the battle of Towton, where the Lancastrians were disastrously defeated, attempts were made in Northumberland to retrieve the fortunes of the fallen king; for in the northern counties there was a strong feeling in his favour. The records of this period are confused and somewhat contradictory; but on examining the various accounts, I find that in 1462 queen Margaret obtained possession of Alnwick castle, either through the treachery of the governor or for want of provisions, and that Bamburgh and

* Rob. de Emeldon, his progenitor, held 40 acres of land in Emeldon, from John de Visconte on socage tenure, on payment of 12d. yearly.—*Testa de Neville*.

Dunstanburgh also fell into her hands. "They," says Warkworth in his Chronicle, "were victualled and stuffed with Englishmen, Frenchmen, and Scotsmen." A large army raised by Edward IV. commenced in December, 1462, the siege of these castles. Dunstanburgh had a garrison of 120 men, and was besieged by the earl of Worcester and Sir Ralph Grey; but this, as well as the other Northumbrian castles, was soon given up to king Edward. So that, "he was then possessed of all England except a castle in North Wales called Harlake."*

Another effort was made in Northumberland in 1464, by the heroic queen Margaret, at first with fair prospects of success, to restore her husband to the throne; Alnwick, Bamburgh, and Dunstanburgh castles fell into her hands; but at the battle of Hexham, fought on May 15th, 1464, the Lancastrians were totally defeated; and soon afterwards, on June 13th, 1464, the earl of Warwick, "with the puissance came before the castle of Alnwick and had it delivered up to him by appointment; and also the Castle of Dunstanburgh, where my said lord kept the feast of St. John the Baptist.†

Tradition says, that queen Margaret sought refuge in this castle and occupied the south-eastern tower, which has hence been called St. Margaret's tower; and that she embarked from the narrow rocky cove beneath the tower, and escaped in a fishing boat into Scotland. Historical evidences do not confirm this tradition; but it is probable that, while in the north, in 1462, she may have visited the castle and occupied apartments in the tower, which bears her name. Injured by the sieges it had sustained, the castle, after this period, became ruinous.

Being a royal castle, it was surveyed along with Warkworth, Harbottle, and Bamburgh castles in 1538, by Bellasis, Collingwood, and Horsley; and from this survey we learn, that Dunstanburgh was then a very ruinous house and of small strength; there were no lodgings standing but the dongeon, which had two little towers joined on either end, the dongeon being 35 yards long and 12 yards broad; the roofs of the whole required "the lead to be new casten and made with guts, spouts, and fillets;" but a roof and two floors were needed for one of the towers, the timber for which must be had in Chopwell wood and framed in Newcastle;

* Warkworth's Chronicle, p. 2.

† MS. College of Arms L. 9, Warkworth's Chronicle.

the Lylborne tower had very good walls and a good roof of timber, which must be covered with lead; the walls of the dongeon, and battlements of the inner ward, with a piece of wall above the outer gate, and in divers places the great wall that compasses the whole castle, must be amended, "and pynd with stone and rowthe cast with lyme;" there must also be an iron gate for the inner ward $3\frac{3}{4}$ yards high and 3 yards broad; there was a draw well in the inner ward, which was very deep. The total cost of these reparations would amount to £106 18s.

Nothing seems to have been done at this time to repair the ruined castle; for in another report on the state of the Borders, made by Sir Robert Bowes, Knt., in 1550, it is said—"The castle of Dunstanbrough is in wonderfull great decaye and the inner wall thereof might be repayred with no great charge and also the gatehouse and a house for the constable. And then surely it would be refuge to the inhabitants of these partes, yff enemies came to annoye them either arriving by sea or coming by lande out of Scotland, soe that they brought no great ordynance or power to remayne any long time there."* No reparations followed from this report; and the time soon came when such castles were not required for the defence and security of the Borders, and they were either destroyed or allowed to remain as picturesque objects—reminders of troubled and bye-gone times.

Dunstanburgh castle continued in the possession of the crown till February 6th, 1625, when it was granted by James I. to Sir William Grey, baron of Wark; and this grant was confirmed by William III. on 20th December, 1694.† The castle passed to his descendants; but Ford lord Grey his grandson, who died in 1701, left no male issue, and his only daughter Mary, who had married Charles Bennet, the first earl of Tankerville, claimed all the estates as heir of her father. Ralph Grey, Ford's brother, however, succeeded to the title of lord Grey of Wark, and also claimed the estates from a settlement of the first lord Grey. After some litigation, the dispute was compromised by agreement, which was confirmed by Parliament in 1704; and the estates were divided between the parties,‡ and Stamford and Embleton with Dunstanburgh castle fell to the share of lady Ossulston,

* Hodgs. Hist. North. p. 207.

† Grose III. p. 86.

‡ Raine's North Durham p. 218.

and they continued in the possession of her descendants till they were sold by the present earl Tankerville in June, 1869, to "The Eyres' trustees" of Leeds, for £155,000.

We shall now look more particularly at the site and at the ruins; and after a general survey we find that, with little exception, all that remains of the castle belongs to one period, and presents the architectural characters of the early part of the fourteenth century: but the general arrangements differ from those of the Norman castles of the preceding age, and in some respects also from those of the Edwardian period. There was no great keep, nor was the area enclosed within the walls divided into separate wards or baileys; an inner ward is referred to in the survey of 1538, but this had included the space enclosed by the walls; while the outer bailey had been outside of the walls to the southward.

The hill on which the castle stands is washed by the sea, on the north and on the east; and it is cut off on the west and south-west by low, swampy ground, from which it rises more or less steeply. Probably the sea, at a period subsequent to the Boulder Clay era, flowed through this swamp and converted the hill into an island. Only the northern part of the hill is occupied by the castle; and the southern portion had been an outer bailey or barmakyn, partly defended by the escarpment of rocks, and partly by a rampier, of which there are traces, and probably, too, by a stockade; thus enclosing a protected area of about fifteen acres for cattle and the growth of corn.

The ground plan of the castle (*Plate III.*) is somewhat rectangular, and includes an area of 10ac. 0r. 25p. Securely defended on the north by high perpendicular cliffs, there was no wall on the north side; but on the east, where the rock slopes into the sea, there was a wall about six feet thick, of which there are yet some remains. On the west side, where the escarpment is steep but somewhat sloping from the fall of debris, there were not only a wall and towers, but also a ditch, which in some parts was 18 feet deep and 80 feet broad. On the south side, which was the weakest, besides the wall and towers and great gateway, there was a ditch, traces of which, cut into the basalt, are yet to be seen.

The chief mass of building left is the entrance gate-house (*Plate IV.*), with its two great semicircular towers, which, at the height of about thirty feet, are converted by means of skilful corbelling into square towers, and which, when com-

plete, rose to the height of eighty feet above the ground. (*Plate III. A.* and *Plate IV.*) This indeed had been the keep of the castle—there are traces of no other, and in the survey of 1538, it is called by the equivalent name of the *dougeon*. There are three storeys in the circular portion of the towers, the lowest one being vaulted. The doorways, windows, and fire-places, shew the characteristic style of the Edwardian architecture; some windows are double, narrow, and pointed; other windows and doors and a fire-place have shoulder or contracted headings; and the same characteristics mark the other towers. A large portion of the south wall is still in a good condition. It had been defended by four other towers. A little eastward of the gate-house a small tower projects from the upper part of the wall supported by corbelling; further eastward is another large tower three storeys in height, in a good state, with double, narrow pointed windows; and next appears another small tower. On the south-east corner stands St. Margaret's tower, of three storey height, overhanging a high cliff and looking down into the Rumble-churn.

On the west side the most remarkable object is Lilburn tower (*Plate V.*), standing on a steep hill, and rising grandly from the midst of detached columns of basalt, which seem to protect the base. This tower, being well built of large ashlar, has by some been regarded as the work of a later age; but its double, narrow pointed windows and shoulder-headed doorway shew that it is of the same period as the other portions of the castle. It is of four storeys height, with a small tower rising above them at each corner. Another small mural tower is between this and the gate-house; and near to the south-west corner there had been a gateway about 11 feet in width, near to the inner court yard.

Behind the gate-house are walls and mounds of debris, but of no great extent—the remains of offices enclosing the court yard, within which was a draw-well, now partly filled up, but which is described as being deep; for here the thick overflow of basalt would have to be pierced before reaching water-bearing strata. A similar draw-well supplied Bamburgh castle, where it was within the great keep, and was sunk through 75 feet of basalt and 60 feet of sandstones. The most distinguished remains within the castle area are the walls of what seems to have been the chapel, which is about 33 feet long and 13 feet broad, standing directly east and

west by the compass; and with an entrance on the west, and another on the south into the chancel. Such remains are confined to a limited space near the gate-house; and scarcely any other traces of buildings appear, excepting foundations on the eastern part, most probably enclosures for cattle. From the limited amount of accommodation within the castle, it appears to have been less fitted for the residence of a great baron than for defence and occasional refuge; but when garrisoned by a large number of soldiers, there would be temporary wooden erections for lodging them.

The scenery connected with the castle is impressive from the dark frowning high cliff—the great pillared rocks—the deep gully up which rushes the sea, producing a crashing gurgling sound, not only from the break of the waters, but also from the rolling of stones over each other. When, however, the sea is lashed into a storm, it breaks with fearful violence on the rocks and throws up great masses of water, white with foam, which on some occasions is driven over the castle walls. Fit scene this to excite the imagination and give birth to, or localise romantic legends. Our own utilitarian age has lost faith in marvels; but the time has not long past, when a solitary antiquary or tourist, rambling among the ruins of Dunstanburgh in the gloaming, would have been regarded as the *Wandering Knight*, who haunted the castle, always seeking but never finding the object of his love. Thus briefly runs the legend, which has been told in verse by G. Monk Lewis, and by James Service of Chatton.

The knight Sir George Guy, having lost his way in a stormy night, sought refuge in the ruined gateway of the castle. He had tied his horse to a lonely yew, and was leaning on the side of the archway gazing on the raging tempest and listening to the hoarse bellowing of the Rumble-churn, when a mystic hand holding a lighted lamp appeared, and a hollow voice called upon him, if he was a brave knight, to attempt the deliverance of a spell-bound fair lady. Guided by this hand he ascended a winding stair leading into a magnificent hall, in which were a hundred marble armed knights, sitting on a hundred brazen steeds, tied to a hundred marble columns; and in the centre of the hall was a crystal tomb, in which was confined an enchanted lady of great beauty, guarded by a gigantic marble hunter, on whose side was a sword and around whose waist was a horn. The hollow voice told Sir Guy to dissolve the spell, either by

drawing the sword or blowing the horn ; but he must beware, whichever he chose, not to cast it away. After a pause he drew the sword ; and then the giant sprung to life, and blew a blast with his bugle, and every marble knight drew his sword and every horse pranced on the floor and rushed towards Sir Guy, who, on seeing the mystic sword turned into a living serpent, quailed with fear, and cast it aside and drew his own blade, and thus failed to break the spell. A shriek of anguish was heard from the tomb, and the hall became dark and silent, and a blow from the giant hunter struck down the knight senseless, who, when he came to life again, found himself lying in the ruined gateway, his steed gone and the aged yew blasted ; while he was thenceforth doomed to wander for ever, in fruitless search of the fair one whom he had failed to deliver from the crystal enchanted tomb.

Nor sun nor snow, from the ruins to go
 Can force that aged wight,
 But still the pile, hall, chapel, and aisle
 He searches day and night.

But find can he ne'er the winding stair
 Which he passed that beauty to see,
 Whom spells enthrall in the haunted hall
 Where none but once may be.—*G. M. Lewis*.

This legend is one of the stories originating in the middle ages, which cluster round the cycle of romance relating to king Arthur and the knights of the Round Table. It is localised with variations in other places in Britain, but always with the incident of the sword and the horn. Elsewhere in Northumberland it is connected with Sewingshields' Pele, which stands also on basaltic rocks, and this version has been well told by Mr. James Hardy of Oldcambus.*

* Table Book, II. p. 37.

PLATES.

- PLATE III.—Plan of Dunstanburgh Castle.
 „ IV.—Great Gate-house and Dongeon of Dunstanburgh Castle.
 „ V.—Lilburn Tower—Dunstanburgh Castle.

Scaphander lignarius : Holy Island, June, 1869. A living specimen of this addition to the Mollusca of the Eastern Borders was sent to me by my sister ; unfortunately the animal was extracted. It is not mentioned by Mr. Alder.—*Robert C. Embleton*.

Zoological Notes in 1869. By JAMES SMAIL, Galashiels.

April 15th.—Martins were seen by me, for the first time this season, at Cowdenknowes.

April 22nd.—The Cuckoo I heard on Buckholm hill, and I do not remember ever hearing it in April before. Apropos of the Cuckoo. On 24th of May, 1866, I saw twelve Cuckoos in the course of a walk of two and a half miles, in the glen of Blyth water, in the basin of which stand the remains of the Hare-faulds. The glen is very wild; and in that part where the Cuckoos were so numerous seen, there are many clumps and thin patches of natural wood, principally birch and ash. It occurred to me that these birds might have very recently arrived at this favourite retreat, and that, when pairing was effected, they would nearly all disperse, and by their "wandering voice" make their presence known in other favourite spots in the district. The Cuckoo is now seldom, if ever, heard in the low-lying districts about towns. Thirty years ago I have occasionally heard it in old orchards at Jedburgh. In the Border counties it has taken almost entirely to the solitary upland woods within the last twenty years or so.

May 28th.—I found a Robin's nest, containing young, in the remains of a whale's jaws, lying in an unfrequented corner among nettles, in the policy of Major Scott of Gala. The nest was in a hole in the thick end of the jaw-bone, and was inserted so far that the darkness of the hole prevented it from being seen.

A Blind and Lame Lark.—A relative has at present (22nd June) a Lark twelve years of age, which is stone blind and has only one leg. It has been blind for seven years, and it is as jovial a songster now as it was eleven years ago; and being blind it sings as much during the night as in the day. Some months ago, when it was enjoying a run on the floor, it was trampled upon, and by this mishap one of its legs was totally severed and one of its wings somewhat injured. It speedily recovered, however; for in three days it began to sing with its wonted spirit, maugre its blindness and the loss of a leg.

June 28th.—I found a nest, with three young, of the Ring-Ousel, in Erncluch glen in the Lammermoors. The nest is somewhat larger than the common blackbird's, but built of nearly similar material. Both parents were in a great state of chatter and excitement, and showed a great deal of boldness

by flying at me repeatedly as I handled the young, which were just 'ripe.' The cock flew oftenest at me, but of course both birds swerved when they neared my face. I should state that the nest was placed under the branches of a large bush of heather growing on the top of a rock, which stands about ten feet above the burn in which I was fishing.

Litter of Hedgehogs.—On 23rd June, a Hedgehog, which had been put into a friend's garden a few days before, produced three young. The nest was made of a large lot of tangled grass-roots, and was placed in a hole made by the animal, between a large sheltering flower-bush and the garden wall. It was well hidden. The young were at three days old covered on the back only, the bristles being nearly as soft as grass. The head, legs, and belly were quite bare, and of a dull cream colour. At nine days one of them partly opened an eye; but in a few days more the mother, doubtless terrified or irritated by being so frequently disturbed, killed the progeny and partly devoured them. For a time she left the young, covered up, during the day, and hid herself in another hole which she made. An egg and milk were put near the nest at night, and these were, with one or two exceptions, eaten ere morning.

Note on Lampris guttatus, Retz,—the Opah or King-fish.
Communicated by the Rev. J. Dixon Clark, Belford Hall.

A specimen of this rare fish was washed ashore near Budle Bay, in the month of February. When first found, it was in a perfect state, but some boys not knowing its value greatly disfigured it. It is of a beautiful gold and silver colour, with large spots; and is about 36 inches long, 22 inches across the back, and 4 stones weight. It is a native of the seas of China and Japan, and has seldom been seen in northern waters. Pennant, in his *British Zoology*, gives an account of one having been found on the sands at Blyth, in Northumberland, in the year 1769.

Rain Fall in 1869 at Glanton Pyke, Northumberland; communicated by FRED. J. W. COLLINGWOOD, Esq.: And at Lilburn Tower, Northumberland; communicated by EDW. J. COLLINGWOOD, Esq.

GLANTON PYKE.		LILBURN TOWER.	
	Inches.		Inches.
January . . .	3.140	January . . .	2.132
February . . .	1.897	February . . .	1.228
March . . .	1.652	March . . .	1.809
April . . .	1.265	April . . .	0.887
May . . .	2.665	May . . .	2.606
June . . .	2.200	June . . .	2.248
July . . .	0.990	July . . .	0.772
August . . .	1.410	August . . .	1.433
September . . .	3.480	September . . .	3.722
October . . .	2.050	October . . .	2.031
November . . .	1.750	November . . .	2.110
December . . .	2.640	December . . .	2.993
Total . 25.139		Total . 23.971	
Rain Guage—Diameter of Funnel, 8 inches; Height of Top above Ground, 4 feet 3½ in.; Above Sea Level, 534 ft.		Rain Guage—Diameter of Funnel, 10 inches; Height of Top above Ground, 6 feet; Above Sea Level, 290.	

Rain Fall at North Sunderland Vicarage, in the Year 1869. Communicated by the Rev. F. R. SIMPSON.

Months.	Total Depth.	Greatest Fall in 24 hours.		Days on which .01 or more fell
		Depth.	Date.	
January	2.61	.57	1st	17
February	.77	.22	10th	14
March	1.00	.17	1st	16
April	.76	.16	2nd	9
May	1.99	.86	6th	14
June	1.56	1.16	15th	10
July	.64	.34	28th	8
August	1.37	.36	3rd	9
September	3.48	.72	12th	19
October	2.03	.46	28th	18
November	1.85	.43	13th	18
December	2.03	.33	16th	21
Total	20.09	5.78		173

Rain Guage—Diameter of Funnel, 8 inches; Height of Top above Ground, 1 foot 2 inches; Above Sea Level, 60 feet.

General Statements.

The following were elected at the Meeting held at Berwick:—

ORDINARY MEMBERS.

Rev. A. R. Ashwell, Principal of the Training College, Durham	- - - - -	1869. Sept. 30.
George Allen, Berwick	- - - - -	„
Rev. James Middleton, Manse, Lauder	- - - - -	„
Robert Romanes, Harryburn, Lauder	- - - - -	„
W. B. Robertson, M.D., Lauder	- - - - -	„
Thomas Broomfield, Lauder	- - - - -	„
John Brown, Hallidean	- - - - -	„
John Bolam, Chathill	- - - - -	„
Rev. H. M. Oswald, St. Paul's Vicarage, Alnwick	- - - - -	„
Rev. James Marshall, Alnwick	- - - - -	„
Rev. Wm. Meggison, Chatton	- - - - -	„
Alex. L. Gracey, M.D., Berwick	- - - - -	„

CORRESPONDING MEMBER.

Thomas Gibb, Alnwick	- - - - -	„
----------------------	-----------	---

HONORARY MEMBER.

Miss Mary Rachel Tate, Alnwick	- - - - -	„
--------------------------------	-----------	---

Places of Meeting for the Year 1870.

Kyloe	.. ..	Wednesday, May 25.
Edin's Hall	.. ..	Thursday, June 30.
Doddington	.. ..	„ July 28.
Whitburn	.. ..	„ August 25.
Coldstream	.. ..	„ September 29.

The INCOME and EXPENDITURE have been:—

	£	s.	d.	
Balance from last year ..	42	4	2	
Arrears received.	31	6	0	
Subscriptions for 1868 ..	37	16	0	
Do. 1869 ..	0	18	0	
	<hr/>			£112 4 2

EXPENDITURE.

For Printing, &c.	51	16	4
For Subscription to Ex- ploration of Edin's Hall }	5	0	0

BALANCE—

Deposit in Alnwick and County Bank }	50	0	0	} 55 7 10
Cash in hands of the Secretaries - }	5	7	10	
	<hr/>			£112 4 2

PROCEEDINGS

OF THE

BERWICKSHIRE NATURALISTS' CLUB.

Address delivered at Coldstream, on the 29th September, 1870. By the Rev. GEORGE SELBY THOMSON, A.M., Rector of Acklington, President.

GENTLEMEN,

I must throw myself on your kind and lenient judgment, as I feel myself utterly unworthy of the high honour you did me in electing me your president for this year. It was entirely unexpected, and it was with some trepidation that I received the announcement. When I look back on the distinguished men who have preceded me, bright lights in various fields of science—Dr. Johnston, Sir William Jardine, my revered and dearly loved relative, Mr. Selby, Mr. Baird, Mr. D. Milne Home, Mr. Embleton, Mr. Tate, and last, though not least, one who has served his Queen and country, with such great ability and efficiency, as to win the knightly cross of the most exalted Star of India, Sir Walter Elliot—I feel that the mantle of these eminent men has most unworthily

fallen on so humble an individual as myself. But as the rules of the Club are somewhat akin to the inexorable laws of the Medes and Persians, I accepted the honour which I could not decline, hoping that the members would be "to my failings ever blind," and to the imperfect performance of my duties "ever kind."

Our field meetings, this year, have been most successful. The weather, on which enjoyment so much depends, has been beautiful on every occasion. Our rambles over hill and dale, and the charming beauties of Nature have been most enjoyable and conducive to the health and benefit of both body and mind; we have had the pleasant interchange of thoughts and ideas, in friendly discussion, and social harmony, and altogether we have enjoyed, to a great extent, the "feast of reason, and the flow of soul."

I was not present at the meeting in Berwick, in September last, but Mr. Tate has kindly sent me notes of that meeting, of which I will avail myself, and I must express my sincere thanks and obligations to him for his great kindness in sending me notes of the other meetings during this year.

The last meeting of the year 1869 was held at Berwick, on September 30th, when there were present—Sir Walter Elliot, president; Mr. Geo. Tate, secretary; Messrs. D. Milne Home, J. C. Langlands, James Tait, Robt. Douglas, James Heatley, J. E. Friar, Archd. Jerdon, A. Borthwick, Wm. Stevenson, Robt. Graham, Thos. Allan; Drs. C. Brown, R. Fluker, R. Hood, H. Fawcus, Francis Douglas, David Cahill; Revs. P. G. McDouall, David Donaldson, J. Irwin, W. Darnell, W. L. J. Cooley, P. McKerron, and J. G. Rowe; Mr. Matt. Young, Mr. Geo. Young, Mr. James Purvis, Mr. Chas. Darnell, and Mr. Thos. Brown. After breakfast at the King's Arms, the accounts were audited and passed, and the following members were elected:—Rev. A. R. Ashwell, Principal of the Training College, Durham; Dr. Gracey, and Mr. George Allen, of Berwick; Rev. James Middleton, Mr. R. Romanis, Mr. Thos. Broomfield, and Dr. W. B. Robertson, Lauder; Mr. John Brown, Earlston; Mr. John Bolam,

Chathill ; Rev. H. M. Oswald and Rev. James Marshall, Alnwick ; Rev. W. J. Meggison, South Charlton ; and, as a corresponding member, Mr. Thos. Gibb, Alnwick. On the motion of the President, seconded by Dr. Francis Douglas, Miss Mary R. Tate was elected an honorary member. Of honorary members there are now five—all ladies—connected with the Club.

The following places of meeting, for 1870, were appointed :

Kyloe Crags and Lowick, in May.

Edin's Hall, near Abbey St. Bathan's, in June.

Doddington, near Wooler, in July.

Whiteburn, near Gordon, in August.

Cornhill, in September.

All on the last Thursday of the respective months.

Business over, the members visited the Berwick museum, and after examining the various departments, high satisfaction was expressed that so many objects, illustrating the Natural History and Archæology of the district, had been collected and arranged during the short period the museum had existed. No little of its value is due to the presentation, by Mrs. Johnston, of the collection made by the late Dr. Johnston, the founder of the Club. The botany, especially, is nearly complete ; of 146 birds, 30 have been presented by Mrs. Johnston. Some rare and fine mountain limestone fossils are the gift of Mr. Robt. Douglas, Town Clerk of Berwick. The scheme of collecting local objects—so well begun—is deserving of encouragement and support.

The members afterwards visited, in succession, Mr. Young's oil and oil cake manufactory, Mr. Thos. Allen's saw mills, and Messrs. Crossman & Paulin's super-phosphate manufactory, with all of which the members were much interested, as the respective proprietors explained the machinery and the manufacturing processes.

The party returned to the inn, where the interval before dinner was spent in examining and discussing various Antiquarian and Geological objects. The President showed ancient copper spear-heads and daggers from India, one of

which was found thirty feet below the surface of the earth ; bronze-socketed celts from Rule Water, in Roxburghshire, and a small stone celt from Bellingham ; bronze pots with flat horizontal handles, and other relics, found while draining near Ruberslaw. The Mayor of Berwick shewed stone cannon balls, fourteen inches in circumference, and one of iron, sixteen inches in circumference, found in the well of Edrington Castle ; and Mr. D. Milne Home brought before the meeting pieces of coal, and other rocks out of the boulder clay of Berwickshire.

An excellent dinner was provided by the host of the King's Arms Inn, to which a company of thirty did justice ; after which the president, Sir Walter Elliot, read an able address, giving an account of the proceedings of the several meetings held during the year, with historical notices of the places visited. He then nominated the Rev. George Selby Thomson, Rector of Acklington, as president for the ensuing year, a proposal which was unanimously agreed to. Mr. D. Milne Home and Mr. George Tate afterwards gave an account of the result of the recent exploration of Edin's Hall, and it was resolved on the motion of Dr. Francis Douglas, that the Secretary be authorised to aid, by an additional contribution from the funds of the Club, the further exploration of that curious ancient fort.

After the proceedings of the Club were finished, several of the members adjourned to the Assembly Rooms, to take part in a public meeting in connection with the Berwick museum. Twelve nominations for membership were made, and seconded.

The first meeting of the Club, for this year, was held at Kyloe Crags, on Wednesday, May 25th.

Twenty-one years ago, the Club explored Kyloe Crags, when a special interest was given to the meeting by the re-discovery of the rare *Convallaria polygonatum*, which had first been observed there by A. Bruce. The Rev. John Baird first noticed here the *Asplenium septentrionale*, and in 1853, Dr. G. R. Tate discovered the very rare *Asplenium germanicum* growing among the debris of the crags.

There were present at the meeting—the Rev. G. S. Thomson, president ; Mr. Geo. Tate, secretary ; Sir Walter Elliot, Revs. J. E. Elliot, P. G. McDouall, J. G. Rowe, and James Marshall ; Drs. F. Douglas, J. Robson Scott, D. Cahill, H. Fawcus ; Messrs. W. Boyd, R. G. Huggup, G. Hughes, F. R. Wilson, R. Douglas, J. Heatley, E. Allen, R. Middlemas, A. Marshall, J. Purvis, E. Friar, H. Hunter, G. Young, Geo. Allen, J. Dunlop, J. Clay, H. Hardie, Wm. Richardson, Geo. Busby, Master Heatley, and Master Elliot.

After breakfast, the party started on the walk of the day to visit Kyløe church, the old pele tower, Kyløe crags, and dyke. The weather was bright and sunny, with just sufficient breeze to make travelling on the hills agreeable. The beautiful and extensive view across the clear blue sea and to Holy Island, the Farne Islands, Bamburgh and Dunstanburgh Castles, attracted the admiration of all. The rugged and pillared crags were lighted up with beautiful brilliancy by the sunshine. The members reassembled at the Plough Inn, at Beal, where an abundant and excellent dinner was provided. After dinner, “Ornithological Notes,” from Mr. Thomas Gibb, a corresponding member of the Club, were read. Mr. Pringle Hughes, Dr. McVail, and Rev. D. Paul were nominated for membership, and reports were made of the observations of the day.

The name Kyløe has been derived from *cil*, celtic, *a recess* or *retreat*, designating the secluded places of Druidical worship, and applied to the cells or chapels of Christian missionaries ; and from *how*, a Saxon word, *a hill*,—the church on the hill. The name, Kylhowe, thus appears in a survey in 1560 ; but the earlier forms are different—in 1386 we have Kelay, and in 1425 Kylay. Kyløe was part of the parish of Holy Island, which, in 1082, was given to the monks of Durham, and it was one of the five chapelries formed out of that parish. A chapel was built sometime between 1082 and 1145, when Kyløe Chapel was confirmed by charter to the mother church of Holy Island, which was held by monks sent from Durham. The tithes belonged to the mother church—the

chapelry had no property of its own—and the services were performed by stipendiary priests appointed, controlled, and paid by the convent of Holy Island. The stipend of the priest of Kyloe was, in 1385, £2 13s 4d yearly. After the dissolution of monasteries, their possessions were seized by the king; but when the possessions of the monastery of Holy Island were leased in 1579 to Sir William Reed, £10 annually were reserved as a stipend for the curate of Kyloe. Since that time the stipend has been augmented at various periods and from different sources, and very recently by the grant of a certain portion of the tithes, till it now amounts to about £300 a-year.

The old Norman church continued to be used for religious services till 1792, when it was so ruinous that it was entirely taken down; we learn, however, that it had a nave fifty-five feet long and fifteen feet broad, a north aisle, and a chancel twenty-nine feet long. With its one aisle it resembled the church at Edlingham, and some other churches belonging to the same Norman period. A new church, erected on its site in 1792, was a plain structure almost devoid of ecclesiastical features, and with a low tower, which, standing on high ground, was a landmark for seamen. Within the last few years it has been considerably altered and improved under the able direction of Mr. F. R. Wilson; the oblong house windows having been replaced by others of the pointed style, with geometrical tracery; a new chancel has been built, and the interior has been very neatly renovated. The low tower remains unchanged, but requires alteration to harmonise with the modern improvements.

The superior lord of Kyloe was the Bishop of Durham; and in 1272 the Vill, along with Berrington and Low Lynn, was held of the Bishop on “thaynage and payment of nine marks yearly by Eustace de Kilei;” subsequently Emeric de Hauldon and Sir John de Kynmouth held it, in right of their wives, Isabella and Mary, probably heiresses of the Kilei family; but becoming rebels, and assisting Robert Bruce in his depredations on the English border, their property was forfeited and granted, in 1327, to Sir Robert

Manners, who died in 1350, seized of this estate. Soon after we find Sir Thomas Grey in possession of two-thirds of the manor of Kyloe, which continued in possession of his descendants for two centuries. He was of Heaton, and the ancestor of the Chillingham and Howick Greys, and died in 1369. Another branch of the family of Grey, John Grey, a burgess of Berwick, held lands in Kylay in 1386, and his descendants have been owners of more or less of Kyloe down to the present time. According to a survey, one-third of Killhowe belonged in 1560, to Thomas Grey; but the whole of it was in possession of Ralph Grey in 1630, when he sold it to his uncle, Henry Grey, of Morpeth, who subsequently resided at Kyloe; but who, having no sons, left it to be divided amongst his six daughters. One of them, Catherine, married Bryan Grey, of Wark, who was connected with the Greys of Howick, and he became, by right of his wife, owner of one-fifth of Kyloe, and subsequently, by purchase, acquired other two-fifths. The last male descendant, Marmaduke Grey, died on February 3, 1823, unmarried, and his nephew, Charles Bacon, who took the name of Grey, son of Dorothy Grey and Charles Forster Bacon, succeeded to the three-fifths of Kyloe under his uncle's will. At that time the other two-fifths of Kyloe belonged to Sir Carnaby Haggerstone, Bart.

Kyloe pele tower, the ancient residence of the Greys, is at West Kyloe, about a mile and a half from the church, and is a roofless ruin, but with the under story in good preservation. It belonged to David Grey, who died in 1450, and in the survey of 1560, it is said to be "in good reparacions." It was a small fortified tower, but of great strength, the walls being eight feet in thickness, and well built with large stones. The entrance is on the south, through a pointed archway into a vaulted chamber, only twenty-three feet long by seventeen broad, in the walls of which, at the spring of the arch, are inserted stone corbels, whereon joists might rest to divide the place into an upper and lower chamber. It is lighted by two narrow long slits, splaying inwardly to

the width of five feet. A stone staircase, in the thickness of the wall, led to an upper story, which is now in a ruinous condition. Stone corbels, with rudely carved heads on the ends, project from near the top of the wall on the west side; similar corbels may also have been on the other walls, of which the upper part is now broken, and they would be used to support wood erections, from which to annoy an enemy attacking the place. The district around was studded over with such fortified towers. I remember one nearly perfect at the Lee, near Rothbury. It had, on the ground floor, a vaulted chamber, of which the walls were six to eight feet in thickness, into which the cattle might be driven, when there was a fear of an invasion from the Border raiders. From this chamber a spiral stone staircase, within the thickness of the wall, led to an upper chamber, where the family lived. Above the doorway, from the roof, projected a stone shield, about six feet high and three feet broad, sufficient to cover a person standing behind it, and at his feet, between the shield and the wall was an aperture, through which he might hurl down stones and other missiles on the heads of the assailants, and immediately above the door was another aperture communicating with the upper chamber, through which the inhabitants might pour down molten lead or other destructive liquid material. After the union of the crowns of England and Scotland, these pele towers were abandoned for more convenient dwellings. The Kylloe pele was inhabited till 1633, after which the Greys dwelt in a mansion house near to the church.

Kylloe crags are pillared basalt, reaching a height of five hundred feet above the sea level, and they form the northern termination of the Great Basaltic Whin Sill, which ranges through the county; but perhaps the basaltic crags at Hume castle, in Berwickshire, twenty miles to the westward, may belong to the same eruption, as the rock is similar in mineral and structural character. The basalt overlies a thick sandstone, which boldly crops out of the west end of the crags, and is called the Collier Heugh Crag. Coal seams are in the

narrow deep valley, which intervenes between these crags and the high sandstone hill to the south called the Shepherd's Crook Hill, which rises to a height of six hundred feet.

A basaltic dyke with some peculiarities has been quarried for road stones, about a quarter of a mile northward of the church. It has a direction of west by south to east by north, and is in a line with that of Holy Island, which extends two miles seaward as far as the Plough and Goldstone rocks. In a westerly direction this dyke cuts through the Lowick coal field, and is traceable as far as Leitham, the whole ascertained course being about fourteen miles. At Holy Island large blocks of the Mountain Limestone are enveloped in the basalt, and highly metamorphosed; and at Kyloe, where the dyke is sixty-nine feet wide, but narrowing towards the top, it is overlaid in one part by sandstone, and in another by shale; but as the shale beds are shattered and irregular in their position, it may be inferred that the protrusion of the dyke was subsequent to the deposition of the shale. All the beds cut through by the dyke belong to the Mountain Limestone formation. Coal beds and shales near to it are seen sloping to the eastward, and a shale contains remains of land plants intermingled with those of marine animals. Along with a fine specimen of the fern *Sphenopteris Johnstoniana* species of *Spirifer*, *Aviculopecten*, *Orthis*, and *Fenestella* occur; and a similar association of organisms is in the *Posidonia* schist at Budle bay.

As the crags have often been searched for plants, botanical discoveries, except among Crypsogams, could scarcely be expected; the *Convallaria polygonatum* was seen flourishing high up in the cliffs; the *Asplenium septentrionale* was found, but sparingly, in the clefts of the rocks; the *Thalictrum minus* was gathered; and the following mosses were observed:—*Grimmia ovata*, *Ptychomitrium polyphyllum*, *Orthotricum phyllanthum*. Mr. William Richardson picked up, on the moorlands, *Pyrola media*, but not in flower.

At the meeting at Edin's Hall, held on June 30th, 1870, there were present—Rev. G. S. Thomson, president; Mr. G

Tate, secretary; Sir Walter Elliot, Drs. F. Douglas, C. Douglas, W. B. Robertson, W. Campbell, and D. McVail; Messrs. J. Turnbull, John Boyd, William Boyd, D. Milne Home, W. Stevenson, C. Watson, J. Paxton, J. C. Langlands, Campbell Swinton, James Tait, H. Hunter, John Brown, A. Jerdon, Middleton Dand, J. Waite, R. Romanis, C. Black; Revs. J. S. Green, John Bigge, J. E. Elliot, D. McAllister, J. Irwin, P. G. McDouall, F. R. Simpson, John Walker; Captain Macpherson, Captain Simpson, Rev. A. Crowther, Messrs. J. P. Turnbull, Edmund Carr, James Wood Elliot, and Principal Dawson of Montreal University.

The members proceeded by conveyances from Dunse to Edin's Hall, where Mr. J. Turnbull, of Abbey St. Bathan's, read an able and interesting report on the result of the exploration of Edin's Hall, and exhibited the relics which had been found. He also read a notice of the excavation of a chapel at Abbey St. Bathan's. After examining the various portions of Edin's Hall, exposed by the recent excavations, it was considered, that while sufficient had been done in the exploration of the great Hall, there were several hut circles within the camp, and other antiquities in the immediate neighbourhood, which ought to be also explored. The following resolution, proposed by Mr. Tate, and seconded by the President, was unanimously passed:—

“That the members express their approval of the work which the Committee, conducting the exploration of Edin's Hall, had done, and their thanks to Mr. John Turnbull, convener of the Committee, for his lucid exposition of the results of the exploration, but they also urge the Committee to complete the investigation, by clearing out the circles within the rampiers of the camp, and by examining any other of the antiquities on Cockburn's Law, which would be likely to throw light on the history of Edin's Hall.”

The members afterwards rambled over Cockburn's Law, and viewed various camps and barrows, and then returned to Dunse to dinner, at which forty-four were present.

After dinner, Sir Walter Elliot read Ornithological Notes,

communicated by Mr. Wm. Oliver, of Long Raw. In addition to the customary toasts, the health of Principal Dawson, a distinguished American geologist, who had favoured the Club with his presence, was proposed by the President.

The following nominations for membership were made:—Mr. J. P. Turnbull, by Mr. Tate, seconded by Mr. Langlands; Captain Simpson, by Rev. F. R. Simpson, seconded by the President; Mr. James Wood, by Mr. Wm. Stevenson, seconded by Dr. C. Douglas; Rev. Augustus Crowther, by the Rev. J. Irwin, seconded by the President.

Six years ago the Club published an elaborate account of the ancient British Sculptured Rocks of the Eastern Borders, with notices of other kindred sculptures in other parts; and since that time active research has been made after other new forms, and there has been much speculation as to their age and meaning. That the members might have an opportunity of examining these sculptures, the third meeting of the year was held at Doddington, on Wednesday, 27th July, at which there were present—Rev. G. S. Thomson, president; Mr. G. Tate, secretary; Sir Walter Elliot, Messrs. John Turnbull, J. C. Langlands, F. J. W. Collingwood, Thos. Friar, Wm. Henderson, R. G. Bolam, W. Wightman, M. T. Culley, J. Paxton, R. Middlemas, J. Heatley, E. Allen, J. P. Turnbull, C. Atkinson, W. Lyall, A. Marshall; Revs. W. Procter, W. Procter, jun., W. Darnell, P. G. McDouall, J. S. Green, W. L. J. Cooley, W. J. Meggison, E. Ormsby, J. Marshall; Drs. John Marshall, J. Robson Scott, and D. C. McVail. The members were hospitably entertained with breakfast by the Rev. W. Procter, who, before leaving, delivered an impressive address, and argued, from the presence of so many of the clergy at the meetings of the Club, that they had no fear of the results of scientific research invalidating the truths of revelation, and he pointed out how the discoveries of geology can be reconciled with the Mosaic account of the creation.

After this the members visited the church, most of which is of modern work; but there remains a north aisle, with

piers, arches, and windows belonging to the early English style of architecture, and dating backward to the thirteenth century. The members next visited the pele tower, which is a good example of one of the latest fortified houses. A stone panel in the wall tells us that it was erected by Sir Thomas Grey, in 1584. The township of Doddington now belongs to the Earl of Tankerville, who is a descendant of Ford, Lord Grey of Wark. There was, however, formerly, a large number of small proprietors, who owned houses, lands, and who had rights over a large common in Doddington on copyhold tenure, one of the conditions of which was the payment, yearly, of a hen or capon. For election purposes these copyholds were converted into freeholds a little before the contested election of 1734; and in 1748, when Lord Ossulston was the Whig candidate, thirty-four lairds of Doddington voted for him. It is a reminiscence of the ancient glory of this place, that forty of these lairds, each mounted on his own horse, attended the funeral of a deceased laird. All now have disappeared, save one, who is non-resident. Mark tells us that in 1734, Doddington "was remarkable for its largeness, the badness of its houses, and low situation, and perhaps for the greatest quantity of geese of any in the neighbourhood." The cottage houses are still bad; but "decay's effacing fingers are sweeping" over the place, houses are tumbling down and destroyed, and the population is decreasing. It is still remarkable, as in Mark's time, for "one of the largest, and best springs in the country, which sends out a current sufficient to turn a mill." The Dod Well yields seventy gallons per minute of pure water. A popular song celebrates this well, but only one line is preserved—

"The Bonny Dod Well, with its yea pointed fern."

Leaving the well, the party proceeded to the great inscribed rock at Roughting Linn, situated at the edge of wild, dreary moorlands, about midway between Doddington and Ford, by the side of a burn, which tumbles over a sandstone cliff some thirty feet in height into the linn or pool at its bottom.

This rock is within an ancient British camp, and not far from a barrow, which covers the remains of some ancient Briton, to whom the mysterious inscriptions had a definite meaning. On this rock sixty figures are now traceable, scattered over a rough, untrimmed surface sixty feet from east to west, and in one part forty feet in breadth. After the various forms were examined, Mr. Tate, standing on the top of the rock, with the members seated on its slopes, read a description of the stone, and of the camp;—Sir Walter Elliot followed, and expressed his view of the camps of the district, which he regarded as the towns or villages of the ancient inhabitants. Some of the members wandered down the deep, narrow dene, extending for a short distance from the linn—but though the *Osmunda regalis* formerly grew there, not a single frond of this noble fern could be seen, so ruthless have been the fern collectors.

After viewing the inscribed rocks on Hunter's Moor, the party returned to the Doddington and Horton Moors, and, under the guidance of the Rev. W. Procter, jun., visited the several sculptured rocks in their route. They passed by a stone circle, of which five stones are remaining, two of them standing upright in their original position, and the others lying prostrate; marking the burying place of some ancient chieftain. Five camps, or rather fortified towns, are within the district, the principal of which are the Ringses, of circular form, on high ground, commanding an extensive view, and defended by three great rampiers; and two others on Dod Law of a similar character, within all of which can be traced hut circles, the remains of the dwellings of the people, who have left their symbolic sculptures on the rocks around. The party paused here to enjoy a magnificent view over the Milfield plain, bounded by the Cheviot and Hedgehope, Humbleton, Yeavinger, Flodden, and other sites of historic interest. After a visit to Gled Law, where the largest and one of the most remarkable sculptures is to be seen, consisting of two great groups of concentric circles connected with each other, one of them having three radial lines and eight concentric

circles, with part of a ninth, and measuring forty-five inches in diameter, the party returned by Cuddy's Cove to Doddington.

The dinner, which was served in the school room, and supplied by the Red Lion Inn, Wooler, was abundant and excellent. After the dinner was concluded, three new members, the Revs. James Noble, Wm. Procter, jun., and E. B. Trotter, were nominated; the Rev. W. Procter, jun., read a paper on the "History of Doddington," which will appear in the proceedings of the Club; and Mr. G. Tate laid before the meeting several sketches of sculptured rocks, and gave an outline of a supplemental paper, which would contain an account of sculptures discovered since 1862, and a notice of the several attempts made to explain their age and meaning. After glancing at the opinion of Professor Nilsson, that Stonehenge and the Northumbrian inscriptions were the work of Phœnicians and sun-worshippers, he noticed the speculation of the Rev. R. H. Vickers, who also connects these inscriptions with sun-worship, and considers them to have been derived from forms on debased ancient British coins, which originally represented the head of Apollo, the Sun God, copied from ancient Greek coins. He concluded by reading a most interesting letter from the late Mr. H. Ormsby, of the Indian Geological Survey, who, when in England, in 1868, was struck with the resemblance of some of the Northumbrian sculptures to markings on rocks in Lower Bengal. The district of Manbhoom, Chota, and Nagpore, are inhabited by original tribes, called Coles, Hoes, Sonthals, &c., who differ essentially in colour, language, habits, and religion from the other nations surrounding them. Their religion is a sort of Fetichism, a worship of what they most fear or most love. They venerate the sun, and the moon, running water, the hills, and the trees, but they fear the elephant and the tiger, and therefore worship them. The hills are formed of porphyritic gneiss, which rise abruptly from the plain to the height of 100 to 200 feet; each hill is supposed to be the residence of a deity, and they cut upon the rock a figure, with

two concentric circles, forming a slightly raised and depressed border around a flat-area, with the border produced from one side of the circles in straight lines, and terminating in a smaller circle, with a round hollow or cup, like those on the Northumbrian stones. To propitiate the deity of the hill, those aborigines place within the larger circle an offering of sweetmeat, and in the cup a lighted stick to drive away jackals from eating the offertory. Mr. Ormsby proposed to make further inquiry into this usage, and to favour the Club with the result, but he died soon after his return to India.

Sir Walter Elliot thought the communication of interest, and said he would endeavour to induce some of his friends in India to prosecute the inquiry. The Rev. J. S. Green afterwards spoke in favour of an explanation proposed some time ago by the Rev. Francis Thompson, of Durham, that the circular markings were sun-dials, whereby the shepherds could tell the hour of the day.

The President, in proposing the customary toast, "Success to the Club," begged to be allowed to transgress the rules of the Society by joining with it the health of the secretary, Mr. George Tate: He said "I am assured that I only represent the unanimous feelings and sentiments of every member of the Club, when I express their cordial thanks and deep gratitude for the zealous and indefatigable exertions of their much-esteemed secretary. He was the very *decus et tutamen* of the Club. By his extensive and intimate knowledge of, and research into, the various branches of science and natural history, he shed a lustre on its transactions, now so well known, and so widely diffused, while he was ever ready and willing, with the kindest courtesy and greatest ability, to illustrate and explain the various objects and places of interest, which they met with in their delightful rambles and field meetings, and thereby afforded so much instruction and pleasure in their social gatherings. In all the arrangements for the working of the Club, in all its minor details and financial affairs, which involve a great amount of trouble, he has

shewn the most careful anxiety for its welfare ; his whole heart and mind have been in the work, and the result has been a complete triumphant success. He was the friend and companion of my early years, "when the heart promised what the fancy drew," and it is a great pleasure to me to have the opportunity of unloading my mind of a burden which has long hung heavily upon it, of tendering from this chair our unanimous and most cordial feelings of grateful appreciation of the meritorious services of our honorary secretary. Long may he live, for it will be a very difficult thing to find his like again." The Secretary responded in most feeling terms, and felt assured that when his mantle fell from his shoulders there would be many able and worthy to put it on.

The fourth meeting of the Club was held at Whiteburn, on August 25th, 1870, when there were present—the Rev. Geo. Selby Thomson, president ; Mr. G. Tate, secretary ; Dr. F. Douglas, Dr. W. B. Robertson ; Rev. M. H. Graham ; Messrs. R. Romanis, J. Scott Dudgeon, Sholto Douglas, James Wood, John Douglas, and M. Milne.

After breakfast a note from Lady John Scott was read, dated Cawston, Rugby, Warwickshire, August 10.

"Lady John Scott presents her compliments to Mr. Tate. She has written to her bailiff at Spottiswood to shew the visitors all that can be seen, but she regrets, that most of the antiquarian relics found in the neighbourhood are locked up ; had she been at home, she should have been very glad to have shewn them. Coming from Whiteburn, they will pass near 'Clach Hairie,' a cairn examined some years ago by Mr. Spottiswood and Lady John, with very interesting and curious results. A great number of the short stone cists—a beautiful urn, containing burnt bones, human, animal, and of birds—sling stones, flints, and near it remains of hut habitations. 'Hartlaw House,' on a farm at Spottiswood, was opened with similar, and even more, curious results, but the accounts of each were read by Sir J. Simpson and Dr. Stuart, at a meeting of the Antiquarian Society.

The Twinlaw cairns, on the top of a hill, also on Spottiswood, were opened by Mr. Spottiswood, and in each a stone cist was found. A cairn was also opened in a field at Spottiswood (Brotherfield), in which was a cist, an urn, and some curious bronze weapons. Lady John regrets not being in Scotland, but has written to desire that every attention should be paid to the visitors in all ways. The curious plants are few now. There used to be plenty of *Trientalis*, *Pyrola*, *Moonwort*, *Sundew*, and of *Gentian*, but they have all become scarce in Lady John's recollection."

Under the guidance of Mr. Milne, Lady John Scott's bailiff, the members proceeded first to a bog, occupying the site of an ancient lake, near the Three Eyes of the Whiteburn. A considerable portion of the peat was sometime ago removed, and at the depth of three feet from the surface, a number of small stems of trees were found in the peat, lying parallel and horizontal, and were supposed to be the floor of a lake dwelling, but the evidence for this did not seem sufficient; for relics were not seen, nor were there any piles or substructure to support a hut. The party then rambled through the woods and gardens of Spottiswood, which are laid out with much taste, and present many scenes of great beauty; and that is the more remarkable from their elevation, being eight hundred feet above the sea level. The members were conducted through Spottiswood House, which is a fine specimen of modern Scottish architecture, and were shewn several objects in art, natural history, and antiquity of considerable interest. Before leaving the house the party were hospitably entertained.

Harefaulds camp was next visited, situated on a high hill, where the highly inclined Greywacke strata protrude through the thin covering of sand. Those members who recently saw the excavations at Edin's Hall viewed, with great interest, this large camp or Ancient British oppidum or town; for within the thick wall enclosing the inner area, there are cells similar to those in the wall of Edin's Hall. The structure, however, both of the wall and the cells is much ruder. There

are some other important differences. Edin's Hall stands within a camp, and is only about ninety feet in internal diameter, while the diameter of the area enclosed by the wall at Harefaulds is above five hundred feet, and some of the cells open into hut circles which come close to the wall. The cells at Harefaulds are undoubtedly coeval with the camp; but it has been suggested that Edin's Hall may be of later date than the camp within which it stands. Perhaps, however, the occurrence of cells within the great wall of Harefaulds helps to fix the age of Edin's Hall as coeval with the camp of which it forms a part. Search was made for inscriptions on the stones, and round hollows were observed on rocks *in situ* near the entrance, but those appeared to be the work of nature and not of art.

After dinner, Dr. F. Douglas read a note from Mr. A. Jerdon, in which he says: "I have gathered, this summer, *Fumaria micrantha* in some abundance, in a corn field near Jedburgh; also *Carex limosa* in Gattonside Moss. The specimens of this were all small and somewhat starved, having generally only one fertile catkin."

Dr. Douglas also showed a printed war bulletin from Stafford, being the substance of an express that came to the hon. committee of the Corn Exchange. The following is a copy:—

"GREAT NEWS
FROM THE DUKE OF CUMBERLAND'S ARMY
IN THE NORTH.

STAFFORD, DEC. 4, 1745, Between 11 and 12.

The Rebels instead of Marching to give our Forces Battle, are Part of them to the number of about three thousand gone to Leeke. The remaining Part of the King's Forces, that are in this neighbourhood and Baggage with the Forces, returned to Stafford last night, and are all hereabouts watching the motions of the Rebels. I am apprehensive now it will be some time before any of our Forces can come at them to give them Battle. By all intelligence I can get, have no certain account where General Wade is."

Afterwards Dr. Robertson submitted for examination a silver coin, in good condition, of David II., of the Edinburgh mintage, coined in the neighbourhood of Lauder. Besides

the customary toasts, the President proposed the health of Lady John Scott, which was drunk with all the honours ; and thanks were voted for her liberality in allowing the members to see the grounds and house of Spottiswood, and for their hospitable reception at the mansion.

Sir Walter Elliot, K.C.S.I., and D. Milne Home, L.L.D., were appointed as Delegates to represent the Club at the ensuing meeting of the British Association for the Advancement of Science ; and thus ended a day, which, though at first threatening, proved most pleasant, enjoyable, and full of interest to the members present.

I would, with all deference, draw your attention to some works by members of the Club, locally connected with the district, which contain most valuable and instructive information, and are the results of great labour and research. I would refer especially to the very able chapters on Natural History and Geology in the History of Alnwick by our worthy secretary, Mr. Tate, which must have cost him many years of toil, and accurate enquiry ; and to Mr. Milne Home's learned and interesting papers on the Boulder Clay of Europe, in the Transactions of the Royal Society of Edinburgh.

We have to deplore the loss of four members, who have been removed from amongst us by the stroke of death during the past year :—Sir James Y. Simpson, Bart., M.D., became a member of the Club in 1862, and died May 6, 1870. He enjoyed a world-wide reputation, and contributed vastly to alleviate the sufferings and sorrows of humanity by the discovery of chloroform. James Falla, M.D., of Jedburgh, entered September 25, 1862, and died in December, 1869. Patrick Johnston, entered July 26, 1866, and died February 26, 1870. The Rev. J. Dixon Clark, of Belford Hall, entered December 15, 1840, was president in 1845, always took a lively interest in the proceedings of the Club, and as long as he was in good health, attended most of the meetings ; he died in September, 1870.

I have trespassed so long on your attention, that I will only say a few words in conclusion. In all our delightful

rambles over hill and dale, over mountain and moor, in all our charming intercourse with each other in social brotherly kindness, one thought has ever come over me, how much, how infinitely much, Nature's God, our loving Father, has given us to enjoy in this bright world of ours; how much reason we have to say in the deep emotion and solemn fervour of our hearts, "God is love." He has brought us into a world full of beauty and loveliness, and He has given us senses duly fitted to relish and enjoy it. He has given us the eye, with its exquisitely delicate mechanism, to revel with pleasure in beholding the fairy forms, the glorious colouring, the fine proportions of animate and inanimate creation—in viewing landscapes and scenes, which make the heart dance with joy—the quiet beauty which sleeps in the sequestered glen, or the bold grandeur which towers in the majestic mountain; and when we turn the eye to the starry heavens, what brightness and glory meet its gaze, to charm, to astonish, and to sink into the inmost soul with the deepest and most earnest adoration of the power, the wisdom, the goodness of the Maker. He has given us the ear, to drink in the rich melody of sweet sounds, the simple, cheering, gladdening music of the woods and groves, the gentle purling of the limpid stream; and to enjoy enlightening converse and friendly communion, one with another. He has given us the hand, to follow the motions of the will and to obey the commands of thought, to execute marvellous works of art and science, which give such pleasure to the mind which planned them. He has given us the bright lamp of reason, to examine into the nature and causes of things, to make inventions and discoveries, to discriminate between right and wrong, and unfold to us the subtle and intricate workings of the mind itself.

These are Thy glorious works, Parent of good,
 Almighty! Thine this universal frame,
 Thus wondrous fair; Thyself how wondrous then!
 Unspeakable, who sitt'st above these heavens,
 To us invisible, or dimly seen
 In these Thy lowest works; yet these declare
 Thy goodness beyond thought, and power divine.

Find of Groats at Embleton, in Northumberland, ranging from Edward III. to Edward IV. By W. H. DYER
LONGSTAFFE.

IN the York museum a drawer contains the coins found in the tomb of Archbishop Scrope, a local traitor, martyr, and saint, "or some or one of them," as lawyers say. He was beheaded in 1405, and those coins, in cotemporaneous or subsequent circulation, range back to the reign of Edward I. That same Edward died about a century previously, to wit, in 1307. His coins are much worn, as might be expected, but indeed none of the pieces in that singular find are in good condition.

Another little bit of evidence as to the duration and state of circulation has just occurred.

Embleton churchyard, on its eastern side, has some three feet of soil on a bed of rock. At two feet from the surface, in that part of the cemetery, on a bed of sand, surrounded by three stones and hard soil, three rows of groats, and groats only, set edge-up, have been discovered. There were two rows at the bottom, and there was one row above them. The coins number 94. There is not what a London collector, or dealer, would call a good coin, among them. But to numismatists, this little find, as a find, is not devoid of interest.

The coins commence with the common types of Edward III.'s groats, and end with No. 6 of Hawkins's types of Edward IV.'s light groats. Edward III. commenced to coin groats in 1351. Edward IV. reduced the weight of the coinage in 1464. So that, as we saw by the Scrope tomb, the hammered coins of the fourteenth and fifteenth centuries continued in use for upwards of a century.

Let me say something in this place about each end of the series. Edward III.'s groats are clipped and rubbed enough, and, on the whole, the impressions of Henry VI.'s are sharpest. Yet, with all the clipping, which could hardly be dishonest when it was only intended to bring ancient coins to the weight of the reduced ones of later days;—with all the clipping, some of the groats of Edward III. outweigh many of those of the Henries, and are within a couple of grains of the heaviest one of Edward IV.; while the last coin of the deposit, Hawkins's No. 6, as aforesaid, is in such a plight that I can positively balance some of my half-groats of Edward III. with it. It is, I think, the lightest of the whole lot.

For reasons, which will be obvious on a perusal of my description of this coin in the list appended, it must be one of the very earliest of Edward IV.'s light coins. The probable date and circumstances of the deposit having their interest, and local events suggesting a time during the heavy coinage of Edward IV., I considered the possibility of locating the type during that time, for I knew not the state of the coins quoted by Hawkins. But, taking a groat of Henry VI.'s rosette coinage which had weighed sixty grains when struck, clipped, as this of Edward IV.'s., which had weighed forty-eight grains, closely to the second circle, so closely that the outer legends of neither coin can be read, I find a difference of six grains between them. This is what we ought to have, or thereabouts. Perfect groats of the two coinages differ by twelve grains, and the wretched specimens I compared, no better than good half-groats of the great Edward, may very well differ by half that weight, or so. Taking also one of Edward IV.'s heavy groats in almost as bad a state, I find a difference of ten grains.

From this, I conclude that the groat, in question, was indisputably coined after the indenture of 13th August, 4 Edward IV., 1464, establishing the change of weight, which was followed up by a proclamation of 29th September, in the same year. And I conclude further that we are not likely to obtain any probable clue to the causes of the burial of the coins. I will not speak of the reasonableness of supposing that some little time ought to have elapsed, even in Northumberland, so near the land of light coin, for bringing light King Edward's money, of forty-eight grains, down to thirty-seven (that is the weight). One might assume that some villain had pruned the edges of our depositor's last acquisition a few days after its issue. But the coin is otherwise in a bad state. Had it not been for these circumstances, I should, at once, have adopted the happy suggestion of the Vicar of Embleton, that the coins were buried for safety during the events at Dunstanburgh Castle (in the parish of Embleton), which arose out of the Wars of the Roses. The details of these need not be stated here. The matter was ended by the execution of Sir Ralph Grey, in July, 1464, and Dunstanburgh Castle had been delivered to Edward, the month before, in sufficient time to allow the king-maker to keep St. John's day there. Now, the new coinage, which must have preceded the burial of the groats in consideration, could not be

in existence before 13th August, in the same year.

Abandoning, therefore, all hope of retrieving the dead story of that burial, I shall only add a few remarks on their independent interest.

Their centurial range, as to duration of circulation, has already been mentioned, but their respective dates are noteworthy. It is plain that some coinages were more dispersed over the country, and, I suppose, were much more extensive, even at London, than others. The uncommon coins of Richard II. and the really scarce ones of Henry IV. are not represented at all. I thought, at first sight, that we had a single specimen of Richard, but it turned out to be one of his predecessor's later coins. Still it has its interest. How is it that Edward's previous coinages (save his earliest and rarest, which does not occur,) are so overwhelming in numbers? Henry V. is decently represented. The great annulet coinage comes out in force, as usual; so does the mint of Calais, for the succeeding period. Then we come to the unsatisfactory coins of Henry VI.'s unhappy times, poor in execution, and as numerous and perplexing in types (two coins seldom being alike) as Charles I.'s. Lastly, we have three of Edward IV., only one of which is in tolerable preservation.

I will now proceed to enumerate the coins with a minuteness which the difficulty which has been felt as to the marshalling of the coins of the Henries may, perhaps, justify. The details must, of course, be regarded as merely supplemental to the ordinary books on the subject; and the view of Pownall, Neck, and myself, (heretics all, as to English numismatics,) on the grand question, will be found in recent numbers of the *Numismatic Chronicle*.

EDWARD III.

French and Irish titles.

The following groats are in a worn, clipped, and miserable state. None of them are of the early coinage with the Roman M in the outer margin.

- | | Number
of
Coins
found. |
|--|---------------------------------|
| 1.—Cusps above crown fleured. The old c without the line uniting the points retained. The A in LONDON CIVITAS crossed. | 3 |
| 2.—Same, but with blundered reading CICI-TAS. It has been | |

supposed that the quarters of pennies may have been punched with three letters at once, and thus we have such blunders as CAN-TAS, for CAN-TOR, but this groat shows that such cannot have been the case with groats. 1

3.—Same, but no blunder. The Irish title has HYBE, and the final members of the fleured cusps form knobs of the crown. The same is perhaps the case with No. 2. 1

4.—No fleurs above crown. LONDON CIVITAS. Three varieties.
 a. With the old A and C retained as in the above coins 3
 b. With the new A and C 9
 c. Same, but with a fleur de lis on the king's breast 2-14

5.—Same as 4 b, but EBORACI CIVITAS. 1

6.—CIVITAS LONDON. Something like a dot among the pellets under CIVI, and apparently an annulet among them under LON. 1

Irish and Aquitanian titles.

7.—Double annulets between words on obverse. Fleured cusps above crown. LONDON CIVITAS. 1

22

No coins of Richard II. and Henry IV.

HENRY V.

8.—No fleurs on cusps above crown. No star on breast. Head resembling that on early half-groats. Nothing after POSVI, but a small *quatrefoil* in the next quarter before DEVM. 1

9.—POSVI—*quatrefoil*. Star on left breast. All read ANGLIE. 4

10.—Same, but FRANCE instead of FRANC. 1

6

HENRY V.—VI.

Annulet coinage. Calais mint.

11.—Henry V.'s head. Cusp on breast fleured. ANGLIE. Annulets, as if broken, on the dexter side, but the coin is partly double-struck, and in a poor state. 1

12.—Same. Annulets perfect. 7

13.—Same. ANGLIE. The condition does not allow me to say whether there is a fleur on the cusp under the breast. 1

14.—Same. ANGLIE. But no fleur on that cusp, and breasts more like Henry VI.'s. 1

15.—Same. ANGL. 12

16.—Same, but with heavy head of Henry VI. 6

28

HENRY VI.

Rosette coinage. Calais mint.

- 17.—No rosettes or mascles on obverse. Reverse, POSVI *rosette*,
 VIL *open mascle*, and CALISIE *rosette*. 1
- 18.—HENRIC' *rosette*, GRA *open mascle*. 1
- 19.—HENRIC' *rosette*, DI' *rosette*, GRA *rosette*, REX *close mascle*. 1
- 20.—*Cross patonce* introduced as mint-mark. The *mascle*
 after REX is open. 9

Transition.

- 21.—Reverse same. Obverse with *cross patonce* as mm.
 HENRIC' *stalked cone*, DI *stalked cone*, GRA *stalked cone*.
 REX *close mascle*, &c. 1

Stalked-cone coinage.

- 22.—Same obverse, but the *mascle* is open. Reverse POSVI
stalked cone, CIVITAS *open mascle*, LONDON *stalked cone*. 1
- 23.—Same type, VIL *open mascle* CALISIE *stalked cone*. 6

Late coinages at London.

a. Without dots at the sides of the crown, and without fleur on the cusp under the breast.

- 24.—Obverse. *Cross patonce* HENRIC' *trefoil* DI' *trefoil* GRA *trefoil*.
 Trefoil on each side of neck. Stalked cone on breast.
 Reverse. *Cross* POSVI.—*Stalked cone* LONDON *trefoil*. 1
- 25.—Obverse. *Cross patonce* HENRIC'. DI'. GRA'. REX : ANGL'. Z.
 FRAN. Trefoil on each side of neck, and stalked cone
 on breast.
 Reverse. Same, but nothing before or after POSVI and
 LONDON. A dot outside the pellets under CIVI and LON. 1
- 26.—Obverse. *Cross* HENRIC. DI. GRA. REX *open mascle* ANGL.
 Z. FRANC. Something like an ermine spot under the
 breast.
 Reverse. *Cross patonce* POSVI.—LON : DON—No dots
 among pellets 1

b. With dots at sides of crown, and fleur on the cusps under the breast. Nothing in the CIVITAS LONDON circle except where indicated.

- 27.—Obverse. *Cross patonce* HENRIC *open mascle* DI GRA *open*
mascle, REX, &c. Small saltire on neck.
 Reverse. Nothing before or after POSVI. No dots near
 pellets. 1
- 28.—Obverse. *Cross patonce* HENRIC *close mascle* DI GRA *open*
mascle EX [*sic*] ANGLI. Z FRANC.—Small saltire on neck.
 Reverse. POSVI *mullet*.—Dot outside of pellets under
 CIVI and LON. 1

29.—Obverse.	<i>Cross patonce</i> HENRIC. DI GRA : REX ANGLI. Z. FRANC.—Leaf on neck.	
	Reverse. POSVI <i>pierced mullet</i> .—Dot outside of pellets under TAS and DON.	1
30.—Obverse.	Same.	
	Reverse. LON : DON.	
	This coin has the outer circle almost completely cut off, but there is room for a mark after POSVI. The stops in LON : DON are little crosses, like those in some groats of Henry VII., not small quatrefoils or saltires. The object on the breast is stalked, and may be a cone.	1
31.—Obverse.	Same.	
	Reverse. Dot under DON only. No other marks. No stops in CIVITAS LONDON.	1
32.—Obverse.	Legend same. Leaf on breast instead of on the neck. A small saltire at each side of the neck.	
	Reverse. Same as last.	1
33.—Obverse.	Legend same. Fleur-de-lis on neck. Nothing at each side of neck.	
	Reverse. DON :—Dots outside of pellets, under TAS and DON.	1
34.—Obverse.	No mint mark. Nothing on neck.	
	Reverse. No marks whatever. Much clipped.	1
		<hr/> 31 <hr/>

EDWARD IV.

Heavy Coinage.

35.—Obverse.	As 33, with change of name.	
	Reverse. Small <i>saltire</i> before POSVI. No dots near pellets.	1
36.—MM.	Rose on both sides. No dots. No marks in CIVITAS LONDON. The termination of the cusp under the breast is one of the small trefoils which are frequent on all the cusps of the light groats. Quatrefoil on each side of neck.	1

Light Coinage.

37.—A poor specimen of Hawkins's No. 6.	The mm. given by him is a rose. The cusp on the breast seems to have a fleur of the old character, and the crown resembles that of the heavy groats. Annulet at each side of neck. <i>Open lozenge enclosing a dot</i> after CIVITAS. This coin is so much cut down that it barely outweighs my specimens of the half-groats of Edward III.	1
		<hr/> 3 <hr/>

DOUBTFUL COINS.

All miserably covered with green incrustation.

38.—Of the old weight	1
39.—New weight in its present state, but with old crown. Quatrefoil on each side of neck.	1
40.—Groat of one of the kings of Scotland, named James	1
41.—Another	1
	4

SUMMARY.

EDWARD III.	22
HENRY V.	6
HENRY V. VI.	28
HENRY VI.	31
EDWARD IV.	3
DOUBTFUL	4
	94

Notes on Natural History, by WILLIAM OLIVER, of Langraw. Read by Sir WALTER ELLIOTT.

Forty years ago a starling was rarely seen in this neighbourhood except in flocks in autumn, when they appeared to be passing to the south. Now, they are not uncommon, and build in hollow trees, unused chimneys, and the roofs of such houses as afford them secure places for their nests.

I have not seen or heard a lark in my fields this season, or, so far as I can recollect, for years. When I was a boy they were in such numbers that, in spring, their song scarcely ceased from daybreak till night. At the time when they were so abundant it was noticed that the crane-fly [*Tipula* ?] or *daddy-long-legs* abounded to such an extent that a person walking through the grass was accompanied by a constant cloud of them; now, one may go out and not see any. Can the lark and the crane-fly have bearing upon one another? The farm at the time was cultivated very much as it is at present, though possibly the sorts of grasses produced may have been altered by artificial manures which are now applied

in *addition*, be it remembered, to the manure then, and still, raised on the farm.

Is it not possible that the ravages of wireworm, and of some other insects, may have been increased by our destruction of moles? We have got nearly rid of moles, and the ravages of wireworm seem to increase. The mole is well known to be a voracious feeder, and when in large numbers must have destroyed a great quantity of worms, insects, &c. The rook, no doubt, will come in for a share of what the mole took; and thrushes and blackbirds have certainly increased largely in numbers, in this district, since it has become so much more covered with wood than it was. At one time I had a cherry tree which afforded fruit sufficient for all our wants, as well as for those of our feathered friends, who, however, eventually became so numerous that they not only did not leave us any cherries, but even pulled them all before they were ripe; and not only that, but by the time the cherry raid was over, the gooseberries were so far ready as to render it needless for the birds to go elsewhere. Other small birds, chiefly the chaffinch I think, have grown more numerous, and this may be keeping up a balance.

It was always considered in my young days that the red grouse never fed on corn, but if that was true I believe that it is so no longer, and that the bird does now feed on oats. There is an old *saying*, the terms of which I have forgotten, in which the grouse either lauds himself or is lauded on account of his feathered legs and hardihood, making him independent of corn and cultivated fields.

Partridges now feed on turnips—Swedes principally—during hard weather in winter. I first noticed that they did so about ten years ago.

About forty years ago a pair of ravens built yearly on an inaccessible part of the rock on the top of Ruberslaw, and the bird was not uncommon on the Border hills.

Humble bees are much fewer than they were, and one sort seems to have disappeared altogether, viz., a black bee with a crimson hind end, and which had its nest in the earth like the common bee. There still remain a very few of a brown bee (the *foggy*) which makes its nest on the surface somewhat like the nest of a mouse, and I am sure that forty years ago twenty such nests might have been found in one small bog here. So numerous and troublesome were they that it was with difficulty the grass could be mown for them.

History of the Wolf in Scotland. A Supplement. By
JAMES HARDY.

IN my "History of the Wolf in Scotland," I gave such local traditions of the existence of that animal as a native, as I could find on record. Some others, which I now bring under notice, supply further details. The first is nearly in the simple language of the old Highlander, from whom I took it down.

A boy travelling through the wild country between Invernessshire and Argyle, at the head of Glencoe, lost himself in the moors, in a misty day. At the last he came to a shed or hut, and ventured into it, and there was a bit loft or nest in it where straw was laid, and a bit ladder to go up. He goes up the ladder and rolls himself up amongst the straw, and keeps his eye on what was below. In time, there came a great big fellow—who, he understood, was a robber—who struck a light to kindle a fire, and was seen to have plenty of venison, of which he made ready his supper. He then stretched himself "on the breid o' his back" and fell asleep. In time, an animal, that the boy took for a big dog, pushed into the hut, and though the fire was still "open" he saw the beast's eyes glancing in the light. It stood a while, and then came stealing up to the big man's feet, and slipped along till it reached his neck; when, in a moment, it laid hold of, and rove at his throat, throwing itself at the same time on to his breast. The man gripped it also, and fought with it, but he could not rise, and it was all over with him, and the great dog "sookit his bluid." It then looked up to the loft, and the boy was terrified lest it should come up and worry him also. But it got out at the door, and set up "two or three great gowls," and he "saw it no more that night." In the morning the mist had scattered, and the boy afraid to be beside a dead man, took to his heels. In escaping he met "the herd," to whom he told what he had seen. He then returned to his home and advised his father of what had happened. "Oh! you silly fool," cries the father, "what a prize is lost, it would make you and me right all the days of our lives." But when they went back to search the robber's pockets, there was not a copper left. Not long after "the herd" took a farm, and became wealthy. But now for the wolf (for such it was); the country was roused, and they tracked him with dogs through the Deil's Stairs (the Devil's

Staircase in Argyle, on the borders of Invernessshire) and over the "Speckled Mountains," and found, and slew him, and there never was a wolf in Scotland more. The narrator also gave me these bits of traveller's lore. Wolves, he said, are the best of companions (they don't hurt one, he meant,) walking alongside, if you let them alone, and are not suspicious of them; but if you lose confidence they will seize you instantly. If a pack of wolves come on you, and you carry a stick, if you trail the stick behind you, they will all turn tail and flee. This is worth knowing—if true.

"There are two races of McDonalds in Braemar," says Miss Taylor, "each with its own distinctive legend. One of them states that a little boy of the name of McDonald was carried away by a wolf from Glen Cluny;—wolves being at that time very plentiful. After carrying him off, the wolf did not destroy him, but treated him, instead, as one of her own cubs. So he grew up a veritable wild man of the woods, and not unfrequently joined the wolves in their predatory expeditions. With such companionship and designs he often visited the house of his mother, and was hounded off by the dogs. By some means it was discovered who he was; and his relations, having traced him out to his lair, succeeded in communicating the circumstances of his birth and abduction. They prevailed on him also to leave his sylvan life, and settle down in a somewhat tamer manner. He never would return to his mother, however, being apparently unable to get over the fact that she had hounded him off with dogs; and he often reproached her, it is said, in some Gaelic rhyme, which is a little too coarse for translation. He married at length, and from him proceeded the race known as the 'Sliochd a' Mhadaidh Alluidh,' *i.e.* 'the Race of the Wolf.'"*

"Between Brabster and Freswick, in Caithness, at a hollow called Wolfs-burn, there is a tradition that the last wolf in the country was killed."† Dr. Robert Brown, who called my attention to this passage, has also informed me, that in connection with a tradition of great woods having once existed in Caithnessshire (as indeed the endless remains in the bogs abundantly prove);—that those in the vicinity of Wick were said to have been cut down by the enraged inhabitants, on account of their harbouring wolves.

* "Tales and Traditions of the Braemar Highlands," p. 71, 110, 111.

† "New Statist. Acc. of Scotland," vol. xv., p. 24.

Notes on Chapel at Abbey St. Bathans, by JOHN TURNBULL,
Abbey St. Bathans. June, 1870.

A FIELD, about quarter-of-a-mile from the church and ancient priory of Abbey St. Bathans, has always been known by the name of "The Chapel Field." Sir John Sinclair's Statistical account says—"About a quarter-of-a-mile from the nunnery, on the same side of the water, lie the foundations of a small chapel and yard holding that name, but there are no marks of people having buried in it." And the later Statistical account adds—"These foundations have now been removed, on account of the obstruction they presented to the operations of agriculture, but the field that contained them is still called the Chapel Field."

No person, now alive, recollects the ruins. From time to time, however, in ploughing the field, stones have been turned up, which apparently had formed part of the building, and thus the site of the chapel was pretty nearly ascertained, but it was only in the course of draining the field this summer that the foundations were discovered, and they have been fully traced, and are now exposed. The building is rectangular, forty-six feet six inches in length externally, and thirty-eight feet internally, twenty-one feet in breadth externally, and fifteen feet six inches internally. The north wall is three feet thick, the east and south walls are about three feet six inches thick, and the west wall is five feet thick. The door has probably been in the middle of the west end, but partly from nothing except the foundations remaining, and partly from a drain having been cut through it before the nature of the building was known, no trace of a door can now be found. In the southern half of this west end wall there is apparently a passage one foot eight inches broad and about six feet long, entering probably from the doorway, but it is difficult to see what could be the object of it, unless it might lead to the stair of a belfry. On the south side, near the west end, is a window three feet seven inches wide externally, the sides of it being formed of free stone, well but roughly dressed; only two courses of these stones and the window-sill remain. The sill must have been on the level of the ground. Lime has been used in the erection of this window, but it seems doubtful if the other parts of the structure have been so built. The east end has been contracted by a two feet wall in each corner, so as to form a small chancel ten feet wide by four

feet six inches deep. In front of this chancel is a flat grave stone, five feet ten inches long, one foot eight inches broad at the head, or west end, and one foot five inches at the foot, or east end. A bevel of about one-and-a-half inches has been cut on the edges. This grave stone differs in shape from most, if not all, others in this immediate district, which, so far as I recollect, are always rectangular. There is no inscription or sculpture on it. It is well dressed, but the tool marks on it are apparently those of a pick, not of a flat chisel. In the building were found a few dressed stones for lintels, and a good many pieces of what probably has been a font about two feet in diameter. Some pieces of oak and large iron nails have also been found; the wood is much decayed on the outside, but the heart of it is sound and hard.

About thirty-five yards north-west of the building there was found a stone coffin. It must have been a good deal broken when it was deposited where it was recently found, and, unfortunately, it was very much broken by the man who dug it up, and who called out to another workman to come and see what fine freestone rock he was hewing through. The coffin is one of those cut out of a single stone, and in which the form of the head and shoulders is preserved, but the greatest depth of the hollow is now hardly six inches, the upper edge having been broken away, although not recently. It is very coarsely "scabbled" with a pick. This coffin was found turned up-side down, and on it another coffin was formed by flat stones being set up on edge. No remains were found in either of them. The direction in which it lay was nearly N.W. and S.E. In the same part of the field was found a stone whorl, an inch and three-quarters in diameter, flat on one side but rounded on the other, and the rounded surface ornamented with circular grooves cut in it. Whorls of this shape are, I believe, understood to have been fixed on the end of the spindle to prevent the thread, wound on it, from slipping off. There was also found an instrument of lead six-and-a-quarter inches long, four-tenths of an inch thick at the thickest part, terminating in a point at one end, and in two pointed prongs at the other end. These prongs are about two-and-a-quarter inches long. It has been suggested that this is an instrument on which votive candles have been stuck to be burned.

The Statistical account says—"Besides the church and priory of St. Bathans, a chapel was founded in this parish, but

by whom, or at what time, does not appear." I have lately made some little investigation, but as yet, with no better success than the author of that account had met with.

On the Stature, Bulk, and Colour of the Eyes and Hair of native Northumbrians. By GEORGE TATE, F.G.S., &c.

DR. John Beddoe, president of the Anthropological Society, who had been long investigating the physical characters of Man in the British Islands, applied to me to procure information regarding the height, the weight, and the colour of the eyes and of the hair of the natives of Northumberland. For this purpose, I obtained returns of the Northumberland Militia, and of the Volunteer Corps in the northern part of the county.* In Dr. Beddoe's recently published valuable memoir "*On the Stature and Bulk of Man in the British Islands*" use has been made of this information; but as the facts gathered are of local interest, and furnish reliable materials for estimating the physical characters of Northumbrians, I have carefully analysed these returns; and I now lay the results before the Club as a contribution to an important section of Natural History, which has not, hitherto, been treated of in our proceedings.

The several returns include a total of 996 men—441 being in the Militia, 428 in the Percy Artillery Volunteers, and 127 in the Rifle Volunteers; but striking off 80 men not belonging to the county, we have left 916 natives of Northumberland. The generalised results appear in table A, on the following page.

In this table the militiamen are from the age of 23 to 50 years; but several both younger and older than these extremes are included among the volunteers. As, however, the colour of the eyes and hair does not alter much within the youngest and oldest ages in these returns, the whole is given, as affording fuller materials for forming an opinion of the prevailing complexion of native Northumbrians.

* I am indebted to Major Holland for information regarding the Percy Volunteer Artillery Corps; to Captain Robt. Douglas for the Berwick Rifles; to Sergt.-Major Treble for Belford, Wooler, &c., Rifles; to Mr Blair for the Alnwick and Morpeth Rifles; and to Sergeant O'Flynn for the Militia.

TABLE A. NATIVES OF NORTHUMBRLAND.

In this, and in the other tables, the height is given in feet, inches, and decimals of an inch; and the weight in pounds and decimals of a pound. The height is without shoes and stockings, and the weight without clothes.

CORPS.	No. of Men.	Average Age.	Average Height.	Average Weight.	COLOUR OF THE EYES.							COLOUR OF THE HAIR.									
					Black or very dark.	Dark brown.	Brown and hazel.	Tight brown blue.	Dark blue.	Blue.	Tight blue.	Grey.	Black.	Dark brown.	Light brown.	Brown.	Red brown.	Red.	Fair.	Grey.	
Militia	390	26.95	5 6-30	lbs.	1	4	91	—	—	39	—	255	5	—	31	54	286	1	9	4	1
Artillery	404	29.10	5 8-20	159.5	74	12	62	5	9	133	17	92	36	40	82	52	104	20	3	66	4
Rifles ..	122	29.56	5 9-00	158.5	6	3	25	2	10	36	3	37	10	17	18	15	42	8	5	8	—
Totals	916	28.20	5 7-50		81	19	178	7	19	208	20	384	51	57	131	121	432	29	17	78	5

Dr. Beddoe, and other anthropologists, considering the age of 23 years as the period when the human frame generally attains its full development, and the age of 50 years as the period when it begins to decline, have fixed on these limits within which to estimate the stature and bulk of man. Eliminating, therefore, from our returns all below 23 and all above 50 years of age, we have left of native Northumbrians 390 militiamen and 400 volunteers, yielding the results given in table B.

Table B. Northumbrians from 23 to 50 years of age.

CORPS.	No. of Men.	Average Height.		Average Weight.
		ft.	in.	lbs.
Militia - - - - -	390	5	6·30	
Artillery Volunteers - -	293	5	9·10	163·1
Rifle Volunteers - - -	107	5	9·00	160·2
Totals.....	790	5	7·56	162·3

From this table we may form an estimate of the stature of native Northumbrians. There is a marked difference between the militiamen and the volunteers; the latter being very nearly $2\frac{3}{4}$ inches taller than the former. Neither, by themselves, would, however, yield a fair average. There are few short men in the volunteers—only six below 5ft. 6in. in height; while, on the other hand, the militiamen belong chiefly to Newcastle, and the other large towns on the Tyne, where they have been reared under conditions unfavourable to physical development. Few, in that regiment, now are taken from the rural districts; and these few, it will be observed, from table C, have a better physique than the urban population. Formerly, the Northumberland militia was, to a great extent, formed of the peasantry who lived in the open country; and at the termination of the war in 1815, it was one of the finest bodies of men in the service; and when ranged in line stood on more ground, from the breadth of the men across the shoulders, than any other regiment. Employment now, however, is abundant in the rural districts, and wages are high, and hence few countrymen can be tempted to enter the militia, which is now chiefly filled by the lighter and shorter men from the large towns on Tyneside.

By taking into account the returns both of the militia and volunteers we may, with some confidence, conclude that the average stature of native Northumbrians is fully 5ft. 7½in.; and this accords with Dr. Beddoe's estimate of the average height of Scotsmen, which is nearly an inch higher than that of Englishmen,—the former being 5ft. 7½in. and the latter 5ft. 6½in. The average height, in 1860, of British recruits was 5ft. 6¼in.; of the French army, 5ft. 5¾in.; and of the Belgian army, 5ft. 6¼in.; but the recruits in New England North West States, in America, almost rivalled our volunteers in stature, for they reached the average height of 5ft. 8½in. If, however, we confine ourselves to North Northumbrians, their average height cannot be estimated at less than 5ft. 8in.

Of the bulk of Northumbrians we cannot form an exact judgment, as we have no returns of the weight of the militiamen. The volunteers yield an average weight of 162·3 lbs., which exceeds the averages both of England and Scotland; Dr. Beddoe estimating the former at 145 lbs. and the latter at 155 lb. Probably the bulk of Northumbrians is about that of Scotsmen.

Some peculiarities in different districts, and in some cases the difference between the militia and volunteers, are shewn in the following table C.

Table C of the Height and Weight of Northumbrians in particular districts of the County.

NAMES OF PLACES AND DISTRICTS.	No. of Men.	Average	
		Height.	Weight.
		ft. in.	lbs.
1. Newcastle, Gateshead, & Shields Militia	323	5 6·11	
" Artillery Volunteers - -	14	5 7·64	157·70
2. Morpeth, Militia and Volunteers - -	26	5 8·60	
3. Alnwick, Militia - - - -	24	5 7·00	
4. " Volunteers - - - -	72	5 9·10	162·00
Total, 3 and 4 - - - -	96	5 8·57	
5. Rothbury and Thropton Volunteers	28	5 8·86	159·46
6. North-Eastern Northumberland, from Amble to North Sunderland, Volun- teers - - - -	111	5 9·41	166·70
7. Belford, Chatton, Wooler, &c., Volunteer Rifles - - - -	49	5 9·30	161·00
8. Belford, &c., Volunteer Artillery - -	52	5 8·65	153·21
Total, 7 and 8 - - - -	101	5 8·96	157·00
9. Berwick, Militia - - - -	21	5 7·00	
10. " Volunteer Rifles - - - -	20	5 8·25	152·2
Total, 9 and 10 - - - -	41	5 7·60	
11. Rennington, Volunteer Artillery - -	15	5 9·80	168·00
12. Boulmer, a fishing village, Volunteers	26	5 8·74	166·00

It will be seen that the natives of the northern districts are taller and bulkier than those of the southern. The militiamen of Newcastle are only 5ft. 6·11in. high, while those of Alnwick and Berwick reach 5ft. 7in. We have but few returns of volunteers from the south; but those few yield an average of 5ft. 7·64in., which is nearly $1\frac{1}{2}$ inches below that of the north. In some districts the men are very large—those along the coast from Alnmouth to North Sunderland are 5ft. 9·41in. in stature, with a weight of $166\frac{1}{2}$ lbs, being about 3 inches taller and 21 lbs. heavier than the average of all England. At Rennington, a village four miles north-east of Alnwick, the men average 5ft. 9·8in. in height and 168 lbs. in weight.

Returning again to Table A, we find grey the predominating colour of the eyes, forming a little more than $\frac{2}{5}$ (or ·42) of the whole; blue occurs in more than a $\frac{1}{4}$ (·27) but it prevails more in the north than in the south; brown appears in a little more than $\frac{1}{5}$ (·22); but of black, or very dark eyes, the proportion is only about $\frac{1}{11}$ or (·088).

Of hair, brown everywhere is the prevailing colour, forming nearly $\frac{3}{4}$ (·74) of the whole; black and very dark colour yield only $\frac{1}{10}$ (·11); fair or light hair occurs seldomer than was expected, and chiefly in the northern district, the proportion being $\frac{1}{12}$ (·085); and of red and red brown there is only $\frac{1}{20}$ (·05).

Dr. Beddoe remarks that, “in most parts of Britain, the average stature of fair-haired is higher than that of dark-haired men; but in several districts the men who combine light eyes with dark hair carry off the palm.” I have tested our returns to see what light they throw on the question; and I find that out of 63 of the tallest Northumbrians of the height of 5ft. 10in. and upwards, nearly one half (·48) had blue eyes and brown hair, while those, with dark eyes and dark hair were only $\frac{1}{7}$ (·14) of the whole. Light brown and fair hair formed about $\frac{1}{3}$ (·3).

In the following Table D, both volunteers and militiamen are arranged according to occupations, and the average height of the militiamen and the average height and weight of the volunteers are given, so that we may see what relation there may be between the different kinds of employment, and the physical characters of the men respectively engaged in them.

TABLE D. OCCUPATIONS.

OCCUPATIONS.	VOLUNTEERS.			MILITIA.			
	No. of Men.	Average Height.		No. of Men.	Average Height.		
		ft.	in.			lbs.	ft.	in.
1. Farmers - - -	28	5	10·28				
2. Husbandmen - -	14	5	10·30				
Total of 1 and 2 -	42	5	10·29				
3. Gardeners, game-keepers, &c. } 4. Quarrymen - - - 5. Labourers - - -	13	5	9·40				
Total of 3, 4, 5	52	5	9·11	79	5	6·26	
6. Fishers - - -	24	5	10·00				
7. Masons - - -	34	5	9·00				
8. Other out-door Mechanics. } 9. Joiners - - -	31	5	8·84	63	5	6·00	
10. Cabinet-makers -	26	5	9·20	17	5	6·00	
11. Smiths - - -	9	5	9·22				
12. Tailors - - -	14	5	9·26	17	5	6·00	
13. Shoemakers - - -	23	5	7·70	6	5	6·33	
Total of 12, 13	16	5	8·50	16	5	6·00	
14. Inn-door Mechanics	39	5	8·00	22	5	6·09	
15. Colliers - - -	35	5	8·55	108	5	6·16	
16. Tradesmen, clerks, &c.	15	5	9·60	9	5	7·77	
	34	5	9·71				

Little difference in stature appears from occupation among the militiamen. Colliers stand highest, being fully $1\frac{1}{2}$ inches above the others. We find, too, that colliers, chiefly at Shilbottle, are, among the volunteers, both tall and heavy, their stature being 5ft. 9·6in. and weight 163·86 lbs. The volunteer returns shew greater differences connected with occupations than appear among the militia. As a general rule out-door employment in the country is most favourable to physical development. Farmers and husbandmen are the tallest, and with one exception, the heaviest men; they reach the average height of 5ft. 10·29in. and weight of 169·81 lbs. Fishers, chiefly at Alnmouth and Boulmer, are the heaviest of all, and are next in height, being 5ft. 10in. high, and weighing 172·8 lbs. Gardeners, gamekeepers, and country labourers have an average height of 5ft. 9·11in., and weight of 159·72 lb. Out-door mechanics, such as masons, slaters, and others, partly out-door and partly in-door, such as joiners, smiths, &c., range pretty nearly with the gardeners'

class. In-door mechanics are somewhat less, their average height being 5ft. 8·55in. and weight 157 lb; but tailors stand lowest in physique, their height being 5ft. 7·7in., or about $1\frac{1}{2}$ inches below the average of other occupations, and their weight 150·4 lbs, or about 10 lbs. below the general average. Tradesmen, clerks, &c., are pretty tall, their height being 5ft. 9·71in., and though not so heavy as other classes, yet of fair bulk, their average weight being 161·52 lbs.

No information regarding the stature and bulk of man has been obtained from Roxburghshire; but from the other Border county, Berwickshire, Dr. Beddoe received a few returns, chiefly from Dr. Charles Stuart, one of the members of the Club; and in order to complete the information we have on this subject relating to the Border land, we generalise, in Table E, the results of the Berwickshire returns.

TABLE E. BERWICKSHIRE.

LOCALITY.	OCCUPATION.	No. of Men.	Average Height.		Average Weight.
			ft.	in.	lbs.
Chirnside - -	Farmers and persons of pure local descent } -	25	5	10·28	163·5
	Rural population - -	15	5	8·45	
Burnmouth - -	All fishers - - -	8	5	8·20	168·6
Eyemouth - -	Mostly fishers - -	9	5	7·73	176·3
Eastern and Middle Marches, and Lothian. }	Miscellaneous - -	16	5	8·50	165·9
Total - -	- - - - -	73	5	8·97	

Of 58 the weight is given, and the average is 165·51 lbs. Blue eyes and fair hair (light shades of brown chiefly) predominate. These returns are too scanty to warrant general conclusions; but they evidence, so far as they go, that the Berwickshire physique differs but little from that of North Northumberland.

The Northumbrian and Berwickshire men appear indeed to have had a common origin; not only are their physical characters similar, but we also find, that most of the names of places in both counties are constructed in the same manner and derived from the same language; even the common speech, or *patois*, of Berwickshire is similar to that of North Northumberland, though the pronunciation is some-

what different, being broader, and free from the peculiar Northumbrian burr which seldom passes north of the Tweed, but which extends a little southward of the Tyne. No doubt different races have contributed to form the present population; chiefly, however, the Angles, who, in the middle of the sixth century, conquered the Celtic race, and spread over the north-east part of Britain as far as the Firth of Forth. From these Angles have come the tall and powerful forms, and the fair and ruddy complexion, and light eyes of the Eastern Borderers. It is not probable that the original inhabitants would be exterminated; many of them would be spared, as servants and wives; and possibly to this source we may attribute the shorter forms and darker complexions, which, in some districts appear. Less effect has resulted than has been generally supposed from the Norse-men or Danes, who ravaged Northumberland in the ninth century. Though they attained the mastery of England, and settled in considerable numbers in some counties, yet, judging from the impress of race, left in local nomenclature, the evidences of their settlement in Northumberland, as now restricted between Tweed and Tyne, are very slight; for taking the termination *by*, the Danish name of a town or village, as a test, we find that the Danish population was chiefly located in Lincolnshire, Yorkshire, Westmoreland, and Cumberland; and that, as we recede northward on the eastern side of the island, the traces of the Danes become fainter; in Lincolnshire there are 212 names of places ending in *by*, in Yorkshire 167, in Durham only 7, and in Northumberland not one. Additional information, as to race, may be gained by a critical examination of the head-forms of the Border population; and when more measurements of their crania have been obtained, we may arrive at more definite conclusions. It is hoped that this will be achieved; and also that some of our Roxburghshire members will gather materials to illustrate the physical characters of the people of that Border county.

The subjoined instructive notes written, at my request, by Mr. Carr of Hedgeley, will be read with interest, because coming from one who, while possessing a special knowledge of the linguistic peculiarities of the North, has also been a careful observer of the characteristics of our native population.

The Northumbrians between Tyne and Tweed. By RALPH CARR, of Hedgeley.

THE people of the present county of Northumberland, the earldom of Saxon times, lying between the Tyne and the Tweed, are quite a different race from those of the county of Durham and the whole of Yorkshire, though all these districts were comprised in the former Northumbria, or region North of Humber.

The people of Yorkshire and Durham (except the Durham banks of the Tyne) are Dano-Saxons by dialect and by physical aspect. The physical characteristics of the Yorkshireman are well known, also his speech, and the men of Durham are like him. The topography of Durham and Yorkshire is full of names with Danish affixes, and so is that of Westmoreland and Cumberland.

But in the earldom of Northumberland between Tyne and Tweed hardly any such occur, and the whole speech of the people and the cadence of its utterance is completely different. A man of Darlington at Morpeth or Alnwick is as much a stranger in his tongue as an Irishman speaking English with a strong brogue. The man from Darlington or York speaks with a cadence never used in Northumberland, and he misplaces or omits the letter *h*, which the Northumbrian and the Scotsman never misuse. The Yorkshireman pronounces the *r* properly, but the Northumbrian replaces it by a slovenly *burr* in his throat, most offensive to all but himself.

Physically, the Northumbrian hind is a tall and handsome man. The head of middle formation, neither brachycephalic nor macrocephalic, but perhaps inclining to the latter, if anything. His hair oftener light brown or dark brown than either white or black, or cold gray. His eyes very often hazel, often dark blue, often grey, not often light blue. His complexion ruddy and sun-burnt. His gait a long active stride, less martial than the walk of the Scot, but totally unlike the heavy waddling roll of the Southern peasantry.

The Northumbrian hind eats but little meat, his farinaceous diet of porridge, bread, potatoes, (all consumed with milk) being varied by a slice or two of his own bacon only, and that not every day. He drinks beer very seldom, chiefly on a market-day. He is hardly ever corpulent, but generally stalwart and equal in power to any of the British races,

unless, perhaps, surpassed by some of the Lowland Scots. Trained to arms he readily becomes a first-rate soldier.

The Northumbrians between the Tyne and Tweed are, it may be said, nearly of pure Anglican race, with very little intermixture, save in Tyneside, where the people are more mercurial, more excitable, more restless, showing signs of a Cymric interblending. These men are rather less stalwart, but very active, great runners, and often good wrestlers. Of the same type are the townsmen of Newcastle and Hexham. Many of the Tyneside men and the townsmen have dark hair and eyes. Dark brown hair predominates in many families. There is certainly Cymric blood, perhaps to the extent of 1-4th in Tyneside.

On Turnip Insects during 1870. By JAMES HARDY.

DURING the summer of 1870, the Turnip Beetle, or "Fly," (*Haltica nemorum*), has been a complete scourge throughout the Border counties. Turnips might be sown early or very late, in either extreme, there was no palliative, so long as drought prevailed, and plants, insufficient in force for the maintenance of the devouring myriads, kept up merely a feeble and struggling existence. It was only through the advent of showers long delayed, and a mild atmosphere, that the crops got established, and at length out-grew their persistent persecutors; for not only did they swarm on the seed lobes, but continued to perforate the foliage and delay the growth, long after the plants were singled out; some even lingering in the fields till there were sizeable turnips. Near the sea-side the damage was not so great as further inland. My own Swedes did not require to be re-sown; but as for the white turnips, it was by mere dint of persevering sowing that the ground got covered at all. Some parts of the fields, here, produce wild mustard, or "Runch," (*Sinapis arvensis*). This was found to be a great preservative to the young turnip plants, in allowing them to assume the rough leaf unbitten. The beetles took as readily to the mustard as to the turnip, it being their natural food; and I noticed that when the Swedes were nearly forward for thinning, the mustard obtained the preference. Owing to this, although the insects in some places lay on the plants like gunpowder; after side-hoeing and thinning, the blanks were very few. I have

heard that in other places where mustard is in the soil, this also happened; so that it is not an unmitigated evil; being, in such seasons as the present, equivalent to thick sowing in fields not liable to this weed.

I had previously remarked that the cruciferous wild plants (*Arabis* and *Cardamine*) on the dry banks were unwontedly frittered away during the present dry spring; but had no conception that such assemblages would spring, as it were, out of the dust so suddenly. If these feeding grounds did not furnish all, they, at least, augmented the bands that gathered in on every side to invade the cultivated lands. It is wonderful, after all, that such a favourable crop has been realised. The disastrous outset in this district was, with the exception of the partial loss of the Swedes, in some measure repaired; and it was only some stubborn clayey fields that continued bare fallow, in spite of the master's skill.

Mr. Langlands has kindly furnished a notice of what happened to the crop in Northumberland. "The ordinary Turnip Fly was prevalent over all this district, with scarcely an exception, last summer. Its ravages were greater, and it continued them for a longer time than I ever remember. In ordinary years it has generally attacked turnips—Swedes, especially, which have been sown early, and where the soil has not been in the most perfect tilth. This was not the case this season; the plants came away very well, and at first appeared to grow vigorously; when they were attacked by the Fly, and withered off, leaving long stalks in many instances; the frosty nights completing the destruction. The flies continued to sweep off every fresh sowing—one, two, three, and sometimes even four—even after the middle of June; at which period we have, hitherto, always found the plants safe. Most of the Swedes were destroyed. I have a very few of the second sowing which escaped. The white turnip and hybrids that succeeded were also two or three times sown, and afterwards came away vigorously; and hereabouts have done well, mainly owing to the showers in August."

The turnip leaves were remarkably free from caterpillars; even the small caterpillar of the Diamond moth, was absent. In a few spots bordering the outcrop of rocks, which had supplied secure breeding places, I had a space of several yards breadth, entirely eaten off by Earwigs. They stripped the leaves, after the plants were thinned, leaving only the skeleton ribs; weeds and potatoes all went in the same way;

till some change took place, perhaps the acquisition of wings by the young broods, when the nuisance abated. They fed only at night, and used to hide during the day in the soil, the fork at the tail being visible here and there at the surface; or clustered under clods and small stones. The workers killed numbers with their hoes, and for a few days the rooks and jackdaws held a high feast over the spot. This happened also at the sunny-side of stone walls, the turnip leaves being holed for some distance off.

But a still worse source of mischief lurked in some of the fields, and began to develop itself to an enormous extent towards autumn; viz., the Turnip Louse, or *Aphis*, of which a notice was given in the Club's Proceedings of last year. I first noticed them here among the Swedes, (*Aphis Brassicæ* was the species,) about the middle of September, on a few plants; whence in the drought of the last fortnight of that month, which was the most hurtful of all, they spread themselves in spots here and there, but did not occasion much hurt in this quarter. The worst effects of them any where that I witnessed was on Swedes, on the gravelly and sandy soils about Wooler. The Aphides had begun to predominate there, when the turnip casts its outer leaves, and while the drought and the mildew kept back the young foliage; and the consequence was most disastrous. The sickly leaves, oppressed with disgusting insects, hung flagging on the ground; and the plants drained of sap grew weaker every day. The smell of decaying turnips rose from the fields, fit to corrupt the air. The white and yellow turnips at the same time were infested with the green and pinkish *Aphis vulgaris*, called also *A. Rapæ*; and the fields wore as many tints of green, yellow, and brown, as the woods in autumn. I was told that in one enclosure the turnips were so disagreeable that sheep refused them. Other fields were being stripped of their produce to give to the cattle; thus losing a month or two's growth. One farmer told me, that as soon as the presence of the insects was manifest, he, in order to starve them, had got the tops of the Swedes cut off; and that they were sprouting again, and growing healthy. Crops that were kept growing were certainly best off, such as those latest sown, or those among the hills, on which only a few insects were present, while the earliest fared worst; but the proposed remedy is a desperate one, "more to be honoured in breach than the observance."

I have again recourse to Mr. Langland's report. "In the beginning of September, the Turnip Louse, (*Aphis Brassicæ*) made its appearance, and its ravages on the early sown Swedes, which had escaped the Fly, were most pernicious. I was in the fine turnip district near Thirsk—and also on the Tees, at this time, and then first noticed the louse, which had already affected some fine fields of Swedes to a great extent. I found it appearing in this district, on my return, and it soon assumed a very destructive character. The early sown Swedes on the gravels and on strong land, seem to have gone off entirely. My own Swedes were partially affected only;—but this I ascribe to the fact of being all later sown; and having suffered less from the drought. The *Aphis* prevailed with me—and did last year in circular patches;—and not to any greater extent this year than last. I hear that East Lothian has suffered much. The worst hereabouts is near Wooler; and those I saw on the Tees were also very bad."

From East Lothian I have a communication from a competent authority, Mr. R. Scot Skirving, of Camptown. He is of opinion, in which I join him, that in Scotland, we have little to fear from the "surface-grubs" of the lepidopterous genus *Agrotis*, which Mr. Newman, in *The Field*, and *The Entomologist*, considers to be so hurtful to the turnip. A much more deadly "grub" is that of the *Tipula oleracea*, or "Crane fly," which eats through the root just below the surface, and soon clears half a field. From this grub, this season, Mr. Skirving has lost, at least, thirty acres of turnips. He goes on to say, "The 'fly' took the first sowing, the drought the second, and the crane grub the third. From Tranent to Edinburgh, and all round Portobello, the turnips looked magnificent up to the end of August; and they almost caused me to 'envy and grieve at the good of my neighbour,' as I travelled on the railroad; but the Turnip Louse came and destroyed the Swedes, root and branch, and the fields became bare; whilst the soft turnips became bright orange, then dirty yellow, and withered up as if scorched by fire. This seemed rather *disease* than insect work. Farms between Tranent and Edinburgh seem peculiarly liable to this, though I have seen it come all over the lower half of East Lothian. It does not attack Swedes."

The migrating epoch of the turnip Aphids, took place in the end of September, as soon as the wings had developed;

and for more than a week, during the calm and genial weather, they rose in succession from the turnip fields along the valleys of the Till and Glen, till they became almost incorporated with the air, so intensely crowded they became. They grew very troublesome to those who had to go out. One had almost to breathe them. At night, or during dull days, they stuck to the threshold, to the grass by wall-sides, or gathered upon hedges or trees. Many fell into the waters, or were swept from the grass on the brink. Beating the bushes for insects at Heathpool, I got my umbrella so filled with the roosting Aphides, that I had to desist. Subsequently I saw that the flights had extended to Goldsleugh and Langley Ford, among the hills; several having been drowned in the burns. The "plague of midges," as they were called, was universal. At length came some heavy showers of rain and hail, which cleared the air, and perished and scattered the insects; and the turnips got up their heads again.

Doddington. By the Rev. WILLIAM PROCTER, JUN.

THE village of Doddington lies at the north-western extremity of the Dod Law, a hill belonging to the sandstone range which runs northwards from Alnwick Moor to the Tweed, and south-westward from Alnwick Moor to the Simonside, at Rothbury. The highest point of the Dod Law is 654 feet above the level of the sea. The present site of the village is low, at the average height of 150 feet above the sea level—while the river Till runs through its wide green haughs to the south and west of Doddington—at the height of 100 to 115 feet above the sea level. I believe there is no more healthy spot in the world; we may attribute this to the fact that the village is so well sheltered from the cold north and east winds, that the soil on which it is built is very dry and sandy, and most of all, to an unfailing supply of the very purest water, in great abundance.

The Dod Well, a fountain of health and comfort to the inhabitants, seems to claim the attention of the Naturalists' Club. A hundred years ago it issued from the side of a natural rock into a natural basin above the level of the ground. Round the basin were seats, naturally formed by a ledge of the rock; and above, the rock was crowned by a

“yea-pointed fern,” which died down in winter and reappeared every spring—much admired by the villagers. When the new farm house and offices were built for the South Farm, the contractor, having leave to get stone from any part of the estate, broke down the Dod Well rock, situated within a few yards of the building. Hence the water, which had before poured over the rock above the level of the road, now sprung up as much below that level; and, its natural spout and trough being destroyed, the supply of water for man and cattle was to be sought in the same pool, which was polluted by many impurities. To remedy, in some degree, this barbarous desecration, the present fountain was erected, mainly at the expense of the Earl of Tankerville, in 1846. First, a strong wall was built inclosing a square of 11 feet in the side, within which bubbled up the outlets into which the noble spring had been broken up by the quarrymen; when the water had been raised to the average height of two feet within this wall, it was allowed to escape by three stone spouts—and then the reservoir was covered over by solid masonry, in the form of a Cross of Calvary, thus substituting an ornament of a Christian character for the fine old fern which had presided over the fountain for centuries before its demolition. There was a song current in the village in days gone by, the burden of which was—

“The bonny Dod Well and the yea-pointed fern.”

which is all that is now remembered of the song.

The Dod Well yields 72 gallons of water a minute—temperature, 47° Fahrenheit—never varying in temperature, or in yield, in summer or winter. It is soft, and lathers well with soap.

About sixty yards east from Dod Well, is Cuddy’s Well. It takes its name, as far as can be ascertained, from an old inhabitant of that name, who lived near it and took interest in keeping it clean and pure. It yields about 20 gallons a minute, of water precisely similar to that of Dod Well; and, doubtless, comes from the same subterranean reservoir. There are two other springs, equal in yield and quantity to Cuddy’s Well, near the village—one, the Blunty, or Blintie Well, yielding 24 gallons a minute. There are also several smaller wells; one of which, the Blind Well, now disused, springs up close to Mr. Rea’s pond. This, though a somewhat feeble spring, was once considered the best drinking water in Doddington, and that for an unanswerable reason, namely, that it runs to the south.

To pass from the natural features of Doddington to a brief notice of those who have occupied it, and of the remains and traces of their occupation, we must mention first the people who, in prehistoric times, lived in the camps or fortified villages on the top of Dod Law and other high points close by; who carved the cup and ring markings on the adjoining rocks, and whose remains, together with their urns and flint weapons, we find in the stone cists which are from time to time brought to light, and under the barrows which protect them. It is for others to say of what family they were. They have left many indications of an eastern origin, and it is interesting to find that some of the Hill Tribes of India, to this day, inscribe on rocks, which they wish to mark as sacred, figures very like those which these ancient inhabitants of Britain cut upon the rocks connected with their habitations. There are four large camps on Doddington ground—one on the top of Dod Law, a double camp; the two parts being nearly contiguous. There is also a large enclosure, joining the principal part of the camp, and there are several hut circles in it and round it. The other Doddington camps are, the Ringses camp, about a mile north from the Dod Law camp; the Wrangham camp, a mile north of the Ringses; and the Routing Lynn camp, three miles north-west from Wrangham. Near the Dod Law camp, are two smaller ones on Horton ground. Within a few yards of one of these, on the Doddington side of the march dyke, are three standing stones, the remains evidently of a "Druidical" circle. Within a very short distance of these Doddington camps, are the camps at Weetwood, Nesbit, and Fenton Hill. There are several barrows on the Dod Law, and adjoining hills; some have been opened recently, but probably not for the first time, as no traces of burial have been found; but from one, close to the Dod Law camp, a stone, forming part of a cist and marked with the ring and cup carving, was taken, and is now at Alwick Castle. Of other remains, found in cists, there is little to record. Two cists, with unburnt bones, were found about twelve years ago near Lord Durham's woodman's lodge. On the Gled Law, two urns have, I know, been found—one long ago, which I only heard of as having been broken up summarily; another, much injured by having been ploughed over, I picked up in 1864. I have still the remains of it. It contained dark soil and pieces of charred wood and unburnt bone. In 1867, a cist was uncovered by

the plough in a field near this, quite close to "Cuddy's Cove." It contained an unburnt body, an urn, a flint arrow head, and two small fragments of flint. I heard also of a piece of "leather" which mouldered away on being touched. The skull, urn, and flints were sent to Mr. Greenwell, of Durham. I may add, here, that two ponderous stone hammers have been found of late years—one is at Alnwick Castle; the other belongs to Mr. Greenwell.

The only other trace of the aboriginal inhabitants of Doddington, is in the sculptured rocks; prominently brought into notice by this Club, and ably treated of by Mr. Tate, in its proceedings for 1864. These have been found in fourteen distinct places on Doddington ground; with these, the incised stone at Ford Hill is associated, as closely connected with the Routing Lynn camp, and the series of markings on Horton moor, which are within a hundred yards of the Ringes camp.

There are thirty-four distinct rock faces in these sixteen localities, more or less covered with markings; the number of figures, of all varieties, is two hundred and twenty, besides a great number of cups or hollows connected with them.

There are no Roman remains at Doddington, though the great Roman road, commonly called "The Devil's Causeway," skirts the Doddington ground for some distance, passing through Horton and Hetton ground.

The Saxons, or English, were probably the first to occupy the present site of the village, which they have occupied undisturbed ever since. There seems never to have been any Norman keep; and, as far as we can learn from records, those who owned the soil from the date of the conquest did not reside upon it. Doddington belonged to the Barony of Alnwick, from a very early period. In the "Testa de Nevil" "*Dodington cum Nesebit membro suo*," are enumerated among the lands which William de Vesey held in chief of the King. This was in the reign of Henry III., about 1250, A.D.; and in the various inquisitions since that time it is named as of the Barony of Alnwick.

In the forty-sixth year of Henry III., 1262, Hugh de Bolbec held, from William de Vesey, Baron of Alnwick, *Dodinton maner' extent, Nesbite villat, Wetunde villat, &c.*

In 1289, the heirs of Bolbec held Doddington, with its members, paying 13s. 4d. yearly; the annual value being one hundred marks.

In 1362, Thomas de Horton, and in 1368, Sir Thomas

Grey, probably the same person, held Doddington and Weetwood as subfeudatory to Henry de Percy for half a knight's fee, the annual value being a hundred marks, and 13s. 4d. yearly was paid for Castle Ward.

From this date the family of Grey are mentioned in the various inquisitions, &c., as holding Doddington. In the tenth year of Elizabeth, 1568, Sir Thomas Grey, of Chillingham, a minor, inherited it, with other lands, from his father, Sir Ralph Grey.* Lastly, William Grey holds Doddington, Nesbit, and Eworthe, as free† tenants from the Barony of Alnwick, in 1664.

The extent of the village must have been considerable in these early times. As in other ancient manors, the villans, or villagers, acquired a right by their service, on the payment of some small due, to the cottage and plot of land which they occupied; and these lands they and their representatives held perpetually, with power to leave by will, or alienate by sale ‡ “For though in general, they are still said to hold their estates at the will of the lord, yet it is such a will as is agreeable to the custom of the manor, which customs are preserved and evidenced by the Rolls of the several Court's Baron in which they are entered, or kept on foot by the constant immemorial usage of the several manors in which the lands be.” The owners of such property are the ancient customary freeholders, sometimes called copyholders, because they shew as title to their property, the copy of the entry in their Court Roll, which describes the land, and the “custom” by which it is held.

My information about these ancient “holdings,” in Doddington, is vague and traditional. It is said that one Culbertson saved the life of a Grey at Flodden Field, who granted him, in reward, a piece of ground adjoining the Till near that bridge which is still called “Cuddie's Bridge,” because it was built on Culbertson's holding. Another tradition says, that on the occasion of a Doddington man dying at Belford, forty lairds of Doddington, each riding his own horse, went over to attend his funeral. By degrees these old holdings have become extinct. Within the last hundred years the large common, to the north and east of the village, has been en-

* *Eschaet de anno.*, x Eliz.

† A.D. 1660, the year of the Restoration, feudal tenures were converted into Freeholds by Statute 12, Ch. II., c. 24; Copyholds were not included.

‡ *Sims' "Manual,"* p. 86.

closed by the Lord of the Manor. Thus the holdings became insufficient to maintain their owners—who were glad to give them up for a consideration to the Lord of the Manor. In some cases, a slight change made in the “rent” was enough to break through the “custom” by which the land was held.

In 1834 there were eight of these customary freeholders in Doddington, not all resident; and still there is one.

A few short notes may illustrate the former condition of Doddington:—

1.—In the fifth year of Richard II., 1382, Adomarus de Athol and Radulphus de Eure were elected to Parliament for Northumberland. Glendale Ward contributed to their expenses 74s. 4d., of which Doddington and Nesbit paid 4s, Wooler 3s. 4d., Homildon 2s.

2.—In 1734, George Mark, in his survey, says—“Doddington (Parish) comprehends 202 families and 7 villages, the principal of which is Doddington, situate at the foot of a hill called Doddington Dod Law, quarter of a mile from the River Till, and on the east side thereof. It is remarkable for its largeness and badness of its houses, and low situation, and perhaps for the greatest quantities of geese of any of its neighbourhood, and is distinguished from all the rest of the county, except Branxton, for having the chapel covered with heather and straw. It stands at the distance of a gunshot from the town, and has a very good Bell. Here is one of the largest and best springs of this county, which sends out a current sufficient to turn a mill.”

3.—A weekly cattle market was once held here, and a market cross stood behind the old Pele Tower, opposite to the road to Nesbit.

4.—The population of the village, in 1801, was 339, of whom 80 were employed in agriculture, and 29 in trade. In the days of hand-loom weaving, the village was noted for the number of its weavers. The number of houses occupied in 1801 was 76, by 78 families. In 1870, the population is 272; 100 are employed in agriculture, 17 in trade, 8 as grooms, road-makers, &c. The number of houses occupied is 56, by 57 families. There are five townships in the Parish, viz.: Doddington, Nesbit, Ewart, Humbleton, and Yearle. The population of the whole Parish, in 1801, was 734; in 1870 it is 787.

The Pele Tower.—There is no mention of a tower at Doddington in a list of “*Nomina Castrorum et Fortaliciarum*”

infra comitatum Northumbriæ," compiled about A.D. 1460. Nor is Doddington mentioned in a view and survey of the East and Middle Marches, with a description of the state of the castles, towers, barmekyns, and fortresses, by Sir Robert Bowes and Sir Raufe Ellerker, knights, commissioners, 2 Dec., 1542, 33 Hen. 8.

In 1582,—24th Elizabeth—Parliament passed a Bill for the better defence of the Marches, and the building of towers and fortresses. In consequence of this, Sir Thomas Grey, of Wark and Chillingham, instead of repairing the old towers at Fenton, and at Nesbit, built a new tower at Doddington; which is still standing almost as it stood when the following inscription was built into the wall of its battlements:—

T. G. MILES HVIVS STRVCTVRE
S̄VPTVM FECIT. A.D. 1584.

The building has a large room on the ground floor, and three stories, one large room in each, extending the whole length, and reached by a spiral stone staircase built on to the south, and covered. The roof is now covered with red tiles, and has a battlement to the north and south. Before the building of the North Farm House, it was occupied as a residence by the first separate tenant of the North Farm; afterwards as a granary and wool store. Now, the decayed state of the upstairs flooring renders it of little use.

The Church.—But by far the oldest and most interesting building in Doddington is the church. That there existed a chapel here before the year 1224, is certain; for the chapel of Doddington is mentioned as belonging to the church of Chatton, in a deed settling the temporalities of the church of Chatton and its chapels, between the vicars of Chatton and the abbot and convent of Alnwick, by Richard de Marisco, Bishop of Durham, in the eighth year of his episcopate; of which the first year according to Raine, was A.D. 1217, and therefore his eighth year would commence A.D. 1224. This original chapel had probably been built at the instance of the monks of Holy Island before the Norman conquest; but nothing remained of it at the beginning of the present incumbency, 1st December, 1834. All that then remained was the double nave, mutilated, as it still is, of half its northern wing or aisle, and the additional nave, or baptistery, west of the large arch. This arch, and the three arches dividing the main nave into north and south aisles, are good specimens of

early English architecture of the 13th century; and it is probable that the double nave and baptistery were built at the instance of Lord Richard de Vesci, who was vicar of Chatton with Doddington at the time of the *Ordinatio* in A.D. 1224. The old Saxon chapel was probably then converted into a chancel, as had manifestly been done at a very similar extension of Kirk Newton church, in the same style of architecture, and therefore about the same time. Churches and castles were then built on plans provided by the community of Free Masons, and executed under their auspices, which accounts for the same style of architecture prevailing over Europe at the same period of time. The old chancel had quite disappeared before the year 1834, but men were then living who remembered its walls standing above the ground. In 1838 their foundations were uncovered, and the present chancel built upon them, but only to two-thirds of their length. In cutting out the present plain arch between the nave and the new chancel, the masons came upon a rounded arch, reaching about ten feet above the old floor of the church, which was, unhappily, quite demolished before Mr. Procter saw it. This, of course, was the original communication between the nave and the chancel; but as the floor was now to be raised three feet, nearly to the level of the ground outside, this round arch was much too low for communication with the new chancel.

Clergy.—In May, 1775, Robert Thorpe became curate of Doddington. He was the first incumbent who held Doddington separate from Chatton. Being also vicar of Chillingham, he never resided at Doddington. He served the parish personally for two or three years, and afterwards by a resident assistant-curate. In 1782, he became rector of Gateshead, and soon after archdeacon of Northumberland and rector of Ryton. He was senior wrangler at Cambridge in 1758, and “coached” Dr Paley, who was senior wrangler in 1763. Robert Thorpe was succeeded at Doddington, in 1782, by Nathaniel Ellison, who died in 1798, and was succeeded by William Augustus Cane; on whose death William Procter succeeded to the incumbency 1st December, 1834. Neither Mr. Ellison nor Mr Cane ever resided at Doddington, so that Mr. Procter is the first resident incumbent. He is also the first vicar of Doddington, perpetual curacies having been made vicarages, in name, though in no other respect, by a very recent Act of Parliament.

Botanical Notices. By JAMES HARDY.1.—On *Sparganium simplex*, Hudson.

There is only one recorded Berwickshire locality for this plant. During the present dry summer, when the mill-pond at Oldcambus Townhead, was nearly dried up, there were beds of it in blossom. Being usually submerged in stagnant waters, it is perhaps mostly in dry years that it becomes conspicuous; and hence may be more general than it appears to be. *Peplis portula* and *Litorella lacustris* accompanied it; and as this pond is quite modern, these water plants in some way or other must have been recently introduced. *S. simplex* is said to grow “especially on heaths and commons in pools of water made by digging gravel;” and the bottom of this pond is nearly in that condition, the soil having been repeatedly carted off.

The disposition of the upright *Spargania* into “*ramosum* et non *ramosum*,” or something equivalent, was early recognised among the botanists preceding Linnæus. That great systematist, as well as Haller, arranged them as varieties of each other. Not only did Linnæus not distinguish the two, but Sir J. E. Smith is persuaded (“Lapland Tour,” ii., p. 126, 127) that “he confused the *simplex* with the *natans* in his Lapland Tour, as well as in his herbarium, where the original specimens of the two are pinned together.” Several other plants besides the modern *Sparganium* have been brought forward as the *Sparganion* of Dioscorides. The first on the present track is a medical composition, much esteemed in the age of Charlemagne (A.D. 742—814); which has been edited by Eckhard, in his “Comment. de Reb. Franc. Orient.” (ii., 980.) In this *Sparga* is mentioned, which Antonius (“Hist. Oeconom. Germ.”) considers to be *Sparganium ramosum*. The Bohemian name of the plant, it is to be observed, only adds another letter—“Spargan” or “Sparhan;” and may either be traditional, or an adaptation. Bock, or as he is latinised, Tragus, in the “Kreuterbuch,” (1546) p. cclviii., (or Tragus by Kyber, p. 676, &c.) identifies *Sparganion* with the “Riedt” or “Ried” of the Germans. Valerius Cordus, who died in 1544, in his “Annotat. in Dioscoridem,” (1561) fol. 63, makes it the “Degenkraut,” (sword-plant) of the Germans, another local name for *Sparganium*. About the same period Matthiolus (French edit.,

Lyon, 1642, p. 375) figures *S. ramosum* for *Sparganium*; but he was not quite convinced that this application, which began to be taken up in his time, was the correct one; so that those writers were wrong who afterwards cited him as strongly upholding this opinion. One of these was his inimical critic, Amatus Lusitanus; "Comment. in Dioscorid." p. 600 (A.D. 1558). I refer to him, in order to cite the note of the learned physician, Robt. Constantine, as it reveals to us a distinguished foreigner as botanising in this country in early times, of whom previously we were unaware. He says, he had a thousand times seen both *Sparganium* and *Spatula fœtida* (the other claimant for the title) both in England and other places; and had frequently compared them with the description of Dioscorides, and was quite willing to subscribe to Matthiolus. The French name, according to him, is "Pilette." Dodonæus ("Pempt." p. 602) while he has a theory of his own, points out that *S. simplex* corresponds better with the *Sparganion* of Dioscorides than *S. ramosum*. *S. ramosum*, however, is the adopted plant of the Pharmacopœias, ("Stokes' Bot. Mat. Med.," iv. p. 335). Dalechamp also, ("Hist. Gen. des Plantes," ii., p. 888, Lyons, 1653) sets forth *S. simplex* for *Sparganium*. In modern times, Dr. Adams, in his "Paulus Ægineta," (iii., p. 350) decides for *S. simplex*; at the same time, he remarks that *S. ramosum* "is still kept in the shops with the reputation of curing the bite of the viper;" for which the root was recommended by Pliny ("Nat. Hist." xxv., c. 63), almost in the words of Dioscorides.

The English "Bur-reed" was of Gerard's invention; "I call them Burre-reede;" but this term did not arise spontaneously. Dodonæus, in an early work, "De Stirp. Hist. Commentariorum," p. 51, A.D. 1559, figures *S. ramosum* as the *Carex* of Virgil, and the "Rietgras" of the Flemings Lyte in 1578, translating this writer's "Hist. of Plants," makes it "Reede Grass;" "with the which," he tells us of himself, "it hath no likeness" (p. 515). Gerard added "burr," and dropped "grass." Johnson, the editor of Gerard, in one of his peregrinations, names it "Burre-flage;" ("Johnsoni Opuscula,") which is perhaps nearer the meaning, than the English "reed." For it is questionable whether this popular "Rietgras" was not traditional of the "Calamogrostis," or "Gramen arundineum" of the Greeks and Romans; or whether, as is fully as likely, it may

have been a common name prevalent among several people, which caught up from a vulgar, had become transmitted in a classical channel. In Tragus, the German name for *Sparganium* is "Ried" or "Riedt." He has also "Riedt-gras" for several rough grasses, inclusive of *Carex*. This word is still in use in England, in the form of "Reits," expressive of sea or river weeds, of which it is also significative in modern German. We have it in the Scottish form of "Reyss," *i.e.* coarse grass in marshy places, or on the sea-shore. Thus, Blind Harry, in Wallace—

"Thai trowit that bog mycht mak thaim litill wail,
Growyn our with reyss." (New Edit. p. 123).

There is also the Anglo-Saxon "rise," a rush; "reisk," Scotticè, grass that grows on downs, &c.; "reezlie," cold land producing coarse grass; whence, perhaps, the first syllable of Riselaw, a Berwickshire farm. The modern German "Rieth" comprehends the most of those meanings; as well as "reeds," and "canes," and "flags."

The Germans have other good names for *Sparganium*; "Igelsknospen," (hedge-hog buttons); "Schwertel-Riet," (Sword-reed); and such like. A Flemish name, "Candel-aers," the chandilèer, is sufficiently picturesque. Another Belgic name is, "seer snydende drycantich Lisch,"* almost Lowland Scottish; its exponent in English being, "sore cutting triangular flag." This reminds us that the "Boutomos" of Theophrastus has strong claims to be regarded as *Sparganium*; and of several ingenious etymological misses recorded by J. Bodæus a Stapel, in his edition, Amst., 1644, p. 462; none of them being the obvious explanation of De Theis, that it is so called because the sharp leaves bleed the cattle's mouths which eat it. ("Spiegazione Etomologica, &c., Vicenza, 1815.)

That the broad leaves of *Sparganium* ever formed swaddling bands for Grecian nurses to strap their children, as some of the older botanists (C. Bauhin, "Theat. Bot." p. 227) allege from the etymology of the word, I do not believe. The word was taken metaphorically from some fancied resemblance; and here De Theis also agrees. It is true that its leaves when withered become pliant and innocuous, and may have thus become adapted for tying. The female "Butomos" of Theophrastus was "ad nexus utilis." C. Bauhin ("Theat.

* The Belgic *lisch* agrees with the Italian *lisca*, a reed; and the A. S. *risca* and our *rush* appear to be other forms of the word,

Bot." p. 232) informs us that mats and rugs were woven with it by country folks in the olden time. Ruellius, who wrote in the time of Francis I., of France, ("De Natura Stirpium," 1537, p. 441), and Gesner assents to him, says that *Sparganium* (or *Butomus* of their nomenclature) was by the herbaries and the apothecaries called "*Juncus Cabacinus*" (*i.e.* basket-rush); for the reason that from the leaves mats and slight baskets were constructed, like those plaited from *Espartograss*. The baskets (*Corbular*) in which figs and raisins were kept, were then ordinarily called *Corbas* or rather *Cabas*; (hence *cabacinus*). In Charles Stephens' work "*De Vasculis*," Paris, 1544, p. 50, "*Cabatz de figues*" is given as the Venetian name for the baskets in which figs were carried. This word is also the same as our *Corb*, a basket in which coals were carried from the pit; and the *Corbis* of the days of Cicero and Propertius—then composed of willow wands, and associated with the labours of the harvest-field. These appear to be the more prominent facts and coincidences brought out by the history of *Sparganium*.

2.—On *Milium effusum*, L.

This grows in the oak wood below Old Middleton, which faces the Wooler water, among one of those collections of detached stones, so frequent on Northumberland hill-sides. It is new to the "*Eastern Border Flora*," as constituted by Dr. Johnston; but not to the Club's field, being found in "*Rugley wood, rare*," ("*Hist. of Alnwick*," ii., p. 430). In October, my eye was attracted to it by its peculiarly dark-green corn-like foliage, still fresh and lively among the drooping and faded sward in other parts of the wood. Unfortunately, I have never yet seen it in the gracefulness of its summer growth. Dr. Withering's notice of it is worthy of the old botanists. "Panicles tall and wide-spreading, very much scattered from the various lengths of the secondary fruit-stalks, which grow in whorls, and give the whole plant an airy, light, and elegant appearance." Join to this the picture of Parkinson; "The common Millet Grass riseth up with a joynted slender stalke, with two or three somewhat larger leaves thereon, and at the toppe, a bushy spreading tuft of many long featherlike sprigges, consisting of many small chaffe husks within which lye small seede, which the small birds greedily devoure." Add also from Gerard; "the stalke or leaves do resemble the bents, wherewith country

people do trimme their houses." These men saw how admirable it was ; but it remained for Linnæus to pronounce its eulogium, "Whose stature, size, or sweet odour, if any one considers, he will allot to it the foremost place among all the grasses." ("Flor. Lapp.," p. 23).

Gerard is so good as tell us that "the chaffie heads" are "like to 'Miliun' or Millet, whereof it tooke the name." But it had no name in English till he translated the "*Gramen miliaceum*" of Lobel ; which is an adaptation from the German "Hirse" or "Hirsengras." (Hirse, *i.e.* Millet.)* Lobel also calls it "Saet-gras;" seed or corn-grass ; the shining seeds being like a diminutive sort of grain.

The dried grass retains for a long time an agreeable odour, which Linnæus compares to that of Melilot. ("Flora Suecica," Ed. 2, p. 21). The poorer Swedes who could not attain the rich perfumes of foreign lands, appear from the choice names they give them, to prize their own woodland scents. They call the Miliun, "Myskegras," *i.e.* wood-roof grass ; and "Lukt-gras," or scented grass. In Oeland, the *Asperula*, and Miliun, together with Melilot seeds are wrapt up in their clothes by the peasants to dispel moths or bacon-worms. Mites also are a sore evil, which it is employed to get rid of. ("Linné Reisen durch Oeland," &c., i., p. 69, Halle, 1764). The contents of the scent-bag of the Lapland maidens is a mixture of Millet grass and tobacco. ("Flor. Lapp.," p. 23). It is also the Swedish "Hazel-brodd," *i.e.*

* Of the unusual word *Hirse*, the root-term has been given up as hopeless by Dr. Prior in his "Popular Names of British Plants," p. 115 ; he only being able to suggest *cerevisia*, "from ale being brewed from it" This will not bear looking at. The Greek for Millet is *Cenchros* (Kengchros), or *Cenchrys* (Strabo) ; (*n* being equal to *ng*) ; a word with which we are familiar in *Cenchrea*, the port of Corinth. *Kenchrimides* were the numerous grains of the fig, or the nuclei of the olive, ("Suidas Lex." i., p. 1428) ; and *P na* and Lobel, ("Stirp. Advers.," p. 13), imagine that this is the primary application of the term. There is, at least, a mutual likeness in each. The German *hirse*, Belgic *hirs*, *hirsse*, *heers*, ("Kilian") and Danish *hirs*, appear to me still to represent this Greek name ; the initial portion has either perished or has dwindled to an aspirate ; but the bones remain in the latter part. There is a still stronger Flemish form in *gers*, found in Gerard Vossius ("Etymolog. Ling. Lat.,"), and in Dutch dictionaries. "*Ieuers*, *geguers*, or *giawres*," of Matthioli ; or *jevers*, *gegers*, *giavers*, as Menzel prints it, shew the outgoings of the word in a different direction. These terms of the Arabian physicians, manifest modifications of the Greek name, and almost the counterpart of the Teutonic *hirse* and *gers*, are excellent proofs of the source from which the latter also emanated. Millet, comprising a variety of similar grains, in penetrating Germany, through the ramifications of Greek commerce, or the extension of cultivation, lost the half of its name by the transition. Similarly, *rice* is *oryza*, lopped off at both ends.

Hazel-blade ; and no doubt we ought to look for it especially in old hazel copses ; in those "Sylvis humosis, nemorosis, quietis, densis et intactis," painted by the master.

3.—*Enanthe crocata*, L.

In Sir Walter Elliot's Presidential Address, it is left doubtful whether, or not, sheep eat of this suspicious plant. I may mention that sheep on the sea-banks do crop the leaves in spring and autumn ; but they do not keep it down, which is conclusive that they do not relish it. According to the experiments in the "*Amœnitates Academicæ*," ii., p. 244, (Amsterdam, 1752), sheep eat it, while cattle and horses reject it.

4.—*Scandix Pecten-Veneris*, L.

No where are there more local names for this weed, than in Berwickshire. Among others of my gatherings contributed to Dr. Johnston's Flora, it is signified that the local name is "Witches needle;" and moreover that "some of our country women call the long-beaked fruit, the 'Deil's Darning Needle,' and others 'Adam's needle,' from their unlearned conjecture that therewith our first parents stitched the primitive robe." I have recently heard it called "Elshins," *i.e.* awls ; and the "Deil's elshin." It impairs the quality of the grain with which it is mixed, from the difficulty of separating the husks from it.

5.—*Digitalis purpurea*, L.

A smooth green gall about the size of a vetch made its appearance, hereabouts, this season, on the mid-rib of the fox-glove, of which there is nothing on record. I could see no inmate, but its structure and appearance lead me to think that it is a blister raised by mites.

6.—*Teucrium Scorodonia*, L.

Mr. Wightman gave me a remarkable monstrous state of this plant in blossom, which he and Mr. Middlemas had got among the rocks below where the Common and Broadstruther burns unite. This is a conversion of the exterior floral parts into small pale green ciliated leaves ; the tubular calyx, as well as the pouched corolla, being decomposed into their components, excepting here and there a welding in some at the base ; showing that flowers are but modifications of a whorl of leaves. The stamens and pistils are either abortive, or they have undergone duplication. The spikes are either close and cylindrical, or clustered into a dense ovate mass.

Contributions to the Entomology of the Cheviot Hills. By
JAMES HARDY.

BEYOND what is recorded in the "Catalogue of the Insects of Northumberland and Durham," little has been done to work out the Entomology of the Cheviots, or of the subsidiary hills and vales that hang round the skirts of the principal mountains. Since that publication one naturalist after another has carried off a rarity; but there has been no systematic exploration. Thus, one discovers *Leistus montanus*, but whereabouts is uncertain; Mr. Hislop takes *Stenus glacialis* of Heer, in August, 1865—very rare here as well as in Switzerland; and Mr. G. R. Crotch finds *Hydroporus celatus* of Clark, "in a little stream on a hill near Cheviot." On several occasions I have picked up insects in that district, without putting them on record; but I am now induced to undertake that duty, in consequence of the considerable collections that I have made during the beginning of June, and in the end of September and beginning of October, 1870, for the purpose of contributing to my friend Mr. Bold's revision of the "Catalogue," already mentioned; which, now, after nineteen or twenty years' study and labour, he is well entitled to as his own. Mr. Bold has kindly aided me with names and otherwise to adapt this local list to the present state of science; the nomenclature being very much altered, with the progress made in recent years. I have always endeavoured to group forms under as few heads as possible; the tendency at present is in a different direction; and species are raised on trivial distinctions; but I am not prepared, at present, to rate the value of these, from having had little practical experience for a long period.

As the result of my late operations several good insects have come to light; some of them new to Northumberland; others never found so far to the north or south before, as this midland region; and not a few never yet entered as belonging to the fauna of the Eastern Borders. Thus much may be said safely, but at the same time there is yet a great deal to do, before effectually breaking up such an extensive tract. However, I do not look on Cheviot itself favourably, as likely to be very productive. Peat predominates too much; and the immense uniformity of heath and mountain grasses is adverse to variety. The subsoil, also, is a bare barren grit or

gravel, or the porphyritic rock itself, and yields no shelter; while the streams rapidly overflow and sweep off the debris, in which insects might harbour. The sides of the ravines are roughened with crowded patches of angular stones, loose and shifting,—in summer, arid as a desert; which also enclose the bases of the precipitous rocks, where a little cool shelter might be obtained, being merely at places hidden from the view by a poor scanty soil. The trees on the outskirts are too few and open to modify the general bleakness. As a whole it does not differ much from moorland of much less elevation.

My first attempt to look up the north and north-east back of Cheviot was rather discouraging. I was led to make it in July, 1869, being flattered by the capture, in the spring, of two of *Carabus glabratus*, which were rambling about the banks, below the rocks at the Bizzle. I made trials of both the Bizzle and Dunsdale, and it was more easy not to find, than to capture anything worth carrying off. I present the list as a starting point.

Coleoptera.

Cychrus rostratus.	Tachinus laticollis.
Steropus Æthiops.	Quedius fulgidus.
Calathus micropterus.	„ molochinus.
„ melanocephalus, dark	Othius læviusculus.
mountain variety.	„ myrmecophilus.
Autalia puncticollis, Sharp.	Oxytelus sculpturatus.
Homalota longicornis.	Byrrhus pilula.
„ atramentaria.	Cereyon, three common.
„ fungicola.	Aphodius subalpinus, numer-
„ elongatula.	ous.
Tachinus humeralis.	„ putridus, scarce.
„ marginellus.	Otiorhynchus maurus.

Hemiptera.

Nabis apterus.	| Sphyrocephalus ambulans.
----------------	--------------------------

Homoptera.

Acocephalus bifasciatus.	| Eupteryx flavipennis?
--------------------------	-----------------------

Ants.

Formica fusca.	| Myrmica ruginodis.
----------------	--------------------

In the Bizzle I came upon a field-mouse or vole, *Arvicola agrestis*, from which I got, *Pulex Talpæ*, Curt.; and an

Ixodes, species not determined. At the same period I took on the sandy road side, leading to Whiteside or Whitsunbank Hill, near Wooler :

Bees.

Colletes succincta.
Halictus rubicundus.

| Halictus tumulorum, L.
| Andrena fulvicrus?

Fossores.

Pompilus sp.

| Mellinus arvensis.

One spring, in visiting Heathpool Linn, I observed *Silpha thoracica*, not a common insect thereabouts. Gyllenhal notices its vernal habits. The result of a short attention, one hot summer, to a shallow peaty pool, on the neck of Hedgehope, was the discovery of *Agabus arcticus*, which was attended by *A. congener*, Payk. Some hasty surveys of the peak of Cheviot shewed that it and Hedgehope agreed in the character of their insect habitants, such as—*Pterostichus Orinomus*, *Homalota tibialis*, *Calathus micropterus*, *Anthophagus alpinus*, *Arpedium brachypterum*, *Otiorhynchus maurus*, &c., common to both. From a pool near “the pole,” I landed, *Hydroporus melanocephalus*, Gyll.; and *H. nigrita*, Fab. (female)=*H. glabellus*, Thomson.

In June, 1870, my object was to investigate Cheviot itself, commencing with the ravine above Goldsleugh and then ascending to the top. I made the ascent twice, but both days terminated in mist and rain. On a third attempt, I looked into Henshole, but did nothing more than turn over a few stones, and shake out some moss. There was a general drought, and not much to be got. Broadstruther Burn, Cold Martin Moss, Wooler Water, and the Till, were also overhauled.

Coleoptera.

CARABUS GRANULATUS and VIOLACEUS. Both on the top of Cheviot.
,, NITENS. One on the moor between Broadstruther and Cheviot.

NOTIOPHILUS AQUATICUS and BIGUTTATUS. On the top of Cheviot, as well as Hedgehope.

PATROBUS EXCAVATUS. Plentiful on Cheviot, up to the apex. No trace of the Scottish mountain species *assimilis*.

CALATHUS MELANOCEPHALUS, nearly all of the black variety. Cheviot.

CALATHUS MICROPTERUS. Cheviot.

- ANCHOMENUS FULIGINOSUS. Cheviot.
 PTEROSTICHUS ORINOMUS. Cheviot.
 „ DILIGENS, *St.* Henshole and Cold Martin Moss.
 AMARA LUNICOLLIS. Henshole.
 HARPALUS ÆNEUS. Top of Cheviot.
 BRADYCELLUS PLACIDUS. Beneath rubbish, on the Till.
 „ COGNATUS. Base and top of Cheviot.
 „ COLLARIS. Ascent of Cheviot.
 „ SIMILIS. Cold Martin Moss, under heather.
 TRECHUS OBTUSUS. Cold Martin Moss, and Cheviot.
 BEMBIDIUM MONTICOLUM and DECORUM. Broadstruther Burn.
 „ PUNCTULATUM. Wooler water above Earl Mill.
 „ PALUDOSUM. On the Till.
 „ SCHUPPELU. On the Till.
 HYDROPORUS PARALLELUS, *Sharp.* Cold Martin Moss.
 OCALEA RUFILABRIS. Under leaves in a marsh, Broadstruther wood.
 TACHYUSA CONSTRICTA. Till, below Weetwood Bridge.
 „ SCITULA. Cold Martin Moss.
 „ FLAVITARSIS. Till.
 OXYPODA LONGIUSCULA. Broadstruther Burn.
 „ RUPICOLA, *Rye.* Cheviot. Hitherto only found in Scotland.
 MYLLENA ELONGATA, *Matthews.* Gravel of Broadstruther Burn, and on the Till.
 HOMALOTA CURRAX, *Kraatz.* Borders of Wooler water, and Broadstruther Burn.
 „ INSECTA, *Thoms.* Channel of Broadstruther Burn. New to Northumberland. Of this Dr. Sharp says, “generally distributed but uncommon.”
 „ CAMBRICA, *Vol.* Beneath stones; channel of Wooler water below Harthope Linn; Broadstruther Burn.
 „ ELONGATULA, *Gr.* Cold Martin Moss.
 „ VOLANS, *Scr.* Broadstruther Burn, and Cold Martin Moss. Mr. Bold says this is common in Northumberland.
 „ CLAVIPES, *Sharp.* Henshole. New to England. “Found hitherto only on the higher mountains of Scotland; Ben Lomond, Mamsoul,” &c. (Dr. Sharp.)
 „ TIBIALIS, *Heer.*—*nivalis*, *Kies.* and *Cat.* of Coleopt. Northd. and Dur. Cheviot and Henshole, numerous; also in Cold Martin Moss. Dr. Sharp finds it, “common on the hills of Scotland, North of England, and Wales.”
 „ GREGARIA, *Er.* Cheviot.
 „ VICINA, *Kirby.* Broadstruther wood.
 „ GRAMINICOLA, *Gr.* Cold Martin Moss, and elsewhere.
 „ CIRCELLARIS, *Gr.* Common.
 „ EREMITA, *Rye.* Cheviot, Henshole, and Cold Martin

- Moss, in plenty; shaken from moss.
- HOMALOTA CURTIPENNIS*, *Sharp*. Several from Henshole. New to Northumberland. "I have only found this species in Scotland; Rannoch, Pentlands, Thornhill." (Dr. Sharp.)
- " *ANALIS*, *Gr.* In moss on moors.
- " *SUBÆNEA*, *Sharp*. Wooler water, and Broadstruther Burn. "In wet places on the banks of the Scotch rivers, and in England rarely." (Dr. Sharp.)
- " *SUCCICOLA*, *Thoms.* Cold Martin Moss.
- " *ATRAMENTARIA*, *Gyll.* Common.
- " *FUNGI*, *Gr.* Rubbish by the sides of streams.
- HYPOCYPTUS LÆVIUSCULUS*. Cold Martin Moss.
- TACHINUS COLLARIS*. Ditto.
- TACHYPORUS TRANSVERSALIS*. Ditto.
- MYCETOPORUS LEPIDUS*. Ditto.
- QUEDIUS FULVICOLLIS*. Cheviot.
- " *SEMLENEUS*, *Steph.* Cheviot.
- PHILONTHUS UMBRATILIS*, *FIMETARIUS*, *NIGRITULUS* and *RUBRIPENNIS*. Channel of Careburn, opposite Hell-path.
- " *PROCERULEUS*. Henshole.
- OTHIUS MELANOCEPHALUS*. Cheviot.
- " *MYRMECOPHILUS*. Do.
- STENUS JUNO*, *BUPHTHALMUS*, *LATIFRONS*, *NITIDIUSCULUS*, and *LATICOLLIS*(= *brunnipes*.) Henshole.
- " *BREVICOLLIS*. Henshole, and by the Till. New to Northumberland.
- " *FULVICORNIS*. Henshole.
- " *IMPRESSUS*. Henshole and Broadstruther water.
- " *IMPRESSIPENNIS* (= *Ossium*.) Cold Martin Moss.
- BLEDIUS SUBTERRANEUS*. Burrowing in sand, on the Till.
- TROGOPHLEUS PUSILLUS*. Among gravel, Broadstruther Burn.
- ANTHOPHAGUS ALPINUS*. One only, Cheviot, but low down the hill, above Woolhope Crag. In Sweden it frequents bushes, but here it shelters under stones. I have met with it several times at the tops of Cheviot and Hedgehope.
- LESTEA BICOLOR*. Marshes.
- LATHRIMEUM ATROCEPHALUM*. Ditto. Not so frequent as I have seen it elsewhere.
- ARPEDIUM BRACHYPTERUM*. Henshole and the top of Cheviot.
- MEGARTHUS SINUATOCOLLIS*. Rubbish.
- CRYPTOPHAGUS SETULOSUS*. This pretty species found under a stone, among heath, on Cheviot, near Bellyside ravine.
- CYTIUS VARIUS*. Henshole.
- HETERO CERUS MARGINATUS*. Side of Till.
- HELOPHORUS OBSCURUS*. Cold Martin Moss.
- HYDRÆNA RIPARIA*. Marshes on Till.
- LIMNEBIUS TRUNCATELLUS*. Ditto.

- APHODIUS SUBALPINUS. Cheviot top.
 LIMONIUS CYLINDRICUS. Flying about in Henshole.
 CORYMBITES CUPREUS. Broadstruther.
 HELODES MARGINATUS and TELEPHORUS PALUDOSUS. Marshes.
 STROPHOSOMUS OBESUS. Whiteside road
 SITONES LINEATUS. I found a considerable number of fresh specimens hid under stones at the top of Cheviot; a strange place for this frequenter of beans, peas, and vetches, in cultivated grounds. It may have been shifting camp, and soared too high, in a warm current of air. In October, I saw others about the top of Hedgehope, in a migrating swarm of insects crossing from the low country. From notices in "The Entomologist," it has, this season, been so prevalent in the South of England, as to destroy several crops of garden peas. In harvest, I noticed hundreds of this insect collected beneath the plate covering the knives of a reaping machine, engaged in cutting beans and vetches.
 OTIORHYNCHUS LIGNEUS. Locality not marked.
 ,, MAURUS. Below stones among clumps of bilberry, on the back and top of Cheviot; also at the top of Hedgehope, in October.
 CEUTORHYNCHUS QUADRIDENS. Broadstruther Burn, on *Cardamine sylvatica*.
 ,, ERICÆ. Cold Martin Moss.
 CIONUS SCROPHULARIÆ. On *Scrophularia nodosa*. Banks of the Till.
 PHAEDON ARMORACIÆ. Broadstruther wood.
 PRASOCURIS BECCABUNGÆ. On *Anagallis aquatica*, in pools near Earl Mill, cutting the foliage into shreds.
 PSYLLIODES NAPÆ. On *Cardamine sylvatica*, side of Care Burn at Hell-path.
 MNIOPHILA MUSCORUM. Shaken out of dry moss in the lower part of Henshole.
 CORTICARIA FUSCULA, *Gyll.* Cold Martin Moss, Cheviot, and Henshole, among heather and moss.
 MICROPEPLUS PORCATUS. Cold Martin Moss.

Hemiptera and Homoptera.

- SALDA STELLATA. Broadstruther Burn.
 ,, PALLIPES. Wooler water.
 SCOLOPOSTETHUS AFFINIS. Among heather, Cold Martin Moss, and Broadstruther.
 DIPSOCORIS ALIENA. Among gravel, side of Care Burn, opposite Hell-path.
 ZICRONA CÆRULEA. Among heather, Whiteside Hill.
 LIBURNIA DISCOLOR. Near Broadstruther Burn.
 ULOPA OBTECTA. Among heather, Cold Martin Moss.
 ACOCEPHALUS AGRESTIS. Cheviot.

Bees.

- ANDRENA EXTRICATA (males). New to Northumberland. Whiteside road.
 „ CINGULATA. Several. Whiteside road.
 SPHECODES EPHIPPIA. Ditto.
 HALICTUS TUMULORUM, L. Large and small form.
 „ ZERATUS. Wooler water, beneath stones.

In the end of September and the beginning of October the principal success was obtained among the Coleoptera that frequent Agarics and tree Fungi. Several insects were also collected in marshes, and by the sides of sykes and rivulets, and in dried-up moss pools, where the Sphagnum peeled off like a rug. Dry ground at this period is almost deserted. I explored most of the clumps of natural wood on Wooler water, chiefly of Alder, from Langlee down to Coldgate Mill; Broadstruther wood; Cold Martin Moss and Trickley wood; Heathpool Linn; Hedgehope; Goldsleugh wood, in passing; and part of the Lill Burn on Middleton ground; besides other spots which were unproductive. The more choice insects were from the corky fungus of the Alder (*Polyporus radiatus*) and from Agarics growing on decayed trees, mostly of Alder also; the abundant *Agaricus fascicularis* excepted, which was nearly unoccupied, probably owing to its acidity, which even penetrated the hands when crumbling it. The return of scarce and noteworthy insects was more favourable than might have been expected from the lateness of the season, and the long continuance of dry weather.

Coleoptera.

- LEISTUS FULVIBARBIS. Among damp grass, and in a ditch, Middleton side of Wooler water, opposite Middleton Hall.
 DROMIUS NIGRIVENTRIS, Thomson. (= fasciatus). Shaken from heather, ditch bank, Whiteside Hill. This is far from the influence of the sea-side, which the insect usually frequents.
 CALATHUS MELANOCEPHALUS. Dark mountain variety. Top of Hedgehope.
 BEMBIDIUM GUTTULA. Wet grass, side of rivulets on Wooler water.
 „ MANNERHEIMÜ, Sahlb. Beneath leaves and long grass, Alder swamp, near Wooler water, below Care Burn bridge. A rare species. Mr. Bold has found it among leaves, &c., at Gosforth; and also at Tain, Rosshire.
 HYDROPORUS MONTICOLA, Sharp. One in Cold Martin Moss under Sphagnum.

- HYDROPORUS OBSCURUS. Ditto.
 AGABUS CHALCONOTUS. Ditto.
 AUTALIA IMPRESSA. In agarics, plentiful.
 BOLITOPHORA LUCIDA. One at the base of *Polyporus versicolor*, on a decayed tree, in a wood on Wooler water, above Coldgate Mill. New to Northumberland.
 „ OBLIQUA. With the preceding.
 OCALEA RUFILABRIS. Swampy ground in Alder woods, on Wooler water.
 „ BADIA. One in a birch fungus (*Polyporus betulinus*) along with a *Rhizophagus*, in Goldseleugh wood, base of Cheviot. The fungus, however, was touching the ground, whence the insect may have reached it.
 LEPTUSA FUMIDA, *Er.* Beneath bark fungi.
 „ RUFICOLLIS, *Er.* With the preceding. The two often occur together under bark. They form my *Homalota rufescens* and its var. I had, it seems, mistakingly referred them to *Aleochara rufescens*, Kirby.
 OXYPODA SPECTABILIS. One from woods on the Lill Burn. Rare.
 „ ALTERNANS. Numerous in agarics.
 PHLÆOPORA REPTANS. Bark of Scotch firs, Trickle planting, on Whiteside Hill.
 HOMALOTA INSECTA. Channel of College water below Heathpool Linn, among gravel; very difficult to secure; many examples got.
 „ PAVENS, *Er.* Border of a syke on Wooler water, Middleton side. This is reckoned “not common.” One of the finest of the genus.
 „ VOLANS. Agarics, several.
 „ CLAVIPES, *Sharp.* Hedgehope, and probably Cold Martin Moss. 6 specimens.
 „ TIBIALIS, *Heer.* Cold Martin Moss, and the hills. Plentiful.
 „ GREGARIA, *Er.* Two examples.
 „ VICINA, *Steph.* (= *umbonata*, *Er.*) Two examples.
 „ OCCULTA, *Er.* One from fungi.
 „ PICIPES, *Thomson*, (= *fuscifemorata*, *Waterh.*) Many from agarics.
 „ CIRCELLARIS. Dry moss on Wooler water.
 „ CURTIPENNIS, *Sharp.* Hedgehope.
 „ ANALIS. Common.
 „ ÆNEICOLLIS, *Sharp.* Agarics, a few.
 „ XANTHOPTERA, *Steph.* Ditto.
 „ FUNGICOLA, *Thomson*, (= *nigricornis*, *Waterh.*) Plentiful. All three are said to be “common in fungi.”
 „ IGNOBILIS, *Sharp.* In agarics in all the localities examined; 60 taken. Dr. Sharp has only found it rarely at Croydon and near Edinburgh. (*Entomolog. Soc. Trans.*)

- HOMALOTA SODALIS, *Er.* Two in agarics. Said to be "not uncommon in fungi in summer."
- „ VILLOSULA, *Kraatz?* Two examples.
- „ ATRAMENTARIA. One. Common.
- „ FUNGI. Four examples. Marshes.
- GYROPHLENA GENTILIS. In the gills of agarics. Woods on Wooler water, and on the Lill Burn.
- MYLLENA ELONGATA, *Matth.* Among moist stones and under moist rubbish, Wooler water; also under Sphagnum in Cold Martin Moss, in dried-up peat pits, rapidly gliding off and concealing itself in chinks.
- „ BREVICORNIS, *Matth.* Among grass in swamps, and by the sides of sykes. Wooler water.
- GYMNUSA VARIEGATA, *Kies.* Among wet grass at the mouth of a syke, in an Alder wood, on Wooler water, opposite Middleton Hall shepherd's house. New to Northumberland.
- TACHINUS PROXIMUS, *Kraatz.* In decayed *Boletus luteus*, in a dark glen leading to Langleyford "backwood" (a little below Langlee), on Wooler water; three taken, but more seen.
- „ COLLARIS. One from agarics.
- BOLETOBIUS ATRICAPILLUS, TRINOTATUS, and PYGMÆUS. In agarics in many places.
- QUEDIUS UMBRINUS, *Er.* In marshes. There were likely other species, but I passed them over.
- PHILONTHUS ATERRIMUS, and P. SUCCICOLA, *Thom.* (= sordidus). Agarics, &c. The Philonthi were not attended to.
- LATHROBIUM QUADRATUM. Among moss and grass. Old peat pits. Cold Martin Moss.
- DIANOUS CERULESCENS. Side of a hill streamlet half way up the east side of Newton Tor.
- STENUS BUPHTHALMUS and S. BREVICOLLIS. Cold Martin Moss.
- „ NITIDIUSCULUS and S. IMPRESSIPENNIS. Swamps and sides of sykes on Wooler water.
- „ GUTTULA. Among gravel, Heath-pool Linn.
- SYTOMIUM ZENEUM. Among moss.
- LESTEVA PUNCTATA. Cold Martin Moss, and in swamps on Wooler water.
- OLOPHRUM PICEUM. Swamps on Wooler water.
- LATHRIMEUM UNICOLOR. Under moss, damp place near an Alder swamp, Middleton side of Wooler water, opposite Middleton Hall shepherd's house.
- DELIPHRUM TECTUM. Dead rabbit.
- HOMALIUM RIVULARE. In agarics, plentiful.
- „ ABIETINUM, *Thomson.* Beneath Scotch fir bark in Trickley planting. This is a split from *H. pusillum*.
- „ ALLARDI. Agarics, one. This is my *H. Oxyacanthæ*.
- „ EXIGUUM. Agarics.

HOMALIUM CONCINNUM. Agarics.

- „ VILE, *Er.* Twelve specimens, in agarics, on trees
 „ BREVICORNE, *Er.* Eight specimens. On the underside
 at the base, *i.e.* between it and the bark, of fresh growing
Polyporus radiatus on Alder, near Langlee, and also on the
 Lill Burn. Mr. Rye writes me that this is on the British list
 —but not generally known. He has two Fifeshire specimens
 given him by Dr. Power, which Fauvel had erroneously named
gracilicorne. The examples now obtained serve to clear up the
 species. The island of Sardinia is the locality given by Erichson.
 CHOLEVA LONGULA, *Kelner nec Murray*. In agarics, Middleton
 banks on Wooler water.
 „ CORACINA, *Kelner*. In a dead rabbit. Ditto. New to
 Northumberland.
 „ MORIO. Ditto.
 „ GRANDICOLLIS. One. Ditto.
 „ KIRBÜ. Several. Ditto.
 „ TRISTIS. Swarms. Ditto; also in agarics.
 „ WATSONI. Three. Ditto.
 „ SERICEA. Under a stone, top of Hedgehope.

Obs. Some of the Cholevæ were found under agarics, but they were all placed together.

SPHERITES GLABRATUS. One in the centre of a deliquescent
B. letus luteus. Almost the last insect to come forth, and very
 unwilling to move when it did tumble out. In a dark glen on
 Wooler water, near Langlee, and leading to Langleyford
 “backwood.” This is new to England. The Berwickshire
 example was found under rubbish, in a still more shaded dean.
 Of late years several examples have been taken in the N. W.
 of Scotland. It seems that the name SARAPIES was first pro-
 posed for this insect, but the description of it perished in the
 conflagration of Moscow, in 1812. (Gyllenhal, *Ins. Suec.* IV.,
 p. 305).

OMOSITA DEPRESSA. One in an Agaric.

RHYZOPHAGUS DEPRESSUS. Under bark of Scotch pine, Trickley
 planting.

„ DISPAR and BIPUSTULATUS. Both of these occurred
 in tree fungi, as well as under bark.

CRYPTOPHAGUS SCANICUS. In dry old agarics on trees. Heath-
 pool Linn, and on the Lill Burn.

„ PILOSUS, *Gyll.* On decayed Alder fungi; Wooler
 water, near Langlee. Rare.

„ DENTATUS. Several curicus high-coloured varieties.
 With the preceding, but more numerous. Heathpool Linn,
 about Langlee, and on the Lill Burn.

MYCETOPHILUS MULTIPUNCTATUS. In the corky fungus of the
 Alder (*Polyporus radiatus*); occasionally also in tree agarics on

that tree. This is now recorded for the first time, for the N. of England. Many examples. Broadstruther wood, woods about Langlee, and on the Lill Burn.

PHILHYDRUS NIGRICANS. Cold Martin Moss.

„ MARGINELLUS. Ditto.

CIS BOLETI and C. FESTIVUS. The first in *Polyporus versicolor*; the second in that fungus, and *P. vulgaris* also. Broadstruther wood; Lill Burn.

OCOTOTEMNUS GLABRICULUS. With the preceding.

ORCHESIA MICANS. Corky fungus of the Alder (*Polyporus radiatus*); scattered and not numerous. Broadstruther wood; woods near Langlee; woods on the Lill Burn. The last is the locality where I first obtained the fungi, from which I bred it. The rarer *Carida flexuosa*, which I then observed, did not occur on this occasion. O. MICANS jumps like a flea (“citissime saliens”); but I remarked that as soon as it concealed itself under a fragment of the fungus, which had to be cut or crushed to pieces, it became quiet.

ANASPIS RUFICOLLIS. I remarked numbers of this insect drowned in fir rosin, on old tree stumps.

SALPINGUS FOVEOLATUS. Mr. Bold remarks that this is new to Northumberland; and that another example occurs in Mr. Boyd’s collection. This was found about Langlee, in the Alder woods.

MELANOTUS FULVIPES. Larva only in decayed Alder, near Langlee.

APION VORAX. This lives on plants of the vetch kind, but at Broadstruther I shook great numbers from a birch tree. I once, at Lobley hill near Ravensworth, got numbers of it on heather.

STROPHOSOMUS CORYLI, RETUSUS, and LIMBATUS; various localities.

GRAPTODERA LONGICOLLIS, *Allard*. This is formed at the expense of the old *Haltica oleracea*. From heath on Whiteside (or Whitsunbank) Hill. The insects were only clustered on certain bushes of the heather, and there were more females than males. If this disproportion of the sexes is general, may not this be the reason for the gregariousness, which renders the *Halticæ* such pests? They associate to pair, but at the same time must feed, and in congregating eat up everything. I observe that *Haltica Nemorum* (the Turnip Fly), this summer, after its destructive career was closed, has fixed itself on some grown turnips, rather than others; and that these “trysting” plants (if such they are) are miserably defoliated; the bulb sometimes only left. The same congregation on certain choice plants may be also remarked in the *Thyamis* of the Ragwort; and perhaps the most of the social Chrysomelidæ. With regard to *G. longicollis*, Mr. Langlands, of date August 4, 1870, sent me a number of its larvæ, which feed in bands on the

heather, as well as on the wild rock-rose (*Helianthemum vulgare*). "Last year the heather on my hill farms was blighted, as we thought, by a spring frost; but these larvæ afterwards were noticed, to a great extent, by my shepherd, feeding and destroying the plants. When he called my attention to them they were passing away; this year, however, we have kept a look out for them; but they are not so numerous."

THYAMIS MELANOCEPHALUS, FUSCICOLLIS, and SUTURALIS. On Ragwort, Humbleton dean, &c.

TRIPLAX ÆNEA. On the Polyporus and agarics of the Alder, Broadstruther wood; woods about Langlee, and downwards on Wooler water; and on the Lill Burn. Also on an oak fungus, old Middleton wood. This is considerably farther north in Northumberland, than it has been previously observed. It will probably cross into Roxburghshire. It is not recorded in Mr. Murray's "Catalogue of Scottish Coleoptera."

LATHRIDIIUS NODIFER. In dried-up agarics on Alders, and on others on the ground under the shade of those trees. Dark glen near Langlee; and more abundant in South Middleton dean, where it joins the Lill Burn. Numerous; otherwise a rare insect.

„ MINUTUS. With the last, but much less frequent.

PHAEDON COCHLEARIÆ, (= *Betulæ*, *Curt.*). Marshes on Wooler water.

RHIZOBIUS LITURA. Found by shaking moss, and *Eleocharis cæspitosa*, over paper, in Cold Martin Moss. I suppose it is there parasitic on a small white powdered Coccus, which abounds about the roots of the *Eleocharis* or "Deer's Hair." More usually it occurs on sea-side sand-hills.

COCCINELLA 7-PUNCTATA. Of this, the common "Lady Bird," I turned out one from under a stone, at the top of Hedgehope. It is gifted with long wings, but one would scarce expect that it would soar so high; 2348 feet. Cheviot, where I found another lowland species (*Sitones lineatus*), is 2676 feet in height.

In connection with the elevation attained by this insect, quite beyond the area of its food, I may mention a wonderful migration of midges, which I passed through in my October ascent of Hedgehope. The air, which was unusually soft and balmy compared with its wonted keenness on this windy promontory, was crowded with them; and at first I thought I had encountered the upper stratum of the clouds of Aphides that then hung over the cultivated tracts, which I had been free from, as soon as I got amongst the hills. They were not Aphides, but an infinitude of *Sciara vitripennis*, mixed with males of a reddish brown ant (*Myrmica ruginodis*), a few of *Sitones lineatus*, and a stray field bug or two, *Lygus campestris*. The Red Admiral Butterfly had also joined the trip of these

minims to these dreary upland moors. But the Sciaræ formed the main body, which kept streaming away, in a gleeful dance, like a fairy raid, over the eastmost corner of the hill, towards the great gulf that intervened between it and Cheviot. If this goes on in the summer atmosphere, no wonder that swallows feed high. To one standing at the base, small birds would be out of sight, so far aloft. On this subject Mr. R. Scot Skirving furnishes me with something appropriate. In September, the small dung beetle (*Aphodius*) appeared in myriad swarms in East Lothian. "They filled the whole air, and covered all the cow and horse dung on the roads and fields. They must also have flown very high in the air. I saw, for a week, a cloud of the Black-headed Gull darting about high in the air. They did not light. At last I shot one, and found it full of these beetles."

Hemiptera.

Scolopotothus affinis.	|	Ætorhinus angulatus. On
Peritrichus luniger. Lill Burn.	|	Alder.
Trapezonotus agrestis. Wooler	|	Lygus campestris.
water, in moss.	|	Anthocoris nemorum.
Drymus sylvaticus. Ditto.	|	Salda saltatoria.
„ brunneus. Ditto.	|	„ pallipes.
Stygnocoris sabulosus. Ditto.	|	Pantilius tunicatus. One.
Monolocoris Filicis. On Aspidia.	|	

Homoptera.

Liburnia limbata.	|	Acocephalus bifasciatus.
Ulopa obtecta.	|	Aphrophora Alni.
Idiocerus Populi. On the Sallow.	|	Iassus mixtus. One.
„ fruticola. Birches,	|	„ 6-notatus.
&c.	|	Eupteryx citrinellus.

In the end of September I found the burrows of the solitary bees quite deserted by the diligent population that rendered them so lively in summer. Only a few of *Halictus Tumulorum* lingered at one spot, and they deserve notice, as this was their latest date. Some remnants of the yellow blossom of *Hypochaeris radicata* had kept them from starving till then. Born with the spring dandelions, they perish with the autumnal. But the spring and summer banks will be as populous as ever, and the passer by will take these for his friends of the bygone year. *They* were all killed off, without exception; and these are the offspring for which they toiled throughout every blink of sunshine, under a terror of dark clouds, and for whose preservation they expended so many instinctive wiles. To observe bees that don't sting, one has only to betake himself to the sunny bank of a sandy road.

Notice of a remarkable Meteor seen at Coldstream, on August 15th, 1870. By GEORGE EDWARDS.

Two extraordinary meteors have, this year, been visible in Great Britain, one on the 15th and the other on the 20th of August, about the same hour of the night. That on the 15th was first seen at Coldstream about 8.45 p.m., and remained visible about thirty minutes. The Duke of Argyll describes one as appearing on the 15th at Inverary, in the N.N.W. "The sky was cloudless, suddenly a large star appeared," &c. As it may not have been witnessed by any of the scientific members of the Club I have thought that the evidence of a less-learned witness might be useful.

I was near the monument, at Coldstream, on the evening of August 15th, when about 8.45, a large star—about the size of the Evening Star—appeared in the N.N.W. It had a dull hazy appearance, and when first seen was round, but soon altering in shape, it gradually got a tail, which had a peculiar oscillatory motion. The ball gradually grew up, and the tail became curved, and after taking a form almost like a horse shoe, a ball appeared at each end, and the whole looked not unlike a great chandelier. The curve and two balls kept moving, as if the balls were coming and going to each other, the curve being greater or less as they advanced or receded. After being visible for nearly half-an-hour, it gradually faded away.

Notice of Orchis pyramidalis. By CHARLES STUART, M.D., Chirnside.

IN July, 1869, one of my sons brought me specimens of an orchid, which I had never before seen, and which he had picked in the pastures at Whitehall, in Chirnside parish. Upon examination I found that it could be no other than *Orchis pyramidalis*. After a careful search over the ground indicated, I did not succeed, that year, in finding other specimens; but in July of 1870, the period when the plant flowers, I succeeded in getting several good specimens, one of which I sent to Professor Balfour, of Edinburgh University, and he at once verified the identity of the plant. As the ground on which the plants grow is pastured by cows, its present scarcity may be due to the chance of being eaten over, and

to its showy flowers being plucked by the persons who milk the animals. This plant has been previously found within the area of the Club, and is recorded in Tate's History of Alnwick, vol. ii., p. 428, as found in a field near Embleton. I am not aware that it has ever been found before in Berwickshire, and Professor Balfour writes me that it is rare every where in Scotland, so that it is a welcome addition to the flora of our district.

Notice of Night Heron; Ardea Nycticorax, Lin.
By T. H. GIBB, Alnwick.

AN immature female of this rare bird was shot, on Nov. 24th last, near to the confluence of the Cawledge burn with the Aln, by one of Major Browne's under-gamekeepers. The specimen was brought to me, by him, two days afterwards; and he informed me it had been observed during the preceding three weeks in the immediate vicinity of the place where it was killed.

The species is of rare occurrence in Britain. It is recorded as an *occasional visitant*, by Selby, in his ornithology of Berwickshire, printed in the Club's Proceedings, 1841, a fine specimen having been killed in the Hirsell. This is but the second time of its occurrence with the area of the Club.

Places of Meeting for the Year, 1871.

Maxton	..	..	..	Thursday, May 11.
Whalton	..	..	..	„ June 29.
Cockburnspath	..	..	..	„ July 27.
Alnmouth, on or about 31st August, } according to the state of the tide. }				
Berwick	..	..	..	„ September 28.

Rain Fall at Glanton Pyke, Northumberland, in 1870; communicated by FREDERICK J. W. COLLINGWOOD, Esq.: And at Lilburn Tower, Northumberland; communicated by EDWARD J. COLLINGWOOD, Esq.

GLANTON. PYKE.	
	Inches.
January . . .	1.96
February . . .	3.06
March . . .	1.13
April . . .	0.72
May . . .	1.62
June . . .	1.53
July . . .	0.83
August . . .	1.63
September . . .	1.26
October . . .	4.00
November . . .	3.10
December . . .	4.54

Total . 25.38

Rain Guage—Diameter of Funnel, 8 inches; Height of Top above Ground, 4 ft. 4 in.; Above Sea Level, 534 ft.

LILBURN TOWER.	
	Inches.
January . . .	1.872
February . . .	2.738
March . . .	1.185
April . . .	0.623
May . . .	1.622
June . . .	1.263
July . . .	0.631
August . . .	1.915
September . . .	1.053
October . . .	3.423
November . . .	2.442
December . . .	4.480

Total . 23.247

Rain Guage—Diameter of Funnel, square, 10 in; Height of Top above Ground, 6 ft.; Above Sea Level, 300 ft.

Rain Fall at North Sunderland, Northumberland, in the Year, 1870. Communicated by the Rev. F. R. SIMPSON.

Month.	Total Depth.	Greatest Fall in 24 hours.		Days on which .01 or more fell
		Inches.	Depth.		Date.
January	1.53	.42	7th	16
February	2.78	.47	7th	25
March	1.17	.24	21st	17
April	.40	.08	29th	9
May	1.19	.46	11th	14
June	1.25	.26	24th	12
July	1.07	.69	10th	9
August	1.03	.20	5th	11
September	.84	.21	8th	12
October	2.35	.77	12th	17
November	4.00	.86	10th	12
December	4.96	.83	9th	25
Total	22.57	5.49		179

Rain Guage—Diameter of Funnel, 8 inches; Height of Top above Ground, 1 ft. 2 in.; Above Sea Level, 69 ft.

GENERAL STATEMENTS.
Accounts—Sept. 28, 1870.

The INCOME and EXPENDITURE have been :—

Balance from last account in hands of

	£	s.	d.	
Mr Embleton	3	12	6	
Mr Tate.	1	15	4	
	—————			5 7 10
Arrears received	25	16	0	
Entrance fees	5	10	0	
Subscriptions for 1869	40	4	0	
Do. 1870	0	12	0	
Interest on £50 Bank Deposit	1	0	10	
	—————			78 10 8

EXPENDITURE.

Paid for Printing and Lithographs,	38	10	6	
Expenses at Meetings, Postages,	19	6	8	}
Carriage, &c.				
Balance in hands of				
Mr Embleton.	3	12	6	} 20 13 6
Mr Tate.	17	1	0	
	—————			78 10 8

The following were elected members at the meeting held at Berwick, September 29th, 1870.

- Rev. Augustus Crowther, Dunse.
- John Dunlop, Berwick.
- Pringle Hughes, Surgeon, Middleton Hall, Wooler.
- Rev. Wm. Merrilies, Berwick.
- David C. McVail, Surgeon, Infirmary, Alnwick.
- David McGrubbin, C.A., 14, Buchanan Street, Glasgow.
- Rev. James Noble, Castleton.
- James Purvis, Berwick.
- George Paulin, Berwick.
- Rev. David Paul, Morebottle.
- Thomas Patrick, Berwick.
- Rev. Wm. Procter, jun., Doddington.
- Rev. John George Rowe, Vicarage, Berwick.
- John Scott, Berwick.
- Captain Simpson, North Sunderland.
- John Pringle Turnbull, Alnwick.
- Rev. E. B. Trotter, St. Michael's Vicarage, Alnwick.
- James Wood, Galashiels.
- George Young, Berwick.
- Matthew Young, Berwick.

PROCEEDINGS

OF THE

BERWICKSHIRE NATURALISTS' CLUB.

Address delivered to the Berwickshire Naturalists' Club, at Berwick, September 28th, 1871. By WILLIAM B. BOYD, Esq., of Ormiston.

GENTLEMEN,

BEFORE retiring from the honourable position of President, I proceed, according to rule, to give an account of the doings of the Club during the past season.

The anniversary meeting of last year was held at Coldstream, on Thursday, 29th September. The members present were—Rev. George Selby Thomson, President; Geo. Tate, Esq., Secretary; Revs. P. Mearns, D. McAllister, S. A. Fyler, J. S. Green, P. G. McDouall, J. E. Elliot, Sir Walter Elliot, Capt. McLaren, Drs. F. Douglas, Chas. Douglas, M. J. Turnbull, A. Brown, Paxton, Fluker; Messrs F. J. W. Collingwood, R. G. Huggup, J. C. Langlands, T. Y. Greet, R. Douglas, W. Cunningham, J. Cunningham, Arch. Jerdon. Visitors—J. Mearns, — Huggup, jun. Breakfast was at the Newcastle Arms, after which the Secretary made a statement with regard to the funds of the Club, which were found to be

in a highly prosperous condition ; he also read a list of twenty-two names of gentlemen, who had been nominated at various meetings during the year, all of whom were admitted members. Rev. J. E. Elliot proposed, and Mr Archd. Jerdon seconded, that the Club extend its investigations as far southwards as the river Blyth. Mr Tate moved, in accordance with the above proposition, that one meeting be held this year at Whalton, which was unanimously carried. A letter from Miss Hunter was read, giving an account of an ancient monument still standing in a good state of preservation, on the site of the extinct village of Deadrig, in the parish of Eccles. The following meetings were fixed upon for next year:—Maxton, Thursday, May 11th ; Whalton, Thursday, June 29th ; Cockburnspath, Thursday, July 27th ; Alnmouth, Thursday, August 31st ; Berwick, Thursday, September 28th. A number of coins recently found at Embleton, of the reigns of Edward III. and IV. were exhibited, and a descriptive paper read by the Secretary. Mr Langlands read a paper, by Mr Hardy, Oldcambus, on the turnip insect, and on an allied species (*Graptodera longicollis*) which is destructive to heather. The Club visited several places of interest in the town and neighbourhood. They first inspected the collection of minerals and fossils at Lees Cottage, belonging to Mr Edwards, and afterwards visited the site of the old abbey. They then visited Lees House, where several objects of interest were shewn by Sir John Marjoribanks ; among others autographs of General Monk, duke of Albemarle, and Robert Burns. The Club next visited Hirsell House and grounds. A chair and table of strong oak, from the ancient castle of Hume, excited much interest. A few of the members visited the monument at Deadrig. The party returned to dinner at four o'clock ; after dinner the President read his annual address. Rev. P. Mearns, Coldstream, read a paper by Mr Edwards, Coldstream, descriptive of a remarkable meteor seen at Coldstream, on the 15th August. Mr William B. Boyd was proposed by the retiring President, and unanimously chosen President for next year.

The first field meeting of the year was held at Maxton, on Thursday, 11th May. The members present were—Mr W. B. Boyd, President; Revs. M. H. Graham, G. S. Thomson, John F. Bigge, P. G. McDouall, J. S. Green, — Graham, W. L. J. Cooley, Jas. Marshall, H. M. Oswald, S. A. Fyler; Drs. Dewar, Robertson, Brown, F. Douglas, C. Douglas, J. M. Turnbull, Mackenzie, Robson Scott; Messrs John Ord, R. Bolam, John B. Boyd, F. J. Roy, C. Anderson, Charles Rea, Archd. Jerdon, Purves, Stewart, Wood, Brown, Young, Geo. Allan, Russell, Stevenson, Sholto Douglas, Capt. Macpherson. Visitors—Rev. Thomas Johnston, St. Boswell's Manse; Rev. T. Rogers, canon of Durham Cathedral; Rev. Mr Paul, Mr Chisholm, and Mr James Boyd. The Club was most kindly and hospitably entertained to breakfast, by the Rev. M. H. Graham and Mrs Graham, at Maxton Manse. Mr Graham then favoured the company with a pleasant paper on the geology and antiquities of the parish, illustrated by fossils, carved stones, &c., laid out on a table on the lawn in front of the Manse. The members then divided into two parties. One party directed their way to Littledean Tower, under the guidance of the Rev. M. H. Graham, who kindly contributed the following notes:—“After loading and firing our pipes at the Manse, some eight or nine of us set off on our walk to rejoin the others at Mertoun House. We skirted the Glebe lands on the heights close by the river Tweed, and then *dropped* (literally) into the Duke of Roxburgh's property; concerning whose salmon-fishing rights *ex adverso* of this field, there was that great law-suit which in its issue is said to have ruled half of the salmon-fishing possessions in Scotland. Midway across the said field, you come suddenly and unexpectedly on one of the richest views and finest stretches of our noble river. Some thirty years ago or so the land gave way here, and in its fall, carrying away trees and rocks and thousands of tons of soil, made a tremendous slip; but unlike slips in general, this one was a great gain to society, for it opened up a bit of almost matchless scenery. At last we reached Littledean Tower,

the chief object of our walk, and one of the subjects of my 'Notes' read in the morning. My party were greatly shocked—as I foresaw—with the state of matters here, and I seized the occasion to request those present to request me, in the name of the Club, to bring it to the notice of the proprietor of the tower. What we desire is that something shall be done immediately, not only to remove recent accumulated masses of earth which conceal some fine portions of the structure; but also to prevent the further destruction by ruthless visitors, of the fast-crumbling ruins of this once splendid and most formidable Border Pele. Saddened but deeply interested by what we saw, and recalling to each other's remembrance the historical associations which still fondly cling to these ancient fortified homes, we entered the boat kindly provided by Lord Polwarth, and glided across the Tweed, which here speeds swiftly along the base of the richly wooded knoll, on which stands the grand old tower. We then made our way by the river side to the parish church-yard close by—as sequestered and eerie a 'God's-acre,' as human *we* could desire. Here, within a handsome mausoleum, repose in richly-carved coffins arranged in orderly tiers, the remains of the Scotts of Harden, *once* a rather disorderly old Border family, but now represented by the present Lord Polwarth. Pushing on, we joined the other party on the brink of that frowning precipice, which the tear and wear of ages is rapidly rendering dangerous; but from the top of which, as we will not readily forget, the lover of Nature obtains one of those magnificent views of Tweed's silver stream, and the gorgeous scenery around, which lingering long in his delighted recollection repays him amply for his pilgrimage here."

The other party, of which I formed one, proceeded from the Manse by the base of the cliffs towards Mertoun, where we were trysted to meet the division gone to Littledean Tower. We were principally on the outlook for spring flowers, but failed in finding anything new in this part of our walk. There were, however, noticed in the woods, *Adoxa*

moschatellina, *Allium ursinum*, *Stellaria holostea*; and on a fine rocky knoll near the Suspension Bridge, glittering masses of *Geranium lucidum* intermixed with *Fedia olitoria*. Passing on by the Suspension Bridge, we arrived at Mertoun House, where we were most kindly conducted by Lord Polwarth through his beautiful gardens and grounds. The gardens are most unique, situated on the corner of a steep bank;—the remains of old Mertoun House standing on the top, entirely surrounded by the garden. This is now occupied by Mr Fowler, the head gardener, who accompanied the party through the grounds for the purpose of explaining any matters of interest connected with the place. Along the banks of the Tweed, on the Mertoun side, we noticed *Doronicum pardalianches*, *Epipactis latifolia* and a considerable quantity of *Lathræa squamaria* growing at the roots of willow trees. After leaving Mertoun the Club kept along the banks of the Tweed to Dryburgh Abbey, where a considerable time was spent in admiring that very beautiful ruin. The ruins of this monastery are situated on a richly-wooded peninsula, formed by a bend of the river Tweed. Many trees of large dimensions surround the abbey; one overgrown yew is said to be coeval with it. There is reason to conjecture that on this spot there had been a Druidical temple; for the Celtic etymology of the name Darach-bruach, Darachburgh, or Dryburgh, is by interpretation, the bank of the sacred grove of oaks, or the settlement of the Druids. The new abbey of Dryburgh was founded by Hugh de Morville, in 1150, for monks of the Præmonstratensian Order, brought from Alwick Abbey in 1152. In 1323 the abbey was burned, and a considerable portion of it destroyed by the English, in the reign of Edward II., and was repaired at the expense of King Robert Bruce. It was, however, again destroyed by the English under Sir George Bowes and Sir Bryan Laytoun, in 1544; from which time there has been no attempt to restore it. This ruin is chiefly in the Saxon style of architecture, and the only remains are the western gable of the nave of the church, the ends of the transept, part of

the choir, and a portion of the monastic buildings. The principal door in the west gable is a masterly work, displaying a semicircular arch, with four single shafts. The south transept is of considerable height, and has a large window of exquisite design, with a division of four mullions. St. Mary's aisle on the north, the arched roof of which springs from a variety of clustered columns of admirable construction, is the finest section of the ruins. Sir Walter Scott was buried here on the 26th September, 1832.

Several plants of interest were found in and around the enclosure at Dryburgh; amongst them were *Tulipa sylvestris* growing in quantity, and *Petasites fragrans*, which, however, was supposed to have been an outcast from the old garden of the monks; *Cheiranthus Cheiri* was covering the ruins, and *Clematis Vitalba* running along the ground and clasping the pillars in its grasp. A quantity of morells, *Morchella esculenta*, were got growing within the abbey precincts, which, along with a supply kindly sent by Sir Geo. Douglas, from Springwood Park, were cooked for dinner, and were much appreciated by the members of the Club. Dinner was at the Buccleugh Arms, St. Boswell's Green. After dinner the following new members were proposed:— Rev. Thomas Johnston, St. Boswell's Manse; Rev. Thomas Rogers, Durham; Rev. R. Paul, Coldstream; Mr R. Grieve Thomson, Rutherford; Mr Francis Walker, Nesbit; Rev. T. S. Anderson, Crailing; and the Rev. D. Yair, Bunkle Manse.

On the proposition of Dr Francis Douglas, the Rev. Thos. Brown (a son of Mr Thos. Brown, one of our oldest members), was unanimously elected a member of the Club, at the present meeting.

The President exhibited specimens of *Petasites vulgaris*, with fertile florets, and also specimens of *Convallaria Polygonatum*. Mr Stewart exhibited specimens of *Tulipa sylvestris* in flower.

The second meeting was held at Whalton on Friday, 30th June. The members present were—the President; Sir Walter Elliot, Sir George Douglas, Drs. F. Douglas, C.

Douglas, Robert Wilson, D. C. McVail; Revs. J. C. Bruce, L.L.D., G. S. Thomson, W. L. J. Cooley, Wm. Proctor, P. G. McDouall, John F. Bigge, J. R. Simpson, J. Wilkinson; Capt. Simpson; Messrs F. J. W. Collingwood, Arch. Jerdon, J. C. Langlands, Henry Hunter, James Heatley, Edward Allen, Robert Middlemas. Visitors—Messrs John Philipson, William Brown, Thos. Arkle, Rev. M. Roach Jones and Miss Jones.

By the invitation of the Rev. J. Elphinstone Elliot the members were kindly entertained to breakfast at the Rectory. Notes of this meeting were kindly supplied by Mr Elliot and Mr Middlemas.

After breakfast, the Rector read an elaborate paper entitled "An Archæological sketch of Whalton and its vicinity." He also exhibited some local antiquities and objects of natural history, which were viewed and discussed with some earnestness. The party next inspected the Rectory, part of which, formerly constituting the Pele Tower, and consisting of two vaulted apartments with strong arched stone roofs, still remains in its original state; from the inner one the remains of a spiral staircase may still be seen, which had originally led to the upper rooms and battlements. They next visited the grounds of Mr Moore, opposite to the Rectory, where the tombstone of a former member of the family who, in consequence of his having adopted the opinions of the Covenanters, was excommunicated, and refused burial in consecrated ground in 1684, still testifies to the religious difficulties of those times. The Club was next conducted to the old Parish Church, dedicated to St. Mary Magdalene, a fine specimen of the transition period, from the Saxon to the Norman style of architecture. Of the former, a semicircular-headed tower arch is still standing; but the date of the original Saxon church is not known. It is, however, certain that the building was entirely remodelled in the 13th century; which has had the effect of marring and destroying much of the beauty of the earlier work. Out of this Rectory there was a payment to the Tynemouth monks of one mark yearly; they

also, for some time, held the advowson. On the suppression of the monasteries, this right was vested in the crown, but since the reign of Elizabeth, it has rested in the family of Bates of Milburn.

The party then resumed their conveyances and proceeded to Belsay Castle, which, by the courtesy of Sir Arthur Monck, was shown to them by his land agent, Mr Goddard. It consists of a square tower or keep, with four tiers of apartments, $56\frac{1}{2}$ feet by 47 feet 3 inches. At each of the corners of the battlements is a turret, projecting considerably over the walls; three of these are round, and the fourth over the south angle is square, and contains the staircase. The view from the battlements was wondrously fine, and the party enjoyed it for some time. This old castle is (as Mr Hodgson says) certainly one of the most perfect, and by far the most imposing specimen of castellated architecture in Northumberland. The family tradition is, that it was erected in King John's reign; but Hodgson, in his "History of Northumberland," thinks that it was in that of Edward III. The family of the Middletons of Belsay is of very ancient origin, dating at least as far back as 1160. In 1278 they were honoured by a royal visit from Edward I. In the succeeding reign, however, of his feeble successor, Edward II., Sir Gilbert Middleton, the then representative of the family, quarrelled with the Crown, raised a large army of Border riders, ravaged Northumberland and Durham, and seized upon two Romish Cardinals and the Bishop elect of Durham, whom they were about to induct into his see, and exacted from them a heavy ransom. He was, after considerable trouble, at last defeated and put to death, and his lands confiscated. They were afterwards, however, recovered by the marriage of one of his descendants with the heiress of the grantee of the Crown, daughter of Sir John de Striveling. Another member of the family married the heiress of the Lamberts of Craven, descendants of William I.; and another married the heiress of the Moncks of Caenby, in Lincolnshire, by whom respectively the names of Lambert and Monck

came to be adopted by the family. General Lambert, the great Cromwellian leader, was of this ancient family. The new mansion and grounds were next visited; the former was built by the late Sir C. M. L. Monck, Bart. It is a building of the most substantial character, has a solid appearance, and is of the purest Grecian architecture. The entrance hall was only viewed; and perhaps the description uttered by one of our members, well qualified to judge, conveys best the impression made upon the company at the time—"Chaste, severe, but cold."

A pleasant walk through the grounds, fernery, and quarry, from which the stones were obtained for the new mansion, and which has been converted into a rockery and wilderness of the most fascinating kind, where the *Allosorus crispus* and *Anchusa sempervirens* were growing in friendship with the exotic palm, brought the party to their carriages. After examining some of the best specimens of the *Auracaria imbricata* and other exotic trees that are to be seen in the county, the party resumed their seats and drove to the quaint little village of Harnham, situated on an abrupt rock of freestone slate. It was formerly, in the time of Henry V., occupied by a fortalice, of which there are now no remains. Old trees and recent walks and shrubberies skirt the foot of the rock, and ivy and fumitory hang upon its sides; *Allium oleraceum* also grows abundantly on the ledges. The party were kindly received by the proprietor, who shewed us the garden, which contains the tomb of the celebrated beauty, Madam Katherine Babington. It is hewn out of the solid rock, on the side of which is cut the following inscription:—

"Here lyeth the body of Madam Babington, who was laid in this sepulchre on the 9th September, 1670."

"My time is past, as you may see,
I viewed the dead as you do me;
Or long you'll be as low as I,
And some will look on thee."

This Madam Babington was a daughter of Sir A. Hazelrig,

and married Major Babington, the possessor of Harnham. She was said to have been so remarkably distinguished for personal beauty, that when she went to Durham the magistrates were obliged to require her to eat her luncheon in a back room of the confectioner's, which she visited for the purpose, in order to prevent the crowds who assembled to look at her from blocking up the street. The reason of her burial in this extraordinary sepulchre, was her excommunication on account of her Presbyterian opinions, which were so strong that she instigated a son of the blacksmith at Bolam, to pull the vicar out of his pulpit, when he was ousted from his living at the beginning of the Long Parliament in 1643.

After another pleasant drive the party arrived at Bolam church. Seated on the low wall of the churchyard, and surveying the massive tower before us, the mind is carried back a thousand years, when some Saxon lord to record his piety and defend his people here founded a church, and built that sturdy tower. The structure became ruinous, and the Norman victor repaired the handy-work of his vanquished foe. Centuries elapse—ecclesiastical art has developed—strength and simplicity have given way to elegance and decoration. The church at this period is again repaired, so that this interesting relic is an embodiment of the handy-work of masons who lived centuries distant from each other. The ecclesiastical antiquary may well linger on the spot, for as Mr F. R. Wilson has accurately and feelingly written, “the place is so hoary, so earthy, so venerable and crumbling, so veritably a priceless relic of high antiquity, that as we look upon it there comes to us a sense that we should put off our shoes from our feet.” As we entered our conveyance, the Rev. Septimus Meggison, the worthy vicar, came to his garden gate, and while bowing our parting acknowledgments, we heartily wished health and happiness to the venerable gentleman, who was inducted to this living fifty-four years ago. A few minutes after four o'clock the party arrived at Morpeth, and sat down to an excellent dinner at the Queen's Head.

The third field meeting of the season was held at Cockburnspath, on Thursday, the 27th July. I was unfortunately prevented from being present, and for the following notes I am indebted to Mr Hardy of Oldcambus. A fine day attracted the attendance of a large number of members; no fewer than twenty-one sat down to breakfast, and the number was increased to twenty-six at dinner. After breakfast Mr Hardy gave a narrative of the principal events that had occurred in the history of the district, especially in connection with Dunglass, which was the chief object of the visit of the Club. Under his guidance the members then passed through Cockburnspath, inspecting an ancient cross, which stands in the midst of the village, sculptured with the Scottish thistle; Cockburnspath lordship having been a regal appurtenance, and the dowry land of the Scottish queens. Thence they proceeded to the shady recesses of Dunglass dean, about half-a-mile distant, which had been opened to the Club, by the permission of Sir James Hall. The dean was traversed upwards for nearly a mile, the beauty of the scenery, consisting of fine trees and noble rocks, with a clear rivulet running at the bottom of the glen, being the subject of general admiration. Walks have been judiciously made, and shrubs planted to heighten the effect. The growth of ferns was superb, many rivalling oriental forms in size and beauty. A few plants of interest were observed, particularly *Neottia nidus-avis* and *Veronica montana*, the latter discovered here about seventy years ago by the celebrated botanist, Dr Parsons. A hurried visit was then paid to the grounds immediately round the mansion house, including the Collegiate church. The ancient village of Dunglass stood in the neighbourhood of the old church, but the only remnant of the village consists of an ancient sycamore tree, which is still known as the Tron tree, *i.e.*, the place where articles bought and sold were weighed as in a public market. The party then proceeded towards the pond, where the *Anacharis alsinistrum* was gathered, having been introduced there, it is thought, for the purpose of feeding tench; and were then

admitted to the garden, which contains a lovely border of herbaceous plants. Thence the party descended towards the sea, passing the hamlet of Billsdean, almost hid in a hollow; viewed the waterfall which, like that of Niagara, is wasting away below by the agency of rushing water and gusts of wind; and reached the coast at an old low arched bridge, not far from which were noticed some fortifications that had, in warlike times, blocked up the passage to the inland country. *Myrrhis odorata* and *Anchusa sempervirens* grow at the bottom of the ravine. The waters here have a petrifying property, and a large block of calcareous tufa was passed, called the "Ballabus Rock," *i.e.* the alabaster rock; and there are many such with the upper part still in process of formation. Ever since crossing Dunglass Burn the Club had been sojourning in East Lothian, and they went here still further along the coast to view some fantastic, cavernous, and detached sandstone rocks, bearing many an impress of the quaint chiselling of Time, and the evidence of mighty disruptions; and the commencement of the Mountain Limestone was noted, and the intervening beds of shale and imperfect coal, which hereabouts succeed in ascending order to the Calciferous Sandstone. The coal was, about the beginning of the 18th century, used in manufacturing salt; and the remains of the buildings connected with the work are still traceable. Between the mouths of Billsdean and Dunglass Burns, the Sea Buckthorn adorns the banks, and is spreading. After reaching the mouth of Dunglass dean, it was ascended as far as the bridge over the post road. A clumsy old bridge was passed at the mill, consisting of ever so many roods of blank wall, perforated by a small aperture. Till within recent times, all the traffic of the country, *i.e.* of Scotland, passed along it. Above this, down in the dean by the waterside, near the remains of an ancient mill, grew the peppermint and spearmint, and *Anchusa sempervirens* of some old garden; along with the authentic aborigines of the spot, *Eupatoria cannabinum*,

Carex pendula, and *Carex remota*, the last noted for the first time here. Gaining the post road, the members wended their way through shady walks, or across fields, to the village Inn. After dinner, new members were proposed, including T. C. Jerdon, Esq., the distinguished ornithologist, who was present and accompanied the Club during its present walk. Mr Hardy exhibited examples of the "Devonshire gall" of the oak, which has recently made its advent in Berwickshire, Roxburgshire, and Northumberland; also, specimens and drawings of the fly, *Anthomyia Tritici*, which has this and last year proved so destructive to the wheat crops in East Lothian, Fife, and Berwickshire; and specimens of the wheat Chlorops which he had reared from the common quicken, *Triticum repens*; and he also gave in a list of insects gathered in the Cheviot district during the present summer. There were also handed round some beautiful drawings of some of the rarer British mosses; some of them from Border specimens, made by W. C. Unwin, Esq., of Lewes. Sir Walter Elliot made a communication on ancient graves in Roxburgshire. Altogether, the members spent a very enjoyable day, the only drawback being the inexorable train, which was to bear some of them to the distance of 40 or 60 miles before they could reach their homes, and which, therefore, curtailed the papers and communications intended to have been made. After the others had departed, the remaining members proceeded to Cockburnspath Tower, a ruined castle of the Dunbars, Earls of March, above a mile to the east of Cockburnspath. It was remarked that more than one style of arch had been employed in this structure, including the adjacent offices; one of them of a more modern appearance. There is, however, no evidence of its being of recent construction, nor of its being tenanted since the old Border period. The approach to it from the east had been from a curious old bridle bridge, of which few suspect the existence; being hidden in the depths of the dean, a little above the modern bridge. Further on, the Pease Bridge and dean obtained a few summary glances, for

timed-work allowed little else. Pushing on, the coast road was gained at the "Old Pease," so memorable in history for the obstructions here interposed by the steepness of its varying paths (whence the name "pethes," corrupted into Pease) to the passage of armies, and reached the Railway Station timeously. Such snatches are not fleeting; scenes of permanent interest make their due impression, however hastily viewed—and these were unexpected and new to most, and valued accordingly.

The next meeting was held at Alnmouth, on Thursday, the 31st August. The members present were—Mr W. B. Boyd, President; Messrs F. J. W. Collingwood, C. H. Cadogan, Thos. Clutterbuck, W. P. Bosanquet; Revs. S. F. Fyler, W. Darnell, John Elphinstone Elliot, W. L. J. Cooley, H. M. Oswald, Thomas Leishman, George Selby Thomson, David Donaldson, David Paul (of Morebattle), F. R. Simpson, J. W. Dunn, A. O. Medd, M. Hepple; Messrs Edward Allen, Thos. Robertson, Wm. Dickson, J. Richardson, Lee Smith, Henry Hunter; Captains Simpson and Darnell; Messrs J. Heatley, M. H. Dand; Drs. R. Wilson and D. M. McVail; and Robert Middlemas. Visitors—Messrs J. Harrison, H. H. Blair, J. Heatley, jun., W. Robertson, and W. Cadogan, jun.

The members breakfasted at the Schooner Inn; and afterwards proceeded to visit the gardens of Wm. Dickson, Esq. The comparatively small space available for garden ground has, with great tact and taste, been laid out to display great variety and profusion of form and colour; and reflects great credit on Mr Newton, the gardener, who accompanied the party over the grounds.

The party then crossed the river to visit the new steam saw mills of Messrs T. Robertson & Son. Here new and powerful machinery was exhibited in active operation for sawing, planing, grooving, and preparing wood for joiners and builders. Messrs Robertson attended and explained the various machines and their method of operation. The party crossed the marsh, in which the *Salicornia herbacea* grew abundantly, to visit the Church Hill. This was formerly the site of a chapel, the

walls of which were standing in the time of Grose, and are figured in his work. Here was the burial place of the village, but about the year 1806 the river Aln made a breach, which it gradually extended until a new course was formed; and, what was formerly a part of the main land, is now an island, the river running on the north side of the Church Hill instead of the south. There are no remains of the old chapel. A few tombstones are scattered over the hill; one records a death and burial in 1724. No burials have taken place of late. A neat mortuary chapel, in the Norman style, from the design of Mr T. Robertson, has been lately erected, at the expense of Major Browne and Mr Dickson. The history of Alnmouth has been written by Mr Dickson. The plants noticed on the Church Hill were *Cakile maritima*, *Echium vulgare*, *Lycopsis arvensis*, *Cynoglossum officinale*; and *Aster tripolium* gathered by the river side.

The party re-crossed the river, and embarked for Coquet Island in a steam-boat, kindly placed at the disposal of the Club by Mr Joseph Harrison, of Radcliffe House, Amble. The distance from Alnmouth to Coquet Island is about five miles, and after a voyage of half-an-hour, not without the usual incidents attending a maritime excursion, the party was landed safely.

As the island has not before been visited by the Club, it deserves some notice. It is part of the Northumbrian coal measures, composed of sandstone, resting on thin strata of coal and shale. Specimens of the latter readily burned. The island seems to have been a residence for monks, at an early period, for in St. Cuthbert's time they had founded a cell here. It was in possession of the Benedictine monks of Tynemouth, in the reign of Henry I., and with the exception of a short period when it was held by the mother church of St. Alban's, it continued in possession of the Tynemouth monks until the suppression of the monasteries. It is now the property of the Duke of Northumberland. The remains of the Benedictine cells are incorporated with the keeper's house. It is the station for an excellent lighthouse, which

was inspected with much pleasure by our party, who listened with great interest to the explanation of the keeper as to the construction and mode of lighting. The first light was exhibited on the 1st October, 1841. The island, with the exception of a small garden attached to the keeper's house, is in pasturage. The ragwort grew most abundantly throughout. The party re-embarked and crossed to Amble, about a mile distant; and entering the harbour proceeded up the Coquet, to the old granary, where they landed. After a walk of half-a-mile, Warkworth was reached. This is ever an interesting locality, from its historical and traditional associations; but the time was too short to admit of further investigations. The party assembled at the Sun Inn, prepared to do ample justice to a most excellent dinner. After dinner, a few members left to catch the express for the north.

The Rev. J. W. Dunn, the worthy vicar, whose contributions to the History and Traditions of Warkworth, have appeared in our Proceedings, read an excellent prose version of the "Story of the Hermit of Warkworth." After dinner some of the more determined members of the Club visited the castle and church, under the guidance of Mr Dunn, and were heartily pleased with his description of the antiquities of these time-worn edifices.

It is with sincere regret that I have to notice the departure from among us of several of our members, since our last annual meeting.

Our first heavy loss that we have to deplore, is the death, at Alnwick, on the 7th June, of George Tate, Esq., F.G.S., aged 66. He was one of our most distinguished and hard-working members. He has supplied our Proceedings with a large number of most valuable contributions, and besides he has acted as our secretary and treasurer for many years; for which gratuitous services he well deserved the Club's warmest recognition. He was also the author of the following works, or scientific articles:—"History of Alnwick," "On the Geology of the Roman Wall," as an appendix to Dr Bruce's classical work; "Account of the Geology of

Northumberland," as an introductory paper to Baker and Tate's "New Flora of Northumberland and Durham;" "The polished and scratched rocks in the neighbourhood of Alnwick, viewed in connection with the Boulder Formation of Northumberland," "Sketch of the Geology of the Howick Coast and the Ratcheugh Crag," "Fossil Flora of the Mountain Limestone formation of the Eastern Borders, in connection with the Natural History of Coal."

We have also to deplore the death of Mrs Johnston, of Berwick, who was one of our honorary members, and widow of the late Dr Johnston. Mrs Johnston assisted largely in rendering popular Dr Johnston's great works on British Zoophytes and Sponges, the illustrations having, for the most part, been engraved from Mrs Johnston's drawings; we have also several of her drawings, as illustrations, in the earlier numbers of our own Proceedings. In the "Flora of Berwick," as well as his many other writings, she has lent her pictorial aid to enhance his favourite studies. Her name will descend to posterity, connected with a distinct and elegant species of Coralline,—*Plumularia Catharina*, dedicated to her by her husband, (See "British Zoophytes," vol. I., p. 99). *Micralymma Johnstonis*, the title of a small marine beetle found in shale, &c., between tide marks, at Berwick, was also intended by Prof. Westwood to commemorate this lady; but the name has been superseded by an older epithet (*Omalium brevipenne*, of Gyllenhal), of which he was not at the time aware.

Our obituary list also includes Mr John Lee, Procurator Fiscal for Roxburghshire; Mr Robert Buchanan Graham, surgeon, Embleton, son-in-law of our respected Secretary, Mr Embleton; Rev. Henry Parker, Rector of Ilderton, one of the older members of the Club, having joined it in 1834; Rev. Court Granville, Vicar of Chatton; and Capt. Alex. Donald McLaren, Hope Park, Coldstream.

Before concluding, Gentlemen, I must congratulate you on the continued and increasing prosperity of the Club. Many of our Members have been hard at work, and made several

discoveries. Mr Archd. Jerdon has been fortunate enough to add one new plant to the district, viz., *Euphorbia dulcis*, found by him at Langlee, near Jedburgh; and Mr Robert Middlemas has been so successful as to add another in *Blasia pusilla*, found at Careburn, near Wooler. There have been, in addition, many new stations discovered for plants, hitherto considered rare in the district. You will also be glad to hear that, in the branch of Entomology, much has been done by our most persevering and ardent member, Mr Hardy, of Old-cambus. He has, in his explorations in the neighbourhood of Wooler—but principally on the Cheviot hills—discovered many new species of Coleoptera, Hemiptera, and Spiders, not only to the district, but I believe veritably new to science.

I must not neglect to describe a very remarkable and severe thunder storm that occurred on Wednesday, 12th July, in a tract of country lying in Roxburghshire, and running up the Kale water from Ormiston to Linton Burnfoot. It commenced about four o'clock by heavy rain, accompanied by thunder and lightning. The rain increased to such an extent that it became a veritable water-spout; the water running past my house, on the road, to the depth of two feet. This continued till six o'clock, when it began to hail, which also continued about two hours. Very few of the hail-stones were smaller than a boy's marble; and they caused much destruction to growing crops, especially to turnips and potatoes. The breakage to glass in greenhouses was very great. Even next morning, my steward measured the hail-stones lying to the depth of eighteen inches, where they had been thrown to the side of the road. The rainfall during the four hours was registered at Linton Burnfoot, by Mr Purves, to be about two inches.

An instance of the great pugnacity of the Kingfisher in the breeding season, is worthy of mention. Two of these birds were captured in a very curious manner, in the spring, near Heiton Mill, Kelso. Two males were seen to be fighting with each other, and so intent were they with their quarrel, that they allowed themselves to be taken by a boy with his hands.

I must also mention the publication of a work by one of our most able and distinguished members, David Milne Home, Esq., of Wedderburn, which well deserves the attention of the members of the Club, entitled "The Estuary of the Forth, and the adjoining districts, viewed geologically."

And now, Gentlemen, on this, the fortieth anniversary of the existence of the Club, it would not be out of place to make a few remarks upon what has been done, and what might be done by such a Club as ours. It is exactly forty years this month since the first meeting of the Berwickshire Naturalists' Club was held at Bankhouse, under the presidency of Dr Johnston. In the earlier years of this Club's existence, nearly all the members were enthusiastically occupied in some particular branch of Natural History, or Archæology, and nearly all contributed the result of their observations to the Proceedings. Now, although of late years we have added very largely to the number of members, that, of itself, is very desirable and much for the good of the Club, as producing funds for the improvement of our Proceedings, by means of illustrations; but that is not enough, and what I regret to find is—that the members who interest themselves personally in the objects for which the Club was founded do not increase in the same ratio as our new members are proposed. We have most certainly a number of most energetic and painstaking observers in the Club; but what I would like to see is—that, instead of allowing a few members to do most of the work, both in the field and by contributions to the Proceedings, that each and every member should do a little. There is still plenty to do before us. Although we have been working away for these last forty years, we have not by any means exhausted the resources of our district. In every branch of Natural History there are still unexplored fields; and I hope that next year we will find among our contributors some fresh names who have hitherto been among our non-working members.

Gentlemen, let me again return you my most sincere thanks, for the kindly feeling you have shown to me, during the year in which I have had the honour to hold the position of President of the Club.

Notice of the Breeding of the Woodcock in Roxburghshire.
By FRANCIS DOUGLAS, M.D.

ON the 26th of May, 1867, the gamekeeper at Abbotsford saw a brood of Woodcocks, which must have been bred on the estate. Both parents were distinctly seen, and the hen made a feint to withdraw the gamekeeper's attention from her brood, one of which was however shot and taken to Abbotsford. On examination the plumage of the bird proved it to be a young one of the year.

Woodcocks generally breed in the North of Europe, and instances of nidification in Britain are exceedingly rare.

The above incident was communicated to me by Mr Smail, of Galashiels.

Notice of the occurrence of a Mock Moon. By the
Rev. F. R. SIMPSON.

ON the 27th August, 1871, at 8.50 p.m., my attention was drawn to a large semi-halo to the east of the moon, in which, on a line parallel with the horizon, was a clearly defined mock moon, which continued so for about five minutes; after which it became gradually more and more indistinct till it assumed the appearance of a faintly bright nebulous spot; finally disappearing as the halo spread to the east. The wind was W. at the time—light breeze, with very light thin scud, which seemed to be driven to the east of the moon, where the halo was formed. The radius of the halo might be about 15° . The time from first observation to disappearance was about twenty minutes.

Notice of Peucedanum Ostruthium, by FRANCIS
DOUGLAS, M.D.

A specimen of this plant was shewn me by Mr A. Brothers-ton, a gardener in Kelso, who found it at Lochtower, close to the margin of Yetholm Loch. So far as I knew, the plant had not been previously observed within the limits of the Club. The habitat must have existed many years, for, although "*Masterwort*" was formerly cultivated as a pot-herb, it has long given place to more valued aromatics. In like manner, I may notice *Smyrnum olusatrum*, which I have observed in the neighbourhood of Jedburgh and Dryburgh; probably relics of Monkish times.

The Basaltic Rocks of Northumberland. By the
late GEORGE TATE, F.G.S., &c.

THE igneous rocks of Northumberland may be arranged in two groups, of different age and mineral composition—the felspathic and the augitic, or the porphyries and basalts; the former being of much greater age than the latter. Of the porphyry and syenite of the Cheviots I gave an account in 1867* ; and in this paper I shall attempt to describe the character, the range, and the relations of the basaltic rocks of the county. William Hutton, in 1831, gave an account of *The Stratiform Basalt of the North of England*† ; but his description of the northern portion of the range is but slight, and not always accurate, and he leaves unnoticed the important sections exposed along the coast. Having examined most of the basaltic dykes, and also the basaltic Whin Sill, from its most northern outbreak at Kyleo Crags to its south-western extremity in the county near Glenwhelt, with the exception of a portion between Kirkwhelpington and the North Tyne, I give the result of my own independent observations, excepting when it is otherwise stated.

Any one with even a limited knowledge of rocks must perceive, that the external appearance and the structural and mineral characters of the pillared masses of basalt at Kyleo Crags, Dunstanburgh, and House Steads, are different from those of the stratified rocks, such as limestone and sandstone, with which they are associated. The basalt, when fresh fractured, presents a dark grey colour and crystalline structure. It is chiefly composed of augite and felspar; and having a proportion of protoxide of iron, is generally magnetic; it is here and there, as at Budle, amygdaloidal, and sometimes, as at Dunsheugh, porphyritic. From the quantity of augite in its composition, it is both hard and tough, and hence its value as one of the best of road-stones, the coarser varieties being best adapted for this purpose. It decomposes slowly, but what soil results from decomposition is very fertile, and produces a number of rare indigenous plants. When in great mass it has a columnar structure, the pillars being rude prisms, irregularly jointed; and a few even approach the hexagonal form seen in Fingal's cave.

* Proceedings of Berwickshire Nat. Club, vol. v., p. 359-370.

† Trans. of Nat. Hist. Soc. of Northumberland and Durham, vol. ii., p. 187-214.

Such characters, along with effects produced on stratified rocks in contact with it, evidence that this basalt is of igneous origin, and that at a distant period it was like lava in a molten state; but on cooling under pressure acquired a crystalline structure and a jointed and pillared form. Such characteristics will be noted as we pass along in our survey of the Northumberland basalts.

The basaltic rocks are similar in character throughout the whole of Northumberland, excepting where they are in contact with stratified rocks; but there is a difference in the mode of their occurrence; there is the Basaltic Whin Sill, which has a long range and is in some parts intercalated with sedimentary beds; and there are also basaltic dykes, which cut nearly perpendicularly through stratified rocks. Each requires a separate notice.

BASALTIC WHIN SILL.

The Basaltic Whin Sill is the most remarkable rock in the North of England, on account of its long and tortuous range, and of its relation to and effect upon the strata it traverses, and among which it has been intruded. Though locally called a *Sill*, because sometimes appearing as a stratum; yet it is not a true stratum, for its thickness varies very much, from two feet to nearly two hundred feet, and the parallelism of its upper and under surfaces is preserved only for short distances; so that though its extension in the line of direction is great, yet its extension in the line of dip is inconsiderable. It appears at all heights from the sea-level up to one thousand feet above it. Following its windings, its course is more than eighty miles long, from Kylee on the north to Glenwhelt at the south-west. The range, however, is not continuous and unbroken; but there is a succession of craggy eminences, rising high in bold and picturesque cliffs above the general level of the country, with intervals between, in which no basalt is visible; and even where there is a continuous range for several miles, as along the line of the Roman Wall, yet is the outline broken by gaps, locally called *nicks*, in the rock, which there appears in an alternate succession of lofty cliffs, steep and rugged, with deep hollows between.

The most northern outbreak of the Sill is at Kylee Crags, half-a-mile W.S.W. of Kylee Church, in a fine mural cliff, 500 feet above the sea level, extending for a mile E.S.E. to Bogle Houses, with a cliff-face to the south-west. The basalt

is columnar, and rises fifty feet above a steep talus of fallen rock, and rests on a thick sandstone, which crops out beneath it at Collier Heugh Crag; and it is overlaid by a metamorphosed shale, which is seen on the slope of the hill dipping away rapidly with the basalt to the north-east. The basalt here is intruded among the lower beds of the Calcareous division of the mountain limestone.* A fault running from N.E. to S.W., affecting both the basalt and the stratified rocks, breaks the continuity of the range; but the basalt re-appears at the distance of a quarter-of-a-mile to the south-west, and hence extends south-eastward to Belford, a distance of four miles in craggy hills, usually about 300 feet above the sea-level.

At Middleton, one mile north of Belford, on the great north road, there are sections of some interest. The cliff face of the basalt, where it bassets out on the south-west, is about 50 ft. in height, but here, on the slope of the hill, it is only 15 ft. in thickness. On the west side of the road it lies directly over an undulating and fossiliferous limestone, ten feet thick, dipping eastward; and on the east side of the road it is covered by sandstone beds, 20 feet in thickness; but it is specially to be noticed that, the underlying limestone is unaltered, while the overlying sandstone is highly metamorphosed at or near the points of juncture. In the Section, No. 1, *l.* is limestone, *b.* is basalt, and *s.* sandstone.

The course of the basalt is changed, at the top of the hill near Belford Hall, where it bends north eastward to Easington, and thence northward to Easington Grange, whence it curves away towards Warn and Spindlestone, and by Budle to the sea-coast. At Crag Mill, near Easington, it rises in great rude columns in an isolated hill, to the height of eighty feet. The Spindlestone Crags have their cliff face to the south, and rise above a steep talus to the height of fifty feet,

* The Carboniferous System of Northumberland I have arranged in the following formations in descending order (*History of Alnwick*, Vol. II., p. 442).—

	Feet.
1. Coal Measures	2000
2. Millstone Grit	500
3. Mountain Limestone, in two divisions—	
1. Calcareous Group	1700
2. Carbonaceous Group.....	900
	} 2600
4. Tuedian Formation, about.....	1000
5. Upper Old Red Sandstone Conglomerate, above	500
	<hr/> 6600

in a similar manner to those at Kyloe. Tradition says that among these crags was the hole into which the Laidley Worm crept after having gorged itself with food; the hole has been destroyed by quarrying; but there still stands an isolated column to which the knight, who slew the worm, fastened his horse before engaging with the monster. A limestone nine feet in thickness, shales, and a coal bed dip under the basalt. These are among the middle beds of the Calcareous group of the Mountain Limestone, and in the limestone are such fossils as *Productus giganteus* and *Griffithides Farnensis*.

At Budle the basalt is nearly connected with an indurated, jointed, red shale (containing *Posodonia Becheri*, &c.), which overlies a limestone; for the basalt is in the hill a little above the schist, and on the sea-shore to the east; so that the jointed and indurated condition of the schist is probably due to the action of basalt. Near the mouth of the Warn, and here and there along the coast southward, a thin bed of limestone lies on the basalt; and a peculiar section indicates mechanical disturbance.

In Section No. 2, on the east side of a fissure (*f*) is a mass of columnar basalt, twenty feet high (*b*), and on the west side another mass of basalt, but much lower, (*b*), on which lies a limestone two feet in thickness.

In joints of the limestone at Budle and Bamburgh I found sulphate of barytes of a salmon colour, a mineral I have not seen elsewhere in Northumberland north of the Tyne; but its presence in these two localities, very near to the basalt, leads to the conclusion that its formation is due to some chemical action of the basalt upon the strata.

The basalt in this neighbourhood covers a considerable area, about a mile and one-half from S.W. to N.E., with a breadth near to three quarters of a mile; and southward of the Warn it rises in high cliffs in the sea-banks, and also slopes away to the N.N.W. into the sea. On the shore it is overlaid by a sandstone, on which rests a thin bed of limestone; but the sandstone appears prolonged into the mass of basalt in the cliff, having basalt both above and below it; and at the southward extremity of the cliff, a sandstone is seen in a similar position. Further southward the basalt is covered by a thin limestone, which runs along the shore till it reaches a fissure; the continuity is slightly interrupted by what seems a perpendicular basaltic dike, three feet wide, which not only cuts through the limestone, but also through

the basalt; and beyond the fissure a metamorphosed shale overlies the basalt. Section 3 shews these relations.

Further southward, sandstone is above the limestone, and both are enclosed within the basalt. And in such relations do the stratified rocks appear, here and there, along this coast till we reach a great fault, affecting both the basalt and the sedimentary beds at the Harkar Rocks. By this fault the rocks are so shattered and tossed about and intermingled, that a section of them is very complicated. In the axis of disturbance is a basaltic dike, having a direction of E. by N. to W. by S., and a breadth of from three to five feet, but widening as it descends. From this axis the beds dip away on both sides at high angles—on the north side E.N.E., and on the south side S.E., in some parts 80°. Basalt is on both sides of the fault; the internal forces having lifted up and broken through the basalt as well as the sedimentary beds. Sections 4 and 5 shew the disturbed condition of the rocks, and the intermingling of the basalt with the strata.

At the point of junction between the basalt and the shale, quartz crystals, hexagonal prisms with pyramidal terminations, some pale yellow and others red, have been formed on the under surface of the basalt.

Southward of this fault, the basalt undulates along the shore as far as Bamburg boat-house, and is here and there overlaid by metamorphosed shales, which also fill up fissures in the basalt. After a short break the columnar basalt reappears in the high isolated hill on which stands Bamburg Castle. It has been ascertained, from the sinking of a well to supply the Castle with water, that it is 75 feet thick, resting on sandstone and shale, which are also seen on the west escarpment of the hill.

Before leaving this neighbourhood, it may be noted, that the basalt is here sometimes amygdaloidal, the cavities being usually filled with calcareous spar; and that when in contact with limestone it becomes more or less calcareous, while the sedimentary rocks assume some of the features of basalt; so that there appears a mutual transfer of their respective characters. Metamorphism is everywhere seen, the sandstones being indurated and burnt looking, limestones crystalline, and sometimes specked with iron pyrites, and shales converted into jasper and felstone.

Half a mile southward of Bamburg Castle, the basalt is at Islestone on the shore and extending into the sea; and

eastward it appears at the Farne Islands, all of which, twenty-five in number, are formed of columnar basalt; one isolated mass, like a monolith rises out from the sea, sixty feet in height, on the south side of the House Island; and three other similar masses with columnar structure, standing apart in the sea, on the south side of the Stapel Island, are impressive objects; on these numberless sea-fowl rest, build their nests, and rear their young. The basalt here varies in thickness; where in greatest mass the depth is about ninety feet. Among those islands there are marked effects, both chemical and mechanical, of the action of the basalt on sedimentary rocks; in the gut, between the Stapel and Brownsman, limestone, sandstone, and shales, ninety feet in thickness, lie upon basalt, and are metamorphosed and tilted up against a basaltic cliff. They consist of—

Indurated sandstone immediately above basalt.

Arenaceous shale, much indurated but fossiliferous.

Chert or metamorphic shale, with a conchoidal fracture, sharp edges, very hard, and also fossiliferous.

Limestone very much altered, but varying in character; cherty, compact and dark in one part, buff and magnesian in another, and in other parts red and crystalline.

Indurated or cherty beds abutting against the basalt and nearly perpendicular in position.

Besides other organisms found in these beds, are *Fenestella plebeia*, *Sulcoretepora parallela*, *Spirifer glaber*, *Strophomena crenistria*, *Productus Flemingii*, *Chonetes Hardrensis*, *Discina nitida*, *Lingula squamiformis*, *Amusium Sowerbyi*, *Nautilus globatus*, and the interesting trilobite, *Griffithides Farnensis* of which complete specimens, for the first time, were found here. On the north side of the Brownsman Island, a patch of metamorphosed shale is intercalated with basalt; and both limestone and sandstone, also metamorphosed, are in the channel between the Farne and Wedum. These various beds are similar to those on the main land at North Sunderland, and belong to the middle part of the calcareous group of the Mountain Limestone; they had been, by the basaltic eruption, torn from the mass with which they were originally connected, lifted up and squeezed into their present abnormal position.

A long space of five miles and three quarters intervenes between Islestone and Farne, and the next appearance of basalt on the south side of Beadnell Bay, near to Newton

North Farm. Midway in this interval there is a great fault, by which the strata on the south side of it are upheast about one thousand feet; and possibly this fault may, in some way or other, be connected with the absence of basalt from this space; or it may be that the Basaltic Sill may range from the Farne, under the sea, and curve inland near to Newton; but though its mineral characters and mode of occurrence are the same as at the Farne, Bamburgh, and in the north, yet its position here is higher in the Mountain Limestone series. It is thirty feet in thickness, and extends along the coast southwards about a furlong and a half, and at each extremity it is overlaid by the Ebb's Nook or Ten Yard Limestone, one of the upper beds of the calcareous group*; the limestone dips at the north end W.N.W. 20°, and at the south end S.E. 15°. The Basaltic Whin Sill here has broken through a thick limestone, and its relative position is higher by about four hundred feet, than in the neighbourhood of Bamburgh.

Southward of this the basalt has an unbroken, but somewhat winding course inland for two miles, by Old Newton, Newbiggin, and Embleton, with extensions down to the sea-shore at Newton Haven and Emblestone. At Spittleford, it is near to the Ebb's Nook limestone, which seems to dip under it; and here and also at Ebb's Nook and partly at Newton this limestone is magnesian, and of a buff colour. At Dunstanburgh, less than half-a-mile eastward, the columnar basalt on the sea-shore rises into a cliff, one hundred feet high, which, as at Bamburgh, is crested by a great medieval

* The following is the succession of limestones in the calcareous division of the Mountain Limestone in North Northumberland; to each I have given a distinctive name:—

	Feet.		Feet.
1. Harlow Hill Limestone.....	20	Brought forward....	743
Other Strata	25	7. Dark Limestone	8
2. Netherwitton Limestone ..	6	Strata	30
Strata	200	8. Main, Sunderland, or Nine } Yard Limestone	27
3. Chirn Limestone	14	Strata	304
Strata	72	9. Stone Close, or Five Yard } Limestone	16
4. Ebb's Nook, or Ten Yard } Limestone	30	Strata	342
Strata	160	10. Hobberlaw, or Four Yard } Limestone	15
5. Denwick Lane, or Eight } Yard Limestone.....	28	Strata	112
Strata	60	11. Dun, or Two Yard Lime- } stone	6
6. Little Mill, or Six Yard } Limestone	22		
Strata	106		
	743		1603

See *History of Alnwick*, Vol. II., p.p. 448-451.

castle. The basalt, which is upwards of fifty feet in thickness, is seen in the cliff underlaid by sandstones, coal, and shales; and on the shore is a remarkably contorted limestone, which is thrown into saddle ridges, and then dips away E.S.E. with other strata under the basalt. Here and there patches of metamorphosed shale and sandstone are seen overlying or filling fissures in the basalt; in geodes of which are crystals of quartz, some colourless, others amethystine, locally called Dunstanburgh diamonds. A gut in the basalt, on the east side, is called the Rumble Churn, because the sea, when lashed into a storm, rushes up with great violence, and by its wild dashing and rolling loose fallen stones over each other, makes a loud rumbling noise. In the cliff on the side of this gut is a section, which affords one of the most marked examples of metamorphism, as well as of mechanical action. (Section 6). The basalt, which is columnar, is forty feet in height (*b*), and beneath lies, but irregularly, a broken bed of limestone (*l*), which, where the basalt wraps over it is converted into a white granular marble; and below that are sandstones and shales (*s*) in a broken and disturbed condition.

From Dunstanburgh the basalt has a continuous range of six miles, two of which are along the shore southward. Its position among the stratified rocks is seen again at Craster, where the Muckle Carr—an island when the tide is high—is partly formed of the Ebb's Nook limestone, and partly of sandstone; and beneath these the basalt dips eastward. At Cullernose, near Howick, the coast section ends, and there the basalt rises in great columns to the height of ninety feet; the base of which is washed by the sea. Very considerable here has been the disturbance of the strata; great masses of sandstone have been displaced, and basalt, sandstones, and shales are irregularly intermingled. Section (*No.* 7), shews part of these dislocations: (*b*) is columnar basalt; (*s*) sandstone regularly bedded; (*s'*) sandstone displaced; (*sh*) shales; (*sh'*) shales displaced; and at (*a*) the beds are nearly perpendicular.

At this point there is a great change in the course of the basalt; it makes a sudden bend and leaves the coast and trends away inland, in nearly a south-west direction, across the county to Tepper Moor, on the banks of the North Tyne; and perhaps this change of course may have occasioned the extraordinary dislocations of the strata.

After leaving Cullernose, the basalt forms the craggy hill of Hipsheugh, and it ranges on to Howick Hall and through the Howick parks to Little Mill, where it has been quarried, and an interesting section is exposed. The basalt is 30 feet in thickness; but abutting against its perpendicular western side, are highly inclined beds of limestones and shales; the limestone is unaltered, but the shales are shattered and bent over near the basalt, the dip being S.W. from 80° to 40° , as shown in Section 8:—

In another part of the same quarry, small veins of basalt penetrate the limestone, which rests on the basalt, the two rocks being completely welded together so as to form one mass. In section 9, (*b*) is columnar basalt; (*l*) three layers of limestone, from 4 to 8 inches thick; and (*b*) veins of basalt 1 to 2 inches in thickness.

Near to Howick Pasture House the basalt is covered by a shale much metamorphosed, over which are a blue limestone and another bed of shale. It forms a high craggy hill at Howick Heugh; and ranges in a broad belt a little eastward of Littlehoughton, and crossing the northern part of Longhoughton, it thence goes by Peppermoor and Harlow Hill to Ratcheugh Crag. At Peppermoor there are indications of two intrusions; in one part granular limestone lies above the basalt, and not far from this the covering is an indurated sandstone; but the sections at Ratcheugh and Snab Leazes are among the most interesting in the whole range.

At Ratcheugh Crag, which is four hundred feet above the sea-level, the basalt rises from a steep talus of fallen rock, in grand columns, to the height of about eighty feet, with a cliff face to the west; and above it are beds of limestone, sixteen feet in thickness, peculiarly metamorphosed; for while the bed immediately above the basalt is, in some parts, but slightly altered, the next beds are highly crystalline; they dip with the basalt S. E. 15° , and are on the slope of the hill eastward, covered by a fossiliferous shale. About five hundred yards southward is another basaltic cliff at Snab Leazes, where the rock, which is sixty-three feet high, is quarried for a road-stone, the top of this cliff being one hundred feet lower in level than the summit of Ratcheugh Crag. For some distance between these basaltic cliffs the section is obscured; but by means of the fossiliferous shale, overlying the limestone covering Ratcheugh Crag, we are enabled to connect the whole, for this shale is traceable

through the wood to Snab Leazes quarry. Here then we find two different overflows or intrusions, one of them overlapping the other, and a rapid thinning out of the basaltic pseudo-stratum, which has a wedge-shape, and in the course of about five hundred yards dwindles down from about eighty feet in thickness at Ratcheugh, to only three feet at Snab Leazes. The Section (*No. 10*) illustrates this, and shews the succession and relation of these rocks.

	Feet.
<i>b'</i> . Columnar basalt, some parts porphyritic, coarse in grain; a superior road-stone	63
<i>s/</i> . Shale, highly indurated at the point of contact with the basalt; a porcelain jasper and Lydian stone	8
<i>l</i> . Limestone, metamorphosed at Ratcheugh Crag	16
<i>b</i> . Columnar basalt, 80 feet thick at Ratcheugh, but at Snab Leazes only	3
<i>s/</i> '. Indurated shale.	

The position of the basalt at Ratcheugh Crag is below the Denwick Lane or Eight-Yard limestone.

The basaltic Sill is not seen in the valley of the Aln, excepting at Lough House, where, though but a few feet in thickness, it has been quarried as a road-stone. It reappears, however, southward of Alnwick at Hope House and Stoney Hills, at the same level as at Ratcheugh Crag; and it ranges south-westward by Greensfield, where a metamorphosed shale, used for sharpening stones, lies below it, and by Ruggle, Snipe House, and Freeman Hill to Swinlees.

From Newton-by-the-Sea to Ratcheugh Crag, the basalt pursues its course among the upper beds of the calcareous division of the Mountain Limestone, being either a little above or a little below the Ebb's Nook limestone; but from Stoney Hills to Swinlees it is intruded among the lower beds of that division, the outcrop of the basalt being two miles westward of the outcrop of that limestone, and its position very little above the Hobberlaw or Four-Yard limestone; so that the relative position of the Basaltic Whin Sill is here one thousand feet lower in the Mountain Limestone Formation, than it is at Newton-by-the-Sea.

Another long break in the continuity of the range occurs across the valley of the Coquet; but six miles south-westward from Swinlees, the basalt is seen near to East Row on the Forest Burn; and a mile further in the same direction it caps the Ebb's Nook limestone at Ward's Hill; its relative position is therefore again altered, as it is here among the upper beds of the Formation. Following the course and

occupying nearly the same position, it is on the north bank of the Font near Ritton, and next, northward of Green Leighton, and then near to Gallow Hill, and away by Hartington to Kirkwhelpington, where on the banks of the Wansbeck are sections of some interest near to Kirkwhelpington Mill, in the bed and in the banks of the Wansbeck; the basalt is overlaid by limestone, about fifteen feet thick, and altered at the point of contact, and this is covered by shale beds about twelve feet in thickness. Another Section, on the north bank of the river, shews the basalt divided by a thin bed of metamorphosed shale. In Section 11 we have, dipping S.E.

	Feet.
<i>b.</i> Columnar basalt	20
<i>sh.</i> Metamorphic shale	1
<i>b'</i> Columnar basalt	12
<i>s.</i> Sandstone	—

From Hartington to Little Swinburn, a distance of seven miles, there are two outcrops of basalt, in some parts one and a half mile apart. The westerly outcrop ranges by Colwell, Horncastle, Hawick, and Throckrington, to near Little Swinburn*. The easterly outcrop curves away from Hartington to Kirkwhelpington, and thence to West Harle, Great Bavington, Humbleton, and Little Swinburn; from whence there is but one range south-westward to Gunnerton and Haughton Strother, where it crosses the North Tyne.

On the slope of the south bank of the Tyne at Cocklaw, the basalt appears, and it extends to Towertye, where it crosses the line of the Roman Wall, and whence its course in a W.S.W. direction is to Glenwhelt, a distance of fourteen miles. Along the whole of this range, it is intruded among the middle beds of the calcareous division of the Mountain Limestone.

At Towertye, the ditch of the great Roman barrier has been cut out of the basalt, which is here seven hundred and seventy-six feet above the sea-level; and on its side are still lying large blocks, which had been excavated by the Roman workmen, and which though little changed during seventeen centuries, shewing the durability of the rock, yet still bearing the marks of time; for the iron in the basalt has oxidised in some places, and partially destroyed the rock, giving a tendency to the outer surface to peel off in flakes. From Towertye the basalt curves away southward and then north-

* Hutton, Trans. of Nat. Hist. Soc. of Northd. and Durham, vol. ii., p. 198.

westward, forming a loop which joins the line of the Roman Wall at Shield-on-the-Wall, where a succession of magnificent cliffs of basalt commences, with deep gaps between. These cliffs face the north and north-west, rising at Whin Shield to one thousand feet above the sea-level; the rock having a rapid dip to the south or to the east. Along the margin of the cliffs the Roman Wall has been built. In the long range of ten and a half miles to Glenwhelt, there is a repetition of phenomena similar to what we have observed in other parts of the Basaltic Whin Sill. Metamorphism is distinct in several places; and though mechanical action is less general, yet at one place it is remarkable; for between Hotbank and Rapishaw Gap, a limestone eighteen feet in thickness is seen passing diagonally through the basalt, with a dip E.S.E. 40° . Of this limestone there are several layers, all metamorphosed, some hard, crystalline, and buff in colour, and others dark grey, crumbling and feeling gritty like sandstone. At one of the "Nicks" westward of Cockmont, a limestone, at least twelve feet in thickness, underlies the basalt, the upper layers being metamorphosed and buff, and the lower of a blue colour and little altered. A shale, metamorphosed, hard, and cherty, generally intervenes between this limestone and the basalt, as near to Wall Town, at Hotbank, and at Rapishaw Gap. Above the basalt at Ollalee, lies a good blue limestone, ten feet in thickness; and this stratum extends eastward along the slope of the hill, and is seen near to House Steads and Sewing Shields; but at the latter place with a metamorphosed shale between the basalt and limestone. At Bradley, however, a very different rock—sandstone—overlies the basalt.

Taking our stand on the cliff at House Steads or Borcovicus we have a favourable point for observation; and looking across the country both in the line of the rise and of the dip of the strata, we see on both sides of the basaltic eminence, a succession of rolling hills and hollows, indicating not only the outcrops of the various strata, but also the character of the rocks below the surface; for the harder sandstones and limestones form the hills and rising grounds, while the valleys have been scooped out of the softer shales by floods and currents, and it may be by ice. The diagram (Section 12) from West Stone Fell to Borcum Hill, a distance of two miles, shews the succession of these beds and their relative position to the basalt. Thick sandstones predominate,

both above and below it; three different limestones come out from beneath it, and there is a coal seam among the beds, now worked at Scotch Couhard. Above the basalt are also three limestones, and a coal seam three feet in thickness.

The Basaltic Whin Sill has impressed picturesque characters on the scenery of Northumberland; but no where so impressively as along the line of the Roman Wall. Here it attains its maximum thickness of about one hundred and eighty feet—its range is more continuous for a long distance—its outline is more broken, and the cliffs are loftier than in other parts of its course. The masses of dark grey columns are much varied in form and grouping—some tower high upwards—others are broken and fragmentary—some are overhanging and threaten to fall—others are isolated and stand out from the mass—and others again in the distance resemble ruined towers and broken-down walls.

These precipitous cliffs, with gaps between, are well shewn near the extremity of the crags, in the *Nine Nicks of Thirlwall*; from which the basalt, following the slope of the hill south-west-ward, declines in height to Glenwhelt, beyond which it extends westward a mile further, and then bends away southward. Near the borders between Northumberland and Cumberland, basalt, having a rapid dip to the north, is in the bed of Burnstones burn in Knaresdale, for about four hundred yards; it is also in Gilderdale burn for about one hundred yards; but it appears more in Cumberland, in the streams which carry off the drainage of the western side of the Pennine Chain. In the North Tyne, near its head, the basalt forms a succession of falls sixty or seventy feet in height; and it has been sunk through at Beddy Mill, in the same district, where it was found to be one hundred and twenty feet in thickness*. Near the head of the Wear, a basaltic Sill appears broken by the Burtreeford basaltic dyke; and further down the same river near Stanhope, there is another basaltic Sill, which Sir Walter Trevelyan thinks is different from the Great Sill, and situated among beds higher up in the Mountain Limestone series†. The Whin Sill attains its maximum development in Upper Teesdale, where it is above two hundred feet in thickness; and it is exposed for several miles, from above the Weel near Caldron Snout to below Middleton; its most

* Trans. Nat. Hist. of Northd., &c., vol. ii., p. 188-189.

† Trans. Nat. Hist. of Northd., &c., vol. i., p. 58.

southern outcrop is in the Lime, a burn which flows into the Tees. Above the Weel it is overlaid by a granular white limestone; and at Caldron Snout and High Force the river cuts through it, and tumbles over cliffs, exposing a limestone below it, which is metamorphosed, and white, and crystalline*. The effects here are similar to what we have already seen in Northumberland.

BASALTIC VERTICAL DYKES.

Besides the great lateral dykes of the Whin Sill, there are several basaltic dykes in Northumberland which cut through the strata nearly vertically, most of them running in a tolerably straight line, in a direction nearly from east to west. The rock of which they are formed is similar to the Basaltic Whin Sill, but generally finer in the grain and more altered by contact with the adjacent strata; the larger dykes usually have dislocated and metamorphosed the strata, but the smaller have had little effect. Of the following basaltic dykes, we have some definite information; we begin with the most northern:—

The Cornhill Dyke cuts perpendicularly through beds of the Tuedian formation, on the south bank of the Tweed, half a mile below Coldstream bridge; but it is not seen on the opposite side of the river. It is traceable in a direction east by north, a distance of seven miles, cutting also through Mountain Limestone beds. The strata have been dislocated and their relative levels altered by it, though the rocks themselves are very slightly changed. On the Tweed the dyke is ten feet wide, but it widens eastward; for at Melkington it is eighteen feet, at Heaton Mill twenty-four feet, and at Mattalees thirty-three feet wide.

The Lindisfarne Dyke is one of the largest in the county, and indeed has been erroneously described as part of the Whin Sill, to which it has some resemblance, as it rises in Lindisfarne or Holy Island, in high craggy hills of columnar basalt. It crosses the south part of the island nearly from west to east, and is seen two miles sea-ward, forming the Plough and Goldstone rocks, on which the "Pegasus" was wrecked. The castle crowns a high craggy basaltic hill, and on the west side of the island the dyke is exposed in a high cliff, and is there one hundred and twenty feet wide with a slope 85° southward; large blocks of limestone, highly

* Trans. Camb. Phil. Soc. vol. ii., p. 162.

metamorphosed, are enveloped in the basalt; and the strata, broken through, have been relatively altered in position; those on the south side having been considerably upcast. A calcareous shale, very fossiliferous, and a limestone beneath it abut against the dyke and are metamorphosed; and near to the castle a vein of basalt penetrates the shale. This dyke is seen near Fenham, on the main land; and further westward near Kylv Church, where its width is from twenty to sixty feet, for it widens as it descends; in one part it is covered by shattered beds of shale. It cuts through the Lowick coal beds, and is traceable further westward to Leitham, the whole ascertained course being about fourteen miles.

The Beadnell Dyke is well exposed on the coast, rising like a Cyclopean wall through sandstone, limestone, shale, and coal beds, whose relative position is very slightly altered, but whose structural characters are greatly changed; coal, for some distance from it, is valueless; limestone, near to it, cannot be burnt into lime and shale and sandstone are indurated. The mutual transference of qualities between the basalt and the stratified rocks which it penetrates, is well illustrated by this dyke. Its width is generally twenty-five feet, and its direction nearly from east to west (S. 85° W.); it is traceable four miles as far as Newham Station.

The Howick Dyke appears only on the coast and is remarkable for its likeness to an artificial wall, and its nearness to the Whin Sill; which, however, it is not seen to join; it is only four feet wide, sloping south 85° , and having a direction of E. by N. to W. by S. (W. 80° S).

The Boulmer Dyke, which also is only seen on the coast, is one hundred feet wide, has a direction of E. by N. to W. by S. (W. 80° S.) and cuts perpendicularly through the strata, which are not disturbed, and but slightly changed.

Trobe's Dene Dyke appears only underground, in the eastern part of the Shilbottle Colliery, running nearly from east to west (S. 85° W.), having a width of thirty-three feet, and metamorphosing the strata on both sides. In the neighbourhood of this dyke, two layers of basalt were passed through while sinking for the Shilbottle coal; one is fifteen feet thick between metamorphosed arenaceous beds, but divided into three layers by the intercalation of two thin beds of metamorphosed shale, each about two inches in thickness. The other is sixty-three feet lower down and two-and-a-half

feet thick, and penetrates, metamorphoses, and partly replaces a seam of coal. These layers are probably overflows from the Basaltic dyke; for they die out towards the north, while they have been followed without change in depth to within forty yards of the dyke.

The Hampeth Dyke is large and cuts through the Shilbottle coal and limestone beds. A mile and a half south-west of Shilbottle, it appears in high crags on the banks of Hampeth burn, which has forced its way through this rocky barrier in a narrow gorge, with basaltic cliffs on both sides rising to the height of fifty feet. The width of the dyke here is one hundred and fifty feet, and the direction from E. by N. to W. by S. ($W. 80^{\circ} S.$); the coal on both sides is charred, to the distance of fifty yards.

All the preceding dykes do not cut through strata more recent than the Mountain Limestone Formation; but some of those that follow penetrate the Millstone Grit and the Coal Measures.

The Acklington Dyke, which has a general direction of east by south to west by north, is seen on the coast at Bondicar; and passing through Coal Measures and the Millstone Grit, it crosses the Coquet above Acklington Park, where it is thirty feet wide. A dyke, in the same direction westward, cuts through Mountain Limestone beds at Debdon, whence ranging by Cartington Castle, where it cuts through a limestone; it extends to Clennell, approaching the porphyry of the Cheviot, but not entering it. The whole course is about twenty miles.

The Causey Park Dyke, which is thirty feet wide, has a direction of east to west, and cuts through Millstone Grit strata. Gritty sandstones abut against the north cheek, and flaggy sandstones and carbonaceous shales are on the south side.

From *Hartley*, on the coast, *two dykes*, about a mile and a half apart, run parallel to each other through the Coal Measures, in the direction of W.N.W., as far as a mile northward of Cramlington. In a line with the Southern Hartley dyke, is one at *Bolam*, cutting through Mountain Limestone beds, which are metamorphosed, the coal on both sides being reduced to cinder*.

The Tynemouth Dyke, which is more allied to Greenstone, or diorite, than to basalt, cuts through Coal Measures, a red

* Hodgson's Life, vol. ii., p. 208.

sandstone and yellow sand, in the cliff facing the sea, below the Priory; but it is not seen penetrating the Magnesian Limestone belonging to the Permian Formation, which caps the same cliff a little to the northward. It is twelve feet wide, and has a direction of nearly S.E. to N.W. (S. 40° E.), with a slope southward 85° .

The Coaly Hill Dyke, which varies in width from seven to twenty-one feet, has a general direction E.S.E. to W.N.W. Buddle has described it*, and notices that the top of it undulates and only occasionally comes to the surface. The basalt dyke in the bank of the Ouseburn, near to Newcastle, and that at Simonside, in the county of Durham, seem to be continuations of it. In Benwell Colliery it is two hundred feet; and in Walker Colliery, six hundred and thirty feet below the Tyne level. The coal in contact with it is reduced to a cinder.

In Wallbottle Dene two small dykes, about thirteen feet apart, appear in the high bank of the burn, with a direction of east to west, and sloping north 78° , the one being five feet and the other six feet wide. They cut through Coal Measures.

The Brunton Dyke, near North Tyne, is sixteen feet wide, and cuts through Mountain Limestone beds, which are up-cast on the north-east side twenty feet. Its direction is nearly from north-east to south-west (N. 40° E.); it crosses the South Tyne and passing Warmley, probably extends to Whitfield, where a basaltic dyke is on the West Allen.

The Lewis Burn Dyke, which has a long and somewhat irregular course, but with a general direction of from W.S.W. to E.S.E., is traceable from Short Cleugh on Lewis Burn, in North Tynedale, to Troughend and Darden, in Redesdale, a distance of twelve miles. At Short Cleugh, in the deep gullies, worn out by water torrents, this dyke is exposed at several points; it widens as it descends and attains a breadth of fifty feet: Mountain Limestone strata are cut through and greatly disturbed; on its south side sandstone beds are flat, while on the other they are nearly perpendicular. A small branch comes from the main trunk, and is seen on the hill-side.

The phenomena described suggest some theoretical questions—What is the origin of the basalt—How has the Whin Sill been intruded among the strata, and what is its age—And what is its relation to the perpendicular basaltic dykes?

* Trans. Nat. Hist. Soc. Northd., &c.

Origin.—Little need be said as to its origin; for it is now generally admitted that basalt is an igneous rock, which had been in a state of fusion; for its composition is similar to that of lava, and its effects on adjacent strata, as already described, are such as would be produced by heated matter; the stratified rocks are hardened and prismatic, and some are crystalline; soft shales are converted into hard cherts, Lydian stones and jaspers; common limestones into granular marbles, and coal into cinders or anthracite. Throughout the whole range in Northumberland such effects are seen, wherever the mass is of considerable thickness. No doubt the structural characters of basalt are different from those of lava; but this may be accounted for, as it has been shewn by the experiments of Gregory Watt, that the structure of rocks, which had been in a molten state, depends on the rate of cooling. Basalts cooling slowly under pressure, and most probably at a time when the land was beneath an ocean of considerable depth, would then acquire their crystalline structure and prismatic form.

How has the Whin Sill been intruded among the strata, and at what period? Was it erupted during the Mountain Limestone era, and poured over the rocks below it, *before* the other rocks above it were deposited? or was it ejected *subsequently* to the deposition of the whole Formation, and forced among the beds as a lateral dyke, between the surfaces of stratification? The former view has been advocated by W. Hutton, and it is mainly based on the stratiform appearance of the Sill, and on its supposed definite position among the strata. It is however only locally, and for no great distance, that the Sill simulates a stratum; an extended survey of it shews that it is very irregular in thickness, and that the parallelism of the upper and under surfaces is maintained for but a short space. Everywhere in Northumberland this irregularity is seen. Indeed, as is apparent at Ratcheugh, the mass is wedge-shaped. Sedgwick remarks in reference to the basalt of Teesdale—"that the trap on the south side of the valley descends among the strata in the form of a great wedge, which diminishes in thickness from thirty or forty fathoms to about twelve feet;"* and that "on the north side of the river below Caldron Snout, we find the base of the trap gradually sweeping over the broken ends of the stratified rocks."†

* Trans. of Camb. Phil. Soc. vol. i., p. 163.

† Ibid, p. 161.

That the Sill occupies a definite place in the Mountain Limestone Formation is founded on what appears in the mining districts of Tynedale and Teesdale ; and, indeed, so far has the notion been carried, as to have made the basalt to be the line of division between the Yordale series and the Scar limestone. But in Northumberland it has no such exact position. It always appears in connection with the calcareous division of the Mountain Limestone Formation. It never enters either the Coal Measures or the Millstone Grit ; and though, in some places Boulder Clay lies immediately above it, yet that clay has not in any way been disturbed by it. Its position, however, in the calcareous division, alters very much in the course of its range ; in one part its relative vertical position is above 1,000 feet lower than in other parts ; and this conclusion is drawn from a careful consideration not only of natural sections, where the chief limestone beds are seen, but also of their organic contents. The course of two beds of this limestone—widely apart from each other—are by these means pretty well ascertained ; the one, the Ebb's Nook limestone, which is about 330 feet from the top of the series ; the other, the Hobberlaw limestone, which is about 1,450 feet from the top. Now, in one part of the range, the Sill is above the Ebb's Nook limestone, and in another part its position is near to the Hobberlaw limestone ; it is therefore evident that the Sill cuts through, here and there, the series of strata, and that it has been erupted subsequently to the deposition of, certainly, nearly the whole, if not the whole, of the Mountain Limestone Formation ; where, therefore, the basalt appears intercalated with the strata it has been forced into them as a lateral dyke along the planes of stratification. The marked effect of the basalt on the beds *above* it, helps to confirm this conclusion ; for these beds, in some cases, are more altered than the beds below it. The mechanical disturbances produced by the basaltic eruption furnish additional evidence ; the tilted and reversed strata at Little Mill, which are about 770 feet from the top of the series, prove that the basalt was erupted there after—and probably long after—these beds had been deposited ; and the great masses of strata displaced by the basalt at the Farne Islands, and especially at Cullernose, tell of the great power of the eruption.

Whatever may be the age of the basalt, the whole had not been erupted at one time. Volcanic action extended over a long period, and there had been times of repose as well as of

activity. Ratcheugh and the neighbourhood clearly indicate at least two distinct eruptions; and, during the same period there are evidences, in the Shilbottle Colliery, of two basaltic overflows, apart from the Whin Sill, and probably proceeding from the basaltic dyke in Trobe's dene. The vomitories of the basalt are not recognizable; along the whole range no crateriform hollows or cones appear; nor can we suppose that the perpendicular dykes by which the county is traversed are large enough, or so situated, as to have been outlets for the molten rock forming the Sill. Doubtless it issued at different points along the line, which are now hidden by superincumbent strata. Sedgwick thinks it perfectly certain that the basaltic rocks of High Teesdale were not formed after the dykes of the Coal field; it therefore follows, he says, "that they must have existed in their present form before the deposition of the Magnesian Limestone."* Phillips arrives at a similar conclusion, but from different evidence: "The Whin Sill," he says, "is of date anterior to the east and west lead veins of Tynedale, Teesdale, and the Pennine chain, for it is divided by these veins of fissure. The Whin Sill is then older than most parts of the saliferous system."† It is, therefore, I think, highly probable that subsequent to the deposition of the Mountain Limestone Formation, and prior to the Permian era, Northumberland, while beneath the sea, was rent by volcanic forces acting in a winding line, having a general direction of N.N.E. to S.S.W., but which in its first and more northern part is to the south-east; in its second portion to the south; in its third and longest portion to the south-west; and in its fourth to west by south; and that at remitting intervals, and from different openings, molten rock was poured over the surface or forced among the strata.

Relation of perpendicular Basaltic Dykes to the Whin Sill.—Though the perpendicular basaltic dykes in Northumberland, cutting through strata, have not been seen in contact with the Whin Sill, yet they are of the same origin; for they differ little in mineral character from it; and when a dyke is wide, such as that of Lindisfarne or Hampeth, the chemical and mechanical effects produced by it are similar to those resulting from the Whin Sill. When dykes are narrow, the rock is finer in the grain, and the influence on strata is very slight. Some dykes, however, as that at

* Trans. Camb. Phil. Soc., Vol. II., p. 189.

† Geology of Yorkshire, Part II., p. 84.

Howick, are seen very near to the Whin Sill; and with the exception of one, that of Brunton, all run in a direction transverse to that of the range of the Sill; those in the northern part of the country run from W. by S. to E. by N., and those further southward have a direction either from west to east, or from north west to south east; and this is in accordance with the theoretical deduction of Hopkins, who has shewn that minor fissures are formed transverse to the chief line of fracture. The great strain from N.N.E. to S.S.W. which resulted in the eruption of the Whin Sill, would, therefore, form the transverse fissures which were subsequently filled with basalt. The section at the Harkar rocks near Bamburgh shows that one basaltic dyke at least is more recent than the Sill—which has been broken through, and slopes away on both sides from the axis of the disturbance.

Notes on Maxton (read at the Manse of Maxton). By the
Rev. M. H. GRAHAM.

THE Maxtonians are, in some respects, a peculiar people. Possessing almost none of those luxuries of modern civilization, which are commonly accounted positively vital, they are yet a healthy, and a contented, and a prosperous race. We have no baker and no butcher—no tailor and no shoemaker—no policeman and no doctor—no druggist's shop and no dissenting chapel;—but, it is only fair to add, that we possess one public house, a turnpike gate, and a perfectly sober beadle.

The name of the parish, as every body knows, owes its origin to a gentleman named Maccus, an early Saxon settler, who, in the days of David I., possessed the lands around us as his manor or ton. Hence Maccus-ton, Macciston, and then Maxton, without the final *e*.

This Maccus seems to have been a somewhat notable person, for his name appears as witnessing many important documents, such as the *Inquisitio Davidis* of 1116; the foundation charter of Selkirk; the Melrose charter of David I., and some others. From Maccus are descended the numerous and not undistinguished branches of the family of Maxwell. The

old family residence—a castle—stood at the top of the present glebe, where portions of a fine chimney-piece and bits of polished marble were not so very long ago dug up. We are now a sparse people in this parish, numbering only 485 souls ; but, tradition asserts that we once numbered 5,000 ; and that once upon a time 1,000 bold Maxtonians, all on horseback, met at the market-place to do battle in the troublous day for their country and *themselves*. The village, at any rate, must have covered a very considerable area, for the foundations of its houses have been struck by the modern deep plough for many acres round.

There was, of course, a Market Place (as already noted), and *there* are still to be seen, close by its original site, the melancholy remains of the old stone cross—probably of the 13th century. Portions of this venerable relic have from time to time, I grieve to learn, been surreptitiously appropriated by predatory and unscrupulous antiquarians. I have discovered the whereabouts of its ancient capital, on which is chiselled a lion recumbent, holding in its paws a lamb ; and I do not altogether despair of greatly restoring our ancient cross.

I turn now to our little Church ; and here also, in the woful transformation our sacred edifice has passed through, we, as a Club—lovers of the beautiful and venerable, and conservators of what is worthy of preservation—have much reason to mourn that our immediate ancestors were not like-minded with ourselves. Thanks, however, to my generous heritors, the little temple has been recently vastly improved. The date of its first erection is not exactly ascertained ; but we may safely set it down as not later than the early part of the 12th century. It was at one time attached to Dryburgh, whose exquisite ruins are within three miles of us ; but the greedy monks cut us off for some loaves and fishes in the shape of half a plough-gate of land. Originally dedicated to Saint Cuthbert, there remains still a fragment of the early building. The west door will be found a fine specimen of the Norman order ; and in the western gable may be plainly seen some stones bearing marks of scroll work. These stones have been stuck in at random by our pious fore-master builders, at one of the many re-arrangements the church has unmercifully undergone, simply, I imagine, to put them out of the way. When some masons, five years ago, were removing the old earthen floor, they picked up a large stone finely carved, which must have formed the capital of a handsome pillar—

but where the pillar stood it is now vain to conjecture. The stone will be exhibited to-day.

Before I leave the village, I must not omit to remind you that it was here there was born and for some time lived, the "fair maid Lilliard;" the memory of whose martial chivalry on Ancrum Moor in 1545, still lives enshrined in the hearts of every gallant Maxtonian. Having lost her lover, so runs the familiar story, during the savage raids of Sir Ralph Evers, the commander of Henry VIII.'s forces, she vowed eternal enmity against the English—for "revenge is sweet, especially in women." Accordingly, when one of the Scotch and English divisions met on the lands of Muirhouselaw (the genuine scene, I am persuaded, of the conflict), our heroine hastened to join the force under the Earls of Arran and Angus, resolved to avenge her lover's death. Poor lass! she fought and *fell*. But the story of her tragic valour has been preserved in four touching lines of verse, inscribed originally, it is said, on a cross erected to her memory on the spot where she was killed and *buried*. Thus they ran:—

"Fair maid Lilliard lies under this stane;
Little was her stature, but great was her fame;
On the English loons she laid many thumps,
And when her legs were cutten off she fought upon her stumps."

Alas, for the chivalric spirit of the age! fair Lilliard's cross is gone—gone like herself, both stump and rump—and all that we have *thus* to perpetuate her fame is something like a grave-yard stone, *also smashed*, but bearing pretty legibly the old inscription. I have said that the chief scene of the battle of Ancrum Moor must be placed in *this* parish. A recent writer thinks not, because a heron rose on wing as Angus reached the ridge of the moor; so he concludes it must have been feeding near the moss at Farnington. But he forgets that there was a lake in those days, and even down to 1820, on the site now occupied by the Muirhouselaw tile works; and it is more likely therefore, that his heronship might have been munching on his favourite dish of eels, than feeding on the less savoury frogs of a bog, *Q. E. D.*

Let us now go down to *Littledean Tower*, about a mile and a quarter to the east of the village. On an extensive plateau—having on the north side the Tweed, running broad and swift at this base, and on the east a great deep dean—stands the fine ruin of a once splendid, but now sadly dismantled, Border Pele. It formed the residence of a well-

known border family—the Kerrs of Cessford (now almost extinct); many of whom repose in a vault beneath the church. Portions of the tower are, as usual, of different dates, the earliest being probably of the first half of the 14th century, and the most recent 200 years later. The building must have been on an unusually large scale, for the plough now reveals that it covered a wide surrounding area. The walls are of remarkable thickness; the ordnance surveyors said they had seen no Pele of such massiveness. In shape, it was a half moon on the western, and an oblong square on the eastern side; while on the southern side it appears to have jutted out considerably beyond the *western* oval tower; for some of its foundations, in this direction, were taken up not many years ago. There are three tiers of loop-holes—an uncommon number—and so placed as to completely command every approach. On the topmost battlement there ran all round a bartisan, three feet high, portions of which may still be seen. But wanton hands have been rudely laid, in recent years, on this grand old pile. For miles, its once precious stones have macadamized the Kelso highway; and stables, not far distant, were built of these too. As if conscious of the proposed desecration, its huge walls refused to give way till blast after blast was repeated; and then there fell, in one mass, some 28 feet solid masonry of the front elevation. I am hopeful, that efficient means will now be taken to prevent further destruction.

Near this tower, and on the sides of Ploughland burn, some remains of a ruin called the “Abbey Mill” existed, until the course of the burn was turned, to prevent the adjoining quarry being inundated, and then *they* were removed. It has always been doubtful how much of the land here belonged to Melrose; but, as a humble contribution to this profoundly interesting controversy, I would suggest that, as the “Abbey Mill” was on the *north* side of the burn, it is therefore very likely that the Monk’s land extended from Broomhouse burn to *Littledean* burn, instead of between Broomhouse burn and *Ploughland* burn, as Mr Jeffrey in his work on Roxburghshire supposes. Popular tradition, and a note of Sir Walter Scott’s, point to Broomhouse as the site of a splendid tower, the inmates of which were slain on the eve before the battle of Ancrum Moor. Hence the war-cry of that day, “*Remember Broomhouse!*” which lent a terrible strength and efficacy to the battle-axes of our gallant villagers. Here also, on the

west side of the burn, tradition has fixed the site of that hospital which Mr Jeffrey has placed on the haugh at Ruthersford. But the following details will assist, I hope, in determining the *questio vexata*. In the fields on both sides of Broomhouse burn, close by the present school-house, and crossing the quarry at the back of the school, are trenches of from 5 to 7 feet deep, full of rich fatty earth and containing human bones. In trenching the garden here, close by the traditional site of the hospital, two of these trenches were crossed: one was 28 feet broad, and $6\frac{1}{2}$ feet deep; the other 20 feet broad by 5 deep; and in these were found quantities of human bones. A few horse-teeth were also turned up, and the upper half of a quern; here was also found a rudely hewn stone jug. A portion of this jug will be shown to-day; but the larger half has been crushed by one of those wretched pests of the archæologist, the floor-scrubbing girl, who always *will* go to one's most valued treasures for her sandstone. This jug had a spout like a cream-pot on one side. In a field also close by, there was dug up, by a drainer, a considerable mass of sheet lead. Was this a theft from the hospital adjoining, thus buried for concealment and never uplifted? Is tradition right then? In front of the school-house, two workmen, in removing the earth from one of the trenches, came at $6\frac{1}{2}$ feet deep on rock. The rock was level and smooth, but there was an indentation, or cut, made into its surface, about 3 inches deep, forming a square of 6 feet or so; and in the centre of this square there was a hole of 3 inches diameter. What meant all this?

Let us now go down to the Broomhouse Quarry here for a minute. It is, like all our quarries in this district, of old red sandstone. Here, as elsewhere in this stone, many excellent specimens of scales of the *Holoptychius* have been found, some of which will be shown to-day. In forming a road, many years ago, to this quarry, the workmen turned up several flat stones, and some small pieces of flint. From their description of the flint pieces there is much probability that they were *arrow heads*; but, I lament to add, they were so quickly used up and so utterly disfigured by the men striking lights on them for their pipes, that they were not thought worth preservation. Here, also, in tirling about 4 feet deep, was cast up an elk's horn, which the men, in their ignorance, smashed to pieces. A few of these pieces were afterwards secured, and will be shown to-day. Embedded in the stone

was discovered the *trunk of a tree*, inclined somewhat towards the east. With the usual ill-luck attending excavations, the tree was thoughtlessly broken up; but the late Lord Polwarth obtained an excellent fragment, so friable, however, that unless it has been carefully preserved it must long since have gone to dust. The workmen said there was a *brown powder* completely surrounding the trunk; was this powder *decayed leaves*, or rather the *bark*?

I shall now leave the quarry, as some of our party will visit it under the guidance of my antiquarian friend, Mr Chisholm, our most respected school-master, to whom, let me most gratefully acknowledge the very generous help he has given me, in drawing up these notes. Mr Chisholm will also conduct a party to Ringly Hall. This is an ancient camp (whether Roman or British we cannot determine), situated about 3 miles to the east of us, near by the well-known tumulus in front of Makerston House. He will also point out the site of the old town of Rutherford, and its church yard; the grave-stones of which an *improving* farmer improved off the face of the earth, by chopping down and burying them in his drains! As I have no desire to take the wind out of my friend's sails, I shall not detain you longer at the camp further than to enter my protest against recent historians placing so much of its outer works in the parish of Roxburgh. There was, I may state, another camp, or fort, in a field immediately to the south-west of Ringly Hall, bearing the same name; and there are still some remains of the entrenchment of part of a camp in a plantation on the south side of the road, where the *west* avenue to Rutherford-mill separates from the turn-pike. In a quarry near here were found, at every tirl, quantities of human bones. From repeated investigations, Mr Chisholm concludes, (and I humbly concur), that defences had surrounded the fort on the north, as well as on the south side; but that the river Tweed, of whose changeful moods we here possess many notable illustrations, has, in the course of ages, swept these defences away by the process of active undermining.

Now, one sentence as to the geological aspects of our immediate neighbourhood. The old red-sandstone obtains throughout the greater part of the parish; and wherever it has been quarried there have been found scales of the *Holoptychius*. In some places, the formation lies conformably on the trapean rock; but above Craigour, three-quarters of a mile

east on the river, and *below* the school-house, are sandstone rocks altered by heat. Right below the manse and overhanging the river, is a sort of clinkstone (phonolite). At Craigour, we have a rock akin to basalt; and below the school-house, a trap-porphry, which has burst through the sandstone strata and displaced them. In fact, the trap-porphry overlapped these strata before it was quarried down for road-metal; and even still it may be seen in one spot. There is amygdaloidal porphyry on the Killaw at Muirhouseslaw. In boring some fields opposite Broomhouse, trap was found at the depth of 20 feet. In sinking a well at the manse, I was interrupted by phonolite at the depth of 20 feet; and so, from these and other considerations, we are led to conclude that the depth of red sandstone in this parish is far from being great. In tirling a quarry close by the manse, several pieces of splint or cannel-coal were found on the rough surface of the rock. The edges of these pieces were rounded, as if rolled by water, and they were *not lying in situ*. May not these fragments, as Mr Chisholm suggests, have come from the Lothians, or more probably, from Lesmahago? And may not, he further suggests, these layers of coal which were found in sinking a well at Longnewton forest (2 miles south-west of us), and which gave rise to some recondite speculation, may not this coal have drifted in the same manner?

Instead of discussing this daring conception, I must hasten on. Our circular states that "looking out for spring flowers and insects" will form a feature in our day's saunter. I hope you will be more successful than I have been in finding them; and, as I have already too much presumed on your indulgence, I shall leave the prosecution of this branch of industry to my brother naturalists. They will find a considerable variety of plants in the glens, through which I propose to conduct a party, though not in a very favourable condition for inspection or preservation. Among them are: March, or sweet-scented violets, in profusion; the common violet; wild garlic, in a burn near Littledean; the poisonous hemlock; the maiden-hair spleenwort; and, perhaps, if we are very wide-awake, the maiden pink, which elsewhere is seen adorning Smailholm Tower and Minto Crags. As to the *insects*, I should like that the entomologists would assist such of us as affect horticulture, to expiscate and to extirpate a little wretch, which, of recent years, has attacked and eaten the life out of the leaves of the pear. I saw it first of all some

nine years ago. It was then much less known than now, for the subject is at present engaging the attention of the horticultural journals. Sometimes I take it to be a fungus, and sometimes an insect; but, whatever it be, it is destroying our pears and breaking our hearts, and cruelly baffling our utmost ingenuity either accurately to diagnose it or successfully to banish it. In conclusion, the only rare birds we have seen in the parish are the kingfisher, the golden-crested wren, and an unfortunate one of Mother-Cary's chickens, that, a few years ago, dashed itself against the school-house window. Its remains now rest in the museum at Kelso. There is a large colony of sand-martens above the Broomhouse quarry, whose close proximity to the school is not to be envied. Hawks occasionally approach to perch on the rails opposite, or hover about till they calculate the opportunity of "stooping" upon the helpless marten. This they seldom fail in accomplishing, and they seem utterly regardless of the near presence of man or school-boy.

I have only to add that the following little notabilities will be exhibited:—

1. The geological specimens referred to.
2. A nodule, which is supposed to contain quartz, and which will be broken up; [but it didn't].
3. Portions of elk's horns referred to.
4. The whirl of a distaff, found in the field before mentioned beneath some up-lifted stone flags.
5. A coin of Edward first's reign, found in a field at east end of village; probably deposited in one of the old gardens.
6. The stone found in the church, and supposed to be the capital of a pillar.
7. An old black oak arm chair, finely carved and in perfect preservation, which belonged to King Robert Bruce.
8. A finely bound copy of Macklin's Bible, in 6 vols; the most splendid edition of the Bible ever printed.

M. H. GRAHAM.

11th May, 1871.

*On an Earthquake among the Cheviot Hills; with Notices of
Border Earthquakes.* By JAMES HARDY.

WHILE travelling during this season among the Cheviots, I was told about an earthquake, which, on the evening of the 17th of March, 1871, had alarmed the dwellers round the northern base of the highest hill. It turned out to be little more than a faint representation of more energetic agencies operating in districts further to the west and south; but it is an event to have an earthquake, even on a limited scale. It was heard at Goldsleugh, Dunsdale, and Southern Knowe, shepherd's houses on different farms; all of them standing in low situations, within a few miles of each other, in the valley of the Coldburn. At Dunsdale it was described as being a dull hollow noise; and at Southern Knowe as like the rumbling of a coach. In a line running obliquely from these places, from W.S.W. to E.N.E., and several miles across the hills, it was heard by the shepherd at Earle Hill-head; and following the same direction, half a mile further, at South Earle, two lads, being disturbed by it in their beds, got up and would not be persuaded to re-occupy the "haunted chamber" that night. The time when this happened at all the places was about 10 o'clock p.m. All speak of it as a "noise;" but there must also have been a considerable concussion. Two days afterwards, the shepherd at Dunsdale, in going his rounds, remarked that a huge block of rock had been dislodged from the southern Bizzle rocks, and launched out into the grassy area beneath, tearing up the turf and soil in its passage. I saw it in August. It is a block of several tons, with all the fresh marks upon it of a new comer; and lies well up the glen, above the great detached rock dignified from its pre-eminence amongst the surrounding boulders, with the name of "Sampson."

On further inquiry, it was ascertained that this was not, as was at one time supposed, a mere circumscribed accident, liable to doubt and disbelief; but that it was connected with a shock of earthquake, extensively felt that night in the north of England, as well as in the south of Scotland. It happened, however, an hour earlier than the more general shock, which accounts concur in placing at from 11 to half-past 11. This several accounts describe as having been preceded by a low rumbling noise. "The shock—or rather shocks, for there were more than one—lasted only three or

four seconds. *The vibration was from W. to E.*, and was accompanied by an unsteady and swaying movement, which led persons who had retired for the night to suppose that some one had got under their beds. In the neighbourhood of collieries it was at first attributed to an explosion. It seems to have been experienced all over Yorkshire and Lancashire, and was perceptibly felt as far north as Dumfries. In Cumberland its effects were very distinctly marked. A noise like the fall of a building was first heard, then a heavy swaying motion was felt, and the doors and windows were rattled violently as with a strong wind. Poultry, cage birds, and domestic animals displayed great terror; and in many cases people rushed out of their houses in alarm. A report from Kendal mentions another shock as having been experienced between 6 and 7 P.M. The waters of Windermere rose, and the appearance of the atmosphere was like that preceding a thunderstorm."—*Newspaper Report*.

It was less palpably felt in Northumberland and Durham. In Newcastle, between 11 and 12, in many cases, rooms perceptibly vibrated for a few seconds, windows were shaken, and the peculiar accompanying sound was heard. It was felt also at Sunderland, Blaydon, Dunston, Corbridge (at 11 P.M.), Beaufront Castle (where it brought down a cornice of one of the rooms), Benwell Hall, Stocksfield, Hexham, Heaton Dene, Wallsend, Byker, Walker, Jesmond, Saltwell. At Middleton, in Teesdale, there were two shocks; one about 7 and the other about 11. There was a strong oscillation felt at Durham; also, at Lanchester, Brancepeth, and several neighbouring villages—all at 11 P.M. About 10 minutes to 11, at Consett and Shotley Bridge, a rumbling sound as of distant thunder was heard, and there was violent shaking of the windows and ware in the houses. A brilliant outburst of the northern lights was observed that evening by a ship captain, who was off Hartlepool at the time.

The records of previous earthquakes on the Borders, by which the recent shock might be assigned to a local area subject to such disturbances, are somewhat meagre. This tract of country has wide and far-reaching sympathies underground, but the seat of perturbation appears not to be immediate, and the intervals of intermission are of lengthened duration. In 1275, on St. Nicholas' eve, great earthquakes were felt in Newcastle, attended "with dreadful thunder and lightning, with a blazing star, and a comet in the appearance of a great

dragon, which terrified the people." (*Local Historian's Table-Book, I., p. 79.*) The next account that I meet with has escaped the researches of Mr Milne Home, in his "Register of Earthquake Shocks felt in Great Britain, from 1608 to 1839." (*Edin. New Phil. Journal, Vol. XXXI-XXXIV.*) It is contained in two letters that appeared in the *Newcastle Courant*, March 23rd, 1727-8. The shock was preceded by successive displays of Aurora, an accompaniment or precursor of earthquakes visible in various other instances, including that of 1871. The first notice is dated Galashiels, March 4. "On Thursday last, at 8 at night, there was perceived in the air towards the north, an extraordinary meteor in form of an arch, the side pointing to the earth dark and gloomy, with the bright side upwards; which, disappearing till about 3 next morning, the 1st instant, it was again observed, with extraordinary commotion in the air, towards the north-east. The vapour was of a pale yellow colour, going in flakes of a considerable breadth, with a whissling distinctly as they drove up; and the nearer they approached the zenith of the atmosphere, the more it increased. About half an hour after four, a shock of an earthquake was felt all over the place and some miles round about." The second report is dated Selkirk, March 3. "Last Friday morning, a little before 4 o'clock, I was awakened by a noise something like a clap of thunder, which, after it had roared for about four minutes, died away insensibly; when it ceased, I arose out of my bed and looked out at the window, and seeing the air clear except two small windy-like clouds in the north, I concluded that it had been the morning-drum by which I had been alarmed. Next morning I was told by everybody that there had been an earthquake, and that it had shaken all the houses in town." The day after, the writer met, on a public occasion, a concourse of gentlemen from all parts of the country, and took the opportunity to question them narrowly about what had happened. "Some of them were abroad at the time, and both felt the shock and heard the noise which followed; others said they were almost tossed out of bed; and others, especially those who lived to the southward, heard no noise, but were dreadfully shaken in their beds."

May 15, 1768, there were, at Newcastle, at 4 P.M., two shocks; they were very strong at Kendal, Darlington, and Middleton. (*Ed. New Phil. Jour., XXXI., p. 104.*)

December 8, 1780, there was a slight shock at Newcastle,

by which the houses, windows, chairs, tables, &c. were thrown into a violent agitation for about two seconds, attended during the time with a remarkable noise. (*Gent. Mag.*, 1780).—December 9. Earthquake at Richmond, Yarm, Stockton, Chester, Newcastle. People were lifted up by a wave-like motion of the earth, and then set down again. The atmosphere was dark and gloomy for several days previous; calm at the time. *Motion from W. to E.* (*Ed. New Phil. Jour.*, XXXI., p. 104).

August 11, 1786. An extensive earthquake shock, almost simultaneously felt wherever it reached, was especially distinct on the Borders. It was felt through the counties of Dumfries, Roxburgh, Cumberland, Berwick, Kircudbright; as well as in Lanark, Argyle, and Aberdeen; and extended from S. to N. 150 miles, and from E. to W. 100 miles. (*Ed. New Phil. Jour.*, XXXI., p. 107). At Kelso, according to “Dodsley’s Annual Register,” the earthquake was felt at 2 in the morning. *“Its motion was from W. to E.”* The motion was succeeded by a noise as if the tiles had been tumbling from the roof.” (*Vol. XXVII. p. 208*). According to an extract from a Kelso newspaper, reprinted in the “Border Almanac,” being a letter dated from Carham, August 14th, the writer says:—“A little past 2 (2:20 says another account) on Friday morning, as I lay quite awake in my bed, I was suddenly alarmed with a motion of my house *from W. to E.*, which sensibly heaved me up in my bed; then followed a tremulous motion of the whole house, concluded with a rattling noise as if the slates had fallen from the roof; the motion and noise did not last many seconds.” This earthquake was preceded by a long drought, and a calmness in the atmosphere; and the day before it took place, the clouds had not the least motion, but appeared greatly impregnated with the electric fluid. Another correspondent at Pinnacle Hill, Kelso, was awakened by the bed shaking under him, and a noise in the room from the rattling of the table, chairs, and other furniture. He looked out at the window, and there was as serene and still a morning as he ever beheld. The concussion appeared to continue more than a second, and to take its direction from *E. to W.* The earthquake was locally “felt at Mellerstane to the north, and as far as Newcastle to the south; and not further west than Jedburgh, or east than Coldstream. It was scarcely, if at all, felt at Berwick.” For the rest I must refer to the accounts of the period. This was a very calam-

itous era. Tempests and hurricanes—earthquakes and inundations—famine, pestilence, and cattle disease—prevailed in all countries and climates. (*Dodsley's Ann. Reg.*, XXVIII., p. 58, 59).

August 11, 1787. "Penrith, Lancaster, Manchester, Lennel near Coldstream, 2 A.M. *Motion N.N.W. and S.S.E.*" (*Gen. Mag.*, LVII., p. 494). I quote this from the Register in "Ed. New Phil. Jour.," XXXI., p. 108. From the coincidence of day and hour, it is obviously a repetition of the foregoing incidents.

August 13, 1816. An extensive and simultaneous shock at 10.45 P.M., which affected all Scotland from the Pentland Frith on the north, to Coldstream on the south. Direction of the concussion, from *N.W. to S.E.* This was a very rainy year.

September 18, 1822. "A smart shock of an earthquake at Dunston, near Newcastle, between 1 and 2 P.M., accompanied by a loud noise like thunder." (*Ibid*, p. 119).

January 21, 1831. At Tynehead, a rent was formed half a mile long. (*Ibid*, p. 121.)

October 23, 1839. An earthquake felt about 10 P.M. throughout the north of Scotland; reached the Borders, being felt at Netherby Hall, and at Closeburn, Dumfriesshire. "It was felt at Selkirk, and in the neighbourhood also of Kelso, where the windows rattled and the crockery ware was shaken. It was felt at Coldstream, in the neighbouring village of Newtown, and the farm of Mountfair." (*Ibid*, XXXIV., p. 106).

Such are some of the distinguishing features of earthquakes, as they have occurred on the Borders. I have only to remark, in conclusion, that the direction of the shocks from W. to E. is nearly parallel with the smaller dykes, which, according to Mr Tate, in the northern part of Northumberland run W. by S. to E. by W. A similar inference is also arrived at by Mr Milne Home: "In Anglesea, North Wales, and Cheshire, where the dykes run N.W. and S.E., the vibrations are, in the great majority of cases, stated to have been in the same direction." (*Ed. New Phil. Jour.*, XXXI., p. 285, where there are other instances of accordance).

The ancient subterranean forces are now confined, but they still occupy their wonted sphere of action, and work along familiar grooves; they have been walling themselves up for ages, but the struggle between restraint and liberty continues still to be waged, and has battered and rent the structure;

and at many of the old sally ports there is still free issue. The study of earthquakes then, even at home where they are so rare, is calculated to throw important light on some of the problems of local geology.

An Archæological Sketch of Whalton and its Vicinity. By
the Rev. J. ELPHINSTONE ELLIOT, Rector of Whalton.

ALTHOUGH there may be little in the circumstances of a secluded country parish, like that of Whalton, to attract the attention of the superficial enquirer; yet, to a Society like that which I have now the honour of addressing, whose object it is to investigate and examine not only the distinctive natural features, but also those relics of antiquity which tell of bygone periods in the social life of the district, it may present subjects of interest connected with their peculiar pursuit. Many things and facts, trivial apparently in themselves, yet possessing some degree of value as illustrative of, and bearing upon the natural and archæological history of the country, are apt to be swept away or covered by the advancing tide of high civilization, every day rising around us. The oldest inhabitant departs to his last resting place, and many local traditions go into oblivion along with him. The plough rips up and destroys the vestiges of camps and battle-fields; and the farmer carries off the stones of ancient peles and castles to build his dykes or mend his folds.

“Out upon Time! who for ever will leave
But enough of the Past for the Future to grieve
O'er that which hath been, o'er that which must be;
What we have seen our sons shall see:
Remnants of things that have passed away,
Fragments of stone reared by creatures of clay.”

Partly, then for the sake of drawing the attention of the Society to some of these memorials of the past while it is yet possible to do so; partly, that I may perhaps persuade it to continue its excursions into a locality hitherto unvisited, I have been induced to offer to you the following rough sketch of the parish and neighbourhood of Whalton.

The history of an individual parish may, in some degree, be regarded as an epitome of that of the country at large. The same feelings, opinions, and passions, which prevailed

at any particular era in the latter, will in general be found to have worked with equal, if not with greater intensity, in the smaller area; and its archæological features may be regarded as the characters by means of which we are enabled to read their operation and influence. As the principal details connected with these are pretty fully given in Hodgson's valuable work, I do not propose to trouble you with them further than may be necessary, for the symmetrical arrangement of my observations on such incidents and particulars as have not come within the scope of the historian's narrative. These I will dispose in their chronological order, noticing such monuments of antiquity as require it, during the period in which they are supposed to have originated.

We might naturally expect to meet with some vestiges of the old Roman occupation of the country; the earliest historic record to which we can with any certainty refer. The parish is situated within about 3 miles of one of their great thoroughfares—the Devil's Causeway. The neighbourhood of the Wansbeck, through which the line runs at the point where it is nearest to Whalton, appears, from the numerous remains of British camps and villages, to have been very thickly peopled. To keep up the imperial authority amongst them, by making them accessible for troops as well as for commercial purposes, and to furnish their inhabitants with the continental manufactures in exchange for their own raw material, was doubtless one of the objects of its formation; and it would be necessary to guard and keep open their communications with the more settled country to the south of the Great Wall, by standing camps and garrisons at commanding points in its vicinity. Such appears to me to have been the intention of two camps situated on the ridge of the high ground, over which the road runs from Whalton to Morpeth, and about 3 miles as the crow flies from the Causeway, and about $1\frac{1}{2}$ from the village, at a farm house called the Camp-house. One of them immediately behind the house had originally enclosed about two acres of ground, which would have afforded space sufficient for the accommodation of two legions. It commands an extensive view of the country to the north and north-west. Of this camp only the north and south sides of the rampart and fosse remain. The other, which is much smaller, being only about 80 paces in length by about 60 in breadth, lies about 300 paces from it to the east and south-east on the opposite slope of the ridge, and has an equally wide prospect

to the west and south-west. It is known by the name of the "Dead men's graves," probably from the inequalities of the surface. It, as well as the former, appears to have been a fortified station of a quadrilateral form.

Of the Saxon period scarcely any remains exist. Mr Wilson in his recent work says: "There was a Saxon church on the site of Whalton Church; and one fragment of it is incorporated in the present edifice. This is the tall, narrow, semi-circular headed tower arch. In the transitional Norman period the tower was taken down; except this sturdy arch." As, at the close of the reign of Edward the Confessor, above a third of the landed property of England was, according to William of Malmesbury, in the hands of the ecclesiastical body, and the advowson of the living seems at a very early period to have belonged to the prior and convent of Tyne-mouth, which was a dependency of the great monastery of St. Alban's in the south,* I am inclined to believe that a considerable part of the parish consisted of church-lands. At the Conquest, however, it seems to have been constituted into a barony, and bestowed by William (who paid little regard to the privileges of the clergy) on one of his followers. There is some difficulty in making out the line of succession of its early possessors. The first mentioned by Hodgson was a certain Eustace Fitz-John, who, he says, was a great man in the north in the time of King Stephen. His name is of continual recurrence in the accounts of this period, as picking up manors and baronies in different parts of the country; for which amusement he appears to have had a decided vocation. He had a fine field for the development of this talent in the troublous reign of Stephen, when a sort of free fight was going on over the length and breadth of the land. His first wife was Agnes, daughter and heiress of William, son of Nigil, baron of Halton in Cheshire; and his second, the heiress of the great De Vesey family. His son by Agnes was named Richard Fitz-Eustace; whose son in like manner adopting the patronymic is called Roger Fitz-Richard; who again was succeeded by his son, Robert Fitz-Roger. On this last King John, June 6, 1205, bestowed Whalton. Meantime, however, another family appears to have had substantial possession of the barony. Almost contemporaneously with Eustace Fitz-John, Walter Fitz-William in the reign of

* Riley's *Abbat Monasterii St. Albani*.

Henry I., certified knight's fees, disposed of lands, and exercised other manorial rights in the barony, and was undoubtedly *de facto*, Baron of Whalton. His son, Robert Fitz-Walter, is supposed by Hodgson to have been the same person as Robert de Crammaville, who, at the assizes in Newcastle in 1194, was certified to have been Baron of Whalton, as his ancestors had been time out of mind. Why King John dispossessed the Fitz-William line cannot now be explained. As the old ballad says—

“He ruled England with main and with might,
And did much wrong, but maintained little right.”

Robert Fitz-Roger was employed as his ambassador to the King of Scots in 1209. He appears to have inherited the talents of his ancestor, Eustace Fitz-John, and also to have had the same turn for adding to the family property; for he held also the Barony of Warkworth, and had a grant of Eure in Yorkshire from Richard I. Besides Whalton, or Qualton, as it is spelt, he obtained from John the manors of Newburn, Rothbury, and Corbridge; with the power of infangthief and gallows, and a ducking stool, pillory, toll, assize of bread and ale, with market and fair. Robert Fitz-Roger was succeeded by his son, John Fitz-Robert, who seems to have been a man of some mark in his day, as he was High-Sheriff for Northumberland four years together from 1224-27. He was also one of the twenty-five, to whom the barons, after extorting Magna Charta from King John, delegated the most extensive authority and power to see it properly fulfilled.* He died in 1240, leaving a son, who succeeded him in the Barony of Eure in Yorkshire, and was the ancestor of the noble family of Eures or Evors; one of whom, in the reign of Henry VIII., made himself famous by the ferocity with which he ravaged the Scotch border. Another son, named Roger Fitz-John, succeeded to the Barony of Whalton and other lands. The widow of John Fitz-Robert, Ada de Baliol—great aunt of Baliol afterwards King of Scotland,—paid 200 marks for his custody and that of his brother Hugh, they being minors at their father's death. Roger died in 1249, in Henry III.'s reign, leaving a son, Robert Fitz-Roger, a minor; and his grandmother offered 1200 marks for his custody. These wardships were the opportunities enjoyed by the crown under

* B. de Molleville's Hist. of Eng., p. 245.

the feudal system of pressing back into its own coffers the wealth which the rapacity of the barons was always drawing away from it.* To such exactions it probably was owing that the family which had so long possessed the Barony of Whalton, became so reduced as eventually to lose it. The offer of 1200 marks which Ada de Baliol made for the tuition of her grandson, Robert Fitz-Roger, was refused; and his wardship was granted to the king's brother, William de Valence. His property at the time of his death went to his son John; probably considerably deteriorated by the sweating it had undergone at the hands of the crown. John Fitz-Roger took the name of de Claveringe and was the ancestor of the Claverings of Callaly. He died in Edward III.'s reign, leaving a daughter; having previously given up his Northumberland property for lands in the south. Thus, the Barony of Whalton again fell into the hands of the crown. It was granted by Edward III. to Lord Scrope of Masham, and remained in the hands of that distinguished family down to the reign of Henry VIII. One of them was Lord of the Bedchamber to Henry V., against whose life he conspired along with the Earl of Cambridge and Sir Thomas Grey. There is a fine scene at the beginning of Shakespeare's *Henry V.*, in which the king, after drawing on the conspirators to an unmerciful sentence on a less guilty culprit, convicts them of their own evil designs, and condemns them out of their own mouths.† The Barony of Whalton, which had been forfeited for his treason, was afterwards, however, restored to the family, with whom it continued until it fell into the hands of another great border family, the Dacres (probably by marriage); the last of whom—the fiery Leonard Dacres—again lost it by confiscation to the crown, on account of his rebellion against Queen Elizabeth in 1569. Finally, in James I.'s reign, it was granted in small allotments to the Meggisons, Moores, Rochesters, and other small proprietors, some of whom still retain their properties at the present day.

The barons of Whalton were, with others in the neighbourhood, bound to aid in the defence of the castle at Newcastle; towards which they paid castleward and cornage,‡ and it was also deemed necessary that they should build each of them a

* Warren's *Blackstone*, p. 275.

† Shakespeare's *Henry V.*, Act II., Scene 2.

‡ See Scott's *Border Antiquities*, p. 6.

house within the liberties of the castle for the same purpose. It does not appear that they had any residence on the barony, either from their belonging to great families who had castles elsewhere, or from its vicinity to the important castle of Ogle, the fee of which was frequently held with it, and which was kernelated or fortified by permission of Edward III., at the time when the Scropes of Masham obtained possession of Whalton in 1341. From this circumstance it happened that the character of the village differed from either Ogle or Belsay; where, the huts of the inhabitants clustering under the walls of the great baronial castle were held chiefly by the immediate followers of the lord of the demesne, ready to take refuge within its walls and defend them against hostile attacks, and prepared at all seasons to attend their liege lord in huntings, and hostings, or when occasion demanded their services;—who, in fact, constituted his court, and shared his hospitality and festivities as well as his dangers and toils. Whalton, on the contrary, was probably composed of bastle houses, similar in their construction to the pele towers, though not so strong or well built; and inhabited by the vassals employed in cultivating the outlying farms. These were, in fact, the onsteads of the different farms in the immediate neighbourhood, collected together for mutual aid and protection against the desultory incursions of the Border reivers. The farms also had probably been laid out with a similar object; they lie in long narrow strips radiating from the place where each farm house originally stood, so as to admit of the stock being driven out in the morning, and grazing back to the homestead, to be placed in safety ere the shades of evening exposed them to be swept off by the “minions of the moon.” These old bastle houses have now disappeared from the village, and been replaced by good farm steadings, now conveniently situated on the lands; but the old people of the place can still remember and point out where each originally stood. The last of them, belonging to the Broomhill, a farm about a quarter of a mile from the village, was taken down about fifteen years since. It had the usual vaulted apartment on the ground floor; and a heavy stone spout projected over the doorway, which tradition affirmed to have been used to pour boiling water on the heads of those who sought to force an entrance. There was also kept in it a heavy swivel gun, said to have been for repelling marauders, which I have

seen, but do not know what has become of it. Another of the same description—but whether it was one of the “serpentines, half-hawks, harquebuses, currys, colyvers, or hand-gunnes,” forbidden by the statute to be sold to the Scotch, I am not able to say—was kept also at another of the old houses, and was eventually by its last proprietor made into a kitchen poker, and so helped to cook his beef as it had formerly protected that of his predecessors.* It might perhaps have been thought that the incursions of the moss-troopers would scarcely have been extended so far inland, and so near to the strong towns of Newcastle and Morpeth, as to render such precautions necessary. There is, however, abundant evidence that this was the case, and that cattle lifting and other outrages were perpetrated in the vicinity not only by the Reed-water clans, the Halls and Reeds, but also by their Scottish associates, the Rutherfords and Armstrongs of Roxburghshire. In a Complaint of Injuries done on the Middle Marches to Her Majesty’s Commissioners, which is contained in Richardson’s “Reprints of Rare Tracts,” vol. i., occurs the following:—“Marke Ogle of Kirklye upon John Rotherforte of Egerton for receptinge of one Thomas Reade, outlawe, which Reade stole from me about Michelmas 1579, four oxen, done against the virtue of trewse,” &c.; and again, “Complaynes Lawnell Ogle of Edington (2½ miles from Whalton) upon Francis Armstrong sonne of the Laird of Whythaugh (in Liddesdale) that he and his accomplices about Michelmas 1585, had stolen and received from him out of Edington 18 oxen, against,” &c.; and others of a similar kind. Nor will this appear strange if we consider that at that time the country intervening between the village and the Scottish border consisted of little else but wild moors covered with natural woods and morasses, which separated and isolated it from the more populous districts. Indeed, within the memory of persons now living, there was no regular road to Morpeth. It only extended to about three miles from the village, after which it entered on the common, across which each passenger chose his own track. A little earlier, the communication with Newcastle was so difficult that farmers usually carried their

* A gun of the same description is still preserved at Belsay Castle, and is said to have been used by Sir William Middleton for shooting wild geese. The last mentioned one was also so used by the old sportsman ycleped Laird Davidson, to whom it belonged, but he found it too cumbrous for the purpose.

corn to the market there, across the backs of horses, two bolls to each horse; the farmer or his man trudging alongside of the train in their wooden clogs. Besides this, in the general order issued by Lord Wharton for the establishment of night watches and patrols along the frontier, which was only a better organization of a system which had prevailed "according to the old custom of the marches," we find that the line ran close to the neighbourhood of Whalton. It provided that "The passages from Callcottes to Meldon deugles at Wansbeke, to be watched with 16 men nightly of the inhabitants of Callcottes, Highamykes, Kyrklaye, Barwikehill, Hortongrange, and Brenkleye to Belsooedge; and the inhabitants of Ogle, Whalton, Trewycke, Mosden, Melden, and Replingtoun, from Belsooedge to Melden deugles; setters and searchers of these passages—John Tussel, Thomas Symson, Richard Anderson, Edward Rawe, Thomas Robson, George Leighton, Robert Symson, and Christopher Yonge. Overseers—Lancelot Ogle, Harry Ogle the lord of Melden, Jarret Heron, and Christopher Fenwyke." A force which, including the setters and searchers and overseers (who were mostly county gentlemen of the neighbourhood), could not have been much less than 1000 strong, was thus employed from the 1st of October to the 13th of March.*

This disturbed and warlike period in the annals of the parish came to a conclusion with its connection with the great baronial families, in the reign of James I. It was to be succeeded by times more favourable to the development of civilizing influences, which had hitherto had little opportunity of making themselves felt. As the progress of these in the Whalton neighbourhood is chiefly associated with the history of its rectors, it is to that I now propose to turn.

Until the reign of Henry VIII., the advowson of the living was in the hands of the prior and convent of Tynemouth. Of the rectors presented by them little else than the names remain. In the absence of any resident baron, they would probably superintend the military as well as the civil and ecclesiastical affairs of their parishioners; for the priests were by no means exempted from the former duties. During some repairs which were made on the older portion of the rectory in my predecessor's incumbency, a good serviceable broadsword was found, which had evidently seen service, and

* Nicolson's *Border Laws*, p. 319.

probably had belonged to some former rector. The rectory itself also had originally constituted a strong well-built pele tower. The ground floor consisted of two vaulted apartments; from the inner one of these a cork-screw staircase (part of which still remains) had conducted to the roof. After the Reformation, however, and when the Union of the two kingdoms had restored some degree of security, the necessity of such incongruous duties ceased, and left the rectors to the more legitimate business of their profession. The advowson of the living, which had been seized by Henry VIII., was given by his daughter, Queen Elizabeth, to Thomas Bates of Holywell, who seems to have been a stirring and active personage at that time; having previously received a letter of thanks from Queen Mary* on account of services done upon the Borders during the troubled years of 1556-7, which letter is still preserved at Milbourne Hall, the present seat of the family. He was likewise, in 1584, named along with Charlton of Hesleyside, Swinborne of Capheaton, and other gentlemen as being "able to inform Her Majesty's commissioners of the abuses done within the Middle Marches," "yf they are sworne or strayghtly examined."† He was likewise M.P. for Morpeth, and was appointed by Queen Elizabeth supervisor of all Her Majesty's houses, lordships, manors, lands, and tenements in Northumberland. In Bishop Barnes' book he is styled "Deputed patron by the Queen of the rectory of Whalton." And in August, 1579, with a due regard to the bodily as well as spiritual health of the parish, he presented Robert Bellamy Clerk, doctor of physic. Of his immediate successors nothing noteworthy is preserved, until at the commencement of the Commonwealth, John Shaw was presented to the incumbency in 1645. Being a man of strong convictions and energetic character, he was unable or unwilling to make his opinions square with those of the ruling powers, who, in consequence, considerably afforded him time to meditate on the differences between them, by shutting him up in prison for four years, and inducting in his room Mr Ralph Wicliffe; who held the living until the Restoration in 1661, when he, in turn, was ousted, and Mr Shaw restored. Shaw, on again obtaining possession of the living, does not appear

* The letter may be found in Hodgson's *Hist. of Northumberland*; *Burke's Commoners*, &c.

† Richardson's *Reprints of Rare Tracts*, IV., p. 18.

to have been actuated by any bitterness against the Presbyterians, which his long incarceration at their hands might naturally have engendered. His zeal seems rather to have taken an opposite direction; for finding, as he says, on his return that "the Romanists had grown more insolently active to bring more grist to their own mill, and list more men in the Pope's service not only by printed books but also by private letters and MSS.," he set himself "to lend his poor endeavours in scouring these northern coasts of those Popish pirates who count all fish that comes to the net." Accordingly, he not only published sermons but also wrote a learned work called the "*Origo Protestantium*," demonstrating Protestantism to be older than Popery; a piece of learned controversy on matters of dispute between the Churches of England and Rome. This was at the time so highly esteemed that the Corporation of Newcastle published it at their own expense, 19th December, 1674. Meantime, his opponent, Mr Wicliffe, on his retirement from Whalton, occupied himself in teaching a school, and preaching to a small congregation of Nonconformists. But he found little comfort or encouragement in this vocation. A Mr Fenwicke, a friend of Mr Wicliffe's, a gentleman of good estate and character, drew up a case of his peculiar discouragements; in which he says, "It was a cause of no small sorrow to him to observe such fickleness and itching humour in some old professors, that if a stranger (a young raw Scotchman) should come and say he was a minister, away some of them would run, by his door, perhaps three or four miles, notwithstanding the hazard he had run by entertaining them in dangerous times."

The encouragement which the Presbyterian forms of worship had received in the time of the Commonwealth, had caused it to be pretty generally diffused over the northern counties. There were chapels and meeting houses at Middleton, Milbourne, Belsay, and Kirkley; and we have reason to believe that these different congregations maintained a close correspondence with the Scottish Covenanters, and, in part, at least, adopted their extreme views. Some of them objected to the use of the ritual for the burial of the dead, and choose rather to be interred in unconsecrated ground. In 1784, Mr Horseley, an ancestor of the present Lord Decies, directed his body to be buried in his own orchard at Milbourne Grange, and the enclosure where it lies still remains. One of the

Moore of Whalton was buried in the grounds behind their house opposite the rectory, and a stone bearing the following inscription, marks the spot:—"To the Memory of Mr John Moore of Whalton—who died in the year 1684—and owing to the dissension of those times—was here interred. This stone—at the desire of the late Mr John Moore of Whalton his grandson, was erected by his widow Elizabeth Moore, December 7th, 1772."

But bigotry and intolerance were not confined to any one party. Many of the restored clergy were not disposed to treat the matter so wisely and wittily as a famous divine, who, when taxed with unwillingness to bury dissenters, is said to have replied that he would only be too glad to bury them all. Mr Foster, the vicar of Bolam, had, about the time of Shaw's imprisonment, been dragged out of his pulpit by the son of the Belsay blacksmith, at the instigation of Mad. Babington, of Harnham; who was a daughter of Sir A. Hazelrigg, one of the leading parliamentarians of the days of the Commonwealth. On his return at the Restoration in 1661, he commenced reprisals in the fashion rather of his Border ancestors than his apostolic predecessors, and excommunicated both the blacksmith and Mad. Babington. In consequence of this, the latter, at her death, was refused burial in consecrated ground; and was buried in a curious vault hewn out of the rock, at Harnham, about three miles to the south-west of Whalton. The mortal remains of the blacksmith were probably disposed of with less ceremony, but where is not known. About two years ago, in sinking a well near to Milbourne, a skeleton was discovered, which may have been his, or that of one of the older inhabitants of the country, as the ground where it was found was dry and favourable to preservation; but, as nothing is known further of it, nothing more can be said. Another of the Covenanting preachers, Mr Veitch, came to the Whalton neighbourhood after the battle of Pentland, at which he was present. He was very active in preaching and propagating the doctrines of his sect, not only in the village, but also to congregations which he collected at Milbourne, Middleton, Harnham, and other places in the vicinity; and suffered many fines and imprisonments for these infractions of the law against conventicles. These punishments probably soured a temper not of the meekest, for he speaks of the misfortunes which befell some

of the magistrates who inflicted them, with a vindictive and unconcealed exultation. If the curate of Ponteland was half drowned and nearly frozen to death, or Sir T. Lorraine of Little Harle, in a drunken orgie, was kicked downstairs by his wife and broke his leg, and other mishaps befell any of his adversaries, he considers them as special judgments by the hand of Providence to avenge his cause. He was, at last, however, driven by these persecutions to take refuge in the wilder and more inaccessible parts of the Border, and preached with considerable success to the savage and barbarous inhabitants of the Wheelcauseway, Kielder Head, and the Dead Water.*

Of the Presbyterian congregations established during and after the Commonwealth, there are very few remaining in the Whalton district. One of the last ministers of the meeting house at Belsay was a Mr Dallas, who was also landlord of a public-house at Bolam—a somewhat incongruous union of professions. Both the meeting-house and the public-house have, however, now disappeared; and that which existed at Kirkley was broken up owing to differences between the clergyman and his elders consequent upon his own irregular habits.

I have been thus particular in noticing these different phases of religious opinion in the district, as affording an explanation of, and accounting for, the isolated tombs and sepulchres which form one of its characteristics. Of the succeeding rectors none, I think, call for any particular notice, with the exception of Mr Noel Ellison, an elegant and accomplished scholar, fellow and tutor of Baliol, and an intimate friend and associate of the illustrious author of the “*Christian Year*.” Besides several sermons, he published a little work entitled “*Romish Truths and Catholic Errors*,” in which he anticipated some of those opinions which led to the great Oxford movement of Dr. Pusey and Mr Newman—in which, however, he did not himself join.

The sketch I have given of the ruling powers, the land-owners and rectors, may properly be followed by some account of the habits and customs of the people who grew up under their superintendence. These—although they have undergone, and are still undergoing considerable changes, owing to the increased facilities of railway intercommunion and the conse-

* See M’Crie’s “*Memoirs of Veitch*,” p. 119.

quent grafting of other races from the north and south, as well as from Ireland, on the native stock—yet, to a comparatively recent period, still retained many features of the olden time. The older inhabitants of the place still recur, with pleasure and fond regret, to the more social customs of their youth. Then at Christmas the Yule log was carefully selected by almost every household, and lighted from what remained unconsumed of that of the preceding year; and the young men went about from house to house exhibiting the intricate and graceful evolutions of the sword dance, which is now, I regret to say, almost entirely forgotten. At Easter again, horse-races formed amusement which brought the people together, and helped to promote good feeling and good fellowship. These festive meetings were, according to my informants, conducted in an innocent and orderly spirit; and the church was usually so well attended on Sundays, as sometimes to occasion disputes for the possession of the pews. All this might lead to the supposition of the existence of an Arcadian simplicity and innocence, much superior to that of the present day. But it is the privilege or weakness of the aged to be *laudatores temporis acti*; and a few admissions reluctantly made to me by my informants help rather to dispel the pleasing illusion. There were at the time I am speaking of (about sixty years since) double the number of public-houses, and these were, at least, as well attended as the church. In Whalton, as in all of the adjoining villages, there was a cock-pit; the neighbourhood of which was kept in a state of frequent disturbance by the quarrels and oaths of the parties engaged in this cruel amusement; and the parish register of the same period shows an equal, if not larger proportion of irregular births; all tending to show that the influence of religious principles, as measured by the standard of moral practice, was, if anything, inferior to that of the present day. The last of these social gatherings, that of the mid-summer bonfire, which still subsists in Whalton, though shorn of much of its original importance—connected as it probably is with those early forms of worship, to which attention has recently been directed, I have on that account reserved for more lengthened notice. On Mid-summer's Eve, reckoned according to the old style, it was formerly the custom of the inhabitants, young and old, not only of Whalton but of most of the adjacent villages, to collect a large cart-load of whins and other com-

bustible materials, which was dragged by them with great rejoicing (a fiddler being seated on the top of the cart) into the village and erected into a pile. The people from the surrounding country assembled towards evening, when it was set on fire; and whilst the young danced around it, the elders looked on smoking their pipes and drinking their beer, until it was consumed. There can be little doubt that this curious old custom dates from a very remote antiquity. One of the earliest forms of idolatry was that which was directed to the Principle of Life and the prolific energies of Nature. These were represented under the symbols of the sun, the element of fire, and other figures, which appeared most vividly to express it among the different races who practised it. Baal or Bel, the sun god, was the great object of worship of the Phœnicians; a people who in their trading voyages were brought into frequent and close connection with the inhabitants of these islands. To their influence Professor Nilsson, in his book on the bronze age, attributes the civilization of that period; and it appears, indeed, sufficiently probable, that it would likewise extend to the introduction of their religious opinions. "Wherever," he says, "the traces of solar worship are discovered, they are found in connection with traces of bronze culture." In the same work, he attributes the concentric markings upon the rocks found in different parts of Northumberland, described in the "Illustrated News" of 19th March, 1864, to sun worshippers; he says that "he was subsequently informed by Dr Bruce that articles of bronze as well as flint were found near them; and in a subsequent paper in the "Transactions of the Ethnological Society," 1866, he endeavours to show that Stonehenge and other so-called Druidical circles were "Temples in which the sun-god was worshipped, in the same manner as Baal in the east." "In evidence of this," he says, "the worship of Baal in Canaan was performed from the days of Moses and Joshua with dance and song. In 1 Kings, ch. 18, v. 22, it is stated that the prophets of Baal leaped upon the altar and invoked the name of their god, &c. The feast of Baal was celebrated in the same manner in Ireland. On Mid-summer Eve, bonfires were lighted on the hills, and dancing was kept up around them all the night. In the language of the country these fires were called *Balsteni*; consequently the Canaanites and the Irish equally denominated the sun-god Baal and lighted fires on the hills, round

which they danced, and through which they carried their children. . . . It is not to be conceived that a solar worship so intimately agreeing in various details, could arise spontaneously of itself in so widely distant countries; it must have been imported from one country to another. . . . There is every reason to believe that this festival was once generally celebrated in the whole of western Europe, &c. . . . We must therefore, come to the conclusion that the worship of Baal in Ireland as well as Scandinavia, must be derived from the east, since the striking affinities sufficiently prove its oriental origin." In this conclusion, I may fairly include Northumberland and the neighbourhood of Whalton. Within the memory of persons now alive these fires were kept up, with their attendant dances, in all the neighbouring villages; they are still maintained in our own, though now fallen into the hands of the young lads. In the neighbourhood of Belsay, a name which clearly indicates its connection with the Phœnician god Baal or Bel, there are remains of a Druidical circle; and near to it was found by my friend, Mr Bigge, one of those stones with the concentric engravings which have recently attracted the notice of the society, and which Nilsson attributes to solar worshippers. This view of the learned Swedish professor is confirmed by the opinion of your late secretary, Mr Tate, in his very valuable paper on "Ancient Sculptured Rocks," in the "Proceedings" of 1864.* Mr Tate, indeed, traces this solar worship to a Druidical source, whereas Professor Nilsson derives it from the Phœnician worship of the sun-god Baal; but as he regards Druidism as a younger form of that religion, there is no actual conflict between them. There are besides other indications of the general prevalency of that solar worship,† of which, as I have supposed, the mid-summer

* See page 174.

† In a letter which I had from Mr T. Arkle of Highlaws, he gives some further confirmation of this. 1st. In regard to the mote hills of Elsdon, "The opening in the higher hill points 35 degrees east of south. The word Elsdon has usually been derived from the Saxon *Elde Dun*, Old Hill; but perhaps there are equally good reasons for deriving it from the British *Heuls dun*, signifying Fortress of the Sun. It was anciently written Ellesden or Hellesden, which may to some minds recall Heliopolis or Heliades. Can Elsdon and Eildon have the same derivation? The hills are likely to have been used for the same purposes. 2. The two stones standing one on each side of the Tumulus on Sandyford Moor, have their longer axes pointing 36 degrees east of south. 3. On Earlside, not far from Byrness, are three upright stones called the Three Kings. This monument has consisted of four stones, one of which is fallen down, but still lying close to where it stood. The side

bonfire forms a leading characteristic. Its connection with the festivities which I have noticed as among the village amusements at Yule, is thus traced by Brand in his "Popular Antiquities." "The Pagan rites of this festival (viz., 'Midsummer Eve,') may be considered as a counterpart of those used at the winter solstice at Yule-tide. There is one thing that seems to prove this beyond the possibility of a doubt. In the old Runic *Fasti*, a wheel was used to denote the festival of Christmas. The learned Gebelin derives Yule from a primitive word, carrying with it the general idea of evolution and a wheel; and it was so called, says Bede, because of the return of the sun's annual course after the winter solstice. This wheel is common to both festivities." Again, the horse-races, which I have also noticed as connected with the Yule or New Year amusements—the money collected at that time being devoted to their celebration at Easter—may have had a similar origin, as also the theatrical entertainments which were common in Whalton at the same period. Herodian, a Greek historian of Rome, A.D. 238, relates that Heliogabalus erected a splendid temple to his god Baal at Rome; and at his festival "*Ludi curiales et scenici*," theatricals and chariot races formed part of the ceremonial. Vestiges of a *cursus* for similar purposes are noticed by Professor Nilsson as existing at Stonehenge; and among the reforms of Josiah (23 ch., 2 Kings) it is noticed that "he took away the horses that the kings of Judah had given to the sun," "and burned the chariots of the sun with fire."

In the preceding observations, I have endeavoured to trace the connection between the different popular amusements common up to a comparatively recent period in the district, and to shew that they were based upon a religious principle and form of worship; the earliest with which we are acquainted, that of the principle of Life, of which the sun or the element of fire was the most significant emblem. The only other popular custom to which I shall allude is one which, though

of the rectangle (nearly a square) points $34\frac{1}{2}$ degrees east of south. There is a remarkable coincidence of the bearings above given—and I was at first led to believe that they pointed to the rising of the sun at the winter solstice; but on calculating the latter point, I find it is 10 degrees further from the south. May these remain not have the direction of what may at one time have been the magnetic meridian? 4. A little west of Blindburn, near the head of Coquet, is a small conical hill with a trench dug round its base. This trench is circular, but on the eastern side there is a portion of it straight, and this I found pointed exactly to the sun at noon-day." &c

now obsolete, subsisted in the neighbourhood within the memory of persons yet alive. On the occasion of the celebration of a marriage, the bride's furniture was brought in a wain or waggon to her husband's house with much pomp and ceremony; on the top of the load, and forming the most prominent object in it, was her spinning wheel, gaily decorated with ribbons. This was called the bride's wain, and the custom was probably derived from the period of the Roman occupancy; as among that people on similar occasions, a maid-servant bearing the distaff, spindle, and wool of the bride, intimating that she was to be active in household work, always accompanied the procession.

With regard to the natural history of the parish, there is little to be said. The village stands upon the Coal Measures, and all around it is the millstone grit. Where they join there are several springs or wells, from which Hodgson derives its name of Whaltown or well town; there being four perennial and strong wells which supply the inhabitants abundantly with this necessary of life. When I first came to the parish, twenty-eight years ago, the badger was occasionally to be met with in the woods of Molesden. The otter still frequents our streams. Black game also was, though not at all numerous, pretty frequently to be found. But the increased population and work have almost driven away this shy bird; and at present I only know one old cock who occasionally visits the haunts of his youth, and I hope may be spared to a natural termination of his career. Previous to the draining of Prestwick Car, numerous strings of wild geese visited the autumnal stubbles. They do so now no longer. Various species of water-fowl, also, the mallard, teal, golden eye, &c., were pretty frequently to be found along the burns at the head of the Blyth. These, also, have become very rare; and the same may be said of the snipe. The zeal of game-keepers has almost rooted out the raptorial birds, with the exception of owls. Even the sparrow-hawk and kestrel are now but seldom seen. The jay also sometimes breeds in the woods; and the beautiful little king-fisher occasionally may be seen by the burn sides.

Ornithological Memoranda. By JAMES HARDY.

GREAT BUSTARD.—One of these now rare birds was shot at Fenham Flats, by a farm servant, in the first week of January, 1871. Another was seen about ten days afterwards. Mr Robert Gray, who commemorates this incident in his recent and very interesting work, “The Birds of the West of Scotland,” likewise records from Holinshed, its occurrence at an early period in the Merse of Berwickshire; when much land on the borders must have lain in an uncultivated state, to render it a haunt suitable for this shy bird. The following is the original, from the “*Scotorum Historia*” of Hector Boece (born 1465, died 1536), Paris, 1575, fol. 7. “Præter hæc aves in Merchia nascuntur Gustardes vernaculo sermone dictæ, colore plumæ ac carne perdicibus non dissimiles, sed quæ olores corporis mole exuperant. Raia est ea avis atque humanum aspectum plurimum obhorrens; nuda humo ova ponit; quæ si ab homine contrectata, aut ejus anhelitu et afflatu vel leviter imbuta senserit (quod facile naturæ beneficio dignoscit) extemplo veluti iuidonea ad pullos procreandos relinquens, alio ad ova parienda se confert.”

BITTERN.—A male specimen was taken at Felton, in the severe frost at the end of November, 1871, and presented to the Rev. T. Ilderton (*Ber. Adv.* Dec. 1). Another male, in the first plumage, was shot on the 16th Dec. 1871, by Mr George Gregson, on the banks of the river Till, near Weetwood. (*Newcastle Journal*, Dec. 20th). In the Club's Proceedings, this rare visitant is recorded for Redheugh, and the vicinity of Berwick.

QUAIL.—A female Quail was shot on the 5th December, 1871, at Lesbury, by Mr Joseph Hindhaugh, of Alnwick. It was in excellent condition. (*Ber. Adv.* Dec. 15th). Mr Selby had met with the Quail at Cornhill and other parts within the Club's limits, as an occasional visitant.

HEN HARRIER.—Dr F. Douglas has recently seen a beautiful specimen of a female Hen Harrier, which was shot in the neighbourhood of Gordon. When a boy I have often seen the “Grey Gled” on Coldingham Moor.

WHIMBREL.—The coast of Berwickshire is too precipitous and rocky for a winter resort of the lesser Curlew, which is not frequent on the Northumbrian shores, where it feeds on sand-hoppers. I have hitherto only obtained a cranium of a bird of this kind, which had been driven ashore during the season.

Ornithological Notes for 1871. By T. H. GIBB.

LITTLE BITTERN, *Ardea minuta*.—A fine male of this rare species, in adult plumage, was captured early in May, on the Cawledge, a small rivulet which empties itself into the river Aln, about two miles from Alnwick. It was flushed from the ground by Mr Chrisp of Hawkhill and another gentleman, and after a short flight alighted on a tree, where it remained for nearly an hour before it was shot; displaying such immobility as to appear more like a part of the branch on which it was perched, than a thing possessing life. The proneness of the Bitterns to remain inactive when disturbed or threatened with danger, in localities offering ready and safe retreats, seems strange; nevertheless, it is a notable trait in their character, and one that I have often seen practised in North America by their congener, *A. lentiginosa*.

RAVEN, *Corvus corax*.—A pair bred on the Cheviot range. The most, if not all of their young were captured. I procured one, which is now in the possession of Mr Moffit of Beanley.

VELVET SCOTER, *Anas fusca*.—In the month of August, a male in very perfect plumage was captured alive, in an exhausted condition, on our sea-board, on a point of rocks left dry by the receding tide. It is the first I have seen in this locality, and it may perhaps be difficult to account for its appearance here at the above-mentioned season of the year; as I am not aware that it has ever been observed before, except as an occasional winter visitant.

PURPLE SANDPIPER, *Tringa nigricans*.—A short time ago this bird was very numerous on the adjacent coast. In December as many as five specimens were shot in one week.

TUFTED DUCK, *Anas fuligula*.—A beautiful male was shot in February, 1871, in the river Aln, about one mile from the sea. This handsome little duck is now and again observed on the Northumbrian coast.

BOHEMIAN WAXWING, *Ampelis garrulus*.—A specimen of this bird was killed by a boy, with a catapult, on November 15th, near Acklington Station, on the North-Eastern Railway. The Waxwing visits us occasionally in small flocks, and was more than ordinarily numerous in 1868, when many specimens were procured.

BITTERN, *Ardea stellaris*.—A specimen was caught near Felton, on November 22nd, in an exhausted state. A very magnificent male was shot on the 4th of January, 1872, near

Lucker, by Mr Ackroyd of Oakroyd Hall, near Leeds. On dissection I found in its stomach three trouts averaging about 3 ounces each in weight. Before the county was drained and when bogs and marshes were abundant, the Bittern was not altogether uncommon, but now it is rarely met with.

T. H. GIBB.

Alnwick, January, 1872.

On the Occurrence of the Devonshire Woody Gall of the Oak on the Borders. By JAMES HARDY.

THE Gall-fly that originates the woody gall of the oak, presents one of the few instances, in which we can almost lay our finger on the first arrival of an insect, native of another country, upon our shores; witness its becoming acclimatized on the milder southern sea-board; and then trace it issuing forth in a gradual progress northwards; till it promises a few years hence to take its place beside the aboriginal species. In 1869 and 1870, several of the galls were collected in some of the plantations of the Earl of Home, at Hirsell. Two of these were sent to me, which I immediately recognized as counterparts of others with which I had been furnished by Mr Jerdon, who had gathered them, several years since, at Malvern, where they were plentiful. I have since been informed that the gall is not uncommon in the district round Dunse, as for example at Puttenmill. The gall there is more frequently found in the scrubby oaks planted in hedges, than in plantations. In England, also, it propagated itself along the hedges. This season, I have a pretty group from the woods behind Houndwood Church, where it is yet very scarce. The galls, in this its most northern position, are rather small; the usual size being that of a boy's marble. They are situated at the ends of twigs, singly or in pairs; and are of a pale olive brown colour, varying according to age. On showing a number to the Club at the Cockburnspath meeting, Sir Walter Elliot mentioned that he had seen the gall about Wolfelee for the first time in 1870; but the Rev. J. F. Bigge said that it was familiarly known in the vicinity of Stamfordham;—so that it had taken up its residence in Northumberland, before crossing the Border line. This is confirmed by my having found an old gall of a bygone season among fallen leaves, in the ancient oak wood at Old Middleton, near Wooler.

The gall-fly has been called *Cynips Kollari*; but according to Mr Walker, the oldest and genuine name is *Cynips lignicola*. (Hartig in Germar's Zeitschrift, II., 207; and IV., 402.) In a letter which I have from that gentleman, he says: "It was noticed in England twenty-five or twenty-six years ago, and, as I believe, a few years before, but I cannot prove the latter date. It may have been unnoticed for several years. The gall was probably brought in some ship to the west of England. I observed its frequent occurrence in the Channel Isles, and that it was sometimes carried about there, as oak-apples are here; and it is not unlikely to have come thence in a steamer to Weymouth. I looked for it in Wicklow, but could not find it, although oaks abound there; however, it is common at Killarney, and was perhaps brought in a ship to Cork, and spread thence to Killarney. I have sent a note of its occurrence in the Scilly Isles to the "Entomologist." The same naturalist has also made the observation that "*Cynips lignicola*, the dweller in the well-known Devonshire gall, brought with it into England two parasites, *Callimome Devoniensis* and a *Decatoma*. This *Callimome* has a long oviduct, which can reach the centre of the gall in which the grub is cradled, but such is not the case with the *Decatoma*." The *Decatoma* has a black band on the forewings ("Notes on Chalcidæ," by F. Walker, F.L.S., London, 1871, p. 14). We have the advantage, also, in tracing its history, of an article by Dr R. C. R. Jordan in the "Entomologist's Monthly Magazine," for August, 1871:—"Although noticed by me in Devon, certainly for forty years at the least (since we used its galls for marbles when I was quite a child), yet it did not reach to Birmingham until 1860, when it was first noticed by me in the town—a fact not to be wondered at, considering how often its galls were brought from the south by tourists. It was not, however, until the autumn of 1866 that it was first seen by me invading Birmingham, along the hedges on the Worcestershire side. The two streams have since met, and it is to be found in both town and country."

Since this paper was sent to the press, I have obtained fuller information about the extension of the gall in our district; and a new centre of distribution has been discovered in the west of Scotland. During the season it has advanced five miles northwards along the eastern coast, and it is now rather plentiful on the outskirts of Penmanshiel wood and

the Pease dean, where it is now concentrated for a further advance into East Lothian. It has appeared for the first time in the west of Scotland, on the oaks at Underwood, near Dunoon, a villa belonging to our respected member, William Dickson, Esq., Alnwick. The wood—called the “Bull Wood”—surrounding this, and other summer residences, rises from the coast backwards, and consists chiefly of oak (“Guide to Dunoon”). Mr Dickson has also had galls of last season’s growth brought to him from the Duke’s park at Alnwick. This gall is attached to the young twigs and not to the leaves, and is distinguished by its solid woody texture. From its smoothness and durability it is applicable to ornamental fancy work; and I have already, in the country, seen examples employed along with acorns, to decorate pine-scale picture frames. I am informed that similar advantage has been taken of it in London; thus furnishing a ready means for a general dispersion of the gall-fly.

Contributions to the Entomology of the Cheviot Hills. No. II.
By JAMES HARDY.

WHILE dealing, this season, with a similar set of insects as those which were observed last year in the district round the Cheviots, I now supplement some branches, which I had not then the opportunity of overtaking;—more particularly aquatic, phytophagous, and graminicolous insects, while the fungicolæ have not been overlooked, although but sparingly represented, owing to the poor crop of fungi incident to a dry season. It was attempted to make the collection of Coleoptera as exhaustive as possible. Hemiptera and Homoptera were taken as occasion offered; but there are probably many more, if earnestly followed out. The list of *Corixæ* is pretty complete for the pools that were dredged, chiefly with that object in view. The periods of my visits were May, August, and October. Some new ground was taken in, but a portion of the old is still unexpectedly productive. Satisfactory weather for Cheviot itself is not readily attainable. Either frosts or chilling mists are fatal to long continued minute researches of this kind; and my observations are not yet sufficiently comprehensive. I have again to express my obligations to Mr Bold and other friends who helped to examine the specimens, or afterwards to sift the novelties. The indication *new*

refers to Northumberland and Durham; as applicable to the Club's limits there is a much larger increase, unnecessary to specify. There are 500 species here recorded.

Coleoptera.

- CARABUS ARVENSIS and NITENS. Broadstruther.
 DYSCHIRIUS GLOBOSUS. Cold Martin Moss.
 METABLETES FOVEOLA. Wooler haugh.
 CALATHUS MELANOCEPHALUS, var. NUBIGENA, *Hal.*, descends to the woods round Langleyford. On Hedgehope in October it had formed, under stones, large societies like *C. Cisteloides*. A few with the red thorax were associated with them.
 " PICEUS. Old Middleton wood, among leaves; not unfrequent.
 ANCHOMENUS MÆSTUS, and PICEUS. Sides of a pond near Lilburn.
 AMARA FULVA. Beneath stones, Wooler haugh; scarce.
 BRADYCELLUS PLACIDUS. Wooler haugh.
 BEMBIDIUM ÆNEUM. Side of pond near Lilburn.
 " MANNERHEIMII. In hay at Broadstruther, &c.
 " SCHUPELLII. Wooler district.
 HYDROPORUS INÆQUALIS. Cold Martin Moss.
 " NOVEMLINEATUS. Cold Martin loch. Many specimens.
 " RIVALIS. Common burn.
 " DAVISII. Near the head of Common burn.
 " DEPRESSUS. Cold Martin Moss.
 " ASSIMILIS. Pond at Humbleton, and near Lilburn.
 " DORSALIS. Pond in Earle field near Pin Well.
 " GYLLENHALII. Pretty frequent in sphagnous pits; Cold Martin Moss, abundant; neck of Hedgehope, rare; sources of Common burn, several; east end of Cheviot, and in pools at the top; in ponds at Humbleton hill. A northern insect.
 " PLANUS. East end of Cheviot.
 " ERYTHROCEPHALUS. Pond near Earle; Cold Martin Moss; Well-dean pond at Wooler. Not in the Hedgehope and Cheviot pools.
 " MELANOCEPHALUS, *Marsh.* (= pubescens *Gyll.*) Pond near Earle; Well-dean pond; neck of Hedgehope; the commonest at the sources of Common burn; base of Humbleton hill; east end of Cheviot.
 " NIGRITA. Pools on the neck of Hedgehope; sources of the Common burn; top of Cheviot. Not in any of the lower pools.
 " CELATUS, *Clark.* One in the stream from the Pin Well, near Earle.
 " MONTICOLA, *Sharp.* Not common. Cold Martin Moss;

Hedgehope, more frequent; sources of Common burn; east end of Cheviot.

HYDROPORUS ATRICEPS, *Crotch.* (= *melanocephalus*, *Gyll.*) This species, in colour black as night, is the predominant kind in the high exposed sphagnous pools on the neck of Hedgehope; east end and summit of Cheviot; sources of Common burn, rare. These are some of the coldest and most cheerless spots that I ever visited.

„ TRISTIS. Mossy pools. Cold Martin Moss; sources of the Common burn; pond near Lilburn; east end of Cheviot.

„ UMBROSUS. Cold Martin Moss, several.

„ OBSCURUS. Cold Martin Moss, a few; neck of Hedgehope, three.

„ ANGUSTATUS. Pond in Earle field near Pin Well. One example.

„ INCOGNITUS, *Sharp.* One in Cold Martin Moss. Coloured like *Gyllenhalii*, but smaller and more finely punctured. Rare.

„ VITTULA. Cold Martin Moss; pond near Earle.

„ PALUSTRIS. Common in the lower pools.

„ LINEATUS. Pond near Lilburn.

COLYMBETES BISTRIATUS. Sphagnous pools, Cold Martin Moss; neck of Hedgehope; sources of Common burn.

„ EXOLETUS. Pond near Lilburn; the typical form, without the black margin to the hinder part of the thorax.

ILYBIUS FULIGINOSUS. Cold Martin Moss, &c.

„ ATER. Pool near Lilburn; Cold Martin Moss.

„ GUTTIGER. Sources of Common burn. One.

„ ANGSTIOR. Sources of Common burn; Cold Martin Moss.

AGABUS SOLIERI. Pools at the east end of Cheviot. Very like a *bipustulatus*, but oval and not obovate; male glossy black; female brownish. New.

„ CHALCONOTUS. Cold Martin Moss; Hedgehope; sources of Common burn; east end of Cheviot.

„ CONGENER. Cold Martin Moss, pretty frequent; frequent on neck of Hedgehope; east end of Cheviot; rare at sources of Common burn.

„ ARCTICUS. Cold Martin Moss and neck of Hedgehope, scarce; more frequent at sources of Common burn.

„ STURMII. Pond near Earle.

„ ULIGINOSUS. Pond near Lilburn.

„ NITIDUS, *Fab.* (= *fontinalis*, *Steph.*) One male in the pond near Lilburn, which is partly a running water.

„ GUTTATUS. Running streams on Hedgehope, and in the Bizzle.

„ NEBULOSUS. Sources of Common burn; Humbletonpond.

- AGABUS UNGUICULARIS. Cold Martin Moss, not unfrequent.
- PHILHYDEUS NIGRICANS. Sources of Common burn.
- „ MARGINELLUS. Hedgehope; Cold Martin Moss.
- ANACÆNA LIMBATA. Cold Martin Moss; Hedgehope.
- HELOPHORUS GRISEUS, var. SPHAGNICOLA. A brassy Helophorus, which at first glance I took for a *Hydrochus*, occurs sparingly in all the sphagnous peaty pools on the high Cheviot moors; as on the neck of Hedgehope, sources of the Common burn, Cold Martin Moss, and east end of Cheviot. Mr Rye and Dr Sharp consider it not distinct from *griseus*. Mr Bold, who also finds it among his Cumberland insects, thinks it may turn out to be *H. planicollis*, Thoms. "Opusc. Entomolog.," p. 327 (1870).
- „ ARVERNICUS, *Mulsant*. Two specimens in the pond in Earle field, near Pinwell. New.
- FALAGRIA OBSCURA. Garden at Wooler.
- BOLITOCCHARA LUCIDA. Fir wood at Langleyford, &c.
- OCALEA LATIPENNIS, *Sharp*. One dark-coloured example; Old Middleton wood. First taken in Scotland by Mr Hislop, and hitherto confined to it. New.
- „ CASTANEA, *Er.* (= *picata*, &c.) Base of Hedgehope, &c.
- „ BADIA, *Er.* Old Middleton wood and elsewhere.
- MICROGLOSSA NIDICOLA, *Fairm.* One. Wooler haugh in May. Rare.
- „ PULLA, *Gyll.* Probably from the blossoms of sallows. Three examples. Wooler haugh and sides of Langleyford vale, in May. A very rare insect.
- CALLICERUS RIGIDICORNIS, *Er.* One. Side of pool near Lilburn.
- TACHYUSA ATRA. Side of pool at Lilburn. New.
- OXYPODA LIVIDIENNIS. Rotten hay, near East Lilburn.
- „ LONGIUSCULA. Water sides, various localities.
- „ RUPICOLA, *Rye*. One, top of Hedgehope in October.
- „ UMBRATA. In hay, near Earle.
- HOMALOTA CURRAX. Old Middleton wood.
- „ INSECTA, *Th.* Two, pool side near Lilburn.
- „ CAMBRICA. Yeaving Bell.
- „ GREGARIA. Old Middleton wood and near Earle.
- „ LABILIS. Sides of pool on the glen near Coupland; at Lilburn; and in Wooler haugh.
- „ CÆRULEA, *Sahlb.* (= *H. carbonaria*). Side of pool in Wooler haugh.
- „ LONDINENSIS? *Sharp*. One small specimen, examined by Dr Sharp. Wooler district.
- „ HYGROTOPORA, *Kraatz*. Cold Martin Moss, and margin of the Glen.
- „ ELONGATULA, *Gr.* Very numerous on the lower lands.
- „ VOLANS, *Scriba*. A few. Firwood at Langleyford; in

hay on Yeavering Bell and near Earle; pond at Wooler and near Lilburn, common.

- HOMALOTA CLAVIPES. In October. Probably Cold Martin Moss.
 ,, TIBIALIS. Top of Cheviot and Hedgehope, in October.
 ,, CRASSICORNIS, *Gyll.* One. Wooler haugh. Hitherto only Scottish. New.
 ,, SYLVICOLA, *Fuss.* Fir wood at Langleyford and elsewhere. August and October. New.
 ,, PAGANA, *Er.* A pair in the Bizzle.
 ,, OCCULTA, *Er.*, var. FUNGIVORA. In fungi, fir wood at Langleyford.
 ,, PICIPES, *Th.* A few. Fir wood at Langleyford; Old Middleton wood, &c.
 ,, EXCELLENS, *Kr.* Two in moss. Cheviot and the Bizzle.
 ,, PILICORNIS, *Th.* One from Wooler district and another from Pease Bridge dean, Berwickshire. Named by Mr Rye. Rare. New.
 ,, DEBILIS, *Er.* One specimen from the Wooler district, and another from the side of a pond near Oldcambus, were at first regarded as a new species, but are now found scarcely to differ from this. New.
 ,, FALLACIOSA, *Sharp.* Three in October collection. New.
 ,, EREMITA, *Rye.* Top of Cheviot and Hedgehope in October; in swarms in October in Cold Martin Moss, &c.
 ,, AUBEI, *Briss.* One; locality not marked. It has been taken by Mr Hislop in Scotland. New.
 ,, GEMINA, *Er.* One in hay at Dunsdale. New.
 ,, CURTIPENNIS, *Sharp.* Bizzle, and hay at Broadstruther; Cold Martin Moss.
 ,, ZENEICOLLIS, *Sharp.* Fir wood at Langleyford; Old Middleton wood; hay near Earle, &c.
 ,, XANTHOPTERA, *Steph.* Same localities.
 ,, VALIDA, *Kr.* Same localities.
 ,, SUCCICOLA, *Th.* Several. Fir wood at Langleyford; Old Middleton wood; Broadstruther; near Earle; Dunsdale; near East Lilburn.
 ,, FUNGICOLA, *Th.* The fir wood at Langleyford; Old Middleton Wood, &c.
 ,, SODALIS, *Er.* One or two. Old Middleton wood.
 ,, RAVILLA, *Er.* One. Wooler district. New.
 ,, SERICEA, *Muls.* Two in the Bizzle; in hay at Yeavering Bell.
 ,, NIGRA, *Kr.* In hay near Earle, Broadstruther, and Dunsdale.
 ,, GERMANA, *Sharp.* In hay, &c., quite as common as

- nigra*. Yeavinger Bell, near Earle, and Dunsdale; in garden at Wooler.
- HOMALOTA MARCIDA, *Er.* One. Wooler district.
- „ INTERMEDIA, *Th.* Three. Old Middleton wood. In fungi.
- „ CADAVERINA, *Briss.* Several. Fir wood at Langleyford; Old Middleton wood; near Earle, &c.
- „ LEVANA, *Muls.* Two. Hay above Broadstruther.
- „ CINNAMOPTERA, *Th.* Six. Langleyford and Old Middleton wood.
- „ PARVA, *Sahlb.* Langleyford, and hay at Broadstruther.
- „ MELANARIA, *Sahlb.* Hay near Earle; garden refuse, Wooler.
- „ MUSCORUM, *Briss.* In hay, &c. Old Middleton wood, Bizzle, Broadstruther, Earle, Dunsdale.
- „ OBBATA, *Er.* Three. Probably decayed hay near East Lilburn.
- OLIGOTA INFLATA. In hay near Broadstruther.
- ENCEPHALUS COMPLICANS. Among withered grass, October.
- MYLLENA MINUTA. Side of pond in Earle field, near Pin Well. New.
- „ BREVICORNIS. In marshy spots in the Bizzle, and near Broadstruther; not rare.
- GYMNUSA BREVICOLLIS. On better examination, the *G. variegata* of my first list proves to be this—a better insect. New.
- BOLETOBIUS CINGULATUS. Mr Hislop informs me that this has been taken in the Wooler district.
- TACHINUS PROXIMUS. In fungi, Langleyford and Old Middleton wood.
- „ PALLIPES. One in the Bizzle. Rare.
- HETEROHOPS DISSIMILIS. At the base of fungi in a fir wood near Earle Hill Head. New.
- QUEDIUS RUFICOLLIS. In a fir wood near Earle Hill Head.
- „ UMBRINUS, MAURO-RUFUS, FULVICOLLIS. Various localities.
- „ AURICOMUS, *Kies.* This was first described by me in our “Proceedings” as a British insect, under the name of *Q. scintillans*; Kiesenwetter’s description of *Q. auricomus* not having then reached me. Mr Rye in his recent list of Coleoptera in “Ent. Annual” for 1871, ascribes the correction to Mr Murray; but I may as well reclaim my own property in this as well as some other species in that Catalogue; the portion on Brachelytra, as the compiler states in his preface, being, with a few interpolations excepted, of my composition. The second British specimen was taken by my friend Mr Hislop. In marshy spots where water trickles among rocks. Bizzle.

- LEPTACINUS LINEARIS. Pond near Wooler; in hay near Earle.
- OTHIUS MELANOCEPHALUS. Very common at the top of Hedgehope in October; scarcer on Cheviot, where the ground is moister.
- LATHROBIUM QUADRATUM. Cold Martin Moss.
- STILICUS AFFINIS. In garden refuse, &c. Wooler, East Lilburn, Langleyford vale.
- DIANOUS CÆRULESCENS. This fine insect is accounted rare; but it occurred in great profusion by shaking the wet moss about the sides of small waterfalls, in the burns among the hills. Broadstruther back-burn; above the "Slack" waterfall, which is opposite Hartheugh.
- STENUS INCANUS, *Er.* Cold Martin Moss. Hitherto only taken by Dr Sharp in Dumfriesshire, and there rarely. New.
- „ GUYNEMERI, *Duv.* One among the drenched moss at the side of the "Slack" waterfall, opposite Hartheugh. It is peculiar to such situations. The moss was *Racomitrium aciculare*. Mr Hislop reports it from Stitchell Linn. The original specimens were found in the Pyrenees. ("Ann. de la Soc. Ent. France," 1850, p. 52.) New.
- „ GLACIALIS, *Heer.* From Mr Hislop's description, the moss in which this was found was *Racomitrium lanuginosum*; and the side, where it was found on Cheviot, was that facing Roxburghshire.
- „ BREVICORNIS. (= brevicollis). One on the neck of Hedgehope; seven elsewhere.
- „ TARSALIS. In bog-hay above Langlee, and about the base of Hedgehope. Mr Selby sent me specimens from Twizell House.
- „ GUTTULA, BIMACULATUS, JUNO, BUPHTHALMUS, PUSILLUS, SPECULATOR, CRASSIVENTRIS (numerous), NIGRITULUS, BINOTATUS, PUBESCENS, LATICOLLIS, PALLITARSIS, RUSTICUS, NITIDIUSCULUS, IMPRESSUS, PAGANUS. Various localities, among withered grass and bog-hay; still numerous in October.
- GEODROMICUS GLOBULICOLLIS, *Mann.* Mr Hislop told me that he took this on Cheviot at the same time that he found *Stenus glacialis*. New.
- LESTEVA SHARPI, *Rye.* One shaken out of a fresh thatch bunch of *Juncus articulatus*, pretty well up on Hedgehope. October. New.
- „ MUSCORUM, *Duv.* Among grass and moss, Wooler haugh. Only added to the British fauna this season. New.
- ACIDOTA ORENATA. Among heather. Base of Cheviot near Goldsleugh; moor near Cold Martin Moss; and several at the top of Hedgehope, in October.
- LATHRIMEUM UNICOLOR. Langleyford? Found in October.
- ARPEDIUM BRACHYPTERUM. On the top of Hedgehope and Cheviot in October. 2K

- PHILORINUM HUMILE, *Er.* In flowers of broom, Wooler haugh, &c.
- HOMALIUM OXYACANTHÆ. In hay at Dunsdale.
- „ EXIGUUM. One at Common burn in flowers.
- „ CONCINNUM. In hay near Earle, &c.
- „ FLORALE. Blossoms of willows, Common burn and Langleyford vale.
- MEGARTHURUS SINUATOCOLLIS. In fir wood at Langleyford.
- PHLÆGEBIUM CLYPEATUM. About roots of grass near Middleton Hall and South Middleton dean.
- BYTHINUS BURRELLII. In moss and grass, Bizzle. New.
- TRICHOPTERYX LATA. Under stones, top of Cheviot; in hay at Broadstruther, &c.
- LIODES HUMERALIS. In puff-balls, woods above Langleyford.
- CHOLEVA MORIO, NIGRITA, TRISTIS, GRANDICOLLIS, (3) KIRBY, LONGULA, (October), WATSONI. In fungi, Langleyford and Old Middleton Wood.
- SILPHA THORACICA. In fungi, fir wood at Langleyford. October.
- HISTER SUCCICOLA. In fungi, fir wood at Langleyford. August.
- EPURÆA FLOREA. Blossoms of crab apple, Wooler haugh. Rare.
- „ OBSOLETA and PUSILLA. In fungi, fir wood at Earle Hill Head.
- MELIGETHES FLAVIPES and PICIPES. On willow blossoms at Wooler haugh, and on Common burn; two of each.
- ANTHEROPHAGUS NIGRICORNIS. On *Comarum palustre*, Cold Martin Moss.
- CRYPTOPHAGUS SETULOSUS. In great numbers in dried fungi at Old Middleton Wood, in August; in hay at Earle and Broadstruther.
- „ SAGINATUS. One from Wooler district, in October.
- „ DENTATUS, SCANICUS, and VINI. In hay, &c., at various places.
- „ PUBESCENS. One in a fungus in fir wood at Langleyford. Rare.
- ATOMARIA PUSILLA and FUSCIPES. Abundant in hay.
- „ PICIPES and ATRICAPILLA. Both occurred in flowers at Common burn and Wooler haugh.
- EPHISTEMUS GYRINOIDES. Abundant in hay.
- MONOTOMA AUGUSTICOLLIS, *Gyll.* In hay near Earle.
- „ LONGICOLLIS, *Gyll.* In hay above Broadstruther.
- CORTICARIA FERRUGINEA. Common in hay.
- TYPHLEA FUMATA. In hay near Broadstruther.
- MYCETÆA HIRTA. In fungi, fir wood, Earle Hill Head.
- MORYCHUS ÆNEUS. In great abundance under dry stones, among sand and gravel; Wooler haugh, above Earle Mill. Hitherto only found in single specimens in the Langleyford vale. May.
- CYPHON NIGRICEPS, *Kiesw.* Crotch, "Entomologist," 1867, p. 125.

- Hitherto, I believe, Scottish only. Among *Comarum palustre* in Cold Martin Moss. New.
- CYPHON PADI Cold Martin Moss. Rare.
- HYDROCYPHON DEFLEXICOLLIS. Above Coldgate Mill, in a wood bottom belonging to Middleton Hall, on Wooler water. Rare.
- MALTHODES MYSTICUS. Fir wood at Langleyford, and Old Middleton Wood.
- TETRATOMA FUNGORUM. The specimens of this, last season, were, without examination, hastily put aside for *Triplax aenea*. It is a much better insect.
- „ ANCORA. One among fungi in a fir wood at Earle Hill Head. Rare.
- ANASPIS RUFILABRIS. Old Middleton Wood. May.
- TRACHYPHLEUS SCABER. Among stones and gravel, at the roots of broom, Wooler haugh. October. Rare.
- ERRHINUS MACULATUS. On grey sallows on Common burn, and the hill sides near House of Crag, and above Langlee; some of them very small and dark in colour; also on *Salix purpurea*, Wooler haugh. Numerous. May.
- „ SALICINUS, *Gyll.* On *Salix purpurea*, Wooler haugh, in May. Several. New.
- „ MAJALIS, *Pk.* Numerous on grey sallows on Common burn, and at Broadstruther wood. A beautiful insect. May. New.
- „ AGNATHUS. On *Salix purpurea*, Wooler haugh. Two specimens. May and October. Rare.
- ANTHONOMUS PEDICULARIUS. Flowers of hawthorn, Common burn.
- „ COMARI, *Crotch.* On *Comarum palustre*, Cold Martin Moss.
- ORCHESTES SCUTELLARIS. On alder, Wooler haugh. I formerly got it at the base of Yeavinger Bell. May. Rare.
- ELLESCHUS BIPUNCTATUS. In vast numbers, this season, on grey sallows, in moory tracts. On Common burn, sides of Langleyford vale, and Old Middleton wood. Mr Selby found it at Twizell. May.
- CAELIODES QUERCUS. Oaks. Old Middleton wood.
- „ RUBICUNDUS. On birches, Common burn and Broadstruther wood.
- „ FULIGINOSUS. Road to Whiteside, &c.
- CEUTHORHYNCHUS RUGULOSUS. In the water-net, pond near Earle.
- „ CYANIPENNIS. Wooler haugh.
- CEUTHORHYNCHIDEUS FLORALIS. Blossoms of sallows, Wooler haugh and Old Middleton wood.
- RHYNCHITES AENEVIRENS. On hazel, Old Middleton wood. New.
- CHRYSOMELA HYPERICI. On *Hypericum perforatum*, Wooler haugh.
- GONIOCTENA PALLIDA. Abundant on hazels, Old Middleton wood. May to October.

- GALERUCA TENELLA. Among roots of *Carex paniculata*, South Middleton dean.
 THYAMIS LEVIS, FEMORALIS, SUTURALIS. Wooler haugh and near Coupland.
 „ ATRICEPS. Two. Wooler haugh. October. New.
 COCCINELLA OBLITERATA. Fir woods.
 „ BIPUNCTATA. Wooler haugh and Coupland.
 „ 18-GUTTATA. Fir wood at Langleyford.
 „ HIEROGLYPHICA. Common burn.
 „ 14-GUTTATA. Common burn and Langleyford.
 EXOCHAMUS 4-PUSTULATUS. Furze, Whiteside hill; trees, Old Middleton wood.

Hemiptera.

- PENTATOMA BACCARUM. Among *Lamium album*, Well-dean, near Wooler. New.
 ZICRONA CERULEA. Moor at Cold Martin Moss.
 TROPICORIS RUFIPES. Oaks and hazels, Old Middleton wood.
 SCOLOPOSTETHUS ADJUNCTUS, *D. and S.* Roots of grass, &c., Oct.
 „ AFFINIS. Among heather. Common.
 PERITRECHUS LUNIGER. Roots of grass and rushes, Whiteside road, border of Cold Martin Loch, East Lilburn, Middleton Hall haugh, Wooler Well-dean.
 DRYMUS SYLVATICUS. Roots of grass, &c., Cold Martin Moss, Broadstruther.
 „ BRUNNEUS. Roots of grass and decayed hay. Cold Martin Moss.
 LAMPROPLUX SHARPI, *D. and S.* (= *Lampronatus Sharpi*, *D. and S.* "Ent. Mo. Mag.," IV., 224.) Wooler district. Hitherto only taken by Dr Sharp on the shore of Dalton Loch, Dumfriesshire. New.
 STYGNOCORIS SABULOSUS. River Glen at Coupland, Wooler haugh.
 „ ARENARIUS. Roots of grass, &c. Wooler haugh.
 NYSIUS THYMI. Frequent on the Glen at Coupland.
 ISCHNORHYNCHUS GEMINATUS. Heather, Cold Martin Moss. New.
 MONANTHIA CARDUL. On thistles; shaken from ivy in Middleton wood.
 ORTHOSTIRA CERVINA. Shaken from heath, Cold Martin Moss. New.
 BRYOCORIS PTERIDIS. Old Middleton wood.
 PITHANUS MÄRKELI. In hay on Yeavinger Bell, and near Broadstruther.
 MIRIS CALCARATUS. Among grass. Common.
 „ RUFICOENIS. Cold Martin Moss; Langleyford.
 DERÆOCORIS SEXGUTTATUS. Wooler haugh and Old Middleton wood.
 „ FERRUGATUS. Old Middleton wood and Akeld dean.

- DERÆOCORIS FORNICATUS, *D. and S.* Old Middleton wood. New.
 LITOSOMA NASSATUS. On alders? One.
 „ ERICETORUM. Heather, Cold Martin Moss.
 „ CHLOROPTERUS. Broom, Wooler haugh. New.
 ETIORHINUS ANGULATUS. Common on alders.
 SPHYRACEPHALUS AMBULANS. Base of Humbleton hill; in hay at
 Yeavinger Bell and Dunsdale.
 PHYLUS PALLICEPS. Old Middleton wood.
 „ AVELLANÆ. Old Middleton wood. New.
 GLOBICEPS DISPAR. River Glen at Coupland.
 CYLLOCORIS HISTRIONICUS. Old Middleton Wood.
 IDOLOCORIS PALLICORNIS. Social on the underside of the leaves
 of *Digitalis purpurea*. South Middleton dean. New.
 „ PALLIDUS. Social on the leaves of *Epilobium hirsutum*,
 near the Glen above Akeld Bridge; in a garden at Wooler.
 MALACOCORIS CHLORIZANS, *Pz.* One, probably from Old Middle-
 ton wood. New.
 MACROCOLEUS HARDYI, *Bold.* Sp. nov. allied to *molliculus*. A
 soft yellowish green insect. Abundant on *Tanacetum vulgare*
 on the Glen near Coupland. August. Mr Bold will describe
 it.
 TINICEPHALUS OBSOLETUS. On broom, Wooler haugh. New.
 PLAGIOGNATHUS VIRIDULUS. Cold Martin Moss. New.
 „ ARBUSTORUM. Wooler haugh; Old Middleton
 wood; river Glen.
 APOCREMNUS AMBIGUUS. Old Middleton wood.
 „ VARIABILIS. Old Middleton wood.
 PSALLUS QUERCETI. On sallows, Wooler haugh. New.
 „ SANGUINEUS. On sallows, Wooler haugh, &c.
 „ LEPIDUS. On sallows, Wooler haugh.
 „ VARIANS. Old Middleton wood.
 „ DISTINCTUS? Old Middleton wood. October.
 RHOPALOTAMUS ATER. Old Middleton wood.
 LIOCORIS TRIPUSTULATUS. Among nettles, Old Middleton wood;
 South Middleton dean. October.
 ORTHOPS KALMII. Akeld dean; sides of Langleyford vale.
 „ PASTINACEÆ. Flowers of willows, Common burn, sides
 of Langleyford vale, &c. May. New.
 LYGUS LUCORUM. Wooler haugh.
 „ CONTAMINATUS. Coldgate Mill.
 „ CAMPESTRIS. Common. An obscure griseous var. ascends
 among heather nearly to the top of Cheviot.
 „ SP. INCOG. October collection.
 ANTHOCORIS NEMORUM. Common,
 „ AUSTRIACUS, *Fab.* Common.
 „ SAROTHAMNI, *D. and S.* On broom, Wooler haugh.

- LYTCOCORIS CAMPESTRIS, *Fab.* (= domesticus, *D. and S.*) In hay, common.
- DIPSOCORIS ALIENA. In gravel, river Glen and Wooler haugh.
- SALDA STELLATA, *Curt.* Wooler haugh.
- „ PALLIPES. Margin of river Glen; Wooler haugh.
- „ SCOTICA, *Curt.* (= *S. riparia*, *D. and S.*) Margin of river Glen.
- NABIS APTERUS. Hay at Broadstruther.
- „ DORSALIS. Langleyford, &c.
- HYDROMETRA LACUSTRIS. Both high and low ponds; no other species seen as yet.
- NOTONECTA GLAUCA. Dirty pools in the low district. Pond near Lilburn.
- CORIXA GEOFFROYI. Pond near Lilburn, abundant, &c.
- „ HIEROGLYPYICA. Three specimens, Cold Martin Moss. Apparently rare. May.
- „ SAHLBERGI. Pond near Earle; Cold Martin Moss; Wooler; Lilburn; Humbleton; top of Cheviot. An abundant species.
- „ SEMISTRIATA. Pond near Earle and Cold Martin Moss. Not numerous.
- „ WOLLASTONI. Neck of Hedgehope; sources of Common burn; Cold Martin Moss; pond near Earle. Common. New.
- „ NIGROLINEATA. Pond near Earle; Wooler pond; Hedgehope; east end and top of Cheviot. Not frequent.
- „ STRIATA. Pond near Earle; Wooler pond; sources of Common burn; pond at Lilburn; east end of Cheviot. Several.
- „ FALLENI. Pond near Earle; Wooler pond; pond near Lilburn; top of Cheviot (one). Scarce.
- „ MÆSTA. Cold Martin Moss; Wooler pond; sources of Common burn; pond at Lilburn; pond near Earle. Pretty numerous. New.
- „ FOSSARUM. Pond near Lilburn. Numerous.
- „ DOUGLASI. Cold Martin Moss; pond near Lilburn. A few.
- „ FABRICII. Sources of Common burn. Two specimens only. New.
- „ PRÆUSTA. Pond near Earle; Cold Martin Moss; Wooler; Hedgehope; Lilburn; east end of Cheviot. Frequent.
- „ SOCIA. Pond near Lilburn; Cold Martin Moss; pond near Earle. Common. New.

Homoptera.

- LIBURNIA PELLUCIDA. Wooler haugh.
 ,, DISCOLOR. Cold Martin Moss.
 ,, LIMBATUS. Various localities.
 ,, LEPTOSOMA. One.
 ,, FORCIPATA. One.
 ,, SP. INCOG. Yeaving Bell.
 CIXIUS NERVOSUS. Old Middleton wood.
 PTYELUS EXCLAMATIONIS. Wooler district. New.
 ,, SPUMARIA. "Cuckoo Spit."
 MEGOPHTHALMUS SCANICUS. In hay, Yeaving Bell; Dunsdale,
 &c.
 MACROPSIS LANIO. On oaks, Old Middleton wood.
 IDIOCERUS POPULI. Wooler haugh.
 ,, NASSATUS and FRUTICOLA. Old Middleton wood.
 ACOCEPHALUS RUSTICUS. Wooler haugh; Old Middleton wood.
 ,, BIFASCIATUS. Old Middleton wood.
 ,, ALBIFRONS, RIVULARIS, and AGRESTIS. In hay,
 Yeaving Bell, Broadstruther, Bizzle.
 ,, SP. INCOG. Wooler district.
 EUPELIX CUSPIDATA. Wooler district. October.
 IASSUS STRIATUS and MIXTUS. Wooler haugh and Old Middleton
 wood.
 ,, PRASINUS. Auld dean.
 AGALLIA VENOSA. Cold Martin Moss.
 EUPTERYX FLAVIPENNIS, Zett. (= Typh. lutea, Hardy, "Trans.
 Tyne. Nat. Club.") Abundant in the Bizzle among *Nardus*
stricta and *Carices*.
 ,, SMARAGDULA. On alder, Wooler haugh.
 ,, FLAVESCENS. Old Middleton wood.
 ,, URTICÆ. Old Middleton wood.
 ,, NITIDULA. Middleton Hall woods on Wooler water.
 New.
 ,, DECEMPUNCTATA. Among willows, Common burn and
 Wooler haugh. New.
 ,, ROSÆ. Wooler haugh.

Hymenoptera.

- AULAX RHÆADIS, Kt. This gall-fly produces the inflated capsules
 of *Papaver Rhœas* and *dubium*. It was more than usually num-
 erous this season near Wooler Haugh-head; and also near
 Cockburnspath.
 ATHALIA ROSÆ, L. Wooler haugh.
 NEMATUS PALLIPES, St. Farg. Wooler district.
 ,, MELANOSTERNUS, St. Farg. Wooler district.

- ICHNEUMON CASTANEUS, *Grav.* Top of Hedgehope, Common burn, and top of Cheviot.
- ORESBIUS CASTANEUS, *Mashall.* Tops of Hedgehope and Cheviot, October, 1871-2. Described and figured in "Ent. Monthly Mag." for 1863, p. 193. This curious apterous Ichneumon has hitherto only been found on mountain summits in Perthshire, at about 3,500 of altitude, and on Goat fell in Arran.
- ODYNEBUS PARIETUM. Wooler haugh.
- CRABRO PODAGRICUS. Old Middleton wood.
- ANDRENA NIGROÆNEA. Sandy road, Whiteside hill.
- „ ANALIS. Sallow blossoms, Wooler haugh.
- „ GWYNANA. Dandelions. Wooler.
- „ CINGULATA. Well-dean, Wooler.
- „ ALBICANS. Blossoms of willows on the moors. Common burn, sides of Wooler water, &c. Often covered up in pollen.
- HALICTUS MINUTUS. Well-dean, Wooler.

Diptera.

- TEYPETA ABSINTHII. Wooler haugh; also in Pease-dean in February.
- MUSCA RUDIS. Large numbers were huddled together under stones at the top of Cheviot, in October, in a half torpid state. There were also several examples of the *Sciara* mentioned in last year's report, some of them apterous and newly disclosed. It may be a species peculiar to mountain tops. There appears to be sufficient food for spiders on the heights throughout the year.

Arachnida.

When I was about to undertake my October journey, I received a communication from the Rev. O. Pickard-Cambridge, Bloxworth Rectory, Dorset, well known for his extensive knowledge of Arachnida, asking if I would bottle for him such species of Spiders as fell in my way. As a commencement, I made up a collection which has been more successful than might have been anticipated, from the previous wet harvest. Mr Cambridge says of it, that "It is the richest lot I ever had from any English correspondent. There are 112 species, of which three are new to Britain, and fourteen new to science." The rarest were from the summits of Hedgehope and Cheviot—the two presenting identical species,—where, excepting a few commoner sorts, the greater

portion were new. It would be worth while to revisit these hills, as on Hedgehope a frost had set in before I completed the ascent, and the cold became too intense for close work. Again, on the top of Cheviot I encountered mist and rain, and had to collect under the shelter of an umbrella, and at length it grew so dark as to render small objects undistinguishable. I have thus only imperfectly examined the eastern summit. It will be recollected that I formerly recorded, in the Club's Proceedings, a collection of Berwickshire Spiders which I had made for Mr Blackwall. Mr Cambridge has, on this occasion, had the kindness to furnish me with a list of the names, as an appendage to this article on Cheviot insects. It is the first outline that we as yet possess of the Arachnida of Northumberland.

- | | |
|--|--|
| 1. <i>Lycosa agretyca</i> . Bellyside ravine. | 20. <i>Clubiona holosericea</i> . |
| 2. „ <i>campestris</i> . | 21. „ <i>comta</i> . |
| 3. „ <i>Andrenivora</i> . | 22. „ Sp. nov. Top of Cheviot. A fine and distinct species. |
| 4. „ <i>rapax</i> . | 23. <i>Ciniflo atrox</i> . Very common on Hartheugh, and on wall tops, &c. |
| 5. „ <i>saccata</i> . | 24. <i>Ergatis benigna</i> . |
| 6. „ <i>piratica</i> . | 25. <i>Agelena montana</i> . |
| 7. „ <i>monticola</i> , <i>Westring</i> . Top of Hedgehope. | 26. <i>Tegenaria sylvicola</i> . |
| 8. „ <i>congener</i> , <i>Cambr</i> . | 27. <i>Cælotes saxatilis</i> . Whiteside Road. |
| 9. „ „ Too young to be positive about; but certainly different from either of the above. | 28. <i>Textrix lycosina</i> . Haughhead Toll. |
| 10. <i>Dolomedes mirabilis</i> . | 29. <i>Theridion projectum</i> , <i>Cam</i> . (Zoologist.) |
| 11. <i>Thomisus cristatus</i> . | 30. „ <i>nervosum</i> . |
| 12. „ <i>viaticus</i> , <i>Koch</i> . | 31. „ <i>denticulatum</i> . |
| 13. „ <i>trux</i> . | 32. „ <i>pallens</i> . |
| 14. „ <i>audax</i> . Top of Hedgehope. | 33. „ <i>variegatum</i> . |
| 15. <i>Philodromus cæspiticollis</i> . | 34. „ <i>filipes</i> . |
| 16. „ <i>oblongus</i> . | 35. <i>Linyphia montana</i> . |
| 17. <i>Drassus pusillus</i> . Wooler haugh. | 36. „ <i>marginata</i> . |
| 18. „ <i>clavator</i> , <i>Cambr</i> . (Ann. Nat. Hist., 1860). | 37. „ <i>fuliginea</i> . |
| 19. „ <i>lapidicolens</i> . | 38. „ <i>rubea</i> . |
| | 39. „ <i>minuta</i> . |

- | | | | |
|-----|---|--|---|
| 40. | „ | socialis. | Hedgehope. |
| 41. | „ | alticeps, <i>Blackwall.</i> | 62. <i>Neriene livida.</i> Top of Hedgehope. |
| 42. | „ | alticeps, <i>Sundeval.</i> Quite distinct from the foregoing of the same name, and new to Britain. | 63. „ gracilis. |
| 43. | „ | longidens. | 64. „ vagans. |
| 44. | „ | frenata. | 65. „ pygmæa. |
| 45. | „ | Sp. nov. From the “Long Slack,” opposite Watch Law, Cheviots. | 66. „ tibialis. |
| 46. | „ | tenuis and terricola. These are only varieties of the same species. | 67. „ bituberculata. |
| 47. | „ | Sp. nov. Top of Cheviot. | 68. „ variegata. |
| 48. | „ | pulla. | 69. „ apicata. |
| 49. | „ | Sp. nov? South Middleton dean. | 70. „ rubens. |
| 50. | „ | alacris. | 71. „ rubella. |
| 51. | „ | insignis. | 72. „ nigra. |
| 52. | „ | Claytoniæ. | 73. „ dentipalpis. |
| 53. | „ | obscura. Top of Hedgehope. | 74. „ vagabunda. |
| 54. | „ | flavipes? | 75. „ promiscua, <i>Cambr.</i> Description now in the press. |
| 55. | „ | rufa, <i>Westring.</i> Wooler district. New to Britain. A fine and curious species, which I have long been expecting to find in Britain. <i>O. P. C.</i> | 76. „ Sp. nov. Top of Cheviot. |
| 56. | „ | experta, <i>Cambr.</i> Cold Martin Moss. Descript. in Linn. Trans. | 77. „ Sp. nov. Do. do. |
| 57. | „ | confusa, <i>Cambr.</i> | 78. „ Sp. nov. Do. do. |
| 58. | „ | angulipalpis, <i>Westring.</i> From Cheviot hill. New to Britain. | 79. „ fusca. |
| 59. | „ | Sp. nov. Cold Martin Moss. A very interesting species. | 80. „ trilineata. |
| 60. | | <i>Neriene marginata.</i> | 81. „ rubripes. |
| 61. | „ | bicolor. Top of | 82. „ exusa, <i>Cam.</i> Descript. in Linn. Transactions. |
| | | | 83. „ elevata, <i>Cambr.</i> |
| | | | 84. „ Sp. nov. Top of Cheviot. |
| | | | 85. „ Sp. nov. Side of Wooler water; Cold Martin Moss; Wooler district. A very fine and striking species. |
| | | | 86. „ sylvatica. Wooler district. |
| | | | 87. „ Sp. nov. Wooler district. |
| | | | 88. „ Sp. nov. South Middleton dean. |
| | | | 89. „ Sp. nov. Top of Cheviot. |
| | | | 90. <i>Walckenæra acuminata.</i> |
| | | | 91. „ cuspidata. |

92. <i>Walckenaera unicornis</i> , <i>Cambr.</i>	101. <i>Walckenaera</i> Sp. nov. Cold Martin Moss.
93. „ <i>fuscipes</i> .	102. <i>Pachygnatha Clerckii</i> .
94. „ <i>obscura</i> .	103. „ De Geerii.
95. „ <i>brevipes</i> , <i>Westring.</i> First record as British in the press.	104. <i>Epeira umbratica</i> .
96. „ <i>cristata</i> .	105. „ <i>similis</i> .
97. „ <i>antica</i> .	106. „ <i>calophylla</i> .
98. „ <i>trifrons</i> , <i>Cam.</i>	107. „ <i>cucurbitina</i> .
99. „ <i>frontata</i> .	108. „ <i>antriada</i> .
100. „ <i>permixta</i> .	109. „ <i>inclinata</i> .
Side of Wooler water. See Linn. Trans.	110. „ <i>diadema</i> .
	111. <i>Tetragnatha extensa</i> .
	112. <i>Segestria senoculina</i> .

Subsequently, in November and December, I made a small collection of Spiders in Berwickshire, which, while containing repetitions of many of those in the preceding list, comprised divers others; which, as adding to our fauna, as well as presenting what species are autumnal, and as it offers the advantage of classifying the Arachnida together, I append here. They were found about Oldcambus, in the Pease-dean, or on the sea-coast there.

<i>Lycosa picta</i> .	<i>Walckenaera nudipalpis</i> ,
<i>Hecäerge spinimana</i> .	<i>Westring.</i>
<i>Clubiona amarantha</i> .	„ <i>punctata</i> .
„ <i>reclusa</i> , <i>Cambr.</i>	<i>Epeira prominens</i> , <i>Westring.</i>
<i>Tegenaria civilis</i> (house-spider).	(= <i>E. bella</i> , <i>Meade</i> .) This
<i>Theridion signatum</i> .	beautiful species was found
<i>Linyphia ericæa</i> .	in the Pease-dean, among
„ <i>circumspecta</i> .	the leaves of wood-rush,
„ <i>gracilis</i> ?	overhanging low banks. It
„ <i>crypticolens</i> .	is new to Scotland.
„ <i>decolor</i> , <i>Westring.</i>	<i>Dysdera Hombergii</i> . Sea-
„ <i>cauta</i> .	coast.
„ Spec. nov. Pease-dean.	<i>Oonops pulcher</i> . Sea-coast
<i>Walckenaera nemoralis</i> .	and Pease-dean.
„ <i>depressa</i> .	

The Red or Common Squirrel (Sciurus vulgaris).

THIS squirrel has made its appearance in the High House wood and Hulne Park, belonging to the Duke of Northumberland, in the parish of Alnwick. The late Mr Tate, in the year 1868, gave an interesting notice of the gradual increase of this little animal in the county, tracing its progress from Roxburghshire and Berwickshire; and stated that at that time it had not made its appearance in the Alnwick district.* The "Alnwick Mercury" of January 20, 1872, contains an account of some mischievous youths hunting a poor squirrel in Hulne Park, wherein it is stated that those animals had been introduced by the Duke of Northumberland. I am assured by Mr Foulger, his Grace's gamekeeper, that they were not introduced; but there is no doubt of their presence in the localities named.

ROBERT MIDDLEMAS.

How the Hermit Crab (Pagurus Bernhardus) escapes from a Trap.

HERMIT CRABS, which occupy the empty shells of *Buccinum undatum*, at times obtain admission to the fishermen's crab-creeels, being enticed by the bait. They are brought into the boats enclosed in the shells, but there are instances where "buckies" are taken without inmates—and they could not have walked in without them; whence the belief is that the cunning hermit, conscious of being entrapped, and also that the narrow meshes of the creeels are impervious while they remain encumbered with their shells, strip off their temporary great-coats, and having thus reduced their bulk, slip out and so escape. This is an old expedient with them, brought forward to meet the exigency; for at previous stages of their progress to maturity, they were over and over again compelled to exchange their smaller domiciles for others more capacious. It is, however, worth recording the recourse they have to it, to release themselves from involuntary confinement. This crab's hinder integuments being soft and yielding, its successive withdrawals from the polished interior of univalves are easily accomplished.

JAMES HARDY.

* Proceedings B. N. Club, Vol. V., p. 442.

Memoir of the late George Tate, F.G.S. By ROBERT
MIDDLEMAS.

It has been the custom of the Berwickshire Club to place on record notices of the lives of those members, whom death has removed; and, had this not been so, the Club could not have overlooked the merits of George Tate, who for a period of thirteen years discharged the duties of Secretary in such a manner as repeatedly called forth the warmest commendations of the Club. Since the death of Dr Johnston, no more honoured and active member has fallen than Mr Tate; who, at the last annual meeting was in his place, joyous as ever, cheering us on by his example, and arranging for the year which closes to-day. When I was asked by several members to prepare a sketch of his life, I felt a difficulty in complying, and wished the pen to be taken by an abler hand. I, however, saw that I was fixed upon, as a friend of Mr Tate; and, when I considered that it was a debt of gratitude I owed for a friendship of above twenty years, I no longer hesitated, but endeavoured to discharge the debt.

Ralph Tate, a builder, and a freeman of Alnwick, married Rachel Turner, a descendant of an old Alnwick family, whose principal members had been freemen of the borough for generations. They had two sons: George Tate, and Thomas Turner Tate, both of whom distinguished themselves in different walks of life.

George Tate was born on the 21st day of May, 1805. He received his elementary education in the Borough School, at Alnwick, then under the care of George Dixon, a severe but able teacher. He passed afterwards to the Grammar School, where he completed his education under the judicious care of the Rev. William Procter, an amiable man and an able scholar, whose worth is commemorated in Alnwick by a memorial window, placed by public subscription in St. Michael's Church, of which he was the incumbent.

Mr Tate was apprenticed to Mr Thomas Riddell, a draper, in the Market Place, Alnwick. He was a diligent, active apprentice, and very studious. Even at this early age, we find him and his brother members of a debating society, then attended by a few intellectual young men; and perhaps it was at these friendly contests, that Mr Tate first learned to

express his opinions with that ease and fluency which distinguished him in after life. Many are the stories he has told me of their meetings;—he ever cherished a friendly feeling for the memory of those with whom he was thus early associated. Being duly qualified, the time came when he had to undergo the custom of going through the well, in order to become a freeman of the town. This custom is traditionally reported to have been originated by King John, who, when hunting on Alnwick Moor, felt so irritated at being laired in a bog, that he capriciously ordained that henceforth every candidate, before his admission to the freedom of the borough, should go through the same bog, on the anniversary of his own mishap. Mr Tate has left us a humorous account of his own experience in leaping the well. The custom was discontinued when the Enclosure Act was put in operation.

Mr Tate commenced business in the year 1826. He at once carried into it that energy and spirit which is the first element of success, and which marked all his undertakings. He was very attentive, and his business rapidly increased; but still it did not wholly occupy his active mind, for in the year 1828 he became one of the Secretaries of the Mechanics' Institution at Alnwick. At that period its fortunes were at the lowest ebb. Only sixteen members agreed to stand by it. Mr Tate, however, on shewing his determination to raise the character of the Institution, and to banish atheistic and polemical discussion, restored confidence, and the Institution rose and prospered. It was not by mere attention and administration that he secured the prosperity of the Institution; he laboured to promote scientific knowledge amongst its members. He secured the assistance of his literary and scientific friends to lecture upon various subjects, and he also delivered lectures himself. The enumeration of those will shew the activity of his mind, and its scientific training. They were: "On the Formation of Dew," "Physical Geography," "Mineralogy and Crystallography," "Extinct Organisms," "Volcanic Action," "The Succession of Life upon the Globe," "The Boulder Formation of Northumberland, and Glacial Action," "Causes and Effects of High Tides," "Cephalopods, recent and fossil," "Sturgeons and Palæozoic Fish," "Structural Botany," "Ancient British Sepulchres," "The Minerals and Rocks of Northum-

berland," "The progress and diffusion of Science during the nineteenth century," "The Geology of the Borders," "The Natural History of Coal and Fossil Plants." After being Secretary for upwards of thirty years, he retired in 1859; leaving, says he, "the men of a new generation to develop the society, so as to meet the wants of the present age." On his retirement, he was elected an Honorary Member—an honour which he shared with Lord Brougham and Professor Airey, and lately with Dr Bruce.

Mr Tate married, May 26th, 1832, Ann, only daughter of the late Mr John Horsley, of Paikes Street, Alnwick. Mrs Tate made an excellent wife; she saw and appreciated the talents of her husband, and being of a thoughtful practical mind, by her amiable manners, activity, and attention, assisted him so materially in his business, that Mr Tate was enabled, without sacrificing the welfare of his family, to devote a large portion of his time to antiquarian and scientific research.

On the 6th of March, 1841, Mr Tate was appointed Postmaster at Alnwick; an office which he held until about a fortnight before his death when he resigned, and it was conferred upon his daughter Ellen. On his appointment, he for some time was compelled to attend daily to discharge the simplest duties; but he soon organised his assistants to discharge those of routine, leaving them to refer all matters of importance to him; and, as his presence was still necessary, this arrangement enabled him to pursue his favourite studies.

Mrs Tate died in 1847, and for a time Mr Tate seemed to have lost all relish for scientific pursuits. He threw all his energy into business, but it was evidently to banish the sad thoughts of his bereavement, for he began gradually to betake himself to his usual studies; and in the year 1855 abandoned business, and entered upon the more congenial pursuits of science.

My first visit to the study of Mr Tate took place when I was very young. I was shewn into his museum. A lamp was burning brightly when I entered, but suddenly it went out, leaving us in total darkness. I heard Mr Tate say, "keep off the serpent"; and knowing him to be a great naturalist, I was in a state of terror, till another light being procured, I was relieved by finding that I had not trodden upon a reptile, but upon the flexible tube that united the lamp to

the gas-pipe. I had been frequently asked to visit him, but was afraid lest he should ask too many questions. On this occasion his conversation was of the most genial character, and I was a frequent visitor afterwards. He liked the company of young people, and after narrating some funny story, would give them advice as to what they should read and study. He was ever the advocate of education and progress. There was no movement of any importance which had for its object the moral and social improvement of the inhabitants of Alnwick, in which he did not take an active part. Both by his exertions and pen he laboured for the institution and welfare of the Victoria Infant School, now used as a Ragged School. We have seen how long and zealously he laboured for the Mechanics' Institution. He was a warm advocate for the extension of the Borough Schools. In the year 1849, when the Public Health Act was about to be put in operation in Alnwick, Mr Tate attended the preliminary enquiries of the Government Inspector and furnished him with most valuable information as to the geological structure of the site of the town and neighbourhood. The first election under the Act took place in 1850; eighty-three candidates were proposed, and Mr Tate was elected one of the eighteen members of which the Board is composed. He was returned again and again, and retained his seat until his death. His ability and scientific knowledge were frequently called into action as a member of the Board. He served upon the most important committees, and aided in drawing up elaborate reports. He advocated the most extensive measures of sanitary reform. He was a fearless, independent, and uncompromising advocate of the rights of the people: holding that, as the Board of Health was "the local authority," it should not only look after the sanitary state of the town and promptly abate whatever was injurious to health, but also endeavour to educate public opinion.

In the year 1869 a Club was formed by a few gentlemen in Alnwick, for the purpose of scientific research. Mr Tate was chosen President; and entered with such energy into the undertaking, that he attended at Howick and gave the most lucid description of the interesting section of strata shewn near Cullernose. He also accompanied the Club to Cawledge Park for the same purpose. He was present at the first winter meeting; and it was before this Club that he read his last scientific paper.

Mr Tate commenced the study of geology at an early period, probably about the year 1832, when that science was in its infancy. No works of any value had then appeared in England save "Smith's Tabular View of British Strata," "Buckland's *Vindiciæ Geologicæ*," and "Reliquæ Diluvianæ." The publication of "Lyell's Principles of Geology" seems to have induced Mr Tate to commence a series of investigations in the neighbourhood of Alwicks, which gradually extended over Northumberland, Durham, and a great part of Berwickshire. His reading kept pace with the views then rapidly propounded by scientific men, and, as he was indefatigable in his investigations, his practical knowledge enabled him to grapple with problems then little understood. He seems early to have paid special attention to the Carboniferous and Mountain Limestone formations; and these formed the subjects of his earliest illustrations and lectures.* Each journey added to his collection of fossils; many of which were so unique as to be figured in the monographs issued by the Palæontographical Society. Mr Tate favoured the public with the sight of a part of his collection in an exhibition held in the Corn Exchange, Alwicks, in the year 1869, on the first distribution of prizes to the students of the Science and Art classes in connection with the Mechanics' Institute. The number and variety of fossils were so great, that few people imagined so much could be accomplished by a single person. He also lectured upon that occasion.

Mr Tate was elected a Fellow of the Geological Society; an Honorary Member of the Hastings and Newcastle-upon-Tyne Literary and Philosophical Societies; and an Associate of the Edinburgh Geological Society.

In the year 1849, Mr Tate first noticed the marks of ice action on the rocks of Northumberland. His observations were made upon the farm of Hawkhill, about $2\frac{1}{2}$ miles from Alwicks. There, underneath a bed of red tough clay, the surface of the limestone rock was polished, scratched, and grooved, over an area of 20 feet by 6, from which the clay had been removed; and the same polished and scratched surface

* *Estheria striata var Tateana*, *Candona Tateana*, *Beyrichia Tatei*, fossil Entomostraca of the Mountain Limestone were named by Professor T. R. Jones after Mr Tate.

extended under the clay.* Mr Tate published his observations in the "Transactions of the Tyneside Naturalist's Club," in the year 1849. He extended them in a lecture, afterwards delivered before the members of the Alnwick Mechanics' Institute. This discovery of polished and scratched rocks was very important when viewed with reference to the Boulder Clay; for this formation has presented a problem which is only being gradually worked out. The Royal Society of Edinburgh, acting under suggestions made by Mr Milne Home, is endeavouring to preserve the Boulders of Scotland from removal or destruction, so that proper evidence of this period may not be destroyed. After his retirement from business in the year 1855, he commenced a tour, which extended from the Vale of Whittingham to the river Tweed;—ground often before traversed by him, but this time with the special object of examining that group of rocks lying between the Red Conglomerates and Mountain Limestone, and to which he in 1856 applied the distinctive term "*Tuedian*," "because they are so largely developed on the Tweed; and because the general conditions of the period as indicated by the mineral character of the strata, and by the organic remains found in them, are different from those of the Mountain Limestone, with which they had been previously grouped." In the year 1857, Mr Tate made a geological tour from Bowness to Wallsend, in the line of the Roman Wall, for the purpose of examining the strata of its site and neighbourhood. The lovely scenery which he traversed, and the kindness and hospitality of friends, rendered this journey thoroughly enjoyable. His antiquarian and geological knowledge was brought into full play; he made a careful survey, and afterwards condensed and published his observations, at the request of his friend, Dr Bruce, in his celebrated work, the "Roman Wall."

The "Proceedings of the Berwickshire Club" contain the best record of the geological labours of Mr Tate. We find in his writings the most minute details and comprehensive accounts of the geology of the several places visited by the Club. We see the assemblage of facts and petty circumstances, under the magic influence of his scientific mind,

* Mr W. K. Loftus, in the year 1845, had noticed polished and scratched rocks of the same Limestone formation at Belsay, which he attributed to diluvial action.—Transactions Tyneside Club, vol. I. p. 273. The mirror like polish is now considered to be the result of ice action.

developing into theories more or less extensive. Bringing his practical knowledge to bear upon one formation after another, he makes the whole testify to the wisdom and benevolence of the Creator, who, in the "beginning," when His spirit moved over the dark waters, was working out His almighty designs, and fitting the earth for the habitation of intellectual man. Mr Tate was no advocate of "Darwin." He acknowledged the extent and power of the arguments of that able naturalist, but he denied that the evidence was sufficient to warrant his conclusions. He believed in the divine origin of man:—"For," says he, "in his origin he cannot be linked with any of the creatures which preceded; for, whatever modifications of bodily form may be made by physical conditions, natural selection, or any secondary law, such is the great gulf between the highest brute and man, that we can refer the introduction of an intellectual and moral being, capable of generalising and of indefinite progression, and endowed with a sense of responsibility, to no other than to the divine Sovereignty."

Mr Tate was admitted a member of the Club on the 16th of June, 1847. He was President in 1853; and made a Secretary in 1858. Pleasantly and cheerfully he and Mr Embleton worked together, until failing health confined the latter to his house and prevented him from taking an active part in the Club's affairs. From the time when Mr Tate was appointed Secretary until his death, his best energies were directed to the advancement and success of the Club. He had a secret pride in its welfare. His management of affairs met with unqualified approval. The meetings were of the most harmonious description. Minor business matters, often so annoying, were managed with tact and discretion. The Club rose and prospered;—may its future be as brilliant as the past.

Mr Tate held a large correspondence with scientific men; and was frequently applied to for, and ever willing to give information; and cared not for the time and trouble it cost to oblige a friend. Few scientific men visited Alnwick without calling at his residence, where they were sure of a plain but hearty welcome.

In the year 1858 Mr Tate was unanimously requested by the Club to write an account of the Sculptured Rocks of Northumberland. He agreed to this; but the account did

not appear until 1864. In the meantime, he had surveyed the entire district—examined the old Celtic town of Greaves Ash—superintended diggings on Yeavinging Bell, and laid bare the hut circles, forts, and fortlets, scattered over that hill. He had examined every sculptured rock in the neighbourhood, many of which had just been discovered by the industry of his friends—his extensive reading and correspondence gave him information of what had been noticed elsewhere;—so that when his account of the sculptured rocks appeared, it was found to be a condensed record of all that was known upon the subject.

For archæology he had an extended reputation; and many works bearing upon this subject were sent him to review for various scientific publications. In this respect he was most conscientious; he never let fly the shafts of criticism at random, but when he differed from the author, gave his reasons in detail. The most elaborate review that I have been able to trace, was of “Keller’s Lake Dwellings;” wherein he shews a complete acquaintance with the subject, and a mastery of details, that stamp the review as the work of one well qualified to judge.

Mr Tate had purposed to write the history of his native town, and for many years had been collecting materials. It was in furtherance of this design that he applied for the clerkship to the Common Council, and was appointed on the 30th December, 1850. He held this office until 1858. His appointment gave him access to the Borough Records, which he patiently and industriously inspected. For the same purpose, he spent some time in London inspecting the records and state papers. He was indefatigable in collecting materials from every available source; which he prepared and condensed into a full and complete history of Alnwick—wherein he flatters none, but exposes and censures every act of meanness, tyranny, or aggression; and rescues from oblivion the memory of those who lived and laboured for the public weal—an impartial record of events, and of the rise and progress of the public institutions of the town;—an enduring memorial of his perseverance and talents for scientific and antiquarian research, and a most valuable contribution to Border Literature. The first volume appeared in 1866; the second in 1868.

On the completion of this valuable work, it was considered that some suitable memorial should be presented to Mr Tate,

and a committee was formed for that purpose. His literary and scientific friends at a distance willingly joined the inhabitants of the town and neighbourhood, so that there was a complete success. A public banquet was held in the Town Hall, Alnwick, to which Mr Tate was invited. Dr Bruce, of Newcastle-upon-Tyne, presided; the vice-chair was occupied by Mr J. A. Wilson, of Alnwick. An address, beautifully illuminated, and numerous signed by the nobility, gentry, scientific men, and the inhabitants of the town and district, a purse of gold, and an elegant tea and coffee service in silver, were presented to Mr Tate, in an able speech, by Dr Bruce. It was a meeting of which Mr Tate might well be proud; for his great historical work had been highly appreciated by eminent men;—some of whom, engaged in similar pursuits, attended to congratulate him on the success of his labours. But his ardent spirit was not satisfied; he thought he had not done enough. He said “he had intended that his *opus magnum* should be the Geology of Northumberland; but that at his age, with infirm health, he could not hope to accomplish it.” His valuable monographs, “On the Cheviots;” “The Basaltic Rocks of Northumberland;” “Fossil Flora of the Eastern Borders;” and “Fauna of the Mountain Limestone,” bear ample evidence of what the complete work would have been.

Mr Tate suffered much from chronic asthma, and was compelled to confine himself for several months of the year, not only to his house, but to his room. He fixed upon his museum for this purpose, that he might have ready access to any specimens he might require when extending his notes of summer investigations. There also his friends visited him and enjoyed his conversation. As the spring advanced he was able to take out-door exercise; and at the first meetings of the Club was generally in his place. The winter of 1869 seemed to take a severe hold upon him, and he did not recover strength as on other occasions. Last winter made further inroads upon his constitution; he, however, rallied sufficiently to summon his friends of the Alnwick Scientific Research Club to meet at his residence to hear a paper which he had just completed for the Berwickshire Club, “On the Basaltic Rocks of Northumberland.” His weakness and laboured breathing were painfully apparent, but he was cheerful and happy, and seemed to enjoy the society of his

friends. A short time afterwards he was again confined to bed. As yet, however, no serious symptoms were exhibited, and his friends fondly hoped that as the season progressed his health would be restored. He made arrangements for, and prepared and issued the circular for the May meeting at Maxton, but he was unable to leave his bed. His medical attendant, Dr Candlish, required that he should be kept quiet and that no visitors should be allowed to see him. I was sent for shortly after this, when he stated that he wished me to undertake any duties for the Club that would otherwise devolve upon him. I agreed to do so; and a few days afterwards I saw him again, when the books were handed to me. I found that even in this period of extreme weakness, he had dictated the circular for the meeting at Whalton. His care for the Club was shewn to the last in the suggestions he made for its future management; respecting which he wrote to the President and Mr James Hardy, an old and valued friend. He much wished a conversation with Dr Douglas, but was too unwell to write to him. The last time I saw Mr Tate was on the Saturday before his death. His faculties were unclouded, and he calmly spoke of his approaching end. He peacefully expired at an early hour on Wednesday, 7th June. He left two sons and three daughters.

His death took place on the morning of the meeting of the Alnwick and Canongate Local Board of Health; and on the members assembling, W. Dickson, Esq., the Chairman, moved a resolution, which was carried unanimously:—

“This Board having learned that Geo. Tate, Esq., the historian of Alnwick and the author of many other valuable publications, and one of our oldest members, died this morning;

“Resolved, that in order to shew the high opinion that this Board had of their late member, that the Board, as a mark of respect, follow his remains to the grave; and also, that the sympathy of the Board be given to his bereaved family by the Chairman sending a copy of this resolution to Miss Tate, with the request that she will convey it to them at a proper opportunity.”

At a meeting of the Committee of the Alnwick Mechanics' Institute, that same evening, a resolution was passed, expressive of sympathy with the family, and the great loss the Institution had sustained by the death of their honorary

member, Mr Tate, who for thirty years had been a Secretary of the Institute, and an able exponent of science to its members. The Committee also invited the members to follow his remains to the grave.

The funeral took place on the 9th day of June, and was numerously attended. The shops were partially closed, and nearly every blind was drawn as the procession slowly moved towards the Parish Church of St. Michael. By the grave of his beloved wife were the mortal remains of George Tate committed to the dust—may we add, in the “hope of a glorious resurrection.”

CONTRIBUTIONS TO THE “PROCEEDINGS OF THE
BERWICKSHIRE NATURALISTS’ CLUB.”

	Page
On Cist Vaens and Sepulchral Urns, in a Tumulus, or Barrow, near Lesbury - - - -	Vol. 3. 63
Geology of the Coast of Howick - - - -	,, 99
Presidential Address - - - -	,, 125
On Celtic Remains near Wooler - - - -	,, 154
On a Herd of Porpoises - - - -	,, 176
Farne Islands; Botany, Geology, &c. - - - -	,, 222
Roman Remains at Adderstone - - - -	,, 262
Geology and Archæology of Beadnell, with description of Carboniferous Annelids - - - -	Vol. 4. 96
Fauna of the Mountain Limestone of Berwickshire - - - -	,, 149
Distribution of <i>Acmæ testudinalis</i> - - - -	,, 213
Old Celtic Town of Greaves Ash - - - -	,, 293
Antiquities of Yeavering Bell and Threestone Burn - - - -	,, 431
Description of <i>Cribellites Carbonarius</i> , a Sea Star from the Mountain Limestone of Northumberland - - - -	Vol. 5. 71
Vill, Manor, and Church of Longhoughton - - - -	,, 74
On Strata connected with Fossil Entomostraca - - - -	,, 83
Ancient British Sculptured Rocks of Northumberland and the Borders - - - -	,, 137
Records of Glaciated Rocks in Eastern Borders - - - -	,, 236
Geological Notes - - - -	283, 357, 372
The Cheviots - - - -	,, 359
Harbottle Castle - - - -	,, 427

Orange-legged Hobby (<i>Falco rufipes</i>)	-	-	„	432
Common Squirrel (<i>Sciurus vulgaris</i>)	-	-	„	440
Dunstanborough Castle	-	-	-	Vol. 6. 85
On the Stature, Bulk, and Colour of the Eyes and Hair of Northumbrians	-	-	„	133
Basaltic Rocks of Northumberland	-	-	„	197

CONTRIBUTIONS TO "ALNWICK MERCURY."

The Skinners and Glovers of the Borough of Alnwick	Nov.,	1859.
Northumbrian Legends and Customs—Alnwick Abbey	March,	1860.
Henhole, Hurlstane, Caterans' Cove, and the Fairies	-	April, „
Saint Cuthbert's Beads	-	May, „
Wooler; the Kettles and the Pin Well	-	July, „
Notes on the Sanitary Condition of the Olden Time	-	Sept. and Oct. „
Life of Dr Gilbert Rule	-	Dec. „
Life of the Rev. Jonathan Harle	-	Feb., 1861.
Life of the Rev. John Horsley	-	May and June, „
May-Day in Old England	-	May, „
Diggings into an Ancient Briton's Grave	-	Jan. 1862.
Whittingham Vale	-	Aug. „

OTHER WRITINGS.

Pamphlet for Victoria Infant School	-	-	<i>Circulated.</i>
Alnwick Freeman Well	-	-	<i>Provincial Souvenir</i> , 1846.
On Glaciated Rocks at Hawkhill	-	-	<i>Tyne. Nat. Club</i> , 1847.
Fossil Flora of Eastern Borders,	-	<i>Johnston's Nat. History of Eastern Borders</i> , 1853.	
Natural History as an Elementary Branch of Education,		<i>Educational Expositor</i> , Sept. 1855.	
Review of Keller's Lake Dwellings	-	<i>Reader</i> , Sept. 24, 1866.	
Geology of Northumberland and Durham,		<i>Trans. North'd. and Dur. Club</i> , 1867.	
Geology of the Roman Wall	-	<i>Bruce's Roman Wall</i> , 1867.	
History of Alnwick, 2 vols., 8vo.	-	-	1866, 8, and 9.

BOTANICAL NOTICES.

Notice of Euphorbia dulcis. By ARCHIBALD JERDON.

IN the month of June last I gathered a small *Euphorbia* near Langlee House, about two miles from Jedburgh, which I could not identify with any British species. I therefore sent specimens to Professor Balfour, of Edinburgh, who informed me that it was *Euphorbia dulcis* of Linnæus—*E. purpurata*, Thuill;—a species which had been collected by Dr Graham in 1829, among trees in an old deserted garden, on the side of the Ochills near Tullibody, and of which he had also specimens from the neighbourhood of Dumfries.

The locality in which my specimens occurred, resembled that in which Dr Graham found his—being among grass, under trees, in a place called the Old Orchard;—but it is not at all a likely plant to have been cultivated, unless for some real or supposed medicinal properties, as it is by no means a handsome or conspicuous plant. The nearness to a dwelling, however, throws a doubt upon its being truly wild.

Additional Note on the same. By JAMES HARDY.

I HAVE followed this plant through the old authorities, but there is no instance of its being appropriated to any medicinal purpose. The absence of acidity from its milk, so characteristic of the Spurges, had early marked it out as peculiar, and given it a name. It is first noticed in Bock's "Kreuterbuch," 1546, fol. 112, 113, and figured as "Guss Wolff's Milch"; and in the Latin edition by Kyber, p. 296, as "Esula dulcis." It was also known as "Dulce Lupinum Lac." (*Pena and Lobel, "Adversaria,"* p. 216). That it had obtained a place in botanic gardens may be inferred from "Gesner, Hort. Germ.," fol. 257, 258, A.D. 1561; although he well knew its native habitat in the moist bottoms of the Swiss mountains. "Amat montium umbrosa." (*Suter "Flor. Helv.,"* I., p. 335). Italy, France, and upper Germany likewise produce it. Although mentioned by Johnson (Gerard) and Parkinson, it had no place in English gardens when they wrote. Ray had to go to Geneva to gather it. It was introduced to cultivation in Britain by Mr Phillip Millar in 1759. (*Aiton's Hort. Kewensis, III.,* p. 165.) It seeds, when matured, spring from the capsules. (*Bock*). It becomes black in drying. "Dignoscitur exsiccata facillime, quoad sicea nigricat, uti Orobus niger." (*Linnæus, "Amœnitat Acad.,"* III., p. 122).

Botanical Notices (continued).

- LATHRÆA SQUAMARIA. By the side of Teviot, near Ormiston Mill. Parasitic on roots of willow.
- EPIPACTIS LATIFOLIA. By the side of Teviot, near Ormiston.
- TULIPA SYLVESTRIS. Naturalized under large trees at Longnewton; gathered since at same place by Mr Borthwick and Mr Stewart.
- GAGEA LUTEA. Re-discovered on the banks of the Jed by Mr Archibald Jerdon, after having been lost sight of for several years.
- HYPNUM NITENS. In fine fruit in a bog near Hetton Hall, Northumberland, 1870-1.
- CLIMACIUM DENDROIDES. In fruit at Yetholm Lock, 1870.
- MNIUM CINCLIDIROIDES. Abundant at Yetholm Lock; found for the first time in a low country. Usually got in wet places on Highland Hills.
- DICRANUM LENTUM. Near Pennymuir, Roxburghshire. Gathered by Mr A. Jerdon.
- ” RUFESCENS. Near Pennymuir, Roxburghshire. Mr A. Jerdon.
- MORCHELLA ESCULENTA. By the side of Teviot, in Grass Haugh near Ormiston Mill; also by the Jed near Jedburgh—Mr A. Jerdon. And by the Teviot at Springwood Park, by Sir Geo. Douglas, and at Dryburgh Abbey.

W. B. BOYD.

- STACHYS ARVENSIS. Fields, Guns-green Hill.
- EUPHORBIA EXIGUA. Corn fields, Linns-dean, Coldingham Fleurs, and Guns-green Hill.
- CONVOLVULUS ARVENSIS. Corn fields, Guns-green Hill.
- ASTRAGALUS GLYCYPHYLLUS. Banks of the Eye, at Eyemouth and Millbank.
- SANGUISORBA OFFICINALIS. Banks of the Ale above Ale Mill.
- CORONOPUS RUELLII. Chirnside Mill, *J. Anderson*; Eyemouth, *A. Kelly*.
- FEDIA DENTATA. Corn fields at Marygold, *J. Anderson*. East Reston, Hallydoun, and Redhall.
- TORILIS NODOSA. Waste places, Hallydoun and Eyemouth.
- SIMUM LATIFOLIUM. Ditch near Allanton, *A. Kelly*. (Not in the “E. Bord. Flora,” but found by Mr Embleton in “Ditches near Embleton and Beadnell.”—“New Flora of Northumberland and Durham.”)
- SPARGANIUM NATANS. In the Eye near Aytoun.

- OSMUNDA REGALIS. One plant, Coldingham Moor. New to Berwickshire.
 CAREX MURICATA. Near Ayton. *T. Renton*.
 ,, REMOTA. Near Ayton. *T. Renton*.
 NEPETA CLINOPODIUM. Near Cockburn Mill, *J. Anderson*; banks of the Ale, *T. Renton*.

WILLIAM SHAW.

-
- CONVALLARIA POLYGONATUM. Craig's Walls wood, parish of Edrom. Kylee Crags is the only other station within the bounds of the Club.
 LYSIMACHIA NUMMULARIA. Allanton.
 VIOLA ODORATA. Do.
 ORNITHOGALUM UMBELLATUM. Do.
 CAMPANULA LATIFOLIA. Do.
 ADOXA MOSCHATELLINA. Do.
 MENTHA SYLVESTRIS. Whitadder banks, right side below Allanton.
 MIMULUS ————— ? var. Whitadder banks.
 ORCHIS PYRAMIDALIS, which I picked for two successive years at Whitehall, Chirnside—I failed to find this year.
 C. STUART, M.D.

-
- CORONOPUS RUELLII. Roadside at Ancroft Toll.
 NASTURTIUM TERRESTRE. On the Glen above Ewart Bridge, and again above Akeld Bridge, and nearly up to Coupland.
 SINAPIS NIGRA. Corn fields at Turvelaws, near Wooler. It is not in the "E. Border Flora." It grows along with *S. alba* and *arvensis*.
 HYERICUM HUMIFUSUM. South Middleton dean. Not common thereabouts.
 GERANIUM LUCIDUM. Abundant on a trap-rock on the Blackadder above Greenlaw lint mill.
 CENANTHE PHELLANDRIUM. In two ponds on each side of the public road, near Lilburn burn foot. New to that part of the country, but recorded for Berwickshire.
 CREPIS SUCCISSEFOLIA. Wooded banks above Coldgate Mill, and upwards; also in Humbleton dean and at Using Shank on the way to Cheviot. Dr Maclagan met with it abundantly this year on Ale water.
 ILEX AQUIFOLIUM. Harthope Linn is the highest station on the hills where I have seen the holly.
 CALAMINTHA CLINOPODIUM. In the Well-dean behind Wooler in a gravelly soil; and on the dry rocky bank above Coldgate Mill.

MYOSOTIS COLLINA. Heathpool Linn, rocky hills near Wooler, Wooler haugh near Earle Mill.

LITORELLA LACUSTRIS. Cold Martin Loch.

CAREX MURICATA. Kettles well, and Humbleton dean.

ALOPECURUS AGRESTIS. A large tuft of this grass on some rubbish below Wooler bridge. It is a Magnesian Limestone plant; but from finding it here, it is possibly from some habitat in the neighbourhood.

J. HARDY.

NOTE TO PAGE 193.

JOHNSTONELLA CATHARINA of P. H. Gosse ("Devonshire Coast," p. 356, pl. xxv.), was a third intended commemoration of the services rendered by Mrs Dr Johnston to marine zoology. It is a delicate transparent annelid, of considerable rarity. But it had been discovered by Eschscholtz in 1825, and named *Temopteris onisciformis*; and Mr Gosse has subsequently, under this its true title, figured and described it in the "Intellectual Observer," for October, 1862.

Places of Meeting for the Year, 1872.

Jeburgh,	..	..	..	Friday, May 10.
Bamburgh,	..	..	..	Thursday, June 27.
Cheviot,	..	..	..	„ July 25.
Greenlaw, for Hume Castle,	..	..	..	„ Aug. 29.
Berwick	..	..	..	„ Sept. 26.

*Rain Fall at Glanton Pyke, Northumberland, in 1871; com-
municated by FREDERICK J. W. COLLINGWOOD, Esq.: And
at Lilburn Tower, Northumberland; communicated by
EDWARD J. COLLINGWOOD, Esq.*

GLANTON PYKE.		LILBURN TOWER.	
	Inches.		Inches.
January . . .	1.88	January . . .	0.310
February . . .	2.25	February . . .	2.428
March . . .	1.47	March . . .	0.851
April . . .	3.64	April . . .	3.621
May . . .	0.99	May . . .	0.898
June . . .	2.81	June . . .	2.845
July . . .	4.51	July . . .	2.536
August . . .	1.52	August . . .	1.236
September . . .	2.31	September . . .	3.668
October . . .	3.32	October . . .	2.728
November . . .	2.58	November . . .	2.712
December . . .	2.89	December . . .	1.602
	30.17		25.435
Rain Gauge—Diameter of Funnel, 8 inches; Height of Top above Ground, 4ft. 3½in.; Above Sea Level, 532 feet.		Rain Gauge—Diameter of Funnel, 10in., square; Height of top above Ground, 6ft.; Above Sea Level, 300ft.	

*Rain Fall at North Sunderland, Northumberland, in the Year
1871. Communicated by the Rev. F. R. SIMPSON.*

Month.	Total Depth.	Greatest Fall in 24 hours.		Days on which .01 or more fell.
		Inches.	Depth. Date. on 3 days	
January	1.17	.17	9, 11, 15	14
February	2.31	.42	4th	16
March	.93	.32	9th	15
April	3.53	.82	18th	22
May	1.37	.56	26th	10
June	1.19	.43	14th	12
July	2.82	.76	4th	19
August	1.12	.37	20th	9
September	2.75	.59	20th	17
October	2.26	.61	19th	17
November	1.72	.23	28th	20
December	1.46	.22	22nd	15
Total. . .	22.63	5.50		186

Rain Gauge—Diameter of Funnel, 8 inches; Height of Top above Ground, 1
foot 2 inches; Above Sea Level, 70 feet.

MEMBERS ELECTED.

Rev. Thomas Brown, 16, Carlton Street, Edinburgh ;
elected 11th May, 1871.

The following were elected Members at the Meeting held
at Berwick, September 26, 1871 :—

Rev. Thomas Johnston, Manse, St. Boswells.
Rev. Thomas Rogers, Durham.
Rev. Robert Paul, Coldstream.
Robert G. Thomson, Rutherford House, Maxton.
Francis Walker, Nisbet, Kelso.
Rev. T. S. Anderson, Crailing, Kelso.
Robert David Yair, Bunckle Manse, Dunse.
John Philipson, Victoria Square, Newcastle-on-Tyne.
Rev. Ambrose Jones, Vicarage, Stannington, Cramlington.
Andrew Scott, Glendouglas, Jedburgh.
W. E. Otto, Jed Neuk, Jedburgh.
Rev. L. J. Stephens, Vicarage, Longhoughton.
William Weatherhead, Solicitor, Berwick-on-Tweed.
Thomas Caverhill Jerdon, 11, Hanover Square, London.
James H. Scott Douglas, Springwood Park, Kelso.
Rev. G. Scott, Amble.
Henry Henderson, Warkworth.
Alexander James Main, M.D., Alnwick.
Rev. John Dixon Hepple, Vicarage, Branxton.

OFFICERS, 1871-2.

Honorary Secretary :

ROBERT CASTLES EMBLETON.

Acting Secretaries :

FRANCIS DOUGLAS, M.D., Kelso.

JAMES HARDY, Oldcambus, by Cockburnspath.

Treasurer :

ROBERT MIDDLEMAS, Solicitor, Alnwick.

GENERAL STATEMENTS.

Accounts—September, 1871.

The INCOME and EXPENDITURE :—

	£	s.	d.
Mr. Embleton	3	12	6
Mr. Tate	17	1	0
	<hr/>		
	20	13	6
Arrears received	9	6	0
Entrance fees	8	10	0

Subscriptions, 1870 :—

Received by Mr. Tate	20	16	0	}	27	17	0
Do. Mr. Middlemas	7	1	0				
	<hr/>				66	6	6

EXPENDITURE.

Paid for Printing	18	13	0
Contributions towards excavating	}	5	0
Eden's Hall			
Expense at Meetings	9	18	0
Postages, Carriage, &c.	12	8	7
Balance in hands of Treasurer	16	14	5
Balance due by Mr Embleton	3	12	6
	<hr/>		
	20	6	11
	<hr/>		
	66	6	6

PROCEEDINGS

OF THE

BERWICKSHIRE NATURALISTS' CLUB.

Address delivered to the Berwickshire Naturalists' Club, at Berwick, September 26th, 1872. By the Rev. F. R. SIMPSON, North Sunderland, President.

GENTLEMEN,

In addressing you on this occasion, I cannot but feel that it is a most happy circumstance, and a subject for mutual congratulation, that, as a Club, we are now old enough to have precedent and tradition to guide us in our proceedings. Your President's course is defined by an established usage of over forty years, so that he knows pretty well what is expected of him in preparing his anniversary address. That usage, while it leaves him free to express his own thoughts on any matter brought before, or bearing upon, the well-being of the Club, yet confines him, as to the main bulk of his address, to presenting you with a summary of the Club's Proceedings for the year during which he has held his office. It is, I confess, a relief to have one's line thus clearly chalked out, so long as one is not confined too strictly to run in a groove. Following, then, the example of former Presidents, I shall lay before

you a brief account of our Proceedings for the year 1872; and in doing so, I crave your utmost indulgence, while trying to fulfil the last and most important portion of the duties imposed by your kindness, when you did me the great honor to appoint me your President.

The anniversary meeting of last year was held at Berwick, on Thursday, 28th September. I was not present; but Mr Robert Middlemas has kindly furnished the following notes.

The party breakfasted at the King's Arms Inn. After breakfast, Mr Robert Middlemas read a memoir of our late worthy Secretary, Mr G. Tate, F.G.S. A vote of thanks was unanimously passed to Mr Middlemas for his paper, which was ordered to be printed. The meeting was addressed by Mr D. Milne Home, who called attention to the action taken by the Royal Society of Edinburgh for the conservation of the "boulders" of the district, and the necessity of preventing their removal or destruction. Mr Home ably explained his views respecting certain ancient sea-cliffs observed by him in the district; and the evidences afforded of the several agencies at work in the transportation of large boulders from their native beds. Mr Stevenson, of Dunse, produced several specimens of boulders of a very remarkable shape, which he stated were found about three miles from what he considered the parent rock, of which he produced specimens. Mr Stevenson was of opinion, that the boulders referred to by him, had been transported by the agency of water. This led to an interesting discussion; and it was found that there were boulders, some of immense size, which had been borne some seventy miles from their native bed.

The meeting was adjourned until 3 o'clock, to give members from a distance a better opportunity of being present, and taking part in the business arrangements for the ensuing year.

The principal part of the members paid a visit to the local museum of natural history, to which several interesting additions had been made; and afterwards visited the vitriol works of Mr Wilson, and were shewn the machinery and process

by which vitriol was extracted from "pyrites." The party afterwards inspected the adjoining chemical manure works, and examined with interest the various processes by which bones were crushed and dissolved, and converted into superphosphate of lime and other manures.

The members re-assembled at 3 o'clock. The President proposed, and it was unanimously carried, "That Dr Francis Douglas, of Kelso, and Mr James Hardy, of Oldcambus, be elected Secretaries, and Mr R. Middlemas, Treasurer, of the Club." A cordial vote of thanks was given to Mr Middlemas for his services as Secretary and Treasurer during the year. A lengthy discussion took place as to the election of members; and it was thought that some steps should be taken to prevent indiscriminate admission. Some members were of opinion, that before members were proposed their qualifications should be stated, and that this would prevent any person from being chosen that would not be an efficient member; by others, it was considered that the number should be limited, and that no election should take place until vacancies occurred; but no motion was made upon the subject, as it was judged advisable that the matter should be fully ventilated before any action was taken. It was unanimously resolved that a portrait of Mr Tate be engraved for the Proceedings; and that the thanks of the Club be given to the Misses Tate for their services in addressing the circulars during the year.

The following gentlemen were present:—The President, Mr W. B. Boyd; Dr F. Douglas; Revs. W. L. J. Cooley, J. S. Green, P. McDouall, W. Darnell, J. Rowe, J. Irwin, W. Procter, jun., J. E. Elliot; Captain Simpson; Messrs F. J. W. Collingwood, D. M. Home, Robt. Douglas, George Allen, Thos. Friar, Archibald Jerdon, John Clay, William Cunningham, George Young, Jas. Purvis, John Scott, E. A. Simpson, and Robert Middlemas.

After dinner, the President read an able address. A flint arrow head was exhibited, said to have been found upon the boulder clay in the vicinity of Berwick. It appeared an ex-

cellent specimen ; and Mr D. M. Home and Mr R. Douglas agreed to visit the spot. The gentlemen proposed during the year for membership were then elected. Mr Boyd then nominated the Rev. F. R. Simpson, President for the ensuing year.

Our Spring meeting was held at Jedburgh, on the 10th of May. Present:—The Rev. F. R. Simpson, President ; Dr F. Douglas, Secretary ; Sir Walter Elliot ; Drs Charles Douglas, J. R. Scott, Hume, and Blair ; Capt. Macpherson ; Revs. Dr Leishman, G. S. Thomson, W. Procter, jun., J. S. Green, D. Paul, P. Mackerron, A. Davidson, and D. Yair ; Messrs John Turnbull, F. Walker, Wm. Elliot, W. B. Boyd, C. Anderson, A. Jerdon, J. B. Boyd, J. Wood, J. Tait, W. E. Otto, A. Scott, and J. Ord ; and as visitors : Rev. Mr Moir ; Messrs T. Robson Scott, Ormiston, and Ritchie. The party numbered twenty-two at breakfast, and thirty-two at dinner.

After breakfast, the programme for the day was arranged. The members there assembled first visited, under the guidance of the Rev. Dr Ritchie of Jedburgh, the ruins of the venerable abbey. These remains are of great interest, unfolding as they do, a tale of chequered and eventful history. The besom of destruction would seem to have frequently swept over the church and abbey of Jedburgh ; for we find in the ruins, as they now stand, at least three distinct styles of architecture, indicating so many successive partial destructions and restorations. The oldest part (if not Saxon as some have thought) is very early Norman ; and the edifice of which it formed a part was itself, probably, a superstructure on the ruins of an older church. It is clear from the remains of sculptured stones here and there built into the present ruins, that a Saxon church had previously occupied the same, or some very closely neighbouring, site. No doubt, in the troublous ages that have passed over this border land, these sacred edifices have been, one after another, damaged or destroyed, to be again restored by the zeal of our fore-elders. Some portions of the older work have been in each case re-

tained, and utilized, and incorporated with the restoration, whose style tells us very approximately the date of its erection. The process of utilization has continued to our own day, as witnessed in the western portion of the nave, now used as the Parish Kirk. It has been utilized, but, alas! not restored. Externally, the old arches on either side are blocked up with rough masonry, in which are inserted square paned windows of modern type, utterly out of keeping with the frame work which surrounds them; and internally the fair proportions of the grand old nave are curtailed, and its architectural features marred, by the erection of hideous pews and galleries. One cannot but rejoice to learn that a new and suitable edifice is being, or about to be, built for the Parish Kirk, and that these disfigurements will be cleared away. These noble remains of the piety of former generations will then be visible in their full beauty and extent. Would that they could have been again restored for the celebration of holy rite—swelling anthem and full-voiced chant and hymn again resounding, as in days of yore, all through the sacred walls! But we may not linger here; other work is before us.

And here my good friend, our Secretary, Dr Douglas, comes to my help; and to his kindly furnished notes I am mainly indebted for the further account of this, our first meeting. “The abbey viewed, we separated into two parties: one proceeding, under the guidance of Mr Adam Matheson, to the Dunion, to inspect the geological features of the hill, including a long extinct crater supposed to exist there; but after considerable research, the spot, if it exists, could not be detected. A rare moss, *Grimmia Schultzii*, was however gathered in fruit. *Vicia lathyroides* and *Myosotis collina* grow on the Dunion; also, *Antitrichia curtispindula*, *Orthotrichum rupestre*, *Pterogonium gracile*, and the pretty lichen, *Lecanora ventosa*. This party afterwards descended by the valley of the Blackburn towards Lintalee and the Jed, returning by the road to Jedburgh, without discovering anything novel, or of marked interest.

“The second party proceeded by the banks of the Jed, passing the spot in the bed of the river where the Greywacke overlies a sandstone bed; but the flooded state of the river prevented this anomalous state of these rocks from being apparent. Hence onwards to “the Capon Tree” and “the King of the Woods” (two ancient oaks of Border celebrity), and through a romantic glen (where *Chrysosplenium alternifolium* was found in flower, and the beautiful oak fern in some abundance) to the old stronghold of the Kerrs of Fernyhirst.” Some of the party, on their way through the glen in search of plants, disturbed a Long-eared Owl (*Strix Otus*, Linn.) which had its nest on a ledge of rock up the side of a small ravine; the bird was a female so intent on her maternal duty that we were within a few yards of the nest before she took flight. The brood was hatched; the eggs being chipped, and one young white downy chick found in the nest. “The ancient castle of Fernyhirst is now occupied as a farmhouse. The old tower remains in perfect preservation, and is attached to the more modern, though still ancient, residence. The old chapel has, alas! been converted into a stable; but the walls are in excellent preservation, and there is a fine doorway—its peculiar ornamentation up each jamb, and that of the coigns, are worthy of notice. The beautifully wooded banks of the Jed are here covered with a fine turf, adorned by a profusion of wild flowers, including primroses, dog violets, wood forget-me-nots, anemonies, and wood sorrel, all adding their beauty to the scene.

“The day was lovely; clear, bright, and cold, after a heavy night’s rain, which doubtless prevented insect life from displaying itself as it would have done under more favorable circumstances.

“The party then crossed the river by Lintalee and Hundalee, and proceeded by the upper road to Jedburgh; its ancient abbey and court-house in the foreground, and the fine woods and mansion house of Hartrigg, being seen in the distance.”

A few of the members visited, before dinner, “Queen

Mary's House," a quaint old residence of some historical interest, as its name implies, but not calling for any special notice at our hands. An old and umbrageous pear tree, covering with its branches a large portion of the garden, looks as though it might be a contemporary of the Capon Tree.

After dinner, Dr F. Douglas read a memoir of our late distinguished confrere, Dr Wm. Baird, of the British Museum, who was one of the founders of the Club in the year 1831. Sir Walter Elliot read some notes on the occurrence, in 1869, of the Goshawk, at Minto; with a notice of other Raptorial Birds, now scarce in the district. Dr Douglas communicated an interesting paper, by Mr Hardy, on the Capon Tree; and Mr Jerdon and the President read notices of the period of arrival during this season of our feathered summer visitants. Sir Walter Elliot likewise called the attention of members to the desirability of different Natural History Clubs communicating with each other; and also of members in different parts of the county making observations regarding the arrival and departure of our migratory birds, with a view to their being tabulated—an office kindly undertaken by Mr Jerdon.

Our second meeting was held at Bamburgh, on the 27th June. There were present:—The Rev. F. R. Simpson, President; Dr F. Douglas and Mr J. Hardy, Secretaries; Mr Robert Middlemas, Treasurer; Revs. Ven. Archdeacon Hamilton, W. Darnell, W. Greenwell, W. Cumby, W. L. J. Cooley, J. S. Green, J. Marshall, P. G. McDouall, C. Thorp, E. A. Wilkinson, J. E. Elliot, S. A. Fyler, and A. Jones; Drs C. Douglas and A. J. Main; Sir Walter Elliot; Messrs F. J. W. Collingwood, Thomas Friar, J. E. Friar, W. B. Boyd, Charles Rea, C. H. Cadogan, R. G. Bolam, E. Allen, W. Wightman, and J. Clay; and as visitors: Rev. J. Park; Messrs Stuart McDouall, Arthur Simpson, Laing, &c., &c. The party, including visitors, numbered thirty-four. The Victoria Inn was the Club's hostel on this occasion.

After breakfast, the members filed off towards the castle.

Perched on its rock foundation, it stands above the neighbouring flat in a position most favorable for the display of its ample size; and, although considerably shorn of its original extent to the north, it yet remains a grand and imposing object. The contrast, however, between the castle and its supporting buttress of pseudo-pillared rocks is not so favorable as if these were higher; the lichens and the scanty tufts of grass giving a raw grey colour, mixed with darker tints, not in unison with the sandstone of the buildings. The grassy slopes are covered with wild flowers: including the gay viper's bugloss, a treacherous plant to pluck, as it stings the tender hand; the curious seeded hound's tongue, with its livid hue; henbane, *Lycopsis arvensis*, *Carduus marianus*, *C. tenuiflorus*, *Asperuga procumbens*, the common stork's bill; while pendant from the rocky brows and chinks hung the fair white sea-campion, and the bearded wall-barley; and up above these, the thrift and the buckshorn plantain. Inside, the pellitory of the wall was noted; and the spots by the yellow lichen, *Parmelia parietina*, were very obvious. On the way to the castle, a single Painted Lady (*Cynthia Cardui*) was observed, sunning itself under the shelter of the southern cliffs. From the battery, a calm sea met the view, on which lay resting in that day's quiet the dark and rocky islets, with their suggestive buildings—once the abodes of the religious anchorite or ruthless pirate, and always reminding one of storms, shipwreck, and disaster. I shall not detain you by any description of the buildings of the castle. The Club, in viewing these, was honoured with the company of several ladies, who thus added a new feature to the day's proceedings. After visiting the principal rooms of the keep, the court room, armoury, and library, the party descended to the famous draw-well, whose occupant, an English queen under enchantment, is doomed every seven years to appear in the shape of a toad. Its depths were viewed by the aid of a candle sent down, whose flicker shewed that it was the bucket, and not her majesty uprising, that ruffled

the surface of its water. The ancient chapel, of which the apse remains, had its due proportion of admirers ; as also the fine old kitchen-hall, now used as a school for the charity girls, who occupy also the adjoining portion of the castle. After spending here a considerable time, a call was made to move towards the church, a fine old building of which the village may well be proud. The beauties of its architecture, and of its old painted windows, proved so attractive, that when the more active portion drew off for Spindleston, it was found that over half the members still lingered there, and these afterwards joined in a sea-side walk as a separate party. The other walk proceeded by the public way, till some rocky

E R R A T A .

- Page 295, line 14, for "Asperuga," read "Asperugo."
 ,, 304, ,, 25, for "rocks," read "rock."
 ,, 306, ,, 17 and 18, for "Juvencies," read "Juvenus."
 ,, 311, last line, for "mining," read "draining."
 ,, 363, line 4, for "sub-ærial," read "sub-aerial."
 ,, 377, ,, 34, for "uncaptured," read "captured."
 ,, 424, ,, 8, for "ТТYPETA," read "ТРYPETA."

was coming into flower ; a few plants of *Réseda luteola* had sprung up ; and the viper's bugloss and purple lychnis joined their gaudy blossoms. The crag itself is of pillared augitic trap : a high perpendicular wall ; and is not most favorably viewed close at hand. At a distance it has a ruined castle like appearance ; ivy, elder, spindle tree, dog roses, and honeysuckle being rooted in its crevices and climbing up its pillars, or hanging gracefully over its face. It is tenanted by a noisy crowd of jackdaws, which from it make forays upon the neighbouring farms.

Perched on its rock foundation, it stands above the neighbouring flat in a position most favorable for the display of its ample size ; and, although considerably shorn of its original extent to the north, it yet remains a grand and imposing object. The contrast, however, between the castle and its supporting buttress of pseudo-pillared rocks is not so favorable as if these were higher ; the lichens and the scanty tufts of grass giving a raw grey colour, mixed with darker tints, not in unison with the sandstone of the buildings. The grassy slopes are covered with wild flowers : including the gay viper's bugloss, a treacherous plant to pluck, as it stings the tender hand ; the curious seeded hound's tongue, with

always reminding one of storms, shipwreck, and disaster. I shall not detain you by any description of the buildings of the castle. The Club, in viewing these, was honoured with the company of several ladies, who thus added a new feature to the day's proceedings. After visiting the principal rooms of the keep, the court room, armoury, and library, the party descended to the famous draw-well, whose occupant, an English queen under enchantment, is doomed every seven years to appear in the shape of a toad. Its depths were viewed by the aid of a candle sent down, whose flicker shewed that it was the bucket, and not her majesty uprising, that ruffled

the surface of its water. The ancient chapel, of which the apse remains, had its due proportion of admirers; as also the fine old kitchen-hall, now used as a school for the charity girls, who occupy also the adjoining portion of the castle. After spending here a considerable time, a call was made to move towards the church, a fine old building of which the village may well be proud. The beauties of its architecture, and of its old painted windows, proved so attractive, that when the more active portion drew off for Spindleston, it was found that over half the members still lingered there, and these afterwards joined in a sea-side walk as a separate party. The other walk proceeded by the public way, till some rocky wooded heights (Budle Hills) were reached, across which a footpath led. Here grew a few ferns, but nothing rare; the maiden pink drew our attention to its blushing beauty, and the wild roses (including sweet briar) had begun to gem the hedge. Arrived at Spindleston-hill, the party drank to the memory of the traditional story at "the Laidley Worm Trow;" sundry flasks helping with their contents to qualify its fine cool water, which, from the occurrence of a tufaceous fragment near, has once had a petrifactive quality. Above the watering trough grew *Eupatorium cannabinum* (here far from thesea), and the hyacinth hare bell; while ivy mantled the rock. In the cliffy wood on the south side of the pass across the crags, the maiden pink again flourished; *Spiræa Filipendula* was coming into flower; a few plants of *Reseda luteola* had sprung up; and the viper's bugloss and purple lychnis joined their gaudy blossoms. The crag itself is of pillared augitic trap: a high perpendicular wall; and is not most favorably viewed close at hand. At a distance it has a ruined castle like appearance; ivy, elder, spindle tree, dog roses, and honeysuckle being rooted in its crevices and climbing up its pillars, or hanging gracefully over its face. It is tenanted by a noisy crowd of jackdaws, which from it make forays upon the neighbouring farms.

The following is supplied by Mr Hardy. "The slanting space in front is almost impassable from rough blocks, which time after time are dropping from the mutilated columns; their surface almost hid by thickets of the hoary thistle (*Cnicus tenuiflorus*). This is a great resort for birds, especially the Redstarts, of which several pairs were flitting about: the females in alarm alighting on the walls, jerking and spreading their tails, and uttering an alarm note; while the more guarded males, shy of human presence, kept more at a distance, or flew to the trees in the cliffs. For embellishment here, the foxglove is notably absent. The principal plants about the edges of the cliffs are—*Allium oleraceum*, the white horehound, in quantity, *Trifolium striatum*, and *Hieracium sylvaticum*. The salad burnet (*Poterium Sanguisorba*), forms a notable ingredient of the pastures all over these hills. Towards the north-west is another towering cliff, having at a distance a fancied resemblance to an Egyptian Sphinx, and called the Cat's Crag, from being at no very remote period the resort of the wild cat. On the south-east, at the side of the pass, is a detached upstanding pillar of whinstone, which is the 'Spindleston,' on which the traditional hero of the tale of the 'Laidley Worm,' hung his bridle-rein, until he had 'won' the overgrown beast, which had made its den in the winding marshy hollow farther up;—for animals were on a great scale in those days, horses as well as dragons. A rude British camp occupies the summit of the cliff, accommodated to the irregularities of the area, the precipice forming one of the ramparts. It is a double camp; the largest division being the easternmost. The western compartment is bounded by a ditch, which may have held water. This at length communicates with a hollowed road, that descends the back of the hill, away towards Warn water. This western single-walled section has a separate entry, secured by an oblong guard-house; and there is also a principal entry common to both. The eastern camp has a double wall. There are no hut circles. A strong wall, in

connection with ancient sheep-cotes and cattle-folds, is visible to the south, in the pasture, below the wooded cliffs. From the top there is an extensive look-out, reaching from the Cheviots and Ras Castle on the west, to the Eglingham hills and lone Dunstanborough on the south; while the Lammermoors, Halidon hills, and the rocks near Eyemouth form the northern circuit. Holy Island and the adjacent coast were strongly marked by the sandy belt, girdling, and girdled by, the unruffled sea of a lovely summer day. Bamburgh, the further we had receded from it, had gained in dignity, and reached its due proportion; and might well be called, although ages have flown since Beda applied the epithet, 'the Royal City.' Members scattered themselves about over the face of the pasture, which was diversified by low crags and flat barren rock spaces, and were pretty well remunerated for their diligence. The lichens, *Parmelia conspersa* and *Cladonia cervicornis*, were in fine order on the rock patches. There were spots, over which in winter the water oozes, which were dry and burnt up now, and have the peculiarity of a moist and arid-loving flora; and *Sedum villosum* and *S. acre*, two contraries, were there flourishing in juxtaposition. Around this bareness was also a dwarf variety of *Bromus racemosus*, such as is found on sea-beat rocks far off at the Mull of Galloway. *Spergula subulata* is nowhere more abundant than here; *Geranium columbinum* was gathered, new to this portion of the Flora, and not a common plant; *Mænchia erecta*, *Hypericum humifusum*, and a pale variety of *Aira cristata* were also present. There was also a flowerless patch of *Spiræa Filipendula*; and little bits of turf composed of the common garden chives (*Allium Schænoprasum*) starving in a poor moory soil. The latter in its native state here is most sickly and dwarf; but I saw afterwards an example of it transferred to Mr Boyd's rockery at Ormiston, increased within a couple of months to full garden luxuriance. *Antennaria dioica* occurred farther up, on soil rather disposed to the production of heath. On the previous evening,

I collected in the bog between Spindlestone and the pond, *Gymnadenia conopsea*, *Orchis maculata*, and its rose-coloured variety, *Listera ovata*, *Epipactis palustris*, *Valeriana dioica*, *Blysmus compressus*, *Carlina vulgaris*, and *Ranunculus Lingua*; and near the farm-place, the wart-cress, *Coronopus Ruellii*. A few insects were taken, including *Metabletus foveola* (on the hills), *Sphærulea Lythri*; and a saw fly, from the bog, *Cladius difformis*. At Bamburgh, subsequently, Mr Middlemas found a double variety (garden form) of the soap-wort (*Saponaria officinalis*), run wild near the edge of the links; and Mr Boyd plucked a sea-side variety of *Galium verum*, which simulates a heath."

The route by the sea-side hostelwards was abandoned for want of time, and the party returned by the Budle road, just in time to meet their friends from the sea-side.

The company assembled at dinner numbered thirty-three. Time being limited, business was gone into rapidly (rather than orderly), and quickly dispatched. The Rev. Robert Park, Bamburgh; Mr Thomas Arkle, Highlaws, Morpeth; and Captain J. Carr-Ellison, Hedgeley, were proposed as members of the Club. Mr Darnell was then requested to read his paper on, "Bamburgh Church: past and present." The President read an account of the supposed occurrence of the Sand Grouse, on Beadnell and Sunderland links, this spring, as reported to him; and made some remarks on a somewhat peculiar solar halo, which he had seen on the 9th of May. A communication from the British Association of Science to the Secretaries, "On the Organization of Local Scientific Societies," was then taken up; and Sir Walter Elliot addressed the Club in some explanatory remarks, as the purport of the circular had been misapprehended. Mr Hardy then read an article on a Cist, which had been ploughed up near Oldcambus in June; and afterwards shewed a number of flints which had been picked up in the cultivated fields, as well as several rude ornaments of the flint age. The Rev. Canon Greenwell then addressed

the Club on some points suggested by this paper, and afterwards authenticated the whole of the articles, as being such as he was familiar with during his researches in the Yorkshire wolds and the chalk districts; observing that some of the types were rare, and the ornaments remarkable for their extreme rudeness. Mr Middlemas read a paper from Mr Dickson of Alnwick, correcting some mis-statements about Bamburgh, which he shewed, by reference to original documents, were far from authentic. The President then read an article from Mr R. Carr-Ellison, on "Certain secreted stores, and certain exuded provisions of moisture, whereby young Gallinaceous Birds are enabled to sustain life in dry seasons." Several minor communications were made, which did not reach the general audience. Among these, the President mentioned a letter from the Rev. W. Procter, of Doddington, enclosing one which he had received from the Rev. Adam Sedgwick, the venerable Woodwardian Professor and veteran geologist, of Cambridge, in which he writes:—"I have no fear that any of the discoveries of geology can ever touch the great saving truths revealed to us in the Word of God. . . . No discovery of philosophic truth can ever shake any one of these elements of Divine truth; but they may shake and destroy our narrow interpretation of certain portions of the Bible." The letters had been mislaid, so could not be read; but their purport was given to the meeting. Mr Cadogan mentioned that in driving from Wooler to the meeting, he had observed two Ash-coloured Shrikes on the wall of Fowberry park, one having a captured insect in its mouth, which shewed that they were breeding. Mr Wightman produced from a field near Wooler, a silver penny of Edward I., coined at Dublin: the inscription being, EDW. R. ANGL. DNS. HYB.; and on the reverse, CIVITAS DUBLINIE. The President had brought two packets of silver coins, from the ruins of an old pele tower at North Sunderland, found chiefly in 1832--33, when the tower was pulled down. Several of the members having to depart for the trains north and south at Belford,

the party broke up early ; the meeting, from the number and interest of the communications read or given, having been one of the most successful.

The third field meeting of the Club was held on July 25th, at Langleyford, an old and favourite rendezvous, at the base of the Cheviots, and was numerously attended. There were present :—The Rev. F. R. Simpson, President ; Mr James Hardy, Secretary ; Mr Robert Middlemas, Treasurer ; Revs. W. Greenwell, W. L. J. Cooley, W. Darnell, W. Meggison, P. G. McDouall, J. S. Green, J. Elphinstone Elliot, E. B. Trotter ; Sir George S. Douglas, Bart. ; Sheriff Russell ; Dr Dennis Embleton ; Messrs C. H. Cadogan, W. Wightman, J. B. Boyd, A. Jerdon, J. E. Friar, W. Henderson, J. C. Langlands, W. B. Boyd, T. Tate, G. Sholto Douglas, G. P. Hughes, C. Rea, E. Allen, J. Heatley, T. H. Gibb ; and the following as visitors : Major Paton ; Captain Nicholls ; Messrs R. Howse (Newcastle), — Ellis, — Cooley, C. Darnell, Stuart McDouall, Arthur Simpson, E. A. Storer, H. A. Paynter, R. W. Surtees (South Shields), A. Barbour, W. T. Hindmarsh, and H. H. Blair.

Our worthy Secretary, Mr Hardy, in addition to the exhaustive paper he has prepared on Cheviot, has also furnished me with copious notes of this visit. I will now give you such extracts as may serve for a brief, but connected, summary of our day's proceedings.

“The weather was not quite propitious, a dense mist occupying the tops of the higher hills ; but it dispersed at intervals, affording in glimpses, magical revelations of wild highland scenery. Later on thunder was heard in the distance, and some showers fell, but without disturbing the equanimity of the proceedings. The greater number of visitors had reached Wooler or its vicinity on the previous evening, and were conveyed in carriages to the scene of meeting. Alnwick also sent up a large contingent, and the company was augmented by several subsequent arrivals.

“About 11 o'clock, the company took the road for Lang-

leyford Hope, winding through the bowery groves of birch which fringe the stream, or coming out upon the breezy open, according as the path led on. Several strong moraines, or boulder mounds, were either crossed or skirted, indicative of glacial action in pristine periods on the sides of the hills; and various British hut-circles and tumuli appeared on the adjacent moor, this being their highest position in the Langleyford vale. Arrived at the Hope, the more numerous party preferred the easier alternative, pointed out in the circular, of going up the Langleyford Burn to Harthope Linn, in order to see a succession of pretty waterfalls, so concealed in a crevice in the porphyry that several members passed without being aware of their proximity. The steep rocky banks overhung with native wild-wood, were diversified with fine thriving ferns arrayed in their light green tints, some of them rare, as well as other upland plants now in flower; none of them, however, unless perhaps the stone-bramble, particularly local. *Hypnum ochraceum* was found in fruit; *Blasia pusilla* was also seen; and the rare lichen, *Sticta fuliginosa*, for which this is the special locality.

“Other more ardent and adventurous spirits, undeterred by the misty prospect on the region above, resolved to climb Cheviot itself. The undertaking for a certain distance was facilitated by the track made by the sledge, a very rude vehicle, used in conveying peat from the heights for the shepherd's stock of winter fuel. The first indication of progress is the appearance of the cloud-berry, or mountain bramble, locally called ‘noops,’ a word equivalent to ‘knobs’ or ‘knops’; the lowermost height of which may be roughly estimated at 1800 feet. It does not fruit on this its lower frontier; but on the spongy tract on the summit, its scarlet berries—they become yellow, when they ripen,—were welcome objects of attention, scattered like rare gems among the sapless rein-deer lichens, the wiry bents and scant heath, and the bleached or lurid bog-mosses, that form the staple production of that wind-swept waste. Various halts were called,

in order to gather up members lingering in the rear, lest they should become bewildered in the mist. Before reaching the 'glitters' near the apex, several mountain plants were gathered: the cotton grass, cowberry, crowberry, bilberry (in great tracts), cow-wheat (mountain variety), wood-sorrel, rein-deer and Iceland lichens, 'Tripe de roche' (*Gyrophora*), three species of club-moss (*Lycopods*), &c. The cairn on the eastern end of Cheviot was reached in an hour and three-quarters from the Hope, all the upper journey being through drifting mist. Owing to the coolness of the day, the fatigue was not great. After a short stay, a certain number volunteered to search the mist for one of the cairns, where rock is to be obtained *in situ*. The examination, however, proved futile, various imaginary pinnacles deluding the vision now and then, towards which a push would be made, across treacherous-looking black peat rifts; but these phantoms proved altogether illusory, and the search terminated in the party drawing up near one of the 'poles,' situated a considerable way along the ridge. Here it was resolved to retreat, while it was yet possible to find the way back; and it was lucky again to discover the cairn whence they had departed on this wild-goose chase.

"On a subsequent day, the object of search, 'Dunsdale Cairn,' which is not a cairn, but a crag, was visited, and it was found that the rocks of which it consists does not represent the loose blocks piled into a cairn on the eastern end of the hill, or clustered together in the surrounding glitters, which conceal entirely the rock beneath. Immediately above Langleyford cultivated ground, on the sides and in the bed of the burn, the rock is a granitoid porphyry, with a light fleshy felspar basis, enclosing numerous large felspar crystals (whence it takes a rough granular fracture), a greyish white quartz, together with small scales of mica, interspersed with larger blackish grey blotches of the same mineral. Nearly all the bottom boulders, and those half-way up what is called the 'Hill End,' are of this variety. It is a readily decompos-

ing rock, owing to the size of its crystals, and weathers into large blocks, or crumbles into a coarse gritty sand. Farther up, the loose rocks have the same flesh-coloured felspar basis, only the crystallization is more minute, making the texture more compact, the fracture being finely granular; the mica in longish thin black crystals; with oblong crystals of white felspar; causing the rock to be more porphyritic than granitoid. It is also weathered into large blocks, but being more compact, these subdivide into thinner slices than the preceding, and into angular fragments, which would finally become clay rather than grit. All the 'Eastern Cairn' and adjacent glitters are of this variety. A similar rock occurs *in situ*, in the Pebble Burn. The rock of 'Dunsdale Cairn' has a greyer basis. It is finely granular, compact, both the felspar and quartz are grey, alternating to fleshy-coloured in the former, with long crystals of felspar, and no mica; and then gradually the basis gets more fleshy-tinted, and there are oblong crystals, and amorphous blotches of black mica. It is prismatic and jointed in structure, and weathers into large blocks; and is an excellent example as to how those rocks decay, and how those free blocks on the hill face, as well as the assemblages in clusters, have primarily originated.

"So-exhilarating was the mountain air, that in the descent the glee of the party grew quite exuberant, young and old going helter-skelter over the heather and rocks, quite forgetful of the somewhat painful 'excelsior' efforts made shortly before to gain this point of elevation. A glissade was also attempted, but owing to the moisture on the grass, which was enough to wet through the boots, was probably more cooling than agreeable. This was perhaps, however, the first time the alpenstock was ever brandished on Cheviot. When the party were about half-way down, the sunbeams rent the travelling mist asunder, and showed under its long trails a wondrous prospect of the steep grey-green sides of Hedgehope, inscribed in front with inky characters from the numerous open peat-rifts or 'moss-brooks'; while below

hung pictures of pigmy trees, variously grouped. Then came the stretch of Langleyford vale, with its crags or castellated rocks on the boundary ridges; and away out from beneath the cloudy canopy, the low country smiling in the brightness of golden sunshine. Despite mishaps, and falls, and partial disappearances in hidden drain gullies, all arrived at Langleyford, safe in limb, and in excellent spirits. Some members who had climbed the mountain were so little fatigued, that they afterwards ascended the Diamond Burn, and were rewarded by finding some fair specimens of amethystine crystals; though these, from the constant chipping of frequent tourists, are becoming yearly more scarce.

“During the day, some of the attendants had captured, in the fir wood, a rare and very conspicuous insect, new to the Club’s district and the Northumbrian Fauna, viz., *Sirex gigas*, a kind of saw-fly, whose larvæ lives in coniferous wood. A month afterwards, a second species of the genus, *Sirex Juvenices*, of similar habits, was sent by Mr Jerdon, from Jedburgh; and it is supposed that both of these have been observed in these localities for the first time.

“After dinner, Mr Hardy read a paper on the physical features, natural history, and archæology of Langleyford vale, and that side of Cheviot; after which the Rev. Canon Greenwell delivered a lucid address on the ancient inhabitants of the hills, their habits, and occupations, as the results from the series of laborious explorations which he has prosecuted for so many years among the barrows of the Northumbrian moors, the Yorkshire wolds, and the chalk-pits of Suffolk and the south of England. There was no time for other papers, which were merely announced; the company separating at six o’clock, on their way to their respective destinations, well pleased with the recreation and instruction derived from such assemblages; where science divests itself of its formal solemnity; where facts become deeply impressed on the mind amidst the grandeur or beauty of nature, ever to be recalled with the delight almost of a

living presence ; and where the solitary investigator is cheered to find himself surrounded and encouraged by so many of his friends.”

The following were proposed as members of the Club, at this meeting :—Major James Paton, Hundalee, Jedburgh ; Captain Thompson, Walworth Hall, Darlington ; Messrs E. A. Storer, H. A. Paynter, and W. T. Hindmarsh, Alnwick.

Mr W. Boyd suggested that it was desirable the Club should be represented at this year’s meeting of the British Association ; and Sir Walter Elliot and Mr G. P. Hughes were proposed, and kindly consented to act as our delegates. Subsequently, I had a letter from Mr Hughes, informing me that it was not in accordance with the rules of the Association, for Clubs so far removed from the locality of the meeting to send deputations ; but that, as President, I might authorize him to represent me, and that he would be so admitted to the various sectional committees. Of course, I wrote to him immediately, as desired ; and the Club have to thank him for the zeal and ability with which he has gone into the matter, and also for his courtesy in sending to me a resumé of the proceedings at which he was present—placing the MS. at my service for extract or quotation. Mr Hughes has since consigned the MS. to Mr Hardy, for the use of the Club.

Our fourth meeting was held at Hume Castle, on the 29th August. There were present :—Dr Francis Douglas and Mr James Hardy, Secretaries ; Revs. J. H. Walker, Geo. S. Thomson, J. S. Green, P. G. McDouall ; Drs Chas. Stuart, A. Brown, W. W. Campbell ; Messrs W. B. Boyd, A. Jerdon, R. Romanes, C. Watson, G. S. Douglas, Jas. Tait, Francis Walker, Jas. Wood, Jas. Cunningham, Geo. Allen, Geo. Young ; and as visitors : Rev. Robert Home ; Messrs Patterson, Robert Hislop, Geo. Logan, Adam Deas, Douglas Simpson, and John Stuart.

The President was necessarily absent, being at the time at Buxton in search of health. Our indefatigable Secretary, Mr

Hardy, again, however, comes to the rescue, and to his notes I am again beholden for the following account of an interesting and successful meeting.

“The day on the whole was favourable, excepting that a few slight showers rather dimmed the prospect.

“Hume Crags is a ridge of augitic trap, running west and east, above one of those longitudinal depressions which accompany the outburst of trap; as if there had been emptied from beneath the trough, much of the material that had been protruded upwards. The ridge is heaved into humps, with passes across; the passes lie about W.S.W., the rock having given way nearly at the joints, which are E. and W., and N. and S. The rock is rudely pillared, the pillars being broken a short way above the surface; and when seen from a little distance, the green hillocks, studded with the grey projections, resemble pieces of crystallized spar of exaggerated proportions. The rock is a crystalline augitic trap, or greenstone, having a green tint in the fracture, and contains numerous acicular felspar crystals—very little olivine being apparent on the exposed surface. The rock shews trifling debris, or *glitter*, and that chiefly on the northern side. It decays sparingly also; but where the atmospheric action has penetrated the rock, the surface oxidises, and the pillars break into square sections, which scale off at the corners, forming rounded yolks. The water being flavoured with the ochre, is not commendable. Being of inconsiderable height, the Flora is poor. In the fissures grow fox gloves, Oxalis, dog-violet, bilberry, wood sage, *Hieracium murorum*, and blue-bells in profusion; and *Sedum acre*, and mother-of-thyme, on the bare surface. *Bryum crudum* is the best moss. *Hedwigia ciliata* also grows here. The notable lichens are *Parmelia conspersa*, *P. aquila*, *Squamaria saxicola*, *Alectoria jubata*, and *Sphærophoron coralloides*. *Viola lutea* occupies the intervals of the whinny ground; and near some of the runnels, *Sedum villosum* used to flourish in former years.

“No buildings, except the traces of some old folds, are apparent, so far as examined. The ridge is the farthest outlying reef of that group of fantastic shaped hills, that render the scenery of this portion of the Borders so peculiarly romantic, apart from any association with history, literature, or song; and being isolated, and standing prominently forward towards the far extended level lands around, is one of the most conspicuous spots in the district. Hume Castle occupies the last detached and highest boss of rock, at the S.E. end of the ridge; having been both a watch-tower and a chieftain’s eyrie. It is not sufficiently elevated in site ever to have been impregnable; and notwithstanding the vaunt that it ‘stood upon a rock,’ it was vulnerable in almost every attack: but it was sufficiently commanding during predatory warfare, to maintain its hardy owners in their pride of place, with the aid of the stalwart followers whom need of protection attached to this stronghold. It occupies nearly all the space that can be built upon square; standing above an abrupt bank of rock on one side, while the other slopes away green and grassy, deep into the lowland far beneath. There is very little surviving of the ancient structure, and that only in a mouldering condition. The present frame-work, representative at a distance of an imposing fortress, was reared about 1799, at the instance of the eldest son of the Earl of Marchmont, who sat in the House of Lords as Lord Berwick but predeceased his father. It includes a cottar’s garden, and a plot of grass, and the ruins of a hut which sheltered those who had charge of the beacon, when the country was alarmed by the threatening designs of Napoleon I. The ‘fair well,’ mentioned by Patten, in 1547, as a ‘rare thing,’ is still there; and at present contains some very muddy water. A quantity of ground-ivy grows near the well mouth, and the goat’s-beard thrives there as if it had been a green field. Outside, *Tortula muralis* produces fruit; *Parmelia parietina* gives quite a saffron hue to the southern sunny wall; and along with it at the base, the mealy white

Diploicia canescens adheres closely to the rock. The swifts shriek round the turrets, as they pass, intermingled with other swallows. The Club's meeting places for the season could not be surpassed for points of view; and the panorama from Hume Castle does not yield to any of them, for its extent and variety, its rich cultured beauty, or the hills which hem it round on every side.

“After the Club had enjoyed the prospect, they assembled in the interior to listen to an article by Mr Tait on Hume Castle; of which the principal and most valuable part consisted of a copy, belonging to Mr George Logan, tenant of Humehall, of an interesting rental of the lands of Hume, when they were sold by the Earl of Home, 19th February, 1766, to Hugh, Earl of Marchmont. The lands were then minutely subdivided, and held by about sixty-nine small tenants, and very few of the rents were so high as one pound a-year. The whole extent of the property is 2100 acres, and is now held by five tenants. The rental in 1766 was £410 10s. 3¼d.; in 1872, £3153. Mr Logan himself was present to point out the local topography, in which he is particularly versant. On the platform before the entrance to the Castle, are some foundations, which according to tradition were ‘Cospatrick’s Castle’; perhaps one of the ‘burly byggynge bauld’ that ‘Wallace wight’ cast down, according to Blind Harry. The castle garden lay on the glacis southwards, where some lines of ash-trees follow the vanished boundary wall. The village itself, as the upturned foundations testify, stood also on the southern flank of the hill, beneath the castle guns. The new proprietor gathered the cottages up from the fields and from amidst the small plots of ground, and pitched them in a long unpicturesque row by the side of the public road, where we now behold them. Several more of them, such as they are, have since gone to ruin, and been swept away. The population deteriorated; and it was long a popular reproach to be one of the ‘Horners (spoon-makers) of Hume.’ At one time it

could muster four hundred warriors as its *quota* to its lord's array. The Bow-butts is a field to the westward, formerly devoted to the training of archers. One of the pendicles of land, called the 'Postman's rig,' in 1766 belonged to Ninian Leitch, which he and his predecessors had held rent-free as a salary for being baron officer since 1693. The tradition is, that its first possessor was once dispatched to Edinburgh by the Earl, with an urgent message. Next morning, however, his lordship observed him loitering about, in apparent neglect, and ordered him to condign punishment; when he shewed that he had already accomplished the journey to the capital, and done everything required. The earl was so pleased with his promptitude, that he granted him the 'Postman's rig' in perpetuity. The family held a horn, which is still preserved, which had been used in delivering messages and summonses. The churchyard is situated at the bottom of a hill-side, almost out of view of the castle. The church has been a humble one, of an oblong form; of it the foundations alone now exist. Near it is the burial vault of the Earls of Home: a plain structure, corresponding to the church to which it was appended. It appears to have been renovated. The tombstones are all modern. Of the 'rude forefathers of the hamlet,' there is not even 'a frail memorial.' In the south-east corner, a green mound is called the 'Pest Knowe,' which is said to have been heaped above persons who died of the plague. Modern excavations have not detected any tokens of either bones or sepulchral remains. Perhaps it is only a pile of earth, excavated from the foundations of the church or the burial vault. Above the churchyard, on an elevation, are five pine trees, on a narrow selvage of ground; which is said to be the only remnant, pertaining to the original owners, of the ancient barony of Hume. An ancient road traverses the country here, passing Hume byres and crossing towards the churchyard by a bridge, but formerly by a ford, through a marsh which is now dried up. Near it some years ago, a man, in mining, dug out thirty-six horse shoes, of a

small kind ; and others similar have been picked up there at sundry times. It is supposed that in returning home from some raid, the shoes had got loosened and had stuck in the tenacious clay of the 'sluther,' or slough ; but they might have got lost also, if the horses when grazing resorted here to drink. Somewhat further down stood the 'Little Mill of Hume,' which, from working by fits and starts, became a proverb: 'It's coming and going like the Little Mill of Hume.' There was a 'Meikle Mill' considerably above it, which intercepted the waters, and only allowed dribblets to escape, insufficient for a constant supply to its minor rival. More than half-way down the fields, between the castle and the churchyard, is the junction between the old red sandstone and the trap, very distinctly marked by the dwarf or burnt up grass on the igneous rock, which almost comes to the surface where they meet. The hollow and low ground is red sandstone ; and there is a detached fragment of it, caught up by the trap, adjacent to the castle. It used to be visited by Professor Jameson, when in the neighbourhood with any of his pupils, as being supposed to favour the exploded Wernerian theory. There is a quarry in the sandstone, on the lands, but the stone obtained in modern times is rotten and worthless. On the return to Greenlaw, by Todrig, a puzzling variety of rock crosses the public road. It has a reddish brown basis, and encloses red crystals of felspar, and traces of chlorite. It is probably a volcanic ash converted into porphyry, and connected with the outburst of trap near Hume. In a field nearer Greenlaw, and in the enclosure walls, are numerous blocks of trap, with a lesser number of greywacke. The trap includes large crystals of olivine, thus differing from that at Hume crags, although popularly supposed to have been drifted thence. I should be disposed to look for some other focus of dispersion more to the north-west. Between this and Greenlaw is a sandy moor, blooming with blue-bells and shepherd's pansies (*Viola lutea*). The ragwort has been more than usual

profusely gay this season, as might be seen on the banks of the Blackadder. The aspect of Greenlaw has much improved in recent years; most of the houses having exfoliated their mean-looking coats of thatch, and adopted blue slates. The houses have a bricky look at a distance, from the colour of the sandstone of which they are built. The red sandstone of Greenlaw quarry is valuable. Many of the railway bridges in the vicinity were constructed of it; and there is a considerable traffic in it to Melrose and Galashiels, and other towns connected with the railway system.

“ Before dinner, at Greenlaw, Dr Campbell exhibited portions of the eggs, and the leg bones of the Moa, from New Zealand; examples of red hæmatite, from East Lothian; and chips of mica slate, studded with garnets, from a British mill-stone at Bogend, shewing that the old natives of the Merse had either trafficked with the Scottish Highlands in this commodity, or had brought it thither in their migrations. There were also shewn large compact bullets, felted by the action of the waves from macerated portions of a cargo of flax, stranded at Burnmouth.

“ Since the meeting, I have made enquiries about the Quern, alluded to above, found at Bogend, and come to the conclusion that it must have been lying in a small hut-circle, either loose, or from portions of it being adherent to another stone, as forming part of the pavement. Mr Hood, the tenant, writes: ‘ The place where the mica schist was found was paved, apparently in a circle, with rough flags of stone some nearly a yard long—the diameter of the circle would be about three yards. Some of the flags had been turned up by the plough before we saw the place, and the ploughman had examined the stone, broken it, and thrown it aside as useless. There was no appearance of bones, &c. ; although the place was carefully examined as each stone was lifted with a pick-axe. One of the flags had pieces of mica-schist adhering to it.’ Mr Stevenson writes: ‘ Mr Hood kindly sent me a large portion, nearly half the Quern in question. The piece sent

is flat, and in the shape of a segment of a circle. It measures about 15×9 inches, and where thickest $1\frac{1}{3}$ inch.'

"After dinner, a paper by Mr Robert Hislop, of Blairbank, Falkirk, on the Coleoptera of the west of Berwickshire, was read, and will appear in the 'Proceedings.' Two plants new to the district were announced: *Lactuca (Prenanthes) muralis*, found by Mr A. Brotherston at Hirsell, and brought forward by Dr Douglas; and *Dianthus Armeria*, gathered by Mr Wm. Boyd on a railway cutting near Kirkbank station, Jedburgh Railway."

The following were proposed as members:—Mr J. T. S. Doughty, Ayton; Mr Adam Deas, Dunse; and Rev. Robert Home, Swinton.

Mr Hughes' able and lucid resumé of the British Association proceedings ought to have been brought before the Club on this occasion; but, owing to my absence from home, could not be sent to the Secretary in time. These meetings of the British Association for the Promotion of Science, marking, as they do, year by year, the intellectual progress not only of our own country, but of the whole civilized world, must always be of great interest to local clubs like ours, engaged in a smaller way in kindred pursuits. Able men from all parts of the world meet together and compare notes; they mention new discoveries, discuss new theories, broach new opinions, and report new facts and observations. There is something truly grand in the continuous, and of late years rapid, onward march of the human intellect, as we are enabled thus to measure its progress. We may make much allowance for what is exaggerated or fictitious, and still own to the immense progress being made in science and civilization. Nature's forces are being yearly more thoroughly known, and more largely utilized, so that the whole human race is being benefitted by the advances made through the achievements of the physical sciences. This advancement is plain and palpable to all; and most so perhaps to those of our members whose recollections carry them back, not to twenty or thirty,

but to over fifty years. It is a plain and palpable advance, and it is still going on—and we may well be proud of it. But that feeling of justifiable pride must be tempered by regret, that many of our leading men in scientific circles should have latterly assumed a position more or less openly opposed to dogmatic Christian faith. Physical science holds a position totally distinct from that of religion, in the carrying on of human progress—physical science and theology ought never to clash with one another. To allow them to do so is not only improper, but most unphilosophical. Dogmatic truth has been delivered once, and once for all; but to scientific research and development there is no limit, within assignable bounds, if at all, for we know not where or how far it may carry us. Our progress within our own recollection is, to repeat it, plain and palpable. But great as our progress may seem, we can still only compare ourselves, to use a favorite simile of a valued and old friend, to “puppies nine days old.” Something or other turns up every now and then which makes us rub our eyes, and confess that we have, as yet, on many subjects, only the faintest glimmerings of light. We cannot penetrate the depths of the immensity that surrounds us. Of our own world—this earth and the subtle agencies that surround it:—we know just enough to puzzle us and make us feel how small our knowledge is; of the region of the fixed stars we know absolutely nothing. The wisest philosopher in the world cannot tell the feeling of the soul after death. Let science and dogma then each confine itself to its own province: science exploring to the utmost the truth as it is in nature; dogma declaring the mysteries of faith as revealed by the Holy Spirit of God. These and similar thoughts have been suggested to me by the very able address of the President of the British Association. Most, if not all, of you will agree with me—all of you will bear with me.

Having gone again over the ground we had most pleasantly traversed during our excursions in the past summer, we are arrived at the close of a very enjoyable, and, as I hope, not

entirely an unprofitable year. Other remarks I might have been tempted to make, but I have trespassed too long on your patience already. It only remains for me to record here my deep indebtedness to our very able and indefatigable Secretaries, for the invaluable assistance derived from their notes and observations. I have to thank them very much, and you all, gentlemen, for your kind support and indulgence during the time I have been in office, and can only wish its duties had been more adequately fulfilled; and, in resigning the honor of being your President, I beg to name as my successor for the next year—Dr Charles Stuart, of Chirnside, an old and valued member.

Obituary Notices.

DR WILLIAM BAIRD. At 38, Burlington Road, Westbourne Park, London, on the 27th January, 1872, after a protracted and painful illness, William Baird, M.D., F.R.S. (of the British Museum), aged 69 years. (See Memoir by Dr Douglas). Dr Baird's name is commemorated in *Bairdia*, a subgenus of *Cythere*, formed by McCoy on fossil *Cytheridæ*; and in *Lerneomena Bairdii*, a parasitic Crustacean of Salter in "Ann. and Mag. Nat. Hist.," 2nd ser. vi., p. 86. Plate vii. B.

REV. THOMAS KNIGHT. The Rev. Thomas Knight, the venerable and much beloved rector of Ford, departed this life on Good Friday, 29th March, 1872, after only a few weeks' illness, at Lowlynn, the residence of his eldest son, Henry Gregson, Esq., in the 77th year of his age, and the 53rd of his incumbency as rector of the parish of Ford. Mr Knight was a graduate of St. Peter's College, Cambridge, where he took the degree of B.A., in 1817. He was ordained deacon in 1818, and priest in 1819; and was appointed to the rectory of Ford in the latter year. On his attaining the fiftieth year of his rectorate, his jubilee was celebrated at Ford by unusual demonstrations of rejoicings, and a subscription was raised by over six hundred of his parishioners and friends, to present him with a memorial of their affectionate regard. At his funeral all the neighbouring clergy and gentry, with the parishioners and many others, assembled to do honour to the

memory of the deceased, who for many years had maintained a very high character as a minister and a man. Mr Knight became a member of the Club, April 16, 1833; and officiated as President in 1839. His anniversary address, delivered at Milfield, 18th September, is the only communication from him in our archives. His presence is noted at one or other of the Club's meetings for several years, when the attendance was very sparse, compared with recent gatherings.

DR HENRY FAWCUS. At Flodden Lodge, 15th May, 1872, Henry R. Fawcus, M.D., fifth son of the late George Fawcus, of Dunstan Steads, Embleton, aged 32. He became a member of the Club, June 29, 1863.

T. C. JERDON. At Upper Norwood, London, on the 12th June, 1872, Thomas Caverhill Jerdon, late Surgeon-Major in the Madras Medical Service, eldest son of the late Archibald Jerdon, Esq., of Bonjedward, Roxburghshire. Mr Jerdon, like Dr Baird, in his student life, was an active member of the Edinburgh Plinian Society—a society, it is believed, in which the Berwickshire Naturalists' Club was foreshadowed; and he became, therefore, on his return from India, most appropriately associated with the Club: having been nominated a member at the Cockburnspath meeting, 27th July, 1871, which he attended; but his unexpected demise has cut short what might still have proved a useful scientific career. Of this distinguished naturalist, Sir Walter Elliot has agreed to favour us with a Memoir. His name is commemorated in *Jerdonia*, a genus of Cyrtandraceæ, containing a single species, a native of India, a small herbaceous, stemless plant. Our lamented friend, Rev. S. Hislop, also a native of the Borders, dedicated to Mr Jerdon a fossil species of Cytherea (*C. Jerdoni*) discovered at Nagpur, and described and figured in the "Proceedings of the Geological Society of London," June 15, 1859.

WILLIAM GRAY, Esq. William Gray, Esq., of East Bolton, a member of many years standing of the Club, died on the 27th June, 1872. Mr Gray was born 1796, and was the eldest son of the late Right Reverend Robert Gray, Bishop of Bristol, and was educated at Eton and Christ Church, Oxford. He was brother of the late Bishop of Cape Town. He was one of the oldest members of the Athenæum Club, London; and J.P. and Deputy Lieutenant for the county of Northumberland. Mr Gray was elected a member of the Club, July 24th, 1850. Rarely being able to attend the meetings, he yet took great interest in its publications.

J. H.

Notice of a Goshawk killed at Minto, and of some other Raptorial Birds; with some Observations on Falconry.
By Sir WALTER ELLIOT, K.C.S.I., of Wolfelee.

The occurrence of so rare a visitant as the Goshawk, (*Astur palumbarius*), within the range of the Club, should not be allowed to pass unnoticed, and I therefore beg to record the capture of a specimen at Minto on the 13th November, 1869. It was shot by the Hon. W. Fitzwilliam Elliot, on Minto Crags, and proved to be a fine young male, measuring 22 inches in length and 41 from tip to tip of the extended wings.* The skin was identified by Mr Turnbull, of Glasgow, was stuffed, and is now preserved at Minto House. The photographic portrait exhibited proves beyond a doubt that it has been correctly named; a point I am the more anxious to establish because the Peregrine Falcon has so often been mistaken for the Goshawk: although there should be no difficulty in discriminating them; the one being a long winged, and the other a short winged hawk. Macgillivray observes, that the Goshawk has been declared to breed in Peeblesshire; whereas it is in fact the Peregrine which has several eyries in the Moffat hills, "whence," he adds, "I cannot but believe that it must often have been the bird so pleasingly introduced in old Scottish ballads as the 'gay Goshawk.'"† Thomson, in his "Natural History of Ireland," states that the Goshawk of more than one list is similarly misnamed. "It is the only name applied to *F. peregrinus*," he says, "in 'Skimmins' History of Carrickfergus';" and in his report of the Vertebrate Fauna of Ireland, presented to the British Association in 1840, he inserts *Astur palumbarius* with a mark of doubt, adding that he had never seen a specimen. Yarrell quotes Selby to the effect that he had never seen a recent specimen south of the Tweed; but that it was known to breed in the forest of Rothiemurcus, in Scotland.

In the edition of "Yarrell's Birds" now in course of publication by Professor Alfred Newton, of Cambridge, it is asserted that, "in Northumberland, or the adjacent counties, seven examples have been killed, according to various writers."

* These measurements accord better with the size of the female, but I give the statement as I received it.

† "Hist. Br. Birds," by W. Macgillivray; 1840. Vol. I., 48, note; also, p. 182, and III., 303.

In Scotland, at least half-a-dozen have lately occurred, from Roxburghshire to the Shetlands, the particulars of which will be found in Mr Robert Gray's work ; while that gentleman, on the testimony of Mr Tottenham Lee, has reason to believe that it has, even recently, bred in Kirkcudbrightshire, as it formerly, almost without doubt, did in Forfarshire, Stirling, Moray, and Sutherland. The same author also quotes evidence from the "Liber de Melros," which seems to show that in the thirteenth century it regularly bred on the Border.* But Professor Newton adds that some caution must be used in accepting such testimony, from the confusion that prevails in the application of the same name to the Peregrine. (Vol. I., p. 84-5).

At the recent meeting of the British Association, in Edinburgh, Professor Duns, of New College, read a paper "On the rarer Raptorial Birds of Scotland," in which the Goshawk does not appear. His list contains only seven species falling within our limits, viz., the Golden and Fishing Eagles, Osprey, Peregrine Falcon, Rough-legged and Honey Buzzards, and Marsh Harrier. It may be useful to supplement this list by adding all the diurnal birds of prey found within the Club's limits, as far as recorded in our Proceedings, and I have prepared the following list accordingly, quoting Professor Duns where necessary.

1. THE GOLDEN EAGLE, (*Aquila chrysaetos*, L.) One, in plumage, was caught in a vermin trap, near Coldingham, in March, 1866. —Turnbull.† Bewick, quoting Wallis, states that its eyries were found on the highest parts of the Cheviot range ; and Sir Wm. Jardine‡ (1838) says, that one or two pairs used to breed in the wild range of the Scottish Borders, but their nests have not been known for twenty years.

* This supposition is only supported by negative evidence, based on the facts that, while the Peregrine makes its eyries on high and inaccessible cliffs, the Goshawk builds on trees —In the Melrose Chartulary, several grants are found, made by the Avenel family, who were lords of Eskdale in the reigns of William the Lion and Alexander II. (A.D. 1165--1249) ; in which they confer lands on the Abbey, but carefully reserve all rights of chase, including even the trees on which the falcons build their nests (*nidos accipitrum aut sperveriorum*), which were on no account to be felled until it could be seen whether they wished to build there again (*donec in anno proximo perpendatur si in illis arboribus velint aerieare vel non*). *Lib. de Melros*, I., xvii, and *Charters* 39, 41, 196-8. It is remarkable that in these same charters, the monks are prohibited from setting any kind of traps, except for wolves.

† "The Birds of East Iothian and a portion of the adjoining Counties," by W. P. Turnbull. 1867.

‡ "Birds of Great Britain and Ireland." 1838.

2. The WHITE-TAILED, or, CINEREOUS SEA EAGLE, (*Haliaeetus albicilla*, L., 1766; Savigny, 1810). Frequents St. Abb's Head and Holy Island. Occasional visitant. (Turnbull, Duns, Selby, "Proceedings," I., 136, 250). Macgillivray has a paper on its habits in the "Jour. Highland Soc.," III., 924.

3. The OSPREY, (*Pandion haliaetus*, L. and Sav., 7). On the Tweed, where they seem to appear periodically. Two were killed on Lord Home's property in 1835 (Jardine). Frequent on the Tweed (Macgillivray). Occasionally (Turnbull). Rare visitant (Selby, Proc., I., 281).

4. The PEREGRINE FALCON, (*Falco peregrinus*, L.) A permanent resident, frequently seen; one eyry, in the lofty precipice a little to the north of St. Abb's Head (Selby, Proceedings, I., 21, 251-6) Four pairs breed on the coast of Berwickshire (Hepburn, Proc., III., 71). An interesting paper on the flight of the peregrine, by Mr Ralph Carr, appeared in Proceedings, II., 89; see also V., 182. At the meeting, the Rev. A. Davidson stated that it built about Linhope on Cheviot; and Mr John Boyd has observed more than one nest, every year, at Bizzle, in Dunsdale, from which locality he took a pair of eyasses and sent them to Mr Broderick, who trained and flew them.

5. The LANNER, (*Falco lanarius*, L.) A specimen of this bird was exhibited by Mr Broderick, at the meeting at Berwick in 1845; but it is not stated that it was obtained in the district, and perhaps was only brought to show in what characters it differed from the Peregrine and Kestrel. (Proc., II., 167). It is not included in the last edition of "Yarrell's Birds," and is only mentioned here to guard against misapprehension. Both Bewick and Pennant have asserted that it breeds in Ireland, but both have probably mistaken the Peregrine for it.

6. The HOBBY, (*Falco subbuteo*, L.) It is stated by Gray,* on the authority of Mr Heckford, of the Kelso Museum, that a specimen was shot at Branxholm, in 1823; but the fact requires confirmation. Mr Gray adds, that though not a common species in Scotland, its occurrence is now so frequent as to excite some surprise that it should have escaped observation hitherto.

7. The RED-FOOTED FALCON, or, ORANGE-LEGGED HOBBY, (*Falco vespertinus*, L., 1766; *F. rufipes*, Beseke, 1792). A single specimen of this rare species, found by Mr Dand, at Hauxley, near Acklington, in October, 1868, was described by our late Secretary, Mr Tate, in the fifth volume of the Proceedings, p. 439.

8. The MERLIN, (*Falco Cæsalon*, Gmel., 1788). Although few examples are recorded by the Club, it is probably not rare. One is mentioned as shot by Mr Dunlop, at Blanterne, on the Whitadder, in 1833; and another by the same gentleman, at Mayfield, in April, 1847. (Proc., I., 14; II., 220.) It does not occur in Mr Selby's list, I., 256.

* "Birds of the West of Scotland," 6, by Robert Gray.

9. The KESTREL, or, WIND-HOVER, (*Falco tinnunculus*, L.) One of the most extensively distributed species of falcon; is so common in the British Islands that it has escaped frequent notice in our records. Mr Selby, in his large work, describes it as hawking cockchafers late in the evening, "seizing one in each claw, eating them while flying, and returning to the charge again and again." One of Waterton's notes well describes the habits of the Wind-hover. (Essays, p. 27, ed. 1838). Proc., I., 19.

10. The GOSHAWK, (*Astur palumbarius*, L., Lacepede, 1801) has already been noticed at length. A writer in the "Field," under the signature of "Varvel," bewails the war of extermination waged against the Peregrine, which is often mistaken for the Goshawk, and fears it will soon become extinct as the *Goshawk is already*. ("Field," April 13th, 1872.) He adds that a falconer friend had written to him last season: "This year, for the first time, I am unable to obtain my young peregrines."

11. The SPARROW-HAWK, (*Accipiter nisus*, L.; *A. fringillarius*, Lacep). Common everywhere. Proc., I., 256.

12. The BLACK KITE, (*Milvus migrans*, Boddaert; *M. ater*, Gmelin; *M. niger*, Brisson). A single specimen of this bird was taken in a trap at Alnwick, by the Duke of Northumberland's gamekeeper, in May, 1866; and was described by Mr John Hancock in the "Ibis" for 1867, p. 253. He supposes it to be the first instance of its occurrence in Britain; but Sibbald ("Scotia Illustrata," Part III., p. 15) mentions in his list of the Scottish fauna "*Milvus niger*, a black glead, an *Lanius*?"—and its trivial name imports a wandering habit.

The Common Kite, or Glead, once so common, appears to be extinct in the south of Scotland.

13. The COMMON BUZZARD, (*Buteo vulgaris*, Lacepede, 1800). Selby records a specimen found at Mellerstain in 1841. (Proc., I., 256). Mr A. Jerdon also stated at the meeting, that another had been killed by the keeper at Edgerston, about 1850. It used to be common, and, as Mr Hepburn informed Macgillivray, was of great service to the farmers in destroying field mice, and driving doves and pigeons away from the corn. Gray also asserts, that it is just the instrument wanted to kill off sick and feeble game-birds, if only spared by keepers as a useful auxiliary, instead of being ruthlessly destroyed.

14. The ROUGH-LEGGED BUZZARD, (*Buteo lagopus*, Gmel., 1788; *Archibuteo lagopus*, Brehm, 1828). An occasional visitant. Several were killed within the district in 1840-1. Selby, Proc., I., 256.

15. The HONEY BUZZARD, (*Pernis apivorus*, L., Cuv., 1817). The occurrence of this remarkable species has been recorded on several occasions. Sir William Jardine observes that the district around Twizel appears to have something attractive for them, if we may judge from the numbers captured there during the last

few years (1836). Proc., I., 101. Interesting notices of its habits have been given by Mr Selby, *Ib.*, I., 109, and Gordon Forster, II., 173; and Gray states that it seems to appear at irregular intervals, three or four having been shot in Berwickshire in June, 1845. They were again seen in 1863-4; and one was killed at Newton Don in May, 1867.

16. The MARSH-HARRIER, or, MOOR BUZZARD, (*Circus Æruginosus*, L., Lacedæde, 1800), is a permanent resident, but has now become rare. Selby, I., 256.

17. The HEN-HARRIER, or, RINGTAIL, (*Circus cyaneus*, L., Cuv., 1817), is a permanent resident, and not uncommon, *Ib.* Prof. Duns notes its breeding regularly in Berwickshire, but adds that from recent inquiries it seems to be seldom met with now.

18. MONTAGU'S HARRIER, (*Circus cineraceus*, Montagu, 1802; *C. Montagu*, Vieillot, 1819). Very rare. A specimen in Mr Selby's possession was killed near Detchant, Proc., I., 256. Mr Broderick reported a fine specimen caught in a trap at Alnwick, on the 9th May, 1847; *Ib.*, II., 201.

The value attached to some of these birds in the palmy days of falconry, so different from the ruthless persecution which now threatens their total extermination, will excuse a few observations on a sport little followed in these days at home, but still cherished in India, where at one time I saw a good deal of it. Indeed, it is from the East that it is supposed to have been originally derived. The people of Asia have always displayed a remarkable aptitude for subduing the wild habits of animals and rendering them subservient to the purposes of man; as exemplified not only in reclaiming falcons, but also in training the elephant, the hunting leopard, the cormorant taught to capture fish in China, &c. The art has been made the subject of numerous treatises in Persian, Arabic, and Turkish,* as it has in our own country, in the celebrated "Boke of St. Albans," of Dame Juliana Berners (1486).

In Europe, falcons are classed as long winged (or noble) and short winged, according as they are fitted for continued or for short flight; but in the East, they are distinguished,

* I presented five MS. treatises in Persian, bearing the general title of "Báz-na-mah," to the library of the India Office; and the German orientalist, Count Von Hammer Purgstall, has published a volume entitled "Falkner klee," containing three treatises: 1st, a Turkish Báz-na-mah, from the Ambrosian Library at Milan; 2nd, a Greek work called HIERAKOSOPHION (or, Habichte lehre); and 3rd, the MS. (Hand schrift) on Falconry of the Emperor Maximilian; with translations into German of the Turkish and Greek texts. Vienna, 1840.

the former as black-eyed (*siah-chashm*), the latter as pale-eyed (or *gúlál-chashm*), the irids of the one being invariably black, of the other yellow or whitish. Among the former, the Peregrine (or *byhree*) stands pre-eminent; while of the latter, the Goshawk (or *báz*) is most esteemed. The *byhree* is trained to strike the heron, the Tantalus or *dokh* (*Tantalus leucocephalus*); the demoiselle crane (*Ardea virgo*); and sometimes even the common crane (*Grus cinerea*), or the bustard (*Otis nigriceps*). The haggard,* or bird that has left the nest to prey for itself, is generally preferred to the eyass, or nestling; and it is remarkable how soon the bird learns to adapt its attack to the defensive tactics of its several adversaries. The Tantalus has a strong, sharp cutting beak, like a pair of scissors. She is therefore taught to seize it by the head. The cranes being armed with a formidable talon on the middle claw of each foot, a kick would tear the *byhree* open, if it was not taught to pounce upon the shoulder and so keep clear of the leg. But the bustard is generally too much for it, for when threatened by the falcon, it alights on the ground, where its great stature and strength enables it to drive off its little assailant. It is said, however, that a certain Nawab of Banganapilly, near Cuddapah, by dint of hard riding, once prevented a bustard from settling, so that it was eventually struck down by the *byrhee*; a consummation, which so pleased the Nawab that he bestowed a village in free gift on the falconer.

Another black-eyed falcon, the Shahin (*F. peregrinator*), is trained to "the standing gait," or, in other words, to hover over the falconer's head at a considerable height, till the quarry, a partridge or florikin (a kind of little bustard)

* The haggard is caught at the close of the rainy season, by means of springs set by persons of the nomade fowler caste, called Yukalas or Yukawas, at the edge of tanks, which then swarm with wild fowl on which the *byhree* preys. When secured, the captor passes a needle and thread through the edge of her eyelids, which are then pulled up and the ends of the thread tied over the top of her head, which effectually closes her eyes. Her feet are then fitted with jesses, and she is made over to the falconer, who places her on his fist and carries her continually day and night, relieved at intervals by his assistants. She is thus kept without sleep and sparingly fed, till her savage disposition is effectually subdued, which generally takes about a week or ten days. The thread is then gradually loosened to let her see; and then being withdrawn, is replaced by an easy hood. She is then made over to the charge of her special attendant—each falcon having her own,—who carries her for several hours daily, hooding and unhooding, caressing and handling her, till she is perfectly reclaimed and ready to begin her education by the head falconer.

is sprung, when it swoops with the velocity of lightning, trusses it in its talons, and rising before it touches the ground, bears it off, till lured back by the falconer.

Another much esteemed black-eyed bird is the *Charagh*, or Saker of Europe (*F. sacer*), which is flown at hares; and even, in Persia, at the gazelle, lighting on its head and confusing it till the greyhounds overtake it. But this I have never seen. Macgillivray refers to instances* of its occurrence in Scotland, and, quoting from an earlier paper written by himself in 1836, states that it may still be seen occasionally among the Grampians and in the wilder parts of Aberdeenshire, adding that, "its flight was so rapid that he could hardly observe its habits"; but the accuracy of this indication may be fairly doubted.

Besides these, several smaller black-eyed (or noble) hawks are flown in India, but they are unknown here. I will only add that, according to Marco Polo, the Tartars and Mongols used to train a very large bird, apparently a species of eagle called *Barkút*, to strike deer, antelope, and wolves. Vol. I., 353; Yule's edition.

Of the pale eyed (or short-winged) hawk, the most prized is the Goshawk (or *báz*). It is trained to florikin, peafowl, and sometimes to hares; but its flight is short and it does not persevere like the *bhyree*, but on missing its quarry, returns to its perch and watches for another opportunity. It is rare in South India; and I have never seen its flight.

The Sparrowhawk (*Shikra*) is generally thrown at partridges, quail, doves, and other small birds. The falconer grasps it beneath, and throws it with a particular twist or jerk of the wrist, only to be acquired by practice. Sometimes it has an additional collar, called an *hals* or *hansli-band*, to which a cord held between the finger and thumb is attached, and which is thought to assist in keeping its head straight when thrown. But it is seldom used.

In the East, male and female birds of each species have different names; thus, the female Goshawk is the *báz*, the male the *jurra*. In like manner, we have the *shahin* and the *kohila*, the *shikra* and *chippakh* or *chipka*, &c.; whereas, in Europe, the male bird, from being so much smaller than the female, goes by the general name of her tiercel or third, whence tassel, tassel-gentle, &c. The tiny male of the

* "British Birds," p. 340.

Sparrow-hawk, however, was called a musket, from moschetto or musquito, a small stinging fly or gnat; and on the introduction of fire-arms, the term was transferred to the weapon which replaced the pike in the hands of the common soldier, which he now calls—or did call, before the days of the Enfield and Snyder—Brown Bess. The rapid flight of the noble birds, also caused the transfer of their names to the earlier descriptions of ordnance guns; so that the first 5-pounders were called *sakers*, and the 3-pounders *falcons*, from which the 1½-pounder was termed a *falconet*.

The Ancient Parish Church at Bamburgh. By the Rev. WILLIAM DARNELL, M.A., Vicar. (Read at the Club's Meeting in July, 1872.)

It would be impossible, if I was even able, to give anything like a history of this famous Church establishment, or to note its progress from the foundation to the present day, —especially in the pages of the Proceedings of a Club which professes not to enter so deeply into such matters.

It has often been stated, in various parts of these Proceedings, that it would be more in accordance with the duties of the members to note down facts from time to time, which may be useful to future historians; and this is my motive on the present occasion for troubling the Club with a slight account of this Church.

In the first place, I may note that the Parish is co-extensive with the Shire of Bamburgh, comprising all the Townships and Chapelries of this extensive Parish, including that of Belford, now a parish by reputation. The Chapelries were Beadnell, Tuggal, Lucker, and Warenton. I refer to the Histories of the County by Wallis, Hutchinson, Mackenzie, Hodgson, Raine, and the late Mr Sidney Gibson; and also to the paper read by Mr Dickson, one of our members, at this meeting, which will be published in our Proceedings. See also the account of the "Churches of Lindisfarne," by Mr F. R. Wilson.

The original Church of Bamburgh dates from a very early period. It is dedicated to St. Aidan, first a monk of Iona, who, at the request of Oswald, King of Northumberland,

undertook to convert the heathens of Bernicia, as the northern province of his kingdom was then called. Soon after his arrival in Northumberland, he was permitted by its King to select for himself the seat of his Episcopacy, and became the first Bishop of Lindisfarne, A.D. 635. A humble shed, affixed to the western end of Bamburgh Church, afforded him an occasional residence; and here it is recorded he was sojourning when the evil news of the death of Oswin, Oswald's successor, reached him; and here he sickened, and in twelve days died, reclining against a wooden buttress which supported the sacred edifice.* He held the See of Lindisfarne for a period of nine years. Of the original Church no traces remain. The date of the present structure is supposed to be about 1180 A.D., and the chancel somewhat later, 1200 A.D. The building appears to have undergone various alterations, in the lapse of so many centuries. The present Church is cruciform in its plan, but having the tower at the west end engaged with the aisles, and a north and south transept. The south aisle is much wider than the north one, and the tower opens to the nave and aisles by three pointed arches upon impost mouldings. Eastward of the tower is an arcade on each side, of four arches opening to the aisles. The pillars are circular, having moulded capitals and rude foliage on one of them. The chancel arch is plain, without mouldings; and in the wall to the south side a square aperture filled with pierced panelling has been inserted as a hagioscope. The chancel is unusually long—62 feet by 21; and was carefully restored about thirty-five years ago, when the plaster was removed from the walls and the ceiling from the oak roof. The east window is a triple lancet, eight lancets on the south side and four on the north; the greater number being filled with stained glass, give a very imposing appearance to the chancel. Figures in stained glass of our Lord, the four evangelists, and some of the apostles, were placed in the chancel in the year 1845; the contributors being Sir Thomas Tancred, Bart., and the three Trustees of Lord Crewe, &c. The glass is of good character, supposed to have been brought from the Continent; and was purchased at the establishment of the Messrs Wright, in Wardour Street, London.

In a sepulchral recess, on the south side, is the effigy of

* *Vide* Raine's *St. Cuthbert*, p. 9.

a cross-legged knight. Within the sanctuary is a monumental tablet, inscribed in Latin, to the memory of Sir Claudius Forster, Bart., A.D. 1623.

Claudius Forsterus Eques Aurat' et Baronettus,
antiquâ numerosâ et nobile Forsteroru'
familiâ in Com. Northumb. oriundus; Dno
Nicolao Forstero fortiss. illi' viri filio Dni
Johanis Forsteri, qui 37 Anos Mediar' Marchiar'
Scotia vers' Dns Guardian' extitit, fili' et hæres:
Honoratiss. etiam Dns Cumbriæ et Bedf. Comitibus,
necon insigni et illustri Fenwicoru' progenie, totique
generosu' genti inter Tinam et Tweda celeberr.
sanguine conjunct'; Castri denique Bamburg Dns
Senescal' et summ' Constabulari': Obiit in manerio
suo de Alba-Terra in Comit: Northumb.: Anno Sal: Nost:
1623.

Memoriæ sacrum lugens posuit uxor ejus Dna Elizabetha,
Gulielmi Fenwici de Wallingtonia Equitis Aurati, filia.

Of more recent date is a monument in memory of the family of Sharp, by the late Sir Francis Chantrey, and one of his last works; which was formerly in the chancel, but subsequently removed to the west end of the north aisle. Of this family, two were successively incumbents of the parish and trustees of Lord Crewe's Charity; and to Dr John Sharp, Vicar of Hartburn, and Prebendary of Durham, belongs the honour of having converted the keep of Bamburgh Castle, from a state of ruin into a residence for himself and his colleagues.

This Monument is erected in Memory
of her Grandfather, her two Uncles, and her Husband,
who were successively Trustees of Lord Crewe's Charities,
and Incumbents of the Parish of Bamburgh, by

CATHERINE,
only child of James Sharp, Esq., of London,
and sole survivor of the name.

A.D. 1839.

- I. The Venerable THOMAS SHARP, D.D. (son of John, Lord Archbishop of York), Archdeacon of Northumberland, Rector of Rothbury, and Prebendary of Durham. Appointed Trustee, A.D. 1737. Died A.D. 1758.
- II. The Venerable JOHN SHARP, D.D., his eldest son, Archdeacon of Northumberland, Prebendary of Durham, and perpetual Curate of Bamburgh; who, after rendering the ruins of Bamburgh Castle habitable, first established there a free

- School and Dispensary, and also formed a permanent arrangement for the preservation of the lives, and relief of the wants of shipwrecked mariners. Appointed Trustee A.D. 1792.
- III. The Reverend THOMAS SHARP, D.D. (third son of Thomas Sharp, D.D.). Rector of All-Hallows, in London, and perpetual Curate of Bamburgh. Appointed to the Curacy A.D. 1757. Died 1772.
- IV. The Reverend ANDREW BOWLT, who took the name of Sharp on his marriage with Catherine, grand-daughter of Thomas Sharp, D.D., who was for 43 years the respected Minister of Bamburgh.

“Blessed are the dead which die in the Lord. Yea, saith the Spirit, that they may rest from their labours and their works do follow them.”

Rev. xiv., 13.

There is also a touching inscription on a marble monument affixed to the north wall of the chancel, of the date of 1711, by Dorothea, Lady Crewe, daughter of Sir Wm. Forster, of Bamburgh, to the memory of her brothers William, John, and Ferdinando, “as the last respect that could be paid them for their true affection to the church, the monarchy, their country, and their sister.” Under the eastern end of the chancel, there is a fine crypt in two divisions, lighted by small lancets, and of very beautiful early-English architecture. It was evidently used as a chapel in former times; for there are traces of the stone altar, there is the staple in the groined roof from which the lamp was suspended, and there is the piscina. The south wall is also pierced by a lancet window. There is a large doorway which now gives access to the crypt from the outside. The coffins of several members of the Forster family were deposited in this vaulted chamber; and from the year 1765 or some later year, till the year 1837, when it was excavated, it seems to have been closed up as a private vault. At that date five coffins were lowered into the ground beneath, and stone slabs inscribed were placed over each of them. I submit a drawing of this curious and interesting crypt, by Mr Hodgson Fowler, architect to the Dean and Chapter of Durham.

In passing through the Churchyard, the monumental effigy of Grace Darling, the heroine of the Farne Islands, with its canopy of stone, designed by Mr Raymond Smith, of London, and presented to the Trustees of Lord Crewe by Mrs Catherine Sharp, attracts many a passing visitor to the spot. She died on the 20th October, 1842; and her remains

were interred in the family burying-place, some time previous to the erection of the monument. The *Foifarshire* steamer, on her passage from Hull to Dundee, was wrecked on the night of the 6th September, 1838; and it was in the attempt to rescue the helpless and perishing survivors, that the heroic conduct of herself and her noble-minded father were so signally displayed.

The Registers of marriages, births, and burials, in the parish of Bamburgh, commence in 1653; and from that time to 1790 are very imperfect. A register of burials only from 1678 to 1688, is also very imperfect. There is a third book containing births, marriages, and burials, from 1692 to 1725: wanting from 1795 to 1797; marriages, commencing 1697 and ending 1725: wanting the year 1708; burials, 1697 and ending 1725. From the year 1726 and onwards, the entries are seemingly perfect. The following extract is taken from one of the old books:—"Memorand' yt on y^e 24 of July 1676 y^e most Reverend Father in God Nathaniel Crew Bishop of Durham, brother to y^e Lord Crew, and of y^e Privy Council, did on his return from Barwick to Durham, honour Thomas Davison then Presbyter or Minister of Bamburgh, with his attendance and acceptance of a glass of sack sydar and martle beer, from y^e said Thomas Davison, Minister, and did then confirm y^e persons before mentioned that belonged to Bamburgh, in honorem parochiæ dictæ de Bamburgh."

Notes on a Shipwreck near Bamburgh in 1472.

My attention has been drawn by a friend to a singular circumstance, which seems worthy of being recorded in our annals, in connection with Bamburgh. In Dr Rogers' "Monuments of Scotland," published for the Grampian Club, it is stated that James Kennedy, Bishop of St. Andrews, son of the Countess of Angus, daughter of Robert the 3rd, King of Scotland, was born A.D. 1405, and was appointed to the bishoprick by his uncle, James 1st, A.D. 1440. His famous tomb in the Cathedral of St. Andrews, cost £10,000—an immense sum in those days. He built a magnificent barge called the *St. Salvador*, which he used in foreign trade. It remained the property of the See till A.D. 1472, when it was wrecked on the coast of Bamburgh. The bishop died on the 10th May, 1466.

W. D.

A more explicit account of this event may be obtained by examining the original historians. Sir James Balfour in his "Annals of Scotland," vol. I., p. 197, says, "This zeire, 1472, that grate shipe, bult by James Kennedey, Bishope of St. Andrews, laded with riche merchandize, coming from Flanders, perished by tempest, neir Bambrughe one the cost of England; all perishing except some few that saued ther lieues in the ships boate, amongst quhom was the Abbot of St. Columbane" (Inchcolm). The date which Lesley gives is March 12th ("De Origine, Moribus, &c., Scotorum," p. 304, Romæ, 1675). The English, he says, divesting themselves of every shred of humanity, fell upon the cargo, and plundered it. The abbot of St. Colomb, after escaping the perils of the deep, was made prisoner by James Carr, and could not be released till £80 sterling of ransom was paid. This circumstance produced much ill-will between the two countries. "Restitution," says Buchanan (vol. II., p. 201, by Aikman), "had often been sought for in vain, and this for some period caused considerable irritation; but at last, an honourable embassy was sent to Scotland, at the head of which were the Bishop of Durham and Lord Scroop. . . . The truce was easily renewed, upon condition that an estimate should be made of the value of the vessel which had been destroyed, and the goods which had been taken away, and reparation faithfully made." In the following year, Edward IV. ordered a partial compensation of 500 marks, with permission to the Scots to sue for any further redress in the courts of law (Pinkerton's "Hist. of Scotland," I., p. 280). A fuller account of the negotiations may be seen in Ridpath's "Border History," pp. 437-439.

This famous vessel, "the largest," says Buchanan, "which at that time had been seen upon the ocean," was popularly known as "the Barge," or "the Bishop's Barge" (Lesley). It cost him a sum equivalent to what he had disbursed to found and endow St. Salvador's College, and to that of the cost of his own tomb therein.* Pitscottie thus quaintly puts it (p. 167, 8): "He foundit ane triumphand colledge in Sanct Androis, called Sanct Salvitouris colledge, quhairin he maid his lear (burying-place) verrie curiouslie and coastlie, and also he biggit ane schip called the bischopis barge, etc., and when all thrie wer compleit, to witt, the colledge, the

* The cost of the tomb, according to Grierson's "Delineations of St. Andrews," p. 159 (1849), was about £2220 sterling.

lear; and the barge, he knew not quihilk of thrie was costliest; for it was reckoned for the tyme, be honest men of considerratioun, that the least of the thrie, cost him ten thousand pund sterling."

About a century later, we still find "wreckers" on the Northumberland coast. In November, 1559, two Scotch vessels were driven by stress of weather on the shores between Berwick and Bamburgh, whereof one was plundered by the country people, and the other (Nov. 4) being stranded on Ross Sands, was seized by the water-bailiff of Ross, servant to Sir Ralph Grey of Chillingham. See Sir Ralph Sadler's "State Papers and Letters," vol. I., p. 548, 550, 579, 582, 583, 593. Sir Ralph Grey, in exculpating himself, dates his letter from "Shillingham"; which shows that the popular pronounciation of this word was then prevalent in high places.

In time not far remote, I have been told, that "Let us pray for a good harvest this winter"—signifying many shipwrecks,—used to be a common expression in the mouths of the fishing population on the southern Northumbrian sea-coast. Let us hope that no one now-a-days cherishes this atrocious sentiment.

J. H.

Notes to correct Errors as to the Manors of Bamburgh and Blanchland. By WM. DICKSON, F.S.A.

As the Berwickshire Naturalists' Club will meet at Bamburgh on 27th June, 1872, I take the opportunity of bringing together a few notes of errors committed by the several historians of the county, so far as relates to the manor and castle of Bamburgh, and the site and lands of the dissolved monastery of Blanchland, in order to correct the errors by an authentic statement of the facts, taken from original documents.

I do not go further into the history of these places. Wallis (North'd. II., 407, 408) states that Frances Forster married Thomas Forster, Esq., of Etherston, by whom he had several children, the eldest being Thomas, the rebel general of 1715. The other daughter, Dorothy (sister of Frances), married the Right Honble. Lord Crewe and Lord Bishop of

Durham; and she being the only remaining child of the family, erected the monument in Bamburgh Church to the memory of her brothers and sisters.

Wallis also states, that Thomas being the general of the rebel forces in 1715, his manors and estates of Bamburgh and Blanchland were, in consequence, forfeited to the Crown, and that Lord Crewe, his uncle, purchased them.

Grose states his version thus: This castle "remained in the Crown to the 10th of Elizabeth, when the Queen appointed Mr John Forster, of Bamborough Abbey, governor of it. His grandson, John Forster, Esq., afterwards had a grant of it and the manor; whose descendant, Thomas Forster, Esq., of Etherton, engaging in the rebellion anno 1715, his estates were confiscated, but afterwards purchased by his uncle, Lord Crewe."

Pennant writes that "the castle and manor belonging to it was once the property of the Forsters, but on the forfeiture of Thomas Forster, Esq., in 1715, for having joined the Pretender, it was purchased by his uncle, Lord Crewe, Bishop of Durham."

Next in succession comes Hutchinson, and in his History he reiterates the same errors; indeed he is rather more inaccurate (vol. II., 174), for he says, that Lord Crewe purchased the forfeited estates of the Forsters, and that Dorothy Forster, the only child of William Forster, Knight, having married Lord Crewe, brought with her the estates of Bamburgh and Blanchland.

Instead of her being an only child, she had several brothers and sisters: see the monument before referred to.

Mackenzie in his History varies the mis-statements a little, by mentioning that Thomas Forster forfeited the whole of the family property, then valued at £1315 per annum; they were purchased by his brother-in-law, Lord Crewe, who settled the whole for charitable uses. (Mack., I., 408).

Now, he was not Lord Crewe's brother-in-law, but the nephew of his wife.

We come lastly to a writer, the late Wm. Sydney Gibson, who is in general a very accurate historian. In his visit to Bamburgh Castle (p. 204), he states, that Lord Crewe purchased the extensive property of the Forster family, which had been forfeited in the rebellion in 1715; also, that one of the consequences of that rebellion was the forfeiture of the Bamburgh estates, the property of his wife's unfortunate

nephew, General Forster. Again, he says, soon after these events, he, Lord Crewe, purchased from the Government Commissioners for forfeited estates, the Forster property, of which Bamburgh was the principal seat.

All these historians are incorrect; for the purchase by Lord Crewe was made A.D. 1709, six years before the rebellion was ever heard of. This shews when a statement is once made, how apt future historians are to follow it, rather than investigate the subject for themselves.

The records of the Court of Chancery are full of information upon this matter. The true statement is as follows. After the death of Wm. Forster, Esq., without issue, in April, 1700, and of Ferdinando Forster, in August, 1701, the manor and castle of Bamburgh, and the manor of Blanchland, and all the estates of their late father, Sir William Forster, descended to two females, viz.: Dorothy, Lady Crewe, as sister and co-heir of William and Ferdinando Forster, and to Thomas Forster, jun. (the rebel general), eldest son and heir of Frances Forster, the only and other sister of William and Ferdinando; and that Lady Crewe and her nephew were heirs-general to Sir William Forster, Knight, all the rest of his children being dead without issue. So that Lady Crewe took one moiety, and her nephew Thomas the other, subject to debts.

In Hilary Term, 1701, Lord and Lady Crewe and Thomas Forster, jun., exhibited a bill in Chancery, to have a rent-charge of £500 a-year, which had been created out of the estates by William Forster, sold for the payment of specialty debts secured on the property.

In February, 1701, that was decreed to be done; and Lord Crewe became the possessor of it at £10,000. The money was paid into court and applied accordingly.

In Easter term, 1704, several creditors exhibited their bill in Chancery against Lord and Lady Crewe and Thomas Forster, the younger, to have the estates sold for payment of the general debts; and it was on the hearing decreed that they should be sold.

They were accordingly sold, and Lord Crewe became the purchaser at £20,679. 10s. He was reported by the Master to be the best bidder, and his report was confirmed by the court.

This sum included the before-mentioned £10,000, and besides it was subject to a rent charge of £350, for Elizabeth,

the widow of William Forster, for her life. She afterwards married William, Lord Stawell; and is mentioned in Lord Crewe's will as then enjoying this £350 a-year (A.D. 1720).

By deed, dated 15th and 16th May, 1709 (enrolled in Chancery), in consideration of this sum, the manor and castle of Bamburgh, the towns of Shoreston and Sunderland, the Friars, cell of Bamburgh and tithes, Fleetham, the manor of Blanchland, with the monastery and the rectory of Shotley, and all the lands which belonged to Sir William Forster, Knight, William Forster and Ferdinando Forster, in the county of Northumberland; and also the fishings in the Tweed, the manor and lands of Thornton, Edmund Hills, and other their lands in the county of Durham, were conveyed to Trustees, upon trust for Lord Crewe, his heirs and assignees for ever, as the purchaser thereof.

After payment of all debts and charges, there remained over for Lady Crewe and her nephew as binding, the sum of £1028. 15s. 7d. only.

Thus it appears, that Sir William Forster and his sons, William and Ferdinando, had run through all these fine estates by reckless extravagance, and that in a very short space of time. Law proceedings began about 1701, and all the estates were sold before 1709 was out; thus proving conclusively that the estates were never forfeited by the rebellion of 1715, but sold in due course of law to pay debts, by order of the Court of Chancery; and that when the rebel general committed the act of treason by joining in the rebellion, all his lands had been sold six years before to pay his debts, and he had not an acre left to bless himself with at the time he joined the Pretender in 1715.

I may also note that the manor of Styford, that beautiful estate on the banks of the river Tyne, was part of the estate of William Forster; and in August, 1708, it was sold to William Bacon, Esq., of Staward-le-Peel, for £6500, and this money was also applied towards the payment of his debts.

WM. DICKSON, F.S.A.

Alnwick, 24th June, 1872.

List of the rarer Coleoptera occurring chiefly in the Parish and Neighbourhood of Nenthorn. By MR ROBERT HISLOP, Blair-Bank, Falkirk.

In former numbers of the Club's Proceedings—those especially contained in the first two volumes—there have been given lists of the Beetles and other insects that have been met with in the territory appropriated by the Club for its investigations. Dr Johnston, Messrs Babington, Selby, Hardy, and Dunlop, have all contributed to throw light upon a branch of natural history, which, in Scotland at least, has received but scanty patronage. As the lists drawn up by these gentlemen have for the most part embraced those species collected in the eastern portion of the district, it has been suggested that observations made in another quarter during the last thirty years, though it must be acknowledged only in a very desultory manner, might help to serve for the elucidation of the geographical distribution of the Coleoptera of the Borders.

The portion of country to which my attention has been chiefly directed, extends from Hume Castle to Smailholm Tower, a distance of about six miles, and of an average breadth of about three. Within these limits there is a considerable variety of surface. From N.E. to S.W. there runs the trap ridge, whose eastern and western culminating points are respectively occupied by the remains of the border strongholds just named; and on its northern and southern flanks, strata of the old red sandstone crop out at intervals. In a hollow on the ridge, about two miles west from Hume, lies Lurgie Loch. For many years its waters have been gradually diminishing, and it is now rather a marsh than a lake. In dry summers it may be traversed in all directions without much inconvenience. Its surface is dotted with willows and birches, and here and there Scotch firs have begun to establish themselves; while among plants of humbler growth, may be observed the bog-bean and the cranberry, and in the pools the curious looking bladder-wort. The greater portion of the country is under tillage, with occasional patches of permanent pasture, which the steep and craggy nature of the surface renders unfit for the operations of the plough. On the north side and in lower ground, we have the fine beech woods and fir plantations of Mellerstain, with bits of heather and scrubby birch; and on the south,

the rich old pastures of Nenthorn, in some parts adorned with respectable if not venerable oaks. These, with the alternate haughs and braes of the Eden, which is more winding here than in any other part of its course, afford a rich variety of habitat and pabulum for the insect tribes.

PTEROSTICHUS MINOR. Not uncommon in Lurgie Loch, among moss. New to Scotch list.

BRADYCELLUS PLACIDUS. Found along with the above, and omitted by an oversight from Mr Murray's "Catalogue."

BEMBIDIUM SCHUPPELII. Banks of the Eden near Girrick.

„ *PRASINUM*. Banks of Leader near Earlston.

HYDROPORUS 5-LINEATUS, *XANTHOPUS*, *LINEATUS*. One specimen of each. Girrick pond.

„ *LEPIDUS*. Ditches near Girrick pond.

ORETOCHEILUS VILLOSUS. Nestling beside stones partly in the water; banks of Eden. When alarmed, it makes for a stream, where its movements on the ruffled surface of the water can with difficulty be followed.

HELOPHORUS ARVERNICUS. Banks of Eden.

HYDROCHUS BREVIS. Three specimens found in Lurgie Loch when nearly dried up in 1868.

HYDRÆNA ANGSTATA. Under stones in Eden, with the commoner *riparia*, *gracilis*, and *nigrita*.

„ *ATRICAPILLA*. With the last-named. Not common.

LIMNEBIUS NITIDUS. One; Lurgie or Girrick pond.

CYCLONOTUM ORBICULARE. Not uncommon in Lurgie Loch.

BOLETOCHARA LUNULATA. In fungus near Greenlaw, and at Girrick.

LEPTUSA FUMIDA. Not uncommon under bark; Girrick, &c.

ALEOCHARA RUFICORNIS. By sweeping damp woodsides; Girrick.

MICROGLOSSA NIDICOLA. Under flood rejectamenta, banks of Eden; probably brought from sandy banks where martins build their nests.

HOMALOTA CURRAX. Banks of Eden, under stones by the water's edge.

„ *CAMBRICA*. Same locality.

„ *NITIDULA*, *GRAMINICOLA*, *PICIPES*, *SUBÆNEA*, *CURTIPENNIS*, *ATRAMENTARIA*, *PYGMÆA*, and *MACROCERA*. Girrick.

„ *DEBILIS*. Lurgie.

„ *ÆNEICOLLIS*. Greenlaw.

„ *SUCCICOLA*. Girrick and Langton.

„ *BOLETOBIA*. One in fungus. Girrick.

HYGRONOMA DIMIDIATA. In half-dried places in Lurgie Loch.

ENCEPHALUS COMPLICANS. Occasionally obtained by sweeping grass.

MYRMEDONIA COLLARIS. By sweeping grass in Lurgie Loch in

- bright weather, and by shaking damp moss at other times.
Has not been taken of late.
- OLIGOTA INFLATA. Barn refuse, Girrick.
- GYMNUSA BREVICOLLIS. Two taken from half-submerged moss ;
Lurgie Loch.
- MYLLÆNA MINUTA. Plentiful in wet moss ; Lurgie.
- „ BREVICORNIS. Beside rills trickling down to Eden.
- CONURUS PUBESCENS. Near Nenthorn.
- LEUCOPARYPHUS SILPHOIDES. Pastures, Girrick ; horse-droppings,
&c. Not common.
- TACHYPORUS OBTUSUS, var. NITIDICOLLIS. Occasional near Girrick.
This variety seems to occupy the place of the type near Tralee,
Ireland. In a parcel of beetles collected there this summer,
indiscriminately, all the examples of this species are *nitidicollis*.
- TACHINUS FLAVIPES. In sheep-droppings, on farm of Blinkbonny,
in August ; several.
- „ LATICOLLIS. Not uncommon in Hypnum in woods
about Mellerstain, &c.
- BOLETOBIUS INCLINANS. One in moss, fir plantation between
Girrick and Mellerstain, in August, 1862 ; found also at Pol-
mont in March of same year. Has not occurred at either
place since. New to Scotch list. This is the species taken by
my friend Dr Millingen in the Wooler district, in the summer
of 1862, and recorded by Mr Hardy in his second paper on
the “Entomology of Cheviot.” By a slip of the pen, it would
appear that I had named it *B. cingulatus*.
- BRYOPORUS HARDYI. In fir plantation, Mellerstain. One speci-
men. New to Scotch list.
- MYCETOPORUS LUCIDUS. Three or four in same locality.
- „ PUNCTUS. One ditto in September, 1851.
- „ REYL.=ANGULARIS. One in same plantation.
- „ CLAVICORNIS. Three, ditto. The four last names
all new to Scottish lists, when taken and examined.
- QUEDIUS FULVICOLLIS. Same place, and in Lurgie Loch in moss.
Also new.
- „ FUSCIPES. Haystack, Girrick. One in August last.
One formerly taken by me at Berwick.
- OTHUS LEVIUSCULUS. Plentiful on one occasion in a plantation
on Girrick braes. Very ready to take wing in the sunshine.
- LEPTACINUS LINEARIS. Not uncommon in barn refuse ; Girrick.
- „ PARUMPUNCTATUS. Occasional, ditto.
- CRYPTOBIUM FRACTICORNE. Frequent in wet moss ; Lurgie.
- STILICUS AFFINIS. Common in straw and hay stacks in August.
- DIANÖS CÆRULESCENS. Stichell Linn, in numbers.
- SYNTOMIUM ÆNEUM. Woods at Stichell, &c.
- TROGOPHLÆUS ARCUATUS.=SCROBICULATUS. Stichell Linn.
- LATHRIMÆUM UNICOLOR. One in moss ; Lurgie.

- DELIPHRUM TECTUM. In horse-dung, in spring. Near Nenthorn.
 HOMALIUM ALLARDI. Girrick. Not uncommon.
 „ STRIATUM. Sometimes plentiful; hedge-sides in autumn.
 PROTEINUS ATOMARIUS. Two; on a dead bird much decayed, in fir plantation between Mellerstain and Girrick.
 EUPLECTUS AMBIGUUS. Moss in Lurgie Loch. New.
 PSELAPHUS DRESDENSIS. One specimen; same locality, by shaking moss. Rare throughout Britain. Not recorded previously as Scotch.
 SCYDMENUS SPARSHALLI. By sweeping dry hedge bank, Girrick; probably bred under bark of thorn stumps. I have another specimen taken from under bark, near Polmont. New.
 EUMICRUS TARSATUS. In barn refuse. One; seemingly rare in the north.
 TRICHOPTERX ATOMARIA. Lurgie; in moss.
 „ SERICANS. In refuse, Girrick.
 PTENIDIUM PUSILLUM. Among vegetable refuse; frequent.
 „ APICALE. Ditto; rather rare.
 CLAMBUS PUBESCENS. Lurgie; in moss. Not common.
 COMAZUS DUBIUS. By sweeping roadsides, occasional in August. In barn refuse, abundant.
 AGATHIDIUM NIGRIPENNE. Under decayed bark of ash.
 „ LEVIGATUM and CONVEXUM. By sweeping herbage and shaking moss in woods near Girrick.
 „ VARIANS. Under bark of beech, Mellerstain.
 LIODES GLABRA. One; near Girrick. Though not uncommon under fir bark in the north, this, and another taken near Polmont, are the only lowland specimens I have seen.
 CYRTUSA MINUTA. One; near Girrick. Circumstances of capture unnoted.
 ANISOTOMA ORNATA. Several in a plantation called "Hundy Mundy," and in other localities. All are of the var. *litura*. In September.
 HYDNOBIUS PUNCTATISSIMUS. On a single spot, about a foot square, upon a trap knoll, nearly bare of herbage, north side of Girrick farm, where they must have undergone their final transformation. One obtained on each of two or three successive days, the last being immature. No fungus was observed near, though looked for.
 PHALACRUS SUBSTRIATUS. Lurgie; by sweeping *Equisetum* and *Carex*.
 OLIBRUS AENEUS. One; by sweeping; Blinkbonny farm.
 CERCUS PEDICULARIUS. One specimen; Girrick.
 EPUREA MELINA. Not common seemingly; but apt to be confounded with *vestiva*. Both occurring in flowers; Girrick.
 „ MELANOCEPHALA. Occasional. In flowers; Girrick.

- NITIDULA BIPUSTULATA. In skins of vermin nailed up; Girrick.
 OMOBITA DEPRESSA. One; in dead animal; Girrick.
 POCADIVS FERRUGINEVS Several in fresh giant puff-ball, about thirty years ago; near Nenthorn. I have found it since in dry puff-ball, near Abbey St. Bathans.
 IPS 4-PUSTULATA and FERRUGINEA. In fresh Scotch fir stumps; Girrick and Mellerstain.
 ANTHEROPHAGVS PALLENS. Plentiful along with next species in nest of Carder Bombus. Imago and larva of both species fed on the contents of the nest. Girrick braes.
 CRYPTOPHAGVS SETULOSVS. Plentiful as above, and in fungi.
 „ PUNCTIPENNIS. In straw stacks and barn; Girrick.
 „ PILOSUS. With the last-named, but much more plentiful.
 „ AFFINIS. One specimen; by sweeping.
 „ DENTATUS. Not uncommon in straw.
 „ ACUTANGVLVS. One in barn. New to Scotch list.
 „ PUBESCENS. One; near Girrick. By sweeping? New to Scotch list.
 PARAMECOSOMA MELANOCEPHALA. River refuse, Eden; several.
 LATHRIDIVS NODIFER. Frequent in barn, with *lardarius* and other commoner species.
 CORTICARIA ELONGATA. One with last-named.
 „ FUSCULA. Girrick, in barn refuse.
 TRIPHYLLVS SUTURALIS. On decaying *Polyporus versicolor* at Nenthorn, 1865; and on *Polyporus squamosus*, plentiful, at Humebyres, 1866. New to Scotland.
 MYCETEA HIRTA. In barn; Girrick.
 ELMIS VOLCKMARI. Eden, along with the more common species *ceneus* and *Limnium tuberculatus*.
 „ PARALLELOPIPEDVS. Not uncommon with the above, though apt to be overlooked from its smallness and sluggish movements.
 APHODIVS SUBTERRANEVS. One, in horse-dung; Girrick.
 „ STICTICVS. One; Wooden, near Kelso.
 „ CONSPURCATUS. One in moss; Christmas day; Girrick.
 „ OBLITERATUS. Two; Girrick.
 HYDROCYPHON DEFLEXICOLLIS. Side of Eden, near Nenthorn. Occasional.
 PHLEOPHILVS EDWARDSI. One beaten out of decaying oak branch; Nenthorn.
 NECROBIA RUFICOLLIS, RUFIPES, and CORYNETES CERULEVS. In a dead hare; Girrick.
 ANOBIUM PANICEVM. Farm-house; Humebyres.
 ERNOBIUM MOLLE. Not unfrequent under bark of spruce paling; Girrick.

- TRYPODENDRON DOMESTICUM. One, on parapet of Kelso bridge. New to Scotch list. Since taken by myself in Moray and Aberdeenshires, boring willow and birch.
- CEUTHORHYNCHUS VIDUATUS. Ridge above Blinkbonny. Feeds on *Stachys arvensis*.
- " MARGINATUS. One; near Lurgie amongst meadow hay, 1868.
- " CYANIPENNIS. On cress; Girrick.
- CEUTHORHYNCHUS HIRTULUS. Lurgie; one specimen. This species I have taken at Aberlady, off water-cress.
- CEUTHORHYNCHIDEUS VERSICOLOR. Rare; woods at Girrick.
- CÆLIODES GERANII. On *Geranium pratense*; Girrick braes.
- ACALLES MISELLUS. One; in decaying bark of ivy, in same locality.
- OROBITES CYANEUS. Frequent on *Viola canina*, Blinkbonny.
- GYMNETRON BECCABUNGÆ, Linn. var. ? This is the insect named *villosulus* in Mr Murray's "Catalogue." The thorax is clothed with short snowy pile, the elytra red, with suture dusky. It was so named by M. Chevrolat, who saw it in my collection many years ago. The true *villosulus*, which I have taken in Wilts, is a larger insect, clothed with long griseous pile, and frequents *Veronica Anagallis*. This variety? was taken at Lurgie Loch—one in 1846, a second in 1852—by sweeping over *Veronica scutellata*. The common dark form is not uncommon near Girrick on *V. Beccabunga*.
- TACHYERGES SALICETI. Willows; side of Tweed at Kelso Bridge.
- " SALICIS. Sallows, Lurgie Loch.
- ORCHESTES RUSCI. Birches, do.
- ANTHONOMUS COMARI. Lurgie Loch.
- DORYTOMUS VORAX. Black poplar; Girrick.
- " PECTORALIS. Lurgie, on grey willow.
- ERIRHINUS ÆTHIOPS. One near pond, Smailholm Tower. This specimen was for many years unique as Scotch. Has of late been taken in Dumfriesshire and Perthshire.
- TRACHYPHLEUS SQAMULATUS. On dry trap knolls near Girrick. In Moray I found it among moss in water.
- OMIAS HIRSUTULUS and BOHEMANNI. In sandy places, side of Teviot, near Kelso.
- SITONES LINEELLUS. Occasional; feeding on *Lotus corniculatus*; Girrick and Mellerstain. When taken here first, was new to British list.
- BARYPEITHES SULCIFRONS. On trap knoll, Blinkbonny. Autumn and spring.
- BARYNOTUS SCHÖNHERRI. Under stones; Girrick. More common in Scotland seemingly than its congener, *B. obscurus*.
- RHINOMACER ATTELLABOIDES. By sweeping on site of a fir plantation cut down the year before. Ridge above Blinkbonny.

- RHYNCHITES MEGACEPHALUS. Birches; Mellerstain.
 DONACIA DENTIPES. Once; on *Sparganium ramosum*; Eden.
 „ COMARI. On aquatic plants; Lurgie.
 LEMA PUNCTICOLLIS. First taken in Scotland by Mr Hardy, on Girrick braes. Afterwards found in some plenty by myself, frequenting *Ononis arvensis*, near Nenthorn and Stichell.
 „ CYANELLA, var. OBSCURA. A single example of this variety occurred in 1853, near Girrick. It is smaller, of a deep black, and quite opaque. The type is common everywhere.
 „ MELANOPIA. Some years plentiful in autumn. I have a specimen from near Tralee, Ireland, with thorax and legs black.
 CHRYSOMELA MARGINATA. One; Girrick braes. Varies much in sculpture on sea-side specimens. Margin, when fresh, blood-red.
 „ VARIANS. In ditches, on *Hypericum quadrangulum*; Girrick. On the Whiteadder near Preston, plentiful on *H. perforatum*.
 „ HYPERICI. On banks of Kale, on *H. perforatum*.
 PHAEDON ARMORACIÆ. Near Kelso, on Tweedside. New to list when taken some years ago.
 ADEMONIA TANACETI. Lurgie, by sweeping.
 „ CRATAEGI. Hawthorn; Girrick braes; August, 1870. New to Scotch list.
 GALERUCA NYMPHLEÆ and LINEOLA. On Comarum; Lurgie.
 LYPERUS RUFIPES. On birches; Lurgie and Mellerstain.
 CREPIDODERA AURATA. On willow; Girrick pond. This is the *Helvines* and *pulchella* of Murray's "Catalogue."
 „ MODEERI. On mint. One year plentiful in a ditch at Girrick.
 PHYLLOTRETA SINUATA, Redt. Near Smailholm Tower, on *Cardamine pratensis*. It approaches *P. tetrastigma* in general appearance. Occurs rarely on the water-cress, near Polmont (Stirlingshire). New to Scotch list. *P. undulata* is much the commonest in turnip-fields, and at hedge-sides; and *P. nemorum* next of the yellow-striped species.
 THYAMIS HOLSATICA. On *Pedicularis palustris*; Lurgie.
 APHTHONA CERULEA. A variety with pale tibiæ has occurred beside the Eden.
 „ HERBIGRADA. On *Helianthemum vulgare*, Stichell Linn, where also *Haltica Helianthemis*, a smaller variety of *pusilla*, occurs. When taken many years ago was new to Scotch list. I have taken it since on Arthur's Seat; but have not heard of it otherwise.
 PSYLLIODES CHALCOMERA. On *Cnicus arvensis*; Girrick braes. First taken by Dr Sharp and myself at Aberlady.
 „ PICINA. Damp corner of fir wood; Mellerstain.

CASSIDA OBSOLETA. Occasional, hedge-sides; Girrick.

COCCINELLA OCELLATA. On briar; Girrick braes. One.

„ OBLITERATA. On oaks, firs, &c.; do.

„ 18-GUTTATA. Scotch firs, frequent; do.

„ OBLONGOGUTTATA. Do., occasional; do.

TETRATOMA FUNGORUM. A large number were found in *Polyporus squamosus*, on a decaying tree near Humebyres, in August, 1866. Does not seem to have occurred in Scotland during the previous thirty-two years, when it was recorded in "Entomologia Edinensis."

„ ANCORA. Two or three specimens in fungus under bark of Scotch fir gate-post; Girrick, about 1850.

ORCHESIA MICANS. Larva abundant in corky *Polyporus* on decaying ash, within the area of Roxburgh Castle; May, 1866. Imago appeared in June. New to Scotch list.

SALPINGUS ZERATUS. By sweeping; near Girrick. One specimen. Then new to British list.

The following species have been observed within a few miles of Dunse:—

LEISTUS MONTANUS. Three examples of this rare and lovely species have been captured in different years on Dirington Law. The first was secured by my nephew, Mr Alex. Wilson, when collecting with me in August, 1862; the others by myself. On several occasions I have failed in securing additional specimens. On the last, *L. rufescens* offered itself instead.

TARUS BASALIS, MISCODERA ARCTICA, BRADYCELLUS COGNATUS, SIMILIS, and COLLARIS, are also to be met with in the same locality.

SPHODRUS LEUCOPHTHALMUS. Male and female found in a bake-house in the town, about 1840. The late Dr Johnston shewed me a specimen about that time, which he had taken in his own house at Berwick. These are the only examples from the Borders that I have seen.

TRECHUS LONGICORNIS. One. Among shingle, banks of Whiteadder at Ordweel. New to Scotch list, and very rare throughout Britain*.

BOLITOCCHARA LUCIDA. Under bark of Scotch fir, with fungus.

OCALEA PICATA. Under fallen trees; Langton wood.

LEPTUSA FUMIDA and RUFICOLLIS. Under bark; Langton wood.

ACIDOTA CRENATA. Plantation; Hardens Hill.

HOMALOTA CURRAX and CAMBRICA=VELOX. Whiteadder and Langton burn.

„ EREMITA. Dirington Law.

„ LONGICORNIS. Near Dunse.

* Mistakenly recorded in "Scottish Naturalist," from near Kelso.

- PLACUSA PUMILIO. Under Scotch fir bark, much decayed ; Dunse Castle and Girrick.
- GYMNUMA VARIEGATA. Margin of Dunse Castle lake.
- LATHROBIUM ANGUSTICOLLE. Shingle, side of Whiteadder, at Preston haugh and Ordweel.
- „ PUNCTATUM. Shingle, near Preston bridge.
- STENUS GUYNEMERI. Several ; side of stream near Oxendean.
- GEODROMICUS NIGRITA. Banks of Whiteadder, Preston.
- LESTEA PUBESCENS. With *S. Guynemeri*.
- EUSPHALERUM PRIMULÆ. Primrose flowers ; Peely braes.
- PTENIDIUM KRATZII. Under damp shingle, banks of Whiteadder and Langton burn, in May. Instead of manifesting the hilarity of movement so common among Trichopterygians, this species is very deliberate in its attempts to shift its quarters. Mr Matthews named it. He had only seen two previously, both from Scotland.
- LIODES ORBICULARIS. One ; by sweeping in Langton wood.
- HYDNOBIUM PUNCTATUS. One ; by sweeping on top of Dirrington Law.
- CHOLEVA LONGULA, *Kelner*. Under fallen leaves ; Langton wood ; 1861. New to Scotch list. Taken this year in Fife by Dr Power.
- LEPTINUS TESTACEUS. About two dozen taken among decaying chips in Langton wood, August, 1857. Under the chips were galleries made by mice or moles, from which several were extracted. This singular-looking eyeless beetle was first determined as British by Mr Hardy, from an English specimen captured by Mr Janson.
- EPURÆA PARVULA. One ; Langton wood.
- SORONIA PUNCTATISSIMA and GRISEA. Larva and beetles feeding on juice of a bleeding elm ; Langton wood.
- ATOMARIA MESOMELAS. Plentiful ; margin of lake, Dunse Castle.
- ANCYSTRONYCHA ABDOMINALIS. One, from trees ; Peely braes.
- CEUTHORHYNCHUS CYANIPENNIS. Banks of Whiteadder.
- CEUTHORHYNCHIDEUS VERSICOLOR. Oaks ; Dunse Castle.
- CÆLIODES GUTTULA. Nettles ; near Dunse.
- ORCHESTES ILLICIS. Oaks ; Oxendean.
- ERIRHINUS TORTRIX. Black poplar ; Dunse Castle. In the Highlands on aspen.
- TETRATOMA ANCORA. On decaying Scotch fir ; Oxendean.

Notes of supposed re-appearance of the Sand Grouse. By
the Rev. F. R. SIMPSON.

I have to mention to this Club the supposed re-appearance of the Sand Grouse, as reported to me by Mr J. Coldwell, of Beadnell. I say *supposed* re-appearance, because unfortunately none of the birds have been captured. Mr Coldwell first observed them on Sunderland Burn Crumbles, on the 16th May. Being very anxious to secure a specimen, he was diligent and persevering in pursuit, but failed in his object; the birds being so exceedingly shy and wary, that he only once succeeded in getting within range. He shot one, as he supposed, and let it lie where it fell, hoping the others might again come about it; but after waiting a short time in vain, and then going to pick up his bird, was mortified to see it rise and go away, apparently unhurt. He never had another chance. The number of Sand Grouse he reports as six—three of larger size, about the size of a hen pheasant; colour over the back a reddish brown, but decidedly paler than the grouse. The breast was lighter coloured, with a broad dark crescent band across it; this not so marked in the smaller birds. There were haunting the same ground, and at times in company with them, two other birds, which he describes as long-legged, taller, and thinner-bodied than the Sand Grouse, and which he does not think were bitterns. He did not see the birds after the 20th, but frequently heard them calling amongst the corn, and believes they remained in the neighbourhood till about the middle of June. I may mention also, that on the last-noted appearance of the Pallas Sand Grouse (1863), they haunted the same and adjoining links to south and east; and would, I believe, have bred there had they not been molested. The flock that I first observed in that year numbered about fifteen birds. Dr Tristram, in a letter to my friend the Rev. Mr Thorp, and which he has kindly put into my hands to read, says: “The bird is a native of Tartary and Southern Siberia as far as the north shores of the Caspian, and to the edge of the Black Sea. It has not unfrequently left the Steppes and visited the vast plains of Russia in Europe. They seem, like the Wax-wing, to migrate irregularly; perhaps when food is scarce. I cannot say anything about the difference in size; but in plumage the sexes and ages differ much. I have five specimens: four

English, and one shot at Pekin in winter. They all vary much. In 1863, the Pallas Sand Grouse actually bred in Denmark and Holland, and the young got safely away and migrated. In May, 1861, there was a great irruption into China, between Pekin and Tientsin. It appeared on the Volga in 1853, and in Europe in 1859 and 1863."

It is exceedingly to be regretted that the dropped bird was not more severely hit; had it been secured our doubts would have been removed. As it is, if these six birds were Sand Grouse, as Mr Coldwell confidently affirms, they would seem to have been of the larger variety (*Pterocles Alchata*), of which the birds of the first year are, I believe, smaller than the mature bird, and of which, so far as I know, we have no recorded visits to our shore. The dropped bird was reported to have been afterwards picked up; but I regret to have to add, after subsequent inquiries, that such report was unfortunately not true. The description given accords most nearly with that of *P. Alchata*.

On the Pele Tower at North Sunderland, and some Coins found in its Vicinity in 1832--3. By the Rev. F. R. SIMPSON.

The old Tower at North Sunderland, in or near to which these large coins were found, was one of those old keeps or peles, with which our Border country was once thickly studded, and of which we have some still remaining; as at Fleetham, Beadnell, Embleton, &c. During its destruction many other coins were found (several scores), most of them similar in size and appearance to those in my possession; others apparently worn, and shewing no trace of design or inscription. At the time the Pele was demolished, the lords of the manor claimed all "treasure trove," and no provision was made for recouping the finder; and the consequence was that the great bulk of these coins were secreted and smuggled away, and have passed into private hands and become dispersed or lost. The Tower was pulled down forty years ago, having been removed when the present church and vicarage were built. It was square, and of solid masonry; the walls being about five feet in thickness. It

had consisted of two stories, the lower one of which was perfect, having an arched roof of stone, with a large doorway to the north, and communicating with the upper by a hanging stair in the south-west angle of the building. Of this upper story, portions of the walls were standing, but it was roofless, with an accumulation of debris on the floor which was overgrown with grass and weeds. Its interior measurement, so far as I can find, was about twenty-four feet. An outer erection had, in later years, been built on to the south side, which was, to the time of demolition, used as a dwelling in connexion with the lower part of the Pele. One cannot but regret that this ancient structure, standing, as it did, only a little to the east of the modern buildings, was not restored and utilized as a coach-house and granary, and thus preserved as a solid link connecting the present with the past. A hammered cannon-ball was found by the sexton when digging a grave, about fifteen years ago, within twenty yards of the site of the old Pele.

The English coins, which are silver, are of the reigns of Elizabeth (1585), James I. (1603), Charles I., James II., and of Queen Anne (1703?). The Dutch coin is of the province of Zealand; date 1700? The smaller coins, which with the above were shown to the Club at Bamburgh, were picked up at Budle Hill, and which Mr Hardy has kindly read, are of the time of Edward I., and II., coined at London and Canterbury; and a curious three-penny (?) token of Elizabeth, coined at London, on which she is belauded as "*ROSA SINE SPINA*"—on which Mr Hardy remarks, "I rather fancy she was as prickly as our Scots thistle"; a remark which most of us will now-a-days think not very wide of the truth*.

No trace of the Tower being left, and old folk who knew it being fast passing away, it may be well that we should take note of it, and chronicle the fact of its former existence in our records.

* Elizabeth coined "pieces of three-pence, three-halfpence, and three-farthings," with this inscription.—*Camden's "Remaines concerning Britaine."*

Notes on the Cist opened at Lanton Mains, Roxburghshire, in October, 1870. Communicated by Mr JOHN HILSON.

From time to time, what may be really termed British graves have been discovered in Teviotdale. They are of the short form, constructed of slabs pieced together, and the walls occasionally supplemented by smaller pieces of stone. We can call up instances of sepulture of this kind which have within the last few years been opened by chance: at Blinkbonny in the parish of Eckford, at Bonjedward, at Newton, at Crailing Hall, at Spittal-on-Rule, at Teinside in upper Teviotdale, and latest at Lanton Mains, about two-and-a-half miles from Jedburgh. The grave at Blinkbonny contained a number of beads and other relics, which have been dispersed; so did that at Spittal. That at Lanton Mains was discovered in October last, on a gravelly knoll, within a stones' throw off the turnpike road which runs between Kelso and Hawick, and about one hundred yards or so from the farm-house of Lanton Mains; the covering slab having been dislodged by the plough. The contents, in addition to portions of the skeleton, were secured by the tenant. These consisted of unformed flint flakes, numbering about twenty, and a clay urn in very perfect condition. The bones had, in their long rest, been in a measure absorbed by the open, gravelly bottom of the grave, which had no under slab; and only a part (a small portion of the curve of the head) of the skull remained*. The urn seemed to have been placed by the side of the body, which had been doubled or deposited in a sitting posture, and to have fallen over as the skeleton mouldered down. It was quite empty. The dimensions of the Cist were 3 feet 8 inches long, 2 feet wide, 16 inches deep; direction of the grave, east and west. Where the side walls had not admitted of sufficient height, they had been coursed with pieces of stone laid on horizontally†. The whole appearance of the stony surrounding was rough, with a look of great antiquity. The white pebble, such as has

* Dr Hume, of Jedburgh, reported that it was the skull of a male; that it was small, and of the brachycephalic type, which was the characteristic of the Celtic or old British skull.—Dr Brydon, in "Trans. of the Hawick Archæological Society," 1872, p. 165. The whole of Dr Brydon's explorations are of much interest.

† Dr Brydon remarks: "The construction of the grave was peculiar, and different from any I have examined or seen described. Its lower half was formed by single stones placed edgewise for each side, and the other part was regularly and neatly built with small stones."

been pointed out by Mr Phené as an accompaniment of the contents of British graves, was not observable at first; but Mr Phené, who visited it some weeks after it had been opened, has recorded the presence of one of these white quartz pebbles, which he regards as a significant element in the contents of ancient places of sepulture. We, however, incline to the opinion, that what he picked up was one of the ordinary quartz pebbles to be found in Teviot gravel. The urn, a photograph of which appeared in the "Graphic," was in excellent condition. The material seemed sun-baked clay, and the structure indifferently executed in its curves. The ornamentation consisted of one surrounding strip of herring bone pattern, and of another strip of simple, sloping lines, like a schoolboy's first lesson in penmanship. The width of the urn was, at the greatest circumference, 19 inches; height, 7 inches.

More attention is now being given to all matters of antiquarian interest; and due regard may be expected to be observed in future occurrences of this kind. From indications of pre-historic remains turning up from time to time, it is believed that excavations, if prosecuted, at Crailing Hall, on the Oxnam, would produce interesting discoveries. At various times, curious archæological relics have turned up at Crailing Hall; and local antiquarians look with interest on certain tumuli thereabouts. In the Jed valley, at Old Jedworth, a cist was opened in February last, containing an urn filled with calcined bones. Some years ago, a cist with all the slabs and structure entire, but containing nothing, was come upon in digging the foundation of the house of Mr Halliburton, grocer, High Street, Jedburgh; and similar deposits have from time to time been exposed at the hamlet of Blacklee, at the head of Rule water. In 1858, an urn of the earth-baked pre-historic character, was come upon in digging the foundation of the house of Mr William Hilson, at Abbey Grove, Jedburgh. It did not seem to have been protected by any cist. The curious ancient cemetery of length-ways stone coffins, lying under Abbey Green, close to Mr John Hilson's house, is well deserving of a closer archæological examination. They are within reach of a very little digging. Mr Greenwell inspected some excavations made on the spot some years ago, and he inclined to the opinion that they formed part of an Anglo-Saxon graveyard. The use of short

square slabs to pack round the bodies, certainly indicates very ancient fashions of burial. The discovery, at a period later than his visit, of a very ancient corn rubbing implement, having a hole drilled in the edge, probably to receive a thong or a stick to lift it by, deposited in the grave, as a domestic implement or utensil, suggests an antiquity of a very remote period. These grain triturating dishes it is known preceded the period when more elaborate mechanical productions, such as querns, came into use; and the discovery of this implement, we are inclined to think, adds a new interest to the Abbey Green graves. The article was sent to the Edinburgh Antiquarian Museum. While referring to the Abbey Green graves at Jedburgh, we may notice the curious arrangement which marks the disposal of the graves closely adjoining the Abbey. There seems to be an upper and under stratum of burial remains. In the upper deposit are contained the graves of the population before and after the Abbey became a ruin. On digging below this, those of the early period are disclosed, fashioned with short slabs of stone, as mentioned above. Whilst a grave was being dug in 1854, to receive the coffin of the late Admiral Elliot, who died at Castlegate, the sexton remarked that he could not get deep down owing to a flagstone. This was found to be the lid of a stone cist of the class in question; and on removing it, a skeleton wrapped in a nolt's hide was found. It is not improbable that the Abbey occupies the site of a Pagan place of worship. Any way, the valley must have been peopled from the very earliest period; and traces of interment turn up continually all over the town. In addition to those referred to, skeletons were come upon when digging on the site of what is now the Royal Hotel. Fifty years ago, some stone coffins were discovered on what is known as Ringan Bell's Close, on the site of the house occupied by Mr Thomas Oliver.

On British Cists discovered at Frenchlaw and Edington Hill, Berwickshire. By CHARLES STUART, M.D.

Some time ago, while passing along the Whitsome road, I was informed that the men ploughing in a field immediately to the south of Frenchlaw, had exposed a stone coffin; and that they had waited before removing the top, for some one who might know about such matters. On inspection, I

found it to be a short cist, $3\frac{1}{2}$ feet long, 2 feet deep, and 2 feet broad, composed of six slabs of free-stone, containing a complete skeleton, in a good state of preservation. The bones, however, upon exposure to the air, began to crumble away; and I was sorry I could not secure the entire cranium, to examine it at leisure. Of this, however, I made myself sure, that it was of the Brachycephalic type, to which Retzius and other Scandinavian ethnologists refer the crania of the men of the stone age. Upon carefully searching the floor of the Cist, I came upon a flint implement, since identified as "a scraper" for cleaning the hides of animals. There were no inscriptions on the cover or sides of the Cist; and I believe the remains to have been those of an ancient Briton, taking us back to a very remote period in the prehistoric annals of the country. I find, upon referring to the "New Statistical Acct. of Scotland" (parish of Whitsome), that several stone chests were dug up on the farms of Frenchlaw and Leethead (now incorporated with Leetside farm), about 1831. The flags composing these Cists were identified with the free-stone at Todhaugh, a natural quarry on the banks of the Whitadder, five miles distant. The sizes of the bones of the skeletons found at that time, were examined, and indicated a stature of upwards of six feet. Roman remains have also been found in a field still known by the name of Battle Knowes, on Leetside. A bronze kettle (evidently Roman) was dug up near the traces of a camp in the same field in 1827; and the ground adjacent is worthy of further examination by those interested in antiquities.

On the farm of Edington Hill, in the parish of Chirnside, a Cist was discovered many years ago—the top of which Mr Wilson has placed over a well, which is situated due north from Edington Hill toll about a quarter of a mile. I asked the late Mr Tate, who was so well qualified to form an opinion as to inscribed stones, to examine it, as I believed it to be a good specimen of the usual circular markings described in his paper in the Club's Proceedings. This he did on the occasion of a meeting of the Club at Chirnside; and he informed me, that he was quite satisfied that the markings corresponded with those described in his paper.

Addition to Dr Stuart's Notice.

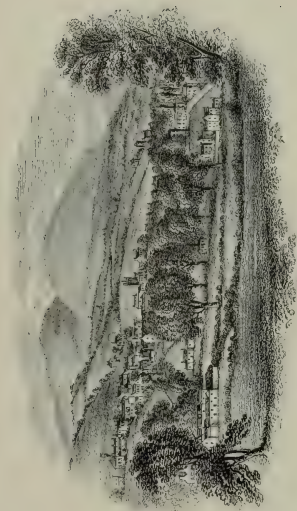
In a letter, of date 20th Dec., 1872, Mr Wilson supplies further information about the situation of the Cist with the inscribed cover, and various particulars which connect it with the burial ground of some ancient tribe; although by a popular myth, here as elsewhere, these relics are referred to a battle. "In the autumn of 1858-9, I was engaged in draining a field at Edington hill, which adjoins the Dunse and Eyemouth turnpike road. At the very apex of a gentle knoll, one of the drainers came upon this Cist. It was covered by one large flag, which had some ten inches of earth over it. The Cist was oval—about 3 feet by 2—the sides being formed of stones about twenty inches or so in depth, set on end like the staves of a tub. The flag and side stones were of the Old Red Sandstone, that is found here *in situ*. They had received only such rough dressing as a dry stone dyker uses; but the Cist was more carefully and neatly constructed than any other that I have happened to see. There was no urn, bones, nor flints; nothing but a slight coating of soft dark coloured soil on the bottom. The field immediately across the road is called Cairn dales, and some sixty years ago contained several cairns, which my father removed. I believe they covered cists, but I have no information about them. It has been supposed that the name of our parish (Chirnside) means *cairnside*, and that the ridge, of which the field in question forms the eastern termination, may have been the scene of a great battle. I preserved the flag that covered the Cist, and used it to protect a well-hole, where several drains converged, to admit of the mouths being examined." Dr Stuart subsequently transmitted a sketch of the cover, which is a parallelogram, 4 feet 2 inches long, by 3 feet broad. The marking is a single cup near one corner, to which is attached, rather diagonally than lengthways, an incised waving channel with three bends, two feet long: in fact, so like a serpent or "worm," that believers in a certain fanciful modern theory would rejoice in it as an illustration; but all that it wants to identify it with Northumbrian examples, are the circles which usually encompass the cups. Mr Wilson goes on to state that this Cist, as well as another which he found near the Whitadder banks, "had their largest axes nearly due north and south; shewing that they were made before the Christian era."

Quite recently (in December, 1872), the same field has furnished another Cist, close to where the one with the incised cover was obtained; which was come upon by Mr Wilson's men when subsoiling the ground. Dr Stuart, after visiting it, writes: "It is very rude in construction, and was empty, only a little dust being in the cavity. The sides were built regularly with stones, the same as those in the field. It was over 3 feet in length; 15 inches in breadth; and was 3 feet deep. This is a greater depth than any I have previously seen. It was covered with two stones of the ordinary Red Sandstone; evidently a single stone split, for when the two halves were laid to one another they fitted exactly. There were no inscriptions on the stones." From this Cist pointing southeast, Mr Wilson thought it might be of subsequent age to the other, but the direction appears to be immaterial; also from its narrowness, it was supposed to have belonged to a young person, but the probability is that in this instance the body was disposed sideways. In the built sepulchre, it agrees with that discovered at Lanton.

While this is passing through the press, the Rev. George Wilson, of Glenluce, communicates, that on a recent visit to his brother, he had looked at this last Cist, and had "picked up some fragments of bone, and a flint, which although *undressed*, is broken into a form like a rude arrow head."—J. H.

On a Will-o'-the-Wisp seen near Chirnside. By CHARLES STUART, M.D.

A few years ago, while on duty, about midnight in the month of March, during a furious storm of sleet and snow, in passing a piece of waste ground on the farm of Harelaw in this parish (Chirnside), I was more than surprised to find my beard and hair, and also the front of my cap to become luminous; beads of a pale phosphorescent light forming on the drops of melting snow, and lighting up my face. I could hardly credit my senses at the time, and put up my hand to dash away the fire, which flew off in sparks; and as I quickened my pace, gradually became paler, and at last vanished altogether as I passed on my way. The weather was very rough, as already described, and there was electricity



WOOLER FROM THE EAST

Presented to the Club by William Dickson Esq. F. S. A. Alnwick.

in the air, as flashes of sheet lightning were frequent. I wrote a letter about this to "The Scotsman" newspaper, and a gentleman from Aberdeen answered, informing me that he had been on fire exactly in the same way; and directed my attention to a paragraph in "The John-o'-Groat Journal" headed "A beard on fire," relating to another instance of a similar kind. The late Mr Henderson, surgeon, Chirnside, once told me, that passing some large manure heaps, in the middle of the night, a phosphorescent light came upon the edge of his riding switch, and remained for some time. I considered this phenomenon at the time to be what is popularly known as "Will-o'-the-Wisp."

On Langleyford Vale and the Cheviots. By JAMES HARDY.

[Read to the Club at Langleyford, July 25, 1872.]

This paper pretends to be little more than a survey of the objects more worthy of notice that fall within the compass of our sojourn from Wooler to the base of Cheviot, with occasional deviations into the back country on either side of the way.

On Horsdean, the hill above Wooler—of which a portion is allotted for the holding of statute fairs—have at different times been disclosed, during cultivation, several sandstone querns of the early British people, who had grown corn—and ground it too—in their primeval settlements on the hill-face. Their tombs occur even within the circuit of Wooler. In one instance, at least, the primitive mill was constructed of cellular Tuedian sandstone; and the cover of a cist recently discovered in a garden, was a hard compact variety of the Tuedian also, which appeared to have been quarried. Very many years ago, an antique brooch or fibula, is said to have been picked up by a native of Wooler, near an old wall, above the Wadhouse, behind Horsdean. The face and back of this hill are covered with drift, but towards the top the coating is shallow, and the plough strikes against the subjacent porphyry. Wooler, itself, occupying the last projecting angle of the Cheviots, stands on a deep accumulation of boulder clay and sand. It was probably a waste, till the mediæval castle, pitched on the terminable knoll, sheltered

the dependents that clustered round it; to meet whose spiritual necessities, the church or chapel was afterwards constructed, and fixed a population for the future.

A short distance from the town, during recent improvements in the Earle fields, many large blocks of white or yellow sandstone and grey limestone of fresh-water origin (Tuedian) have been extracted, along with other "earth-fasts" of hill-porphry. Both sandstones and limestones enclose fossils, of which *Calamites* and *Stigmaria* are the most noticeable. The sandstone contains green-earth and scales of mica, and the quartz granules are minute: differing from the Whiteside sandstones, in respect that the latter shew no mica, and include large fragments of quartz, as if derived from the debris of an ancient quartzose rock. There is probably a junction with the Tuedian on the outcrop of the porphyry, overlaid by the drift; for I found a loose block of porphyry with a fragment of this sandstone mortised into a hollow in its centre. Drifted pieces of the sandstone are frequent in the clay scaurs above Earle Mill, and particularly in one opposite Haugh-head; large blocks are scattered in the channel of Wooler water, below Caldgate Mill, and a large one at the junction of Old Middleton dean with the Caldgate valley. Several rolled fractions of it, of a green colour, are visible in a bed of gravel mostly porphyritic, firmly jammed into the interstices of the newer sandstone rocks of Whiteside. Occasionally also, of a yellow tint, they occur in the thick assemblage of gravel, sand, and clay on the high bank to the east of Careburn bridge; but that deposit, which has undergone subaqueous re-arrangement, appears never to have extended farther up, for we find none on the west side, although the boulder-clay itself in its crude condition is spread over all the hills. We are probably here on the shores of an old sea, or, rather, as there are no marine shells present, of a great fresh-water lake; and the latter condition consists best with the appearance of the laminated and slowly deposited unfossiliferous silts in the valley of the Till, farther down. There are again fragments of this peculiar sandstone and limestone in the deep clay beds above South Middleton dean, where porphyries predominate at present. The Tuedian formation may have been originally shallow; but it is evident that it has undergone vast denudation. A large sandstone block is said to lie on the moorland height above

Brand's Hill. It may have been transported thither by human agency, for the purpose of the ancient inhabitants sharpening their weapons and domestic implements thereon. For ages a sharpening slab of this kind lay near the Well-dean, Wooler, on which the inhabitants ground their swords or pikes, when summoned to active warfare.

In the first gap behind Horsdean, issues at the foot of the rocks a copious spring of pure water, called the Fairy, Maiden, or Wishing Well; whither youngsters still resort, and dropping in crooked pins, whisper the name of their partners as fervently and believingly as ever they did in the olden time. Overhanging it, although now partly destroyed, is a rock, called the King's Chair, whereon a king once witnessed a mythical battle in the days of old, when something of "divinity did hedge a king." An extensive camp occupies the platform behind, and is accommodated to its shape; the ancient refuge for the Horsdean and other hutmen, the foundations of whose habitations and rude tombs are still sprinkled over the adjacent waste of Kenterdale. By those who have seen it entire, it is said to have been fully as strongly fortified as the fine camp on a similar situation on Harehope (on Akeld farm), and was almost a "fac-simile" of that stronghold. The place is called "the Kettles" from the pot-like cavities in the surrounding ravine. In these hollows are old folds and hut-circles of the British people. An old faint wall runs down the side of the valley next to Horsdean. A road from this great camp conducts to several other smaller ringlets, or hill-forts, at the top of the steep fields which we pass before reaching Earle; and near that road are traces of ancient division walls, of mixed earth and stone. Nearly all the top, and middle face of the hill, forming the cover called Earle whin, except the declivity of Earle dean, has been cultivated on the ridge and balk system; we likewise find hut-circles of the former husbandmen among the balks. The balks again re-appear beyond Old Earle, above the "Common" farm, whence they may have communicated with Hartheugh, where a set of them remains entire, intermingled with tombs, and walls, and hut-circles; while on a bright spring day, others of them are readily distinguishable on the slopes of part of that hill above the Care burn. Precarious must have been the harvests on these wind-swept eminences; but corn growing was not abandoned on the Earle heights till within a recent period.

The pristine name of Earle is "Yardhill," "Yerdhill," "Eardle," &c., still traceable in the country pronunciation, "Yer-ill." It may either signify guard-hill, or the hill with enclosures on it; or the name may refer to the ancient British dike crossing by Earle Hill-head. Some other symptoms of British occupancy have been revealed. On March 12th, 1814, "as some labourers were at work on the summit of a green hill, on the farm of Old Earle, they struck into a complete urn of baked clay, unglazed, inverted on a flat stone, a little inclined. Some fragments of a human skull, and other bones in a sound dry state, and a thin piece of flint, were found under the urn. The small end of the urn was not a foot below the surface, with a few stones remaining over it*." About 1825, another urn, of similar composition, was disinterred, which the field workers broke.

Gaining the ascent above Middleton Hall, we attain our first view of the giant masses of Cheviot and Hedgehope, recumbent guardians of the great lone moorland. Now they approach us, dark-brown, blue, or sombre black, symptomatic of a moist atmosphere. Especially if the mists troop, or cling to the summit, or form a ragged bridge from hill-top to hill-top across the valley, may we augur spiteful showery weather farther up—not always, however, descending to the base; for coming out of a dense mist, and the society of plaining plovers, you are sometimes surprised with gladdening sunshine, and the singing of cheerful birds, and the undimmed portraiture of the lower landscape. At other times the hills lie farther off, but still extended in all their vastness—dressed up in lighter tints, or dappled robes, and with winning smiling features, gilded over with sunshine. Towering white clouds gather up beyond the ridges, that seem to float over another and brighter sphere, enticing us to climb up the long hill steep to participate in what proves but a visionary prospect. In autumn, however fair and well-determined the outlines of things stand out in the light of dawn, broad shadows cast a gloom over the mountain sides long before night-fall, and in the deep hollows and the woods the light speedily becomes crepuscular. In that season every cloud paints its inky shadow on the desolate moors. Thence too—from this spot where we gaze—in winter time, when all is comparatively temperate in the lower world, we may

* Local Papers, in "Local Historian's Table Book," III., p. 135.

witness the snow-blasts warring remote on the hills, and the streaming drifts and showers, here and there silvered by the sun, wheeling round the ridges, fed by the lowering muddy clouds that retain a fixed station there for many a long day.

Bringing the eye downwards, there opens before us, between two ridges, a winding inlet, with bold capes and sinuous bays, stretching away up into the very bosom of the hills. The haze that veils the promontories adds to the similitude of a narrow sea-frith. This is the vale of Langleyford, whither we are bound. We are now skirting one of its reaches, where the Wooler water works its uncertain way among congeries of ancient gravels and rolled masses, often disturbing and ploughing them up, but adding nothing to the spoils brought thither and distributed by earlier and more intensified agencies, that scooped the channel for the present diminished stream. I have called it Wooler water; but its oldest name, and one still used, is the Caldgate burn. In the sixth year of Edward VI., "At Cadgate mouth (*i. e.*, where it joins the Till), two fords" were "to be watched with four men nightly of the inhabitants of Dodington." Farther up, the Ordnance surveyors have named it Harthope burn. Small crowds of alders, varied by lighter tufts of birch, thorn, and hazel, or scattered mountain ashes, with a fine but limited oaken bank, intervene on the steep between its banks, and the moory and ferny grounds backwards.

The ground above, on the Middleton side, is permanently stamped with the twisted ridges and long reaching balks of the old British cultivators, who had here, although hitherto almost unnoted, numerous strong fortlets, and at intervals camps of greater compass; showing that it was reckoned of great importance by the aborigines. The soil itself is thin and full of small stones, and they must have had a hard time of it to make a living, proportionate to the numbers, as indicated by the multitude of huts, that required support. Strange that they should have preferred, as a sort of outlaws, to live, in a great measure, at the outskirts of fertility. It supports the view, that they were chiefly a pastoral race.

There are some names of places here worth noting, some of them rather whimsical. Shining Pool, Skirl-naked, and Switcher-down, are old shepherds' or farm sites. The waters here bifurcate; that whose bridge we cross is called Care burn,

because the flocks require to be herded, as a distinction from Common burn, farther up, where there prevailed a sort of socialism as regarded occupancy. The bank that descends to Care burn is the Armer brae. The hill-side on the left is the Slack, indicating a depression in the hills. There is in it a noted foxhole, and tiny water-fall with its crop of brittle and other ferns; and still farther up a miniature representation, in its broken tiers of pillared rocks, like the fragments of an aurora, of the grander Henhole. Indeed, the shapes of the hills, whether conical, or lumpy, or rock crowned, as well as the configuration of ravines, are over and over repeated among the Cheviots. The opposite hill, with its grand steep of blue glitters and scanty share of grass, is Hartheugh. You stumble here and there upon small camps amongst the wilderness of ferns on its south-eastern flanks; and at its tops, for it has two, are many folds, and hut-circles to guard them. In modern times a house had been erected between its eminences; for the summit comprehends a very considerable rock-roughened and benty space. The wind, it is said, once blew up the hearthstone, which is still reckoned by the shepherds a marvel; but as the last occupant was a reputed witch, such an occurrence might have been taken for granted. After this, we are quite prepared to find on the other side of Hartheugh, the Devil's Knowe and Hell-path. Crossing Care-burn, we come upon the Using-Shank, which may admit of a variety of meanings. Old Using stood near Broadstruther. The next hill-face to Broadstruther is Lukinarks; and there is a field of the same name at Middleton Hall. We have also Arks among the southern Cheviots, and in Roxburghshire. *Airig*, in Gaelic, is a summer pasture; and *lucken* is a bog in Ettrick Forest: which applies well enough here. Farther over, where we again look down upon Langleyford vale, is the hill called the Sneer. *Sneer*, by a reference to Jamieson, is equivalent to *snifter*; and I have no doubt there is cold enough on it to make both shepherd and dog turn up their noses. Its highest peak is appropriately named Cold-law. So far for the minor topography.

The eastern grassy end of the Sneer hill has once been the scene of British cultivation; traces of their twisted ridges, balks, huts, tombs, folds, with others of more recent construction at the expense of the ancient, and fence walls nearly obliterated, being scattered up to and across the ridges. Mr

Hughes opened a few of the tombs in the higher part; but the soil being peaty, it had probably absorbed the lime contained in the human frame-work, for nothing remained. The cists were short, and formed of boulders. A remarkable British division dike crosses the point of the Sneer nearest to Careburn. On the southern side, just as we enter Langleyford vale, we see it go up the steep heathery acclivity of Brand's hill, across which it passes, guarded by fortlets, and accompanied by grounds of ancient occupation, till it loses itself among the Old Middleton camps and fortlets, towards which we glanced from the Middleton Hall side. The shepherds now call it the "Aud dike"; but when I first knew it, it went by the name of the "Roman dike," and was regarded as of great antiquity. An old shepherd told me, that it ran from Ingram, on the Breamish, to Akeld; while another affirmed, that it had a course of a hundred miles. Whether it was the old march of grazing grounds, the boundary line of tribes, or a fortified barrier, we can never know. These hill-Britons, although it has not yet been noted here, were fond of separating walls, whether for the protection of their flocks, or crops, or to distinguish family property. I have not tried to trace this dike southwards; but it may be the same which joins a group of camps and fortlets, and ground of old culture, now waste, between Middleton burn and the upper Lill burn, near Ilderton Dod hill. It remains for others to enquire whether the British settlements on the moor edges were linked together in one chain. Northwards, according to some, after crossing the Sneer, it combined with a still well marked old wall, which separated the cultivable grounds of the old Slack farm from the grazings on the Crag; which terminates at the Slack washing-pool on Care burn. It was then said to ascend the face of Watch-law; but I examined the circuit of that hill without success. Many tumuli and an ancient road lie between it and Hartheugh, but no wall. The more probable opinion is, that it proceeded aslant the lower part of Hartheugh, and is now incorporated with modern fences in one portion, and afterwards defaced for a considerable distance by tillage grounds. Pursuing this direction, we arrive at what may be its continuation, about the middle of the Common houses, where a wall, marked with upright stones, accompanies a road and several fortlets and camps across to Humbleton hill. I have not

sought out the junction, but this hill itself is nearly encircled by an ancient wall on the south, enclosing folds, and guarded by forts; which at the eastern end combines or coincides with the huge balks of the ancient cultivator, which are such conspicuous objects, and have been mistaken for fortifications, and have given rise to several absurd speculations. A line of wall, with cross-ribs, sheltering huts and folds, burrowed out from the immense congregation of stones, descends the eastern side of that hill (I believe there are three lines of these walls on the hill face, but they are not equally traceable), till near the base, where it may unite with the under wall of defence. The bottom wall turns the eastern corner of the hill, where there are clusters of huts in ruins, accompanies the hill round and passes away to the plantation in the direction of an ancient road that crosses through it. Again, behind Humbleton hill on the west, a new series of hut-circles associated with dikes resembling enclosures, commences; the main-wall running up the road, by a hollow, towards the great fortress on a promontory (Harehope camp) at the head of a ravine. This is now partly occupied by a recent march fence. Coming back, traces of walls continue among the fine fortlets still remaining at the southern base of Standrop, and proceed round the hill-edge for the extensive camp overlooking Akeld fields. These dikes are numerous at Swintlaw, and are as evidently the results of Ancient British labour; as are the huts, and forts, and hollowed out roads, marked by stones on edge. They re-appear among the scattered settlements at Heathpool linn. They can be traced on Whiteside, not far from the eastern inscribed stone, running behind the ground where the fair holds, towards the camps now enclosed by Fowberry Park wall. In Berwickshire, they are prominent at Cockburn Law; and especially on Bunkle Edge, where tradition calls them "Dane Camps," and points out the water-tables in front of them as a sort of rifle pits whence, with dart or arrow, an attacking foe might be annoyed. There is also there a tradition, but very small traces, of a forgotten ditch and turf wall named the "Black Dike,"* the counterpart of

* In Berwickshire, there is also a ruinous entrenchment, called the "Black Dike," which can still be traced for two miles on Earlston Moor. In the 'New Statist. Acct. of Berwickshire,' p. 43, another rampart—the "Black Dikes"—is noticed in connection with the camp named "Blackcastle Rings," near Greenlaw, which runs in the direction of Hume Castle. Being prin-

the Cheviot one, coming down from a place called Smiddy-hill on the Lammermoors, across by Quixwood, where it is visible, and on towards St. Abb's Head. These, and other instances, shew that the Britons could rear walls of their own, without being indebted to Roman precedent.

Whether or not this wall was a guide, we find in later times settlers of a different race adopting its line of communication, treading, it may be, in the path of old traditions, to prevent invasion from Scotland. "The Day-watch appointed for the East Marches, 6th Edward VI. (1552).—The Day Watch from Mydleton-Cragg to the Torre—South Mydleton to watch Mydleton-Cragg, with one man on the day.—North Mydleton to watch Brandhill, with one man on the day.—Mydleton-hall and Yardall to watch Harsheugh, with one man on the day.—Wooler to watch Troden-carne, with one man on the day," &c. [The northern end of "Watch-law" is still called Fredon; the cairn may have been utilised for fences].

Let us now go up into the flat grassy glen, where there is no tiring so long as the feet are on the elastic grass, and where we appear to be ever withdrawing more and more from the outer noisy world to the quietude of reposing Nature. The hurrying water finds an audible voice in the silence, and fills the hollow with liquid tumult. The water at present skirts the southern side, but at some former era has traversed a higher channel, whose boundary terrace still stands up on the northern margin. A similar arrangement exists on the Care burn, and also on the Lill burn.

cipally composed of black turf, they have probably derived their name from their colour. We are not, however, to regard every such wall as pre-historic, unless associated with undoubted British remains; for we find march-dikes, and ditches, and hedges, in very early writings. In the Kelso Charters, we meet with the "murum de Qwitlaw" (Morton's "Teviotdale," pp. 122, 123); "murum qui dicitur Swtercroftdyks" (p. 122); "antiquam balcam, quæ est antiqua marchia ad pedem del Whitelawe" (p. 136); "balcam lapideam"; "quandam balcam latam" (p. 136); "quandam antiquam balcam quæ est marchia" (p. 137); this last was continued across the "strother" by a ditch. Of these march ditches we have "quædam fossa ex antiquo constructa" (p. 138); we have also "fossati quod monachi fecerunt" (Melrose) (p. 269). We have also a "vetus murus" at Whitton (p. 269), which was ancient at a date about A.D. 1199. "Earl Patrick of Dunbar" gave to Dryburgh, "Elvinesley, bounded by the hedge which reached up to Duneden, &c." (p. 306). The supposed "camp" that obtained notoriety some years since in the Alnwick district for growing "Roman oats," was merely one of these old boundary balks. I noticed others in that vicinity.

The southern side being moory, gives origin to the heather. There are a few juniper bushes near the bottom, perhaps the remains of a belt of that shrub; we find it again above Old Langlee, and a solitary bush on Cheviot above Harthope linn. Where springs scatter their moisture or flow down to a plash at the foot, clumps of alders have been established. There is much scantiness of earth; many of the alders having their creeping roots exposed on the surface in a labyrinthine network; their support being a mere causeway of stones with a slight soil washed into them. Gathered into masses, these trees have a stiff, sombre look. In autumn this is kindled up by the yellowing green of the hazel, the scarlet bravery of the mountain ash, and the feathery birches, which glow like sun-pierced orange clouds on the higher and drier spots.

To look up the heathy slope, it rises uniformly steep and level; but one has little idea of form and distance among those hills. There are numerous inequalities, wrinkles, and hidden recesses up there; and one cannot comprehend the extent till he has traversed the ground. Many scattered British settlements lurk concealed over the heathery space, even down to the edge of the woods. They are as much entombed there from human knowledge, as are the fossils which lie sealed up between the layers of rock. The road ascending from Langlee is an old British track-way.

The ridge on the other side rises gradually, but at length aspires to such a height, that where the ascent is abrupt, as for example above the fine glitter-covered bank, it appears to approach nearer to the ethereal blue than many loftier eminences; the gossamery summer clouds, one might say, float out from behind it. It is bared to the bone, and from its dryness produces grass and bent rather than heather.

The rock that feeds the "glitters" is a hard compact grey-blue porphyry, and its fissility originates from the mode in which its particles are adjusted, rather than from their being softened by the weather. The process of comminution and slipping forward is constant; the shepherds tell me that they hear the splinters tinkling down, even in the calmest day of summer—the alternate heats and colds being sufficient to set the particles a-pattering. In passing, I sometimes imagine, how the self-same cliffs in by-gone ages of the world, thus imperceptibly mouldered away amidst fierce frosts and showers of snow and rain, till the accumulated spoils were

at length swept off by currents, glaciers, or ice-bergs, to contribute to the soils, sands, and gravels that now overspread the lower lands. This is the progress it has made since, under the present sub-ærial influences, to bury itself once more with ruin. In a short time the cliffs themselves will disappear beneath their own debris, and the external waste will terminate; and the surface may skin over, and the evidence be altogether shut up, that discloses that not only it but all the adjacent hill-sides have once undergone the same gradual disintegration. These remarks are applicable to the whole of the Cheviots, so much encumbered are they with displaced weathered rocks.

Farther on, the ground is disfigured by heaps and inequalities, such as are produced by great slips of soil from hill-sides; and several long ridges of rolled blocks and gravel cross the valley, similar to those which above Langleyford I have called moraines. These mounds may at a former period have converted this confined valley into a series of temporary lakes, whose ancient bottoms the stream is now disturbing.

The quantity of thriving Hawthorn here is a special index of the soil's dryness and gravelly texture. They are the charm of this part of the glen. They are not very tall nor so pendant in the branches as in richer ground, but their shapes are wonderfully diversified: bushy and bowery; upright and tufted; one-sided, antique, and bent; dwarf, stunted, and crippled; now flourishing in the vale and the shelter; then flung out on the far-off ridge, the forlorn-hope of trees, bidding every foul gust of wind; and so dispersed and scattered about in the hollows and on the low grounds, that they imitate an artificial park in happier situations. We need only to bring back the extirpated red-deer and roe, to make it real. But now, we have the calmer picture of the ewe and lamb reposing under their shadows; while the ring-ouzel pipes its wild note from their unmolested bowers. There is a period too, when the hawthorns are not only leafy and decorative, but unfold their snowy blossoms, to soften the roughness of the mountain side and introduce a gracious mildness on the waste. The blossoms continue a longer time up here than farther down; sometimes we have the hawthorn, the wild rose, and the late primrose in flower together—a combination of three floral seasons. The thorns and other trees here are free of lichens, shewing the air itself to be comparatively dry.

I sometimes question if these thorns are native here. They may be said to be so now, having been dispersed by birds. Not far from the road, there is a series arranged as if on the line of an old fence. Hawthorn hedges are not modern improvements. In 1552, enclosures on the Borders were directed to be "double set with Quickwood";* and none of these bushes are three hundred years old. Be this as it may, they are distributed on these hills over various places once occupied by the British people, springing even from the centre of their hut-circles. They are numerous at Yeavinger, and again at Heathpool. We have here, also, as happens at Heathpool, a stray bush of elder among the glitters, testifying to former human vicinage; for I cannot account it wild, as some have done. Our northern elders never occur in a thicket, asserting their birthright.

Here we have many tokens of the former primitive inhabitants. The first to be noticed is an oblong structure, built without lime, with three compartments. In the opinion of the old shepherds, it was a *bught* for milking ewes or assorting sheep. As it has small doors, it was as likely to be a stable, or cattle stall. Its name, "Frater's walls," rather betokens recent tenancy. Among the boulders at the base of the glitters are examples of rude hut-circles, little better than earth-pits. Very wretched they must have been, and infested with adders, as they are now. A modern shepherd's hut on the hill-side shows pretty much what they would be: it is horse-shoe shaped; and there is a pavement of smoother stones on the floor to keep the body from the wet soil, which becomes quite saturated in winter and in rainy weather; and over that a coating of withered brackens. Farther up, on the heights, ancient folds have been constructed of grey tumbling rocks, and have been adapted to modern wants also. The British road crosses from the Langlee side, and ascends this hill.

Many of the alders in the bogs by the way-side are of unknown antiquity. John Ray, or Daniel Defoe (the latter mentions them), may have looked on them nearly two centuries ago. There are few of them that are not buttressed at the base, from the power they have of self-repair. After living to a good old age, the tree begins to droop, but some lively young shoot takes up the growth, and transmits a

* Nicolson's "Border Laws," p. 220.

stream of fresh wood towards the root, and, as the old stumps become more earthy and rotten, roots themselves issue, which finally thicken and coalesce into those clumsy shapes and carry up a tree as vigorous as before. This capacity of renewal is also exercised by the thorns, as may be seen by the cords and wrinkles on their stocks. A young tree thus takes possession of its ancestor, and is converted into its substance and becomes its substitute. Another interesting form of parasitism prevails in the "Back-wood." Not only are the alders renovated by self-growths, but mountain-ashes have seized or incorporated a large proportion of the decayed trees: and we find trees half alder and half mountain-ash; and while in spring the latter rises upright and stately, shaking out its fresh green leaves, the alder, being later in leafing, continues a mere collection of withered branches. In other instances, the mountain-ash has entirely supplanted the original, which is suspended to it by a piece of dead bark; like the story of the ancient tyrant who chained a dead prisoner to a living one. They assimilate themselves, even to the shape of the alder buttresses; for the descending roots follow the shape of the alder, and when the mould is withdrawn they are seen to be buttressed themselves. Other examples of this parasitism of the mountain-ash may be seen in Goldsleugh wood, where they have displaced aged birches.

Turn we now to the Fauna. There are no water-voles on the streams among the hills. These run too wildly, and supply no refuge. They do not ascend above Earle mill. Rabbits abound up nearly to Langleyford Hope. Hares are scarce and lean: I observed only one, on the end of Cheviot, above the fields. When there are any, a frosty winter is said to settle them. Foxes are numerous. They seldom attack lambs; but, like dogs, there are some of savage dispositions which do. I once saw, near a stream on Hedgehope, what I took for a black shrew; but it was too nimble for positive recognition. Some birds may be marked by their absence. There are either few, or no, yellow-hammers, buntings, sparrows. Larks are scarce on Cheviot; a pair now and then may be put up. They love moor-edges of cultivated ground lower down. Lapwings also prefer lower ground. Curlews rise to the back of the Sneer, or cross Cheviot from Broadstruther. Plovers, like the grouse, do not fear the

swamps on the uppermost ridges of the hills. Since the drainage, wild ducks are not so frequent as they once were. A moor-pipet, in spring, was nestling at the apex of Hedgehope. Swallows look up the Glen, as far as Langleyford. Black game is not uncommon; a picturesque bird in flight across the black heather and green bogs, by the pale streak on its wing and the white feathers at the angles of its tail. Large birds painted against the wide empty landscape, appear bulkier than they are in reality. Such is the heron, when roused from sleepy digestion, on some unfrequented steep; in which strangers have sometimes imagined that they saw an osprey or fish-hawk. Great birds too, in expanse of wing, are the common and lesser black-backed gulls, which prowl over Cheviot in spring in search of garbage and the carcasses of dead lambs. The ring-ouzel is not so numerous here as towards Broadstruther, Dunsdale, and the Newton Torrs. Dottrels used to resort to Langleyford in spring; as woodcocks do to its wooded swamps in autumn. The tree-pipet frequents the alder woods; and also the shy redstart. Starlings have at first, I suppose, followed the rooks up to feed on the insects bred in the sheeps' droppings, and then have commenced to nestle in the convenient hollow alders. This is their present position near Langlee. The wheat-ears are at home wherever there are boulders for them to play at hide-and-seek with the passers by, ascending high up on Cheviot and Hedgehope; and the common wren is as busy and fussy in manner, and as hurried in its little rush of song, as you can find it anywhere. Only a pair of stonechats have as yet been visible. The kestrel builds in the woods, usurping perhaps some carrion crow's nest. Both pied and grey wagtails haunt the rivulet; and the water-crow never flags in whirring past. I have listened to its song once or twice on a frosty day in autumn, when it sat perched on a stone in the midst of the dashing stream. At present the kingfisher keeps below Wooler; but old people recollect of seeing it on the reach of the water above the town. The black-headed gulls seldom ascend much farther; and even their appearance here, flying backwards and forwards, is regarded as the forerunner of a tract of bad weather. Cuckoos make these banks a constant resort in spring. You see the restless birds flitting across the glen, both male and female, and both calling, but in different keys. The missel-

thrush is no stranger in this glen, as far up as the Hope. This spring, I witnessed a pair in furious pursuit of a sparrow-hawk, which had clutched up one of their young that had just ventured from the nest. The hawk had to drop with its prey, and finally, with my aid, it was rescued, amidst the great chattering of the parents who were as jealous of me as of the hawk. On another occasion, I saw one far up the bank attack a cuckoo passing below it, while a ring-ouzel sounded the alarm beneath, which so baffled the scared bird that it clapped down as if to hide among the rocks, muttering half its call-note. The summer long, the sandpiper, like another Ariel, trips along the yellow river sands. This year, I noticed it gradually making its way upwards towards the hills. It was first observable on some islands of gravel, near Wooler, during a flood, circling round them like a lark, uttering its pretence of a song; then a day after, at Careburn; and afterwards in its summer retreats up the valley. I once saw a carrion crow up here, dogging a sandpiper to discover its nest. The sandpiper retired by little and little, as the crow made its advances, uttering a sad plaining as if it was meeting with very bad usage. At last I sent the black fellow about his business; and I hope the sandpiper felt more relieved by my interference than the missel-thrushes appeared to be. The siskin is sometimes a winter frequenter of the alder thickets. Wood-pigeons, being much shot at in the lower woods, flock for refuge to the plantations about Langleyford. The shepherd told me, that they had become so impudent as to eat up his crop of young kale, directly in front of his window. In spring, the little willow wren (*Sylvia trochilus*) populates most of the glen, and sings particularly sweet among the birches below the Hope when they first open their odoriferous buds. Linnæus remarks that no bird was so frequent among the birch woods in Lapland as this. Troops of rooks pass some part of the summer on the hills, feasting on the mountain berries; and when these fail, they commence to stog up with their bills the moor grasses and bents in search of the grubs of crane-flies, or for wire-worms. I was surprised to what extent they had pulled up the grass on Hedgehope, above Harthope linn; the withered tufts being scattered all over their hunting ground. These were again recognised near the apex of Cheviot. Mr Hughes mentioned to me that a goshawk (*Astur palumbarius*) was

trapped in early spring, some time since, in a rock near the top of Cold-law, and the stuffed bird is now in his possession. It was a young bird of about two years old; after which the longitudinal bars on the breast feathers become transverse. The peregrine falcon preys as far down as Middleton Hall. By an examination of the bones and the remains of wing-feathers, &c., strewed beneath their eyrie in the Bizzle, it would appear that it is principally wood-pigeons with which they nourish their young.

Where the very modern cottage of Langlee stands, there terminates a low ridge called the Shank, on the upper side of which is a longitudinal depression parallel to Langleyford vale, named the Letchy syke. *Latch* is a dub or mire (Sibbald's "Glossary" to "Chron. Scot. Poetry"); and in modern German, *lache* is a pool, puddle, plash, or lake. For more about a *Latch* or Letch, see "Guy Mannering," chap. xxiii. Passing upwards from the cottage, there is a camp, traversing which is an oval-oblong erection with two compartments, and a hut-circle at the end of it. There are other hut-circles in the corners of the camp. Two large tumuli next occur; and still farther on, there is in the bank a cluster of cup-shaped cavities, whose purpose is not obvious. I have seen nothing like them, except near some huts and tumuli on the upper Lill burn, near Ilderton Dodd hill. They are too rude for pit-dwellings, and are more like modern concealments belonging to the smuggling period. Passing on, there are strong, numerous, and extensive enclosures and folds, round the old Langlee cottage; many of them modern, but others, from the employment of stones on end, of ancient date. They lie directly opposite the British town on the Langleyford side of the hill, to which they may have originally belonged. This townlet occupies an expansion at the foot of the hills, and its lower boundary-wall skirts the present main road. The huts are closely clustered, and in good preservation; some of them remaining still, as the natives would leave them when unroofed, with their causewayed floors exposed, and they require no excavation to bring their form to light. I thought I could trace in some a raised platform inside round the walls. A British road passes slant through amongst them, and they ascend well up the hill-face. They are copiously supplied with springs. Here, as elsewhere, the inhabitants had taken advantage of

a group of boulders strewed over the sunny side of the hill. I met with a viper basking on one of the deserted floors. The huts extended circuitously round the high bank onwards to above the Pebble burn ravine; some of them being still preserved near the burn sides. The rest were carted off to construct the fences surrounding the fields.

I pass the Pebble, or Diamond, or Hawsden burn, merely remarking that, by the side of its stream, after a flood, we may see in what manner a rapid flowing water assorts and deposits gravel: not level, but ridgy, wave behind wave, like the successive flow of glitters pushed down a hill-side.

In order to pick up a few miscellaneous items, I shall glance over to the fine castellated crag of blue porphyry, called the Housy Crag, or House of Crag, which towards evening imparts so much grandeur to the ridge. On one of the eminences of the crag, facing Hedgehope which lies westerly, lie two blocks of the well-marked porphyry of that hill; one of them being partially suspended over the cliff. As there is a hollow interval of half-a-mile or so betwixt the crag and Hedgehope, these must either have been dropped by an iceberg, or have slipped from a melting glacier. There are three or four tumuli of large dimensions on the slope beneath the crag; but hut-circles are few, the soil being moist. The modern wood at the base of the hill is traversed by old dikes and enclosures. Somewhere on the heights above Langlee is Carr's Fold. In rebuilding it, a cist was found, of the short form, containing human bones, which crumbled into dust. In the moors behind the ridge, towards Three-stone burn, in cutting peat on a dry moor, an ancient whetstone was recovered, at the depth of eighteen inches, supposed to have sunk to that depth in the course of years. The stone had been an oblong, seven inches long, and one inch square at the ends. The edges had been rounded by sharpening with it, and it had either been badly used or applied to coarse implements, as it was unequal. It was a "burn-stone," of a grey colour. It was found near the "Prashy syke"; a corruption, I suppose, for *rushy*. Also in cutting peat, and at about the same depth, several horns of cattle have been observed, not differing from those of the present domestic breed. Half-way up Hedgehope, facing Three-stone burn, a few years since, a very fine ancient quern was found among some boulders; which from the very large

felspar crystals, giving it a peculiar mottled appearance, is believed to be of Shap Fell granite. It now belongs to Mr Wightman, at Wooler, who also possesses a fragment of another of the same kind from Kilham. Mr Riddell has two additional examples from Bewick Folly. In the Berwick Museum there are two querns of this kind of rock: one obtained at a great depth under soil, on the surface of the limestone at Scremerston quarries; the other from near Branxton. An ancient traffic in these implements had subsisted between the eastern and western British tribes. In ascending Hedgehope during the autumn, while the sun shone opposite in the west and some driving mists were creeping across the hollow beneath, behind, almost obscuring the Housy Crag, I was delighted, on turning round, to see a gigantic shadow of myself projected across the interval, with a halo encircling the head. The halo was ever shifted and re-formed. On the same occasion, on looking from the apex across the mossy ground on the neck between this height and Coomb Fell, the rain having recently filled the pools, a most dazzling reflection of brilliant points, like the fragments of great mirror, sparkled from amidst the black setting of the peat-bogs of that extremely dreary expanse of broken ground. Between Standrop and Hedgehope is a syke; and near to it, a Highlandman named "Black Rory" had his whisky-still. A green spot near it is called Rory's Gair; *gair* being a small strip of green ground among heather or ferns. Mr Tate once told me, that a huge rock standing out from one of the Hedgehope heights has a quadrangular face, and a thin bed overlies a very thick bed. It is hence called "Kate's Kist," from its resemblance to a chest; and a lichen which is attached to the eastern face is called "Kate's Hair." There is another rock with a tale attached to it, called the Hanging stone, situated more towards the Scottish side, above Langleyford. A hapless packman was once resting upon it, with his burden of cloth too near the edge, when the pack slipped over, and tightening round his neck, strangled him. A similar story is told about a robber and a stolen sheep.

Let us now revert to Langleyford, which has been ever a bright spot in the Club's history. Has it not also been sung?

"Hedgehope and Cheviot are pleasant bits of ground,
But such a place as Langleyford is rarely to be found."

Langleyford was of ancient note. A British road crossed the country here. A Border night-watch in 1552 (6, Edw. VI.) upon the west side of Till, ran from Langleyford to "Ryden burn." "Langley-ford, Preston, Byrkes, Hunt-roodes, Dawson's-rode, to be watched with 11 men of the Inhabitants of Mydleton-hall, Mydleton-South, Mydleton-North, West Lylburne, the Newton, and Chatton."*

The Britons have left their traces on the first dry position, above the present plantation, and facing the farm-house, in their huts among a group of boulders. Proceeding along the top of the bank, whence there is the best view of the birchen groves that here cling to the stream, there is first an oblong; and farther on, where the boulders begin to multiply until they monopolise the wide ferny space, the huts also abound more and more. There are likewise more oblongs, and ruder folds. In a recess in the wood, two natural cave-like hollows have been adapted to contain sheep and cattle. Concealment during an invasion was doubtless the object of their adaptation. Higher up on the hill, and stretching away towards the Hope, are many large and conspicuous tumuli, which had depended for their construction on the adjacent congregation of boulders. The highest that I have noted is well up on the hill, in a line with the Hope; and the farthest up on the Hedgehope side, is also nearly opposite that cottage.

Conjoined with this, the greatest local collection of boulders on this side of Cheviot, near the outlet of the Rae (or Roe) burn,† are several fragments of what I take to be terminal glacial moraines, consisting of strong mounds firmly compacted; which cross the defile between the hill-foot and the bank of the burn, and face up the glen. From their being lowered at the end next the burn, as if they had been removed there, and from a depression lying above them, they may also at one period have dammed back all the upper waters issuing from Cheviot and Hedgehope, which may have constituted a lake that subsequently burst its barriers. This wonderful assemblage of rocks appears to be due also to the same powerful instrumentality that piled together the

* Nicolson's "Border Laws," p. 213.

† The Cat-loup, a deep gulph cloven by the stream by its passage through the rocks—situated farther up the Harthope burn—recalls another extinct member of the fauna, the wild-cat.

moraines. When we encounter heaps of loose rocks on the hill-sides, where they occupy limited spaces, they generally belong to some dismantled crag which has been overtopped by its own dislocated materials during the present era; and by a little search we discover the upper extremities of the parent rock. But it is otherwise here; their position shows that they have travelled, and a deep soil interposes between them and the fundamental rock—as the thriving trees and the rank growth of ferns among them bear testimony. In mineralogical character, these boulders correspond with the rocks adjacent to the burn-sides; but so do all those, with a slight diversity of crystallisation on this slope of the hill, up to the Craggs towards the summit on the S.W. side. It is among these high crags, which at present sweep in a semi-circle round a lowered vacant area, and amongst which the materials for a still active dilapidation—aided by a long retention of the winter's snow—are not yet exhausted, that I would seek the primary seat of many of those transported blocks; these, and a band of rock once continuous between them and Hedgehope, across the head of the valley, the varieties of rock on each side being almost identical. These crags lie a mile or two to the west or north-west; and this direction is in accordance with the distribution of travelled blocks all over the moors beneath, far down into the low country, as well as with the portion of this series of blocks which stretch along for those crags. That the reference to that source is correct, appears from the occurrence among them of a peculiar fine grained granitic porphyry, with pale pink or whitish felspar, resembling an Aberdeen granite, which occupies in its native site the borders of the deep ravine called the Long Cleugh, descending from those crags. It is an unmistakeable rock, and can be identified all down the Langleyford vale among the rolled blocks exposed by the burn. This being the case, these blocks, for the most part, have been swept not down the hill direct, but across the present declivity. But there must be added to them the vast array of dislodged stones that cumber most places of the hill, beneath the turf, composing quite a pavement between the turf and the soil. These are very abundant in the bogs, and constantly obstruct the drainers when digging foot-drains. Several of them turned out during this operation are whiter than any rock now *in situ*, and give the false idea of being

syenites of extraneous origin, but this is owing to the peaty waters having discharged the fleshy hue of the felspar. On the Hedgehope side, however, at the head of the vale, there is a native rock with paler felspar; and it has given origin to a great number of these pseudo-syenetic boulders, which can be traced down to Wooler. The upper portion of this paler variety being overlapped by peat, is called the Black Crag, and it is almost the sole remnant of exposed rock now left, except in gullies, on the northern slopes of Hedgehope. It lies at the very head of the valley; and from being so much pared down and rounded—pared down, but not polished,—it appears still to bear the impress of the movements of the ancient glacier that extended up and down the valley.

But there has been also a secondary movement of these boulders, which is still being carried on. During spates, the wild hill-burns dislodge and bear down all that they can shift; as is apparent from the crowds strewn near their courses, or accumulated at their junction with the lower streams. Both on the slopes of Cheviot and Hedgehope there are lengthened streams of stones irregularly scattered, stretching far down the declivities, and sometimes terminating in quantities huddled together. It was only recently that I ascertained how this came to pass. Happening to cross a slip of peat which had recently precipitated itself down the slope near the Black Crag, I found that along with the peat, the movement had torn up and brought with it the boulder rocks beneath it—for, as I mentioned, they constitute a loose stratum under the turf,—and had arranged them in that long straggling line, which had hitherto appeared inexplicable. Passing over to the Cheviot side and scrutinising Hedgehope, I could now trace the lineaments of numerous old slips, still visible on its face but now overgrown with grass. The peat, which, now broken up by frequent “peat-brooks,” overhangs, with ragged edge, the slopes, is retrograding, and probably once extended much farther down the slope, the mountain grasses having occupied the cleared spaces. This gradual transition to an ameliorated condition is precisely what is observable on the top of Cheviot wherever the fundamental clay is bared by the removal of the peat. The sheep’s fescue and other grasses soon colonise the new soil, and produce strips of meadow.

The exceeding thickness of the clays in the sections exposed by the ravines and open drains on these hills is worthy

of attention. The circumstances under which they were formed, and are forming, are here laid open; and the great depth to which disintegration has penetrated far down the solid rock is very remarkable. At the top, we have the boulder-clay finely comminuted, intermingled with the remains of boulders of the common rock of the hills not yet completely crumbled down; and underneath this, another stratum of fine clay, having at its base angular wasted fragments of the subjacent rock. This itself, in a discoloured state, with its white crystals of soda-felspar still preserved, appears in its external original entirety; but being struck by a hammer, it is found to be converted into a mass of damp clay, not differing from the incoherent materials above it. We have thus represented to us, going on before our eyes, the decayed condition which the surface of those hills would have acquired during the ages preceding the era of boulders; and we also here learn whence came the clays, which being then excavated, and borne away and distributed over the lowlands, constitute a large proportion of the present agricultural soils. These are now again here being stored up anew, but in their present untempered condition are unavailable for the production of useful vegetation.

Gladly now the eye is turned to the pygmy groves and scattered trees, that form so many old-fashioned pictures of landscapes in miniature, suspended on the face of Hedgehope. Were they ever more numerous, and did they rise higher on the hill-sides than they do now? I think not. They could not have grown for the swamps, let alone the exposure. Here and there an ancient oak may be disclosed in an upland peat-pit; which may be *in situ*, having grown by itself before being surrounded by bog. I once found a large birch in peat, on the high moors, where no trees flourish now; but we still see solitary trees of this kind in situations which do not argue former sociality. The highest situated trees at present on the Goldsleugh side, are the ancient birch wood; but it never rose higher than the platform immediately above it, where branches and stumps of small diameter are still dug out of a peat moss. There are decayed roots of trees entering the clay beneath the peat, far up the base of Hedgehope, and in drains on Cheviot; but there are single trees or clumps there still. Because Cheviot was once called "a Forest," we must not jump to the conclusion that it was overgrown with trees. In some parts of Great Britain there

are "forests" with no trees whatever.* A free forest, or chase, is not necessarily a wood. In the last survey of Cheviot, it is called, "*that great waste, the Forest of Cheviot*"; the same term which is employed in the early grants ("Cheviot: magnum vastum vocat' forestam de Chyvyot.") The trees were principally on the side fronting Scotland, which is dry and favourable for the production of oaks; and the remains of these woods still exist between Heathpool and Kirknewton. The Scots were accustomed to slip over and steal the timber, to aid in constructing their rude shielings. The prevalence of remains of British huts all over the hills, shew that they never were densely wooded. Such a population as they maintained could never have obtained subsistence if entangled in woods. A native oak-wood upon a height would form a thicket as impervious as a bramble-brake, which no domestic animal could have penetrated. The Rev. W. Greenwell informs me that the Britons were graziers rather than huntsmen; and thus the deer and the roe would have few charms for them. Few bones of deer and roe are found in their funereal feasting-places, compared with those of oxen, horses, and goats.

The subject is not one that can be finished at one sitting. I have endeavoured to take up some points of view left untouched by previous observers; but I have purposely refrained from others, for which the canvass is too narrow.

Report of Experiments on the Salmonidæ of the Tweed, 1870, 1871, and 1872. Communicated by MR GEORGE YOUNG.

The natural history of the Salmon has been studied on the river Tweed for a great many years; and the facts which have been brought to light have not been exceeded in any part of the Kingdom.

In order to begin at the beginning, it may be as well to give some account of the "artificial breeding." When the French naturalists first talked about raising fish from the egg, as you would do with birds or fowls, it was received in this country with great incredulity; but as the newspapers

* "An Englishman, new to the Highlands, passing through a northern deer forest, remarked to his native companion that he was surprised to see no trees there. 'Trees!' said the Highlander, with undisguised contempt, 'wha ever heard tell o' trees in a forest?' Each was partly in the right; the word forest has different meanings beside the Severn and the Spey."—*Sir Wm. Stirling-Maxwell's Address, University of Edinburgh, 1872.*

kept sending one account after another of its success, it was resolved to give it a trial. The first to do so were the authorities of the Tay, who commenced breeding ponds at Stormontfield, under the superintendence of the late Mr Buist; and I need not say how enthusiastically he went into it, and how successful have been the results. I visited them first with Mr Buist, some fourteen years ago; and again this season, and found Mr Marshall attending to his young family as carefully as ever. The Tweed Commissioners also early turned their attention to it, and commenced ponds at Nabdean burn (on the property of D. M. Home, Esq., Paxton House), under the care of their former superintendent, Mr Mitchell, and in which I took a deep interest. It was always thought that they could only be propagated by the male and female coming together in the usual way; but this experiment proved that this is not necessary. The male and female salmon were caught in a stream above Melrose: the female was taken by the gill, and the belly stripped down by the hand, causing the ova to flow in a stream like so many peas into a pail; and the milt of the male was subjected to a like process, and the contents well mixed together, and then taken down the river a distance of forty miles, put into the boxes, and covered with gravel. There it remains until the month of April, about which time the hatching generally takes place. This part of the process is deeply interesting. The first thing you notice, is an object of a tadpole appearance; and on examining it more minutely, you observe a round globe or bag of a very fine shade, from a pink to a purple colour; and across the top of this bag, you find a minute fish, as small as a fine small sewing needle. This little thing floats about on the top of this balloon, and tries to hide himself under the stones when you approach too close to it. The boxes in which the gravel is deposited, have a continuous flow of water running over them; every square having a small opening in the corner, opposite to where it enters, and that causes the flow to be uniform over the whole surface. Mr Gilhome, of Tongueland, in Kircudbrightshire, has introduced an improvement on this system, by making his breeding boxes of wood frames, fitted with ribbed glass, in the shape of ridges and furrows, across which the water flows, and in which the ova are sown in the same way as peas in a garden. These frames he has placed in an old house, and causes a stream of filtered water to flow over them.

They are also protected with lids or covers, and thus they can be protected from rats and all other creatures that might destroy them. This system is very favourable for any gentleman who wishes to try breeding on a small scale. The next stage is that of allowing them to leave the boundary boxes to go into the adjoining feeding pond, where they are kept in the "Parr" state for the first year. At the expiration of that time, they put on the "Smolt dress"; along with which they seem to get their migratory propensity, and are allowed to pass into the river; and during the months of May and June seem all to find their way to the sea, where they stay until the following year. The Salmon Smolts then return as "Grilses," from $1\frac{1}{2}$ to 3 pounds weight; but rapidly increasing in the sea, and, as the season advances, improving in weight at the rate of one pound for every month that they remain: so that, towards the close of the season, in September, many of them have attained the weight of nine pounds or more. Most, if not all, of these fish spawn during the following winter; return to the sea as "Grilse Kelts"; and the following season return as adult Salmon. This has been denied by some people, but they give us no proof of their theory. The migratory Trouts go through the same stage as the Salmon ones, with this exception, that the Trout Smolts on returning from the sea, come back as "Black-tails" or "Silver-whites," retaining a good deal of the silvery dregs with which they left, but increased in weight to about 12 to 16 ounces. After this, they again return to the sea, and very quickly return as "Whitling," or "Young Bull Trout," or "Sea Trout"; having in the interval lost the silvery appearance, and put on the large star-like spots peculiar to the larger Trout mentioned above.

These facts have been ascertained by carefully marking the young fish in all the different stages of their growth, and by keeping a proper register of all that are uncaptured on returning from the sea.

The following report of those coming back last season, as reported by the Experimental Committee to the Tweed Commissioners, shows in what manner those experiments are conducted, and gives also an idea of the proportion of the smaller fish that are coming back from time to time.

"The following tabular statements show—First, the particulars relative to the fish which have been retaken; and secondly, the number and species of the fish marked between September, 1870, and June, 1872, inclusive:—

No. I.—RETURN OF THE FISH

WHICH WERE MARKED AND RETURNED ALIVE TO

Species of Fish.	Date of Marking.	Where Marked.	Weight.	Length in inches.	Species of Fish when recaptured.
Whitling.	1870 Sept. 29	Start	1 $\frac{3}{4}$ lb	17	Whitling.
Salmon.	"	Do.	21 $\frac{1}{2}$ lb	37	Salmon.
Blacktail.	"	[Water Scotch New	16oz	13	Bull-Trout.
Bull-Trout.	"	Start	2 $\frac{1}{2}$ lb	18	Do.
Yellow Trout	Oct. 13	Yardford	9oz	9	Yellow Trout
Bull Trout.	"	Eithermouth	2lb	16	Bull-Trout.
Do.	"	South Bells	3 $\frac{1}{2}$ lb	20	Do.
Black Tail.	"	Eithermouth	12oz	12	Whitling.
Do.	Nov. 10	Scotch New	12oz	14	Blacktail.
Do.	"	Start [Water	13oz	13	Bull-Trout.
Bull-Trout.	"	Scotch New	2 $\frac{3}{4}$ lb	20	Do.
Whitling.	"	Do. [Water	1 $\frac{1}{2}$ lb	15	Whitling.
Grilse.	"	Start	4 $\frac{1}{2}$ lb	23	Grilse.
Orangefin.	1871 June 7	Low Bells	1 $\frac{1}{2}$ oz	6	Orangefin.
Yellow Trout	"	Eithermouth	2 $\frac{1}{2}$ oz	7 $\frac{1}{4}$	Yellow Trout
Blacktail.	Oct. 12	Scotch New	11oz	11 $\frac{1}{2}$	Blacktail.
Do.	"	[Water Do.	21oz	14 $\frac{1}{2}$	Whitling.
Do.	"	Do.	16oz	11 $\frac{1}{2}$	Do.
Do.	"	Start	16oz	12	Bull-Trout.
Do.	"	Do.	8oz	10	Blacktail.
Do.	"	Cove	16oz	13	Whitling.
Do.	Nov. 1	Clayholes	16oz	13	Do.
Do.	"	Hornwell	16oz	14	Do.
Do.	"	Do.	12oz	12 $\frac{1}{2}$	Blacktail.
Do.	"	Eithermouth	12oz	11	Whitling.
Do.	"	Start	20oz	15 $\frac{1}{2}$	Do.
Whitling.	"	Hornwell	1lb 12oz	17	Do.
Blacktail.	"	Start	14oz	14	Blacktail.
Do.	"	Low Bells	12oz	11	Whitling.
Do.	"	Eithermouth	10oz	12	Do.
Grilse.	1872 Feb. 28	Scotch New	3 $\frac{3}{4}$ lb	24	Grilse.
		[Water			

CAUGHT IN THE RIVER TWEED.

THE RIVER, AND WERE AFTERWARDS RECAPTURED.

Date of recapture.	Where re-taken	Weight.	Length in inches.	Difference in Weight	Difference in Length	Interval between Marking and recapture.
1872 July 26	Hallowstell	2½lb	18¾	12oz	1¾in	21 m 27 d
1870 Nov. 12	Galashiels	25lb.	—	3½lb	—	44 d
1871 Sept. 25	[Montrose North Esk	2lb 1oz	18	1lb 1oz	5in	11 m 27 d
1871 Aug. 15	Cove	5½lb	24	2¼lb	6in	10 m 17 d
1871 July 15	West Ord	—	—	—	—	9 m 2 d
1871 Aug. 15	Broad, [worth	2lb	18½	None	2½in	10 m 2 d
1871 Nov. 30	Coquet, Wark-	4lb 13oz	24	1lb 9oz	4in	13 m 17 d
1871 June 1	Sandstell	17oz	13	5oz	1in	7 m 19 d
1871 March 29	Watham	12oz	15	None	1in.	4 m 19 d
1871 Aug. 15	Hallowstell	1lb 14oz	17½	1lb 1oz	4½in	9 m 5 d
1871 March 11	Teviot	2lb 2oz	20½	10oz dec	½in. inc	4 m 1 d
1871 June 26	Ford	2lb 4oz	—	12oz	—	7 m 16 d
1871 Feb. 22	Watham	4lb	—	8oz dec	—	3 m 12 d
1872. June 9	English New [Water	—	—	—	—	2 d
1871 Aug. 29	Eithermouth	5oz	9	2¾oz	1¾in	14 m 19 d
1872 Oct. 15	Scotch New [Water	11oz	11½	—	—	3 d
1872 Aug. 19	Broad	2¼lb	18	15oz	3½in	10 m 7 d
1872 Aug. 7	Twizel Boat Ho.	1lb 7oz	16	7oz	4½in	9 m 26 d
1872 Aug. 13	Fallinnr Stirling [on the Forth	1lb 7oz	15	7oz	3in	10 m 1 d
1872 May 4	Yardford	6¼oz	11	1¾oz dec	1in. inc	4 m 21 d
1872 June 4	Sandstell	18½oz	14½	2½oz	1½in	7 m 23 d
1872 July 30	Hollywell	1½oz	17½	8oz	4½in	8 m 29 d
1872 July 1	Shoreside	1lb 12½oz	16	12¼oz	2in	8 m
1872 April 8	Broad	8¾oz	12½	3¼oz dec	None	5 m 7 d
1872 Aug. 5	Tweedmill	16oz	14	4oz	3in	9 m 4 d
1871 July 31	English New [Water	2½lb	18¾	1¼lb	3½in	8 m 30 d
1872 Nov. 4	Lees	1lb 12oz	17	None	None	3 d
1872 March 13	Watham	9¼oz	12½	4¾oz dec	1½in. dec	4 m 12 d
1872 July 14	Twizel Boat Ho.	2¼lb	16	1¼lb	5in	8 m 23 d
1872 Aug. 1	Tweedmill	19½oz	16	9½oz	4in	9 m
1872 Aug. 28	Finchie.	8lb	29	4¼lbs	5in.	6 m

No. II.—FISH MARKED IN 1871 AND 1872.

	Recaptured.
25 Salmon, - - - -	1
177 Grilse - - - -	2
153 Bull-Trouts - - - -	4
6 Whitling, - - - -	3
454 Blacktails, - - - -	18
9 Silver-Whites - - - -	—
40 Smolts - - - -	—
400 Orange-Fins - - - -	1
31 Parr, - - - -	—
1 Grayling, - - - -	—
2 Yellow Trout, - - - -	2
Total, 1298	31

If any doubt has existed hitherto, it can no longer exist, that a Blacktail and a Whitling are the same fish in different stages of growth, and likewise it is proved that Blacktails are subsequently retaken as Bull-Trout; but the proof is not obtained that the Whitling is an intermediate stage between Blacktail and Bull Trout, one case actually leading to the inference that a Whitling remains a Whitling, a perfect fish; 1 year and 299 days having elapsed between the two periods of its capture as a Whitling. If this should be so, there must be more than one species of Blacktail. The present series of experiments has not determined (what, however, has been perfectly established formerly), that the Orange-fin is the previous stage of the Blacktail. It will be expedient, however, to continue the examination of Blacktails and other fish of similar dimensions, with the view of removing the uncertainty existing on these points, as well as of discovering some of the Orange-fins and Smolts which have been, or shall be, marked; and, if possible, to settle the value of certain theories relative to distinctive shapes of the earlier age, supposed by some to indicate the future Salmon, Grilse, or Bull-Trout, as the case may be.

No certain light has yet been thrown on the question whether Grilse become Salmon. One Grilse, marked in November, 1870, was retaken as a Grilse in the following February; but it had decreased in weight, and can afford no criterion for decision. Another Grilse, marked February, 1872, was recaptured still in the Grilse state on 28th August, 1872—six months after being marked. On the other hand, several Salmon have been noticed in the Berwick Shipping Company's fish-house, with scars, corresponding in position to the place where the wires are inserted in the tail of the Grilse. The Committee propose to adopt another method of marking Grilse, and thus test the power of the hypothesis, that the wires having been rubbed out by the power of

the larger fish, the scars in reality present evidence that the Salmon bearing these scars were marked as Grilse. It may be observed that of the Blacktails, 3, which were recaptured in the months of March and April respectively 144, 159, and 133 days after being marked, had decreased in weight by $1\frac{3}{4}$, $3\frac{1}{4}$, and $4\frac{3}{8}$ ounces—being found in poor condition, and one of them increased in length only 1 inch, while the others were stationary. These still retained the character of Blacktail. The others, which were recaptured in June, July, August, and September, had all increased in size and weight, had assumed the characteristics of Whitling or Bull-Trouts, and were generally in good condition, some being retaken in the river Tweed, others on the Sea-Coast Fisheries, and others as far as the North Esk above Montrose, the Coquet in Northumberland, and in the Forth below Stirling. The rate of growth may be illustrated by the following instances:

(A.) BLACKTAILS RECAPTURED.

	Increased Weight.	Increased Length.	New Character.	No. of Days after Marking.
In June, 1872,	$2\frac{1}{2}$ oz.	$1\frac{1}{2}$ inch.	Whitling.	235
„ 1871,	5 „	1 „	Do.	231
July, 1872,	$12\frac{1}{2}$ „	2 „	Do.	243
„	24 „	5 „	Do.	266
„	8 „	$4\frac{1}{2}$ „	Do.	292
„	20 „	$3\frac{1}{4}$ „	Do.	273
Aug., 1872,	$9\frac{1}{2}$ „	4 „	Do.	274
„	4 „	3 „	Do.	277
„	7 „	$4\frac{1}{2}$ „	Do.	300
„	7 „	3 „	Bull-Trout.	306
„	15 „	$3\frac{1}{2}$ „	Whitling.	312
„	17 „	$4\frac{1}{4}$ „	Bull-Trout.	278
Sept., 1871,	17 „	5 „	Do.	361

(B.) WHITLING.

June, 1871,	12 „	— „	Whitling.	228
July, 1872,	12 „	$1\frac{3}{4}$ „	Do.	{ 1 year and 300 days.

(C.) BULL-TROUT.

August, 1871,	36 „	6 „	Bull-Trout.	320
Nov.,	25 „	4 „	Do.	413

(D.) GRILSE.

August, 1872,	$4\frac{1}{4}$ „	5 „	Grilse.	181
---------------	------------------	-----	---------	-----

Although no new conclusive facts have been established during the period embraced in this Report, the statistics afforded regarding the growth of the fish recaptured, and the confirmation of former experiments, are not without value; and the Committee are sanguine that further experience may solve doubts respecting the maturity of the Grilse, as well as the alleged varieties of Orangefins, Smolts, and Blacktails."

Perhaps it may be interesting to give some account of the mode of marking, as done on the Tweed. The fish are first landed with a harry water-net of small meshes. They are then put into corves, perforated with holes all round the sides; and from these they are carried in pails to a tray full of water on a stand. Their length is taken by a measure on the bottom of the tray. The wire is then inserted, and properly twisted, at the top of the tail, with a slight hold of the fleshy part to prevent it slipping down the rays of the tail. The wires are carefully prepared before, by being stamped with a number, and also with private marks; and this is so small that it can only be seen with a strong magnifying glass. This is found necessary to prevent any person tampering with them, or substituting other wires. They are then weighed, and returned to the river.

Arrival and Departure of Migratory Birds in 1872, at North Sunderland. By Rev. F. R. SIMPSON.

Sand Martin, April 12; Chimney Swallow, April 24; Blackcap, April 29; Corncrake, May 6; Willow Wren, May 11; Pied Flycatcher, May 14 (a pair about the garden and shrubberies for quite ten days); Sand-grouse (doubtful, but believed to have reappeared), May 16 to 20; Swift, May 18 (only one pair seen); Flycatcher, May 23; Yellow Wagtail, May 24; Woodcock, first shot October 21, but had been seen over the middle of the week before.

The Flycatchers disappeared from about the garden house, about a fortnight after the young brood came off in July; and I have not seen them again till last week (Sept. 20). During the storm which has prevailed, they have been seen under the shelter of some trees feeding, and one is a pied bird. The bulk of the Swallows left about the middle of last week (Sept. 18); some stragglers only having remained to brave the equinoctial storms.

I saw two early yesterday (Sept. 25) trying to shelter under the south side of the house; but believe them to have been driven away (if not destroyed) by the force of the blast. Woodcocks were thin this season; the main arrival noted was on October 28, but a few were over about a fortnight earlier.

Note of Arrivals of Summer Birds in 1872, in the neighbourhood of Jedburgh. By ARCHD. JERDON.

Sand Martin, about April 15; Willow Wren, April 23; Chimney Swallow, April 27; Sandpiper, April 29; House Martin; May 1; White-throat, May 8; Redstart, May 9; Swift, May 13, Blackcap, May 15; Wood-wren, May 17; Corncrake, May 17. A single Chimney Swallow was seen on April 27, but no more made their appearance till about a week after. Sandpipers were very abundant this year.

Arrival, Departure, and Local Migration of Birds, near Oldcambus, 1872. By JAMES HARDY.

- April 1. First Wheat-ear on the sea-banks. Curlews have not left the shore.
- April 14. One Grey-backed Crow; the only one this season.
- April 21. Willow Wren arrived, but did not sing for several days.
- April 24. Ring-Ouzels arrived on the coast; more Wheat-ears have come; a single Redstart; Curlews flying between the shores and the moors.
- April 25. Chimey Swallow; Stone-chat.
- April 26. Ring-Ouzel and Redstart left the coast; Wheat-ears shifting their ground; Curlews have left the coast, except three, which remained during the summer. No Cormorants visible on the rocks, and no Herons; but one of the latter returned, and remained alone all the summer.
- June 21. Six Curlews on the coast; the number probably that had not bred.
- July 6. Young Wheat-ears returned, accompanied by the Stone-chat; four Redshanks returned to the shore; one Shag and two Herons on the rocks; two Lapwings have come to the potato fields.
- July 9. Redshanks in flocks at the sea-side.

384 *Arrival and Departure of Migratory Birds, &c.*

- August 5. Lapwings from the hills in flocks in the turnip fields, which are full of small caterpillars. Fourteen Herons on the shore; and more Curlews.
- August 16. Fifteen Curlews on the shore; they are still circulating high in the air between the coast and the moors.
- September 30. Swallows left, after disappearing for a few days and then returning.
- November 8. Ring-Ouzel returned to the coast, but speedily left. The remains of a dead bird seen in December.
- November 13. Snow-bunting arrived. November 20. Fieldfare.
- December 16. The number of Cormorants on the rocks at this date is eleven; these live *en famille*. Other two, which appear to be old birds, sit on a rock apart, fish by themselves, and flap and dry their wings side by side.
-

Arrival, &c., of Birds near Wooler, 1872. By JAS. HARDY.

April 29 Chimney Swallow at Belford; Whitethroat and Tree-pipet, at Fowberry; Curlews and Wheat-ears numerous on the moors. May 1. Martins and Chimney Swallows, at Wooler. May 2. Whinchat. May 3. Cuckoo. May 5. Corncrake. May 14. Sandpiper; Swift; Redstart. October 17. Chimney Swallow still at Belford. All the summer birds had left Wooler. October 19. Still a few Ring-ouzel on the hills round Wooler; one Woodcock among heather, behind Humbleton Hill.

Arrival of Birds, &c., at Weetwood Hall. Noted by
R. G. BOLAM.

1867. Sand Martins at Ford Forge, April 18; ditto, at Weetwood Hall, April 19. Cuckoo, April 28.
1868. Hawthorn in bloom, Doddington Lane, May 2.
1869. Sand Martins at Weetwood Bridge, April 11. Cuckoo, April 25. Corncrake, April 25. Hawthorn in bloom, April 28.
1870. Sand Martins, 17 or 19 April. Cuckoo, April 23. Hawthorn in bloom, May 17.
1871. Cuckoo, April 27. Hawthorn in bloom, May 14.
1872. Cuckoo, April 24. Hawthorn in bloom, May 7.

Note of Arrival of Summer Birds at Belford (Bowmontwater). By Dr J. ROBSON SCOTT.

Name of Bird.	1858	1859	1860	1861	1862	1863	1864	1865	1866	1867	1868	1869	1870	1871	1872
Chimney Swallow	May 4	May 8	May 1	May 15	Apr. 21	May 9	May 9	May 8	May 3	Apr. 18	Apr. 24	May 11	May 7	Apr. 27	Apr. 28
Sand Martin....	" 7	" 10	" 8	" 15	" 25	" 7	" 29	" 4	" 5	" 20	" 21	Apr. 24	" 7	" 28	May 5
Cuckoo	" 10	" 6	" 12	" 24	May 5	" 7	" 5	" 7	" 7	May 7	May 10	"	" 7	May 1	" 26
House Martin ..	" 13	" 4	" 6	" 1	" 1	" 12	" 11	" 16	" 10	" 18	" 16	May 14	" 18	" 27	"
White-throat ..	" 20	" 8	" 12	" 15	" 5	" 9	" 10	" 7	" 7	" 4	" 8	" 8	" 20	" 13	"
Swift	" 25	" 15	" 8	" 28	" 15	" 14	June 3	" 18	"	" 18	"	" 15	" 19	" 13	"
Corn-crake	" 28	" 31	" 28	" 28	June 1	"	"	"	"	"	"	"	"	"	"
Sand-piper	" 1	" 15	" 15	" 15	" 5	Apr. 26	Apr. 30	" 15	" 2	Apr. 27	Apr. 24	"	" 21	Apr. 28	"
Willow Wren ..	"	"	"	"	"	"	"	Apr. 26	" 6	"	"	Apr. 24	Apr. 22	" 26	Apr. 21
Flycatcher.....	"	"	"	"	"	"	"	May 6	" 13	"	"	"	"	"	"
Redstart.....	"	"	"	"	"	"	"	"	"	"	"	"	"	"	" 28

Additional Notes. By Dr J. ROBSON SCOTT.

Sandpipers very scarce, and Corn-crakes not observed at all, in 1865. Redstarts very rare at Belford. Cuckoos very numerous in 1872. The Corn-crake has not been observed since 1865. House Martins are less abundant than formerly; but Swifts are more so.

How certain Secreted Stores, and certain exuded Provisions of Moisture seem to exist, whereby Young Gallinaceous Birds are enabled to sustain life in dry seasons. By RALPH CARR-ELLISON, Esq., of Dunstan Hill.

Within the last decade of years some very dry summers have occurred, and they were distinguished by a singular scantiness of dew; because through many weeks of drought the nights were almost always overclouded, so that the radiation of warmth from the earth was intercepted, and the surfaces of grass and other herbage rarely became cold enough to condense the humidity of the atmosphere and cause it to be deposited upon them. The absence of dew for long spaces of time was much noticed by labourers and other country folk. Strange to say, these droughty summers were as prolific as any known in the fine broods of partridge and grouse that were reared by the parent birds. How was this possible? For we know that when these birds are hatched under a domestic hen, they cannot live without liquid any more than barn-door chicks. Nor is there any reason to think that the parent birds of the gallinaceous order can convey water to their young.

I remember telling one or two members of our Club that I was pretty-well satisfied that we owed our plentiful game-broods to a source little thought of; namely, to the very copious and well-known production called cuckoo-froth, which is secreted by the little frog-skip insect, in its early state, from the aqueous juices of our vernal and estival herbage-plants and cereals. The froth in question is perfectly tasteless, whatever may be the plant wherefrom it may have been formed. Cuckoo-froth was abundant in the very driest and most dewless of these dry summers. It ascends far up upon these moorland hills, where it is found not only on moist grassy vegetation, but upon heather, bent, and, if I mistake not, also upon bracken. Its limit of altitude I have not ascertained; but, speaking generally, it is pretty abundant on the moors as well as in the cultivated grass lands and corn-fields.

In a cold, wet spring like the present of 1872, it is not developed till after a few warmish days of June. Towards the end of May I could not find it in Kent, when showers were ever and anon recurring. But it was discoverable in

Tyneside before the 10th of June, after a few sunny days, and soon became visible in plenty as the brightness increased. It is sufficiently mucilaginous to resist very heavy rain; and yet so aqueous as to be unaffected by our greatest heat and brightest sunshine.

Probably not only young gallinaceous birds, but crakes and young plovers are much indebted to this secretion, notwithstanding that the latter birds feed greatly on moist food, such as slugs and earthworms, and that the old birds may possibly sometimes convey and regurgitate water, though partridges, pheasants, grouse, &c., certainly do not.

Very probably field-mice may find liquid in this froth, besides that obtained from eating succulent vegetables. But as yet the positive evidence requisite for certitude is wanting. The movements of a brood of young chickens or turkeys in a meadow ought to be watched. If they are seen to swallow the cuckoo-froth, we may be sure that young game-birds do the same.

It is probably also this that enables young wild-ducks to wander to such considerable distances from water as they sometimes do.

The abundance and ubiquity of this liquid manna is quite marvellous. I had often speculated, where the skylarks that haunt our driest and grassyest fields, might quench their thirst in rainless and dewless weather. Very rarely are they seen to resort to a field-pond or to a streamlet to drink. In many places there is not a stream for miles. The mystery seems now to be near its solution to me; and I am lost in wonder at the resources of creative wisdom, and at the blindness of human observation, which seems unconscious that this bounteous diffusion of snowyspume amidst our vernal herbage, is of any importance in the economy of animated beings in this our climate. Yet possibly the mere extinction of one small insect might carry with it the loss to man of various creatures which he has learnt to value and could ill spare.

Nature is full of the most direct evidences of design; of the creative workings of boundless wisdom, evincing endless resources and variety of means, yet always proceeding within determinate rules and inter-relative analogies.

That there are other and no less unexpected supplies of liquid than through insect-secretion, may be perceived by examining the young barren stems and filaments of the

common corn horsetail (*Equisetum arvense*). One who hopes to share in the honours and pleasures of membership of our Border Field-Club—namely, Captain Carr-Ellison,—pointed out to me last week how curiously every filament of the young and succulent horsetail was tipped by a small exuded drop of clear water. There was no dew upon any of the blades of grass or other plants among which the *Equisetum* was growing, nor upon the older and more hardened heads of the plant itself. But every young, succulent, and tender example was beautifully spangled with its brilliant drops of clear and pure water. Young partridge chicks might have allayed their thirst without stint, for the plant was freely mingled with the grass. The soil was a deep sand, with humidity below.

It is hoped that others may be able to complete what is wanting in these imperfect data, and that we may obtain increasing knowledge how and where young game-birds find moisture in dry weather to sustain life, and how even the skylark finds it; since she seldom flies to the brook or pond, though after a shower she will drink from a rut on the highway rather than alight among the drenched and reeking grass.

RALPH CARR-ELLISON.

On Fireblight; or, the Minor Effects of Lightning on the Foliage of Trees,—and the valuable lesson which it affords to the arboriculturist, by teaching him how to curtail the extremities of lofty branches by aid of torch-flame. By RALPH CARR-ELLISON, Esq., of Dunstan Hill.

When a useful process, adopted from Nature herself, by which human control over the trees of the field and the forest can be increased, has been successfully practised, but may easily fall into forgetfulness and pass away with him who first applied it, some means ought to be used for handing it down to future foresters.

As the method of checking the extremities of lofty side-branches by blighting their foliage at midsummer, by help of a torch affixed to a long rod, was first followed at Hedgeley,

within the district of our Club, I venture to ask leave to record it briefly in our "Proceedings."

It was suggested by observing how trees are not only rent and shivered by lightning, but how the branches that are not broken or killed are yet frequently found to exhibit portions of scorched foliage. The thought occurred to me of utilizing the hint by applying common torch-flame to the terminal foliage of long rambling side-branches of the Wych elm (commonly called the Scotch elm), which were threatening to injure neighbouring oaks, but which were too high from the ground to be reached by even the most improved long-handled shears, or by any other known instrument. I need hardly say, it is often desirable only to stop the further progress of such limbs by terminal pruning of some kind, and not to amputate them near the trunk and so destroy or impair the natural form of the tree. Now, although we have no saw, no knife, no shears, that can be successfully applied to cut off the end of branches so lofty and inaccessible, it is easy enough to stand on the ground below, and by help of a long bamboo cane, or of a long home-grown rod of ash, rowan, or geen (tipped with a little wire), to hold a flaming torch under the twigs that we desire to destroy. The leaves within reach of the flame will immediately shrivel up, without bursting into flame or endangering any adjoining verdure; and further growth will be effectually paralyzed just so far as we wish, not only for one year but several. Of course we must bear in mind that the torch cannot be safely applied to any resinous tree. The best kind of torch is simply a wisp of linen or cotton rags, steeped in oil.

There has been no greater *desideratum* in arboriculture than to obtain some easy means of checking the extension of lofty side-branches, whether in woods or in hedgerows. The lightning that visits us in summer and scorches many a stately ash or graceful birch, has taught us at Hedgeley how to curtail any branch aloft that is rambling too far. And I trust this little notice may lead to like experiments beyond the Tweed, where so many able masters of forest-craft are ever ready to teach or to learn.

RALPH CARR-ELLISON.

Contributions to the Entomology of the Cheviot Hills. No. III.
By JAMES HARDY.

The pursuit of tracing the distribution of Insects among the Cheviots during the past inclement year, has been somewhat discouraging. Many of the old localities were flooded and unworkable; long walks had to be taken with meagre returns; and there were rarely two consecutive good days for collecting, so that a search was very restricted. There was a scarcity of spring species to commence with; and long before autumn they were much thinned out. Still, after an analysis has been made of the results, a few novelties and rarities do not leave the exertions of the past year wholly without reward. The quantity of decayed hay on the hills made it the principal object of investigation; but after the October rains, the hay still in the swathe on the high grounds was quite unproductive. There was scarcely any peculiarity in the insects yielded by the highland hay, to indicate the influence of elevation or a corresponding severity of climate.

COLEOPTERA.

- DROMIUS MERIDIONALIS. Broadstruther wood; July.
 ,, QUADRINOTATUS. Beneath bark of fir; Trickley wood.
 PTEROSTICHUS ÆTHIOPS. Hedgehope; in old hay.
 AMARA OBSOLETA. Ditto.
 HARPALUS TARDUS. Beneath stones; side of Wooler water, above Earle Mill.
 BRADYCELLUS HARPALINUS. Old hay; Langleyford vale.
 BEMBIDIUM MANNERHEIMI. Among hay above Langleyford, and at the base of Hedgehope.
 BOLITOCCHARA LUCIDA. Fungi; Earle Hill Head. October.
 HAPLOGLOSSA ERYTHROCERAS. Bottom of old hay-stack near Langlee, in some numbers; October. Rare. New to this district.
 OXYPODA SPECTABILIS. In hay, Middleton wood; October.
 ,, PALLIDULA. Among *Hypnum triquetrum*, in Humbleton wood, and in moss at Earle Hill Head.
 ,, OPACA and LIVIDIPENNIS. Decayed hay, Hedgehope, &c.
 ,, HÆMORRHOA. Bottom of old haystack, Langleyford Backwood; three specimens. Mr Janson, "Entomol. Annual," 1857, p. 75, says he has repeatedly met with this insect in the nests of *Formica rufa*, near London. New.
 HOMALOTA CLAVIPES. Apex of Hedgehope.
 ,, GREGARIA. Middleton wood; two only.

- HOMALOTA OBLONGIUSCULA.** Old hay; Middleton wood, and near Langlee.
- „ **XANTHOPTERA.** In fungi; Earle Hill Head. Oct.
- „ **SODALIS.** Old hay; near Langlee, and at the base of Hedgehope.
- „ **ANGUSTICOLLIS,** *Thomson.* Two in decayed hay, Middleton wood; rare. October. New to this district.
- „ **LÆVANA.** In hay; Middleton wood.
- „ **MUSCORUM.** Humbleton wood.
- GYROPHÆNA AFFINIS.** In fungi; Middleton wood. July. Rare.
- MYCETOPORUS LEPIDUS.** In moss at the apex of Hedgehope; also a small pale variety.
- EPHISTEMUS GLOBOSUS.** Wooler district. One.
- MYCETOPORUS SPLENDIDULUS.** In decayed hay at the base of Hedgehope; several. It is usually found about the roots of rough grass, in moist, clayey situations. I formerly found it near Monkhouse, &c.
- CONURUS LIVIDUS.** General at the roots of grass, in sandy spots, by water sides; also a sea-coast insect.
- HETEROHOPS DISSIMILIS.** A considerable number of this somewhat rare insect in the bottom of a hay-stack near Langlee; and again above Langleyford. May; October.
- QUEDIUS TEMPORALIS.** Decayed hay on Hedgehope; also near Langlee. May; October. Scarce here.
- „ **XANTHOPUS,** *Er.* In Langleyford backwood; one example; in May. New. It is believed to have been taken under the bark of a decayed alder. Dr Sharp, "Scottish Naturalist," I., p. 37, states that, "a few individuals of this very rare species have occurred under fir bark at Rannoch."
- „ **RUFICOLLIS.** In fir stumps; Langleyford.
- „ **SUTURALIS.** In decayed hay, Middleton wood and Langleyford Backwood; in numbers in October. It has previously been found in Newcastle district, but mostly by single specimens. See Mr Bold's "Catalogue," &c.
- „ **ATTENUATUS.** Decayed hay, Hedgehope; also near Spindleston pond.
- „ **FULVICOLLIS.** Decayed hay; Middleton wood and Hedgehope.
- „ **SCINTILLANS.** Old hay-stack near Langlee.
- The other Quedii in decayed hay, were *Q. fuliginosus, molochinus, picipes, impressus* (very large dark examples), *boops, peltatus, impressus,* and *maurorufus.*
- PHILONTHUS PUELLA.** Decayed hay; Middleton wood and Langlee.
- LATHROBIUM MULTIPUNCTATUM.** Among stones; side of Wooler water, above Earle Mill.
- STILICUS ORBICULATUS.** Earle Hill Head and Langleyford vale.

- LATHRIMÆUM UNICOLOR. Decayed hay, Langleyford Backwood and on Hedgehope; heather roots, Whitsunbank hill; among moss, Humbleton wood.
- HOMALIUM OXYACANTHÆ. In hay; near Langlee.
- „ NIGRICEPS, *Kies.* In hay; Middleton wood. One example; rare. October. New.
- BRYAXIS JUNCORUM. In hay; Hedgehope. October.
- SCYDMENUS COLLARIS. Decayed hay; Hedgehope. July.
- AGATHIDIUM ATRUM. Old hay-stack, near Langlee.
- LIODES HUMERALIS. Middleton wood.
- „ GLABRA. Middleton wood; in fungi.
- CHOLEVA LONGULA, CHRYSOMELOIDES, ANISOTOMOIDES, MORIO, TRISTIS, and GRANDICOLLIS. In decayed hay, &c.; Middleton and Earle woods. October.
- CRYPTOPHAGUS AFFINIS. In decayed hay, Middleton wood; four examples. October. New to this district.
- „ BICOLOR. Decayed hay-stack, near Langlee; six examples; rare. October. New to this district.
- ATOMARIA ANALIS. Old hay, on Hedgehope.
- TYPHÆA FUMATA. In hay; Middleton wood.
- MYCETÆA HIRTA. Old hay-stack, near Langlee.
- BYRRHUS DORSALIS. Beneath stones; Wooler haugh.
- ATHOUS NIGER and VITTATUS. Borders of Middleton wood.
- HELODES LIVIDUS. Wooler haugh.
- CYPHON NITIDULUS, *Thomson.* Middleton wood; four examples.
- „ PALLIDULUS. Broadstruther wood; two examples; rare.
- „ VARIABILIS. Coldmartin moss.
- HYDROCYPHON DEFLEXICOLLIS. Shaken from leaves of alder and other trees, near Wooler water; near Earle Mill, and a haugh below Middleton wood; plentiful in July.
- TELEPHORUS LIMBATUS, *Thomson.* Middleton wood.
- MALTHODES MINIMUS. Middleton wood and Langleyford.
- ANOBIUM MOLLE. Middleton wood.
- SALPINGUS ATER. Middleton wood. Two.
- „ CASTANEUS. Earle Hill Head. One.
- OTIORHYNCHUS MUSCORUM. Two specimens. Wooler haugh.
- RHINOSIMUS VIRIDIPENNIS. Middleton wood. One.
- RHYNCHITES ÆNEOVIRENS. Ditto. One.
- SITONES SUTURALIS and HUMERALIS. Wooler haugh, on broom.
- RHINONCHUS CASTOR. Among heather, Whiteside hill.
- LUPERUS RUFIPES. Below Langleyford Hope.

HEMIPTERA HETEROPTERA.

- PENTATOMA VIRIDISSIMUM. One captured in a house at Wooler.
- PIEZODORUS LITURATUS. Middleton wood.
- LOPHOMORPHUS FERUGATUS. Middleton wood.

- PHYTOCORIS TILLE. On ash trees above Earle Mill; and border of Middleton wood. July; October. New.
- „ POPULI. Middleton wood. New.
- „ FLORALIS. On hawthorns and wild roses; Middleton wood and Wooler haugh.
- DEREOCORIS STRIATELLUS, BIPUNCTATUS, SEXGUTTATUS, and FORNICATUS. Middleton wood. All fine insects.
- PANTILIUS TUNICATUS. On trees, above Earle Mill and in Middleton wood; not common. October.
- LITOSOMA ANGUSTUS. Middleton wood. New.
- PHYLUS MELANOCEPHALUS. Middleton wood. Rare.
- „ CORYLLI. Middleton wood, and above Earle Mill; on hazel. Not numerous.
- MALACOCORIS CHLORIZANS. Earle Mill and Middleton wood; several still found in October. Colour wasted.
- APROCREMNUS OBSCURUS. Wooler haugh, Middleton wood, and Langleyford. Numerous.
- PSALLUS SALICIS. Middleton wood. Numerous.
- HETEROCORDYLUS TIBIALIS. Wooler haugh, on broom.
- ORTHOPS CERVINUS. Middleton wood. One.
- LYGUS RUGICOLLIS, *Fallen; Doug. and Scott, "Ent. Month Mag.,"* IV., p. 9, where only a single specimen is recorded. Middleton wood; nine specimens.
- „ PABULINUS. Middleton wood several.
- HARPOCERA THORACICA. Wooler. Omitted in last year's list.
- NABIS LIMBATUS. Wooler haugh,
- „ FERUS. Middleton wood; also a rufescent variety among heather, near Coldmartin moss.

HEMIPTERA HOMOPTERA.

- CIXIUS CONTAMINATUS. Broadstruther wood.
- IASSUS SUBFUSCUS. Middleton wood.
- EUPTERYX VIRIDULA, ULMI, and PULCHELLA. Middleton wood.
- „ AURATA. Wooler haugh.

HYMENOPTERA.

- SIREX GIGAS. A female example of this magnificent insect taken in the fir woods at Langleyford, on the day of the Club's meeting there. New.
- DOLEBUS CORACINUS. On willows, above Langleyford. May.
- TENTHREDO SCALARIS. Broadstruther wood.
- „ BALTEATUS. Ditto.
- ANDEENA EXTRICATA. Wooler haugh.

ANTS.

The Ants are a small section of the Hymenoptera, which we have hitherto almost neglected. I picked up a few in

May, and forwarded them to F. Smith, Esq., of the British Museum, the best authority on this branch of Entomology. Mr Bold has already in the "Nat. Hist. Trans. of Northumberland and Durham" (1869), given a Catalogue of the Aculeate Hymenoptera. The species near Wooler are fewer than in the Newcastle district; but there is one very numerous on the hills which he has not enumerated. I give a list of the whole.

FORMICA FUSCA. Plentiful beneath stones by dry sandy road sides, and in decayed trees. It swarms beneath rocks on the face of the Sneer hill. The Aphides of grass roots sometimes occur in the nests.

„ **NIGRA.** In colonies less populous than the preceding, beneath stones by the sides of Wooler water and in Langleyford vale. There were a number of dead *Myrmica ruginodis* among them.

„ **FLAVA.** Not quite so numerous, Wooler haugh and Whiteside hill. The Aphides of grass roots are frequent in their resorts.

„ **UMBRATA.** Numerous beneath stones on the Sneer hill, and in Langleyford vale. Larger and duskier than the last. New.

MYRMICA RUGINODIS. The commonest of the red huedants. It ascends the apex of Cheviot and Hedgehope. *Astilbus canaliculatus* appeared in one of the nests.

„ **SCABRINODIS.** Along with the last, beneath stones, sides of Wooler water above Earle Mill, and above Care burn bridge. A brighter tinted insect than the last.

•*Obs.* I have not seen *M. levinodis* here, which Mr Bold says is the most abundant kind in the Newcastle district.

LEPTOTHORAX ACERVORUM. A minute, shining ant, found in only one decayed alder stump, at Langleyford Backwood. Mr Bold met with it in trees at Gosforth; and the collectors at Loch Rannoch found it in great abundance in decayed fir stumps. Mr Smith remarks: "This is the old *Myrmica acervorum*; the genus *Myrmica* being now divided into numerous genera, founded principally upon the varied number of joints in the palpi."

ARACHNIDA.

Only a few Spiders have been added to the list this season. The number of specimens collected was also limited. The following are new to the district.

LYCOSA ALLODROMA. I have obtained this twice among the gravel of Wooler water, above Earle Mill; it occurs near Gibside, county of Durham, in the gravel of the Derwent.

CLUBIONA DIVERSA, *Cambr.* A remarkably fine example occurred at the top of Cheviot in 1871.

NERIENE HUTHWAITII, *Cambr.* From the Cheviots. October. "Of this rare spider," Mr Cambridge writes, "I have never seen more than two examples before. Oddly enough one of these came from Dartmoor, and the other from Derby; so that these three examples establish its distribution from one end of England to the other."

WALCKENERA LATIFRONS, *Cambr.* Beneath heaps of fir prunings, Humbleton wood. May.

The following, which were indicated as new to Britain last year, have this summer been captured by Mr Traill, of Old Aberdeen, in the Scottish Highlands ("Scottish Naturalist," II., p. 25).

LINYPHIA RETICULATA, *Cambr.* Top of Cheviot. Found by Mr Traill on the top of Cairn-na-Glaisha, on the boundary between Aberdeenshire and Forfarshire, at 3,300 feet above the sea.

NERIENE UNCANA, *Cambr.* The same remarks apply to this.

„ PROMISCUA, *Cambr.* Cheviot. Found by Mr Traill at Braemar, near Aberdeen, at Inverary, and at Dunkeld.

Notices of a remarkable Aurora Borealis.

On Sunday evening, February 4th, 1872, at Kelso, a fine display of Aurora was seen. It commenced about 6 o'clock, when the sky to the east and south presented a brilliant appearance of rosy light, an arch of the same hue extending between the principal points at an angle of about 15°. No corruscating rays were then visible, and the brilliant colour did not extend far towards the zenith. Later in the evening, the rich rosy hues of the Aurora extended somewhat towards the north and west, but the principal colouring remained in the east and south. The sky was clear, and the stars shone beautifully through the electric light. At times brilliant rays, rose coloured, blue, and white, mingled together and shot up towards the zenith. The night was still; wind had been S.W. all day; the sun had shone brilliantly after a heavy shower of rain in the morning; barometer 29.82, slightly declined from the previous day; thermometer 43°. At 10 P.M., rosy lights continue in south and east, sending up rays; clouds beginning to rise from S.W., and a soft wind stirring; all clear to the north. 11 P.M., cloudy; Aurora disappeared.

N.B.—This unusually fine display of Aurora was witnessed over the whole continent of Europe, and extended even to the northern shores of Africa.

F. DOUGLAS, M.D.

At Berwick, the Aurora " began to develop itself between 5 and 6 o'clock, at which time the sky was cloudless and the stars shining brilliantly. After going through a few fitful phases, it took the form of a magnificent canopy, which for several hours, under ever-varying forms, continued to overspread the whole or greater part of the heavens. The centre of action appeared to be in the zenith, from which, for the most part, the rays of light shot forth on all sides like the ribs of a gigantic umbrella. Occasionally the beams seemed to radiate from a clear round patch of deep blue sky, but more frequently they issued from a corona of light which kept constantly changing its form. The prevailing colour of the rays was crimson; and in the course of the evening every variety, from the most delicate rose tint to a shade almost verging on purple, was profusely displayed. The phenomenon continued for several hours to afford a most interesting and imposing spectacle. As the evening wore on, it contracted itself to smaller dimensions, but its leading features remained much the same. The corona became, if possible, still more remarkable in its changes, while the rays, in which crimson and blue were now more generally intermingled, glanced forth in all directions with undiminished vivacity. Throughout the evening, the Aurora was of sufficient brightness to hide the smaller stars, though those of greater magnitude could be dimly seen through it."—*Berwick Advertiser*.

At Oldcambus, I was not called out to witness the Aurora till 8 o'clock. It then shewed bands of red rays, with dark intervals, diverging to the south and east, while the sky to the north was clear and unoccupied. These kept almost stationary, till bands of yellow "dancers" broke off at the borders, and streaming round to the north, were succeeded by the redness in that quarter also; and soon after the corona was completed. This was shifted and renewed repeatedly, as if an unseen operator behind guided its evanescence or re-appearance. The main features remained long unaltered, and there was less movement than is usual of flying columns. Later, floating clouds poured up from the south, and as in passing they intercepted the red or yellow auroral beams, their edges were tinged with blood red, or primrose yellow. The light was nearly equal to that of the moon. A rain-blast next morning and forenoon came on from the south.

J. H.

On the Occurrence of the Camberwell Beauty (Vanessa Antiopa) in the Club's District, with Notices of other Lepidoptera.

THE prevalence this season of *Vanessa Antiopa*, hitherto a rare Butterfly throughout Great Britain, has elicited quite a plethora of communications in natural history periodicals. Our attention was first called to it by Mr Thomas Tate. "On the 20th of October last," he writes, "I saw one alight upon the outside of the window frame of the windows of Lesbury House, and I examined it for a considerable time before leaving the room to go out and try to capture it." It had been disturbed, however, before Mr Tate reached it. He reports another having been seen a short time before, by Mr James Dand, upon a wall at Alndyke. *V. Antiopa* appeared rather plentifully near Durham, and also in the vicinity of Newcastle. In the "Entomologist," VI., p. 237, Mr J. C. Wassermann notifies: "My wife has seen a specimen of *Antiopa* at Newbiggen-by-the-Sea, and my brother-in-law saw another at Warkworth." Again, at p. 259, Mr J. H. Rowntree records one seen at Rothbury. In our Proceedings its appearance has been twice previously recorded: first, in 1845, when Mr Brodrick saw two on Twizel moor, about the middle of August (vol. II., p. 198); and Mr Selby, at Twizel, in September, 1858, secured two fresh examples, which appeared to have been very recently excluded from the chrysalis; and two more were taken during the same week at Belford (vol. III., p. 92). In Berwickshire, during the autumn, seven examples have been noticed. Mr W. Shaw communicates, that one was caught and two seen near Eymouth; one was caught at Clarabad, one at Netherbyres, and another near Lauder. "The fineness of one of them would go against its having travelled far." Mr J. Anderson states, that "one was captured here (Preston) by Mr Watts, of Ayton, and is in my brother's collection. It has the white border (peculiar to British and Scandinavian specimens), which appears to have been the common type of colouring."

Some other Lepidoptera of unfrequent occurrence have also come to notice.

A caterpillar of the Poplar Hawk-moth (*Smerinthus Populi*), was reared by Mrs T. D. Smith, of Alnwick, and reached a perfect state; and Mr W. Shaw has obtained two

examples at Eyemouth this season. He has also noted the Silver-striped Hawk-moth (*Chærocampa Celerio*), which was caught hovering over Verbenas at Eyemouth; and last year *Sphinx Convolvuli*, one specimen, Mr Wilson having got another; and he reports that Mr Kelly made a fine capture of *Celæna Haworthii*. Mr J. Anderson's best captures at Preston are:—

CHÆROCAMPA PORCELLUS. Two at Honeysuckle; two at White
Campion, along with *Dianthœcia capsincola*.

SPHINX CONVOLVULI. One in green-house at Billie Mains.

SMERINTHUS POPULI. Bred from the caterpillar; Preston.

THYATIRA BATIS. One, June 14; one, June 24. Primrose-hill.

PLUSIA CHRYSITIS and P. IOTA. Abundant.

PTILODONTIS PALPINA. One, June 12. Preston.

NOTODONTA CAMELINA. One. Caterpillars pretty well spread on
Marygold hills, on oak.

TETHEA SUBTUSA. One, August. Preston.

J. H.

On some curious Habits of the Rat. By Mr JOHN WILSON,
Edington Mains, Chirnside.

I addressed the following letter to the "Daily Review," about the end of November, 1867:—"Having a plot of yellow bullock turnips from which I intend to raise seed, I yesterday set two men to fill up some blanks with transplanted roots. While thus engaged, they came upon a rat burrow, around which a good many turnips had been eaten by the rats. They at once laid the burrow open with their spades, and succeeded in unkenning one large rat which they killed. The uncovered rat-hole presented a very strange sight. A portion of the hole, or gallery, about 18 inches in length, with a kind of recess at one end of it, contained several hundreds of earth-worms, still alive and wriggling, but so disabled as to be unable to make their escape. In the recess there was a knot of them of the size of a man's fist. The part of the burrow containing this store of fresh provisions was about ten inches from the surface. I am aware that such stores of earth-worms have been observed during summer droughts in the galleries of the mole; but I have never heard of the common rat eating worms, much less laying up a store of them. It was at first a puzzle to me how rats (assuming them to have been the operators) could

collect such a quantity of earth-worms ; but my walk in the forenoon solved the difficulty. The day has been mild and cloudy, with an occasional very slight drizzle, and I observed during my walk many pairs of the large bob-worm half protuded from their holes, as one sees them plentifully in dewy mornings in spring.

During the past harvest unusual numbers of rats were found in the corn-fields. In one instance I saw above a score which the boys had unearthed and killed from one burrow. As soon as the grain crops were carried, they began to gather into the corn stacks ; but they are still to be met with in the fields in greater numbers than I ever saw before at this late season. In particular, we come upon numerous burrows in the turnip fields, from some of which considerable numbers have been ejected and killed. In all such cases many turnips around the holes have had the fleshy part of the bulbs eaten by the rats, and the rind left lying about in fragments. Quite recently, a rabbit-catcher told me that he found rats caught in his traps daily—often five or six in a morning.”

The letter elicited no further information at the time. On more fully considering the facts as observed at the time, I ultimately came to the conclusion, that the worms had been collected by a family of moles, whose domicile the rats had taken possession of. Still the rats have such an omnivorous appetite, that it is quite possible they might help themselves to the mole's stores. I have seen a kestrel pick up large worms from behind the plough ; and I have been told that foxes eat frogs at a pinch ; and both quite as anomalous as the case supposed. Rats are at present more numerous over the country than I have seen before. The excessive rains have, I infer, driven them from their burrows in the fields. Their rapid and general increase in numbers is undoubtedly due to the universal extermination of pole-cats, stoats, and weasels, which formerly kept the rodents in check.

Remarks on some Berwickshire Birds. By the Same.

Two birds which were very scarce in my boyhood have become exceedingly numerous of recent years, viz. : the Starling and the Missel Thrush. The Song Thrush is, I think, sensibly scarcer ; and some persons say that the Lark becomes scarcer as the Starling multiplies—the allegation

being that the latter sucks the eggs of the Lark. I have seen nothing of this personally. The Goldfinch, which used to be plentiful here, I have not seen for many years; and the Bullfinch, also once frequent, I now see very rarely. Up to about sixty years ago, a pair of Peregrine Falcons bred annually on the rocks opposite the southern extremity of this farm; and a pair of Ravens continued to do so until 1825, when I assisted in taking their full-fledged brood, and they have never bred there since. I have, however, occasionally seen both of these birds of prey here, although not very recently. The Water Rail I have seen four or five times in my life; the last instance being this winter. The Quail visits us at wide intervals; only once have I known it at all seasons.

JOHN WILSON.

On an Ancient Scottish Shield. By FRANCIS DOUGLAS, M.D.

ON the 19th of March, 1870, an ancient brass shield was turned up by the plough, in the immediate vicinity of Yetholm. The place was a piece of ground which had in former days been a bog or lake, and had been drained by the great sluice or cut from Yetholm Loch towards the river Bowmont. Thus in the course of years the land had become gradually drier; and the shield, which must for centuries have been imbedded in the soil, had come nearer to the surface. It was slightly injured near its outer circumference by the coulter of the plough. The shield itself consisted of a thin disk of brass, quite circular, and $22\frac{1}{2}$ inches in diameter. There was a stronger and more convex centre, about 5 inches in diameter; behind which was a brass handle. The ornamentation was of the simplest description, and consisted of 27 rings, between which were small elevated dots. The rim was somewhat thicker than the body of the shield. It is probable, that either some leather or wood structure had originally existed to strengthen the very flimsy protection, which a thin plate of brass would otherwise have presented to a sharp pointed arrow or cutting blade. Two similar shields were several years ago found in the same locality, and are now exhibited in the Royal Antiquarian Society's Museum in Edinburgh. Through the kind influence of his Grace the Duke of Roxburgh, the shield recently discovered was presented by the Lords of the Treasury to the Museum of the Tweedside Physical and Antiquarian Society in Kelso, and it now occupies a prominent place among the local antiquities of the district.

Memoir of Dr William Baird, F.R.S. By FRANCIS DOUGLAS, M.D.

SINCE our last meeting, we have to deplore the removal from amongst us, by death, of Dr William Baird, the last of three brothers who were all original members and founders of the Berwickshire Naturalists' Club. The eldest brother—the late Reverend John Baird, of Yetholm—dwelt among us for the long period of thirty years, and died in 1861, in the 63rd year of his age. He contributed many papers to our Proceedings; and felt the deepest interest in the geological and botanical pursuits of the Club. An obituary notice of him was inserted in our Proceedings for the year 1861, by his friend and colleague, Mr Embleton. The Reverend Andrew Baird, of Cockburnspath, was a no less distinguished naturalist. Early in life, while a student attending the University of Edinburgh, he attracted the especial notice of Professor Jameson, and became one of the founders of the Plinian Society, which had considerable influence in making Natural History a subject of popular study. Of him an obituary notice by his friend Dr Johnston appeared in our Proceedings for the year 1845.

The subject of the present Memoir was the youngest son of the Rev. James Baird, of Swinton; and was born in 1803, at Eccles, in Berwickshire, of which parish his father was then minister. He received his education at the High School of Edinburgh; and afterwards attended the medical classes in the University of that city. After receiving his diploma, Dr Baird made a voyage to South America and the West Indies; and subsequently entered the maritime service of the East India Company, as surgeon. In this capacity he remained till 1833; having made five voyages to India and China, besides touching other countries in the East, where he ever availed himself of every opportunity of cultivating his favourite science, and observing nature in its multifarious aspects. Dr Baird, after leaving the East India Company's service, settled in London as a medical practitioner; but he had a stronger yearning for the study of natural history than for the practice of medicine, and resigned the latter in 1841, for an appointment in the zoological department of the British Museum. In this great national institution he laboured zealously until his death, on the 27th January last.

Dr Baird's qualifications as a zoologist were of a high order; and his published writings were numerous. They consist chiefly of scattered papers in the "Edinburgh Philosophical Journal," "Loudon's Magazine of Natural History," "The Zoologist," the "Proceedings" of the Zoological Society, the Ray Society, and the Berwickshire Naturalists' Club. His most important work was, however, the "Natural History of the British Entomostraca," published by the Ray Society in 1850; and containing a most admirable account of the structure, physiology, and habits of these minute Crustacea. In 1858, Dr Baird published a popular Cyclopædia of the Natural Sciences, as also a valuable paper on "Pearls and Pearl Fisheries." A bibliographical list of Dr Baird's numerous contributions to the science of natural history is in preparation by Mr Hardy, and will be appended to this brief Memoir. During the later years of his life, the attention of Dr Baird was principally directed to the study of Entozoa, of which a catalogue had been drawn up by him in 1843, and published by the Trustees of the British Museum. At the time of his death he was engaged in preparing a general catalogue of the Entozoa, for which he possessed abundant materials.

"But it is not by his publications only that his great attainments must be judged; his knowledge of every branch of natural history was extensive and profound, and his readiness in imparting it to others will be long remembered by those who were in the habit of studying at the British Museum. As a man of science Dr Baird was highly esteemed by scientific men, and he was no less prized for his genial and kindly nature by all who knew him. In private life he was greatly beloved on account of the unvarying amiability of his disposition, and the kindness of his manner.

"On the days of the week when the Museum is closed to all but students, he was generally to be seen in the Conchological Gallery, bending over one or other of the table cases, patiently and carefully arranging and examining specimens of shells; and so closely is he associated in our mind* with the scene of his duties, that when in future we enter the gallery on such days, it will be long ere we cease to look, instinctively, as of old, for the familiar skull-cap and the gentle placid face beneath it, and the kind genial smile

* H. L. in "Land and Water."

and the cordial greeting of Dr Baird—they can never more gladden and encourage us, but they will take and retain a place in the treasury of our pleasant recollections of good men whom it has been our privilege to know and to appreciate.”

Dr Baird's valuable services and contributions to the science of natural history were rewarded by his election as a Fellow of the Royal Society, and of the Linnæan Society of London. He was likewise a member of the Ray Society, and of the Berwickshire Naturalists' Club*. It is as an honored member of the latter that our eloge is here presented to the Club. Associated early in life in natural history pursuits with his two elder brothers, with Dr Johnston, Mr Embleton, Mr Selby, and Sir William Jardine, it can be no matter of surprise that Dr Baird became an enthusiastic student of the beauties and mysteries of nature. He was one of the first of British naturalists who called attention to the minute class of Crustacea called Entomostraca. Before Dr Baird commenced his investigations, the known number of species to be found in Great Britain amounted to sixteen only. In one autumn's search in our Border district, he found no fewer than thirty-eight species belonging to the order Branchiopoda alone; a number afterwards largely increased. These are all described, and many delineated, in the first volume of the Proceedings of the Club. Few who have read are likely to forget the eloquent and highly poetic description which Dr Baird contributed to our Proceedings of two brilliant displays of *Aurora Borealis*, observed at Yetholm and Berwick, in 1835.

During Dr Baird's connection with the Club, embracing the long period of above forty years, he has never resided in our district. His attendance at its meetings has therefore been unfrequent; and for many years his pleasant and edifying companionship has been wanting. Other and perhaps more important duties engaged him elsewhere, otherwise his name would have long ago appeared among the number of our most distinguished Presidents; and we have now only to mourn the loss of, alas! almost the last of the zealous and earnest founders of this Club, then only nine in number, but presenting an array of names celebrated in the

* Dr Baird was also a member of the Imperial and Royal Botanical Society of Vienna.

Natural History of Great Britain. The success of the Berwickshire Naturalists' Club, the parent of all similar institutions in this country, has proved its usefulness; while the number of its present members, considerably over two hundred, is ample testimony of the taste and education of the Borderers for natural history pursuits.

In drawing up this imperfect sketch of Dr Baird's labours in the field of science, I am under great obligations to an obituary notice of him by his friend William Crosley, Esq., and also to an extract from the natural history magazine called "Land and Water." The task imposed upon me, though thus imperfectly executed, I could not decline to perform; as, in the early days of my connection with the Club, previous to my departure for service in India, I had the privilege of knowing, and to a limited extent, profiting by association with all the three brothers, who have now passed away from us, but who have left their mark behind them as able and zealous members of our Club.

F. DOUGLAS.

NOTE.—Dr Baird married, in January, 1847, Mary, second daughter of Edward Owen, Esq., of Maesmynan, Denbighshire—who survives him. He left no family. J. H.

*Bibliographical List of the Writings of William Baird,
M.D., F.R.S., F.L.S.*

1. Notice of the Habits and Characters of the *Lemur tardigradus* of Linnæus; Le Loris paresseux, ou, le Paresseux de Bengale of Cuvier.—Mag. Nat. Hist, ser. 1, I., 1829, p. 208; Edin. New Phil. Jour., III., p. 195; Isis, 1832, p. 692.

2. On the Rice Paper of China.—Trans. Plinian Soc., 1828--9, p. 25 (abstract); Edin. Jour. of Nat. and Geog. Science, I., p. 299 (the article).

3. On *Trientalis Europæa* from the Cheviots; *Rhodiola rosea*; and *Melampyrum montanum*.—Trans. Plinian Soc., p. 33.

4. On the Luminousness of the Ocean.—Trans. Plin. Soc., p. 34 (abstract). The paper itself headed "On the Luminousness of the Sea," in Mag. Nat. Hist., III., 1830, p. 308; and IV., pp. 284, 500.

5. Table of a Series of Observations on Solar Radiation.—Ed. Jour. Nat. and Geog. Science, I., 1829, p. 173.

6. On the Portuguese Man-of-War.—Mag. Nat. Hist., IV., p. 475.

7. Remarks upon the *Gordius aquaticus*, or Hair-Worm Hist.—Ber. Nat. Club, I., 1833, p. 23.
8. On the Aurora Borealis.—Ibid, I., 1834, p. 46.
9. List of the Entomostraca found in Berwickshire, Ibid, I., 1835, p. 95.
10. Remarks on the Sea-Tree. Ibid, I., 1836, p. 115.
11. Remarks on the Aurora Borealis, as it occurred at Berwick on the evenings of Tuesday, 17th, and Wednesday, 18th November, 1835.—Ibid, I., 1836, p. 127.
12. The Natural History of the British Entomostraca.—Mag. Zool. and Bot., I., 1837, pp. 35, 309, 514; II., pp. 132, 400; Ann. Nat. Hist., I., 1838, p. 245; II., 88, &c.; XI., 1843, p. 81.
13. Description of several new species of Entomostraca.—Zool. Soc. Proc., Pt. XVIII., 1842, p. 254.
14. Note on the Luminous appearance of the Sea, with descriptions of some of the Entomostracous Insects by which it is occasioned.—Zoologist, I., 1843, p. 55.
15. Notes on British Entomostraca.—Ibid, p. 193.
16. Arrangement of the British Entomostraca, with a list of the species, particularly noticing those which have as yet been discovered within the bounds of the Club.—Hist. Ber. Nat. Club, II., 1845, p. 145.
17. Description of some new genera and species of British Entomostraca.—Ann. Nat. Hist., XVII., 1846, p. 410.
18. On the genera *Nebalia* (Leach), *Chirocephalus* (Prevost), and *Branchipus* (Schæffer).—Brit. Assoc. Rep., 1847 (pt. 2), p. 74.
19. Additions to the list of Entomostraca found within the limits of the Berwickshire Naturalists' Club; with a description of *Caligus Stromii*.—Hist. Ber. Nat. Club, II., 1847, p. 259; Ann. Nat. Hist., I., 1848, p. 396.
20. Note on the genus *Cypridina*, M. Edwards; with a description of two new species.—Ann. Nat. Hist., I., 1848, p. 21.
21. Monograph of the family *Limnadiadæ*, a family of Entomostracous Crustacea.—Zool. Soc. Proc., Pt. XVII., 1849, p. 84.
22. Description of a new Crustacean.—Zool. Soc. Proc., Pt. XVIII., 1850, p. 102.
23. Nomenclature of Molluscous Animals and Shells in the collection of the British Museum. Part I. Cyclophoridae. London, 1850.
24. The Natural History of the British Entomostraca. London, printed for the Ray Society, 1850. 364 pages, 36 plates,
25. Descriptions of several new species of Entomostraca.—Zool. Soc. Proc., Pt. XVIII., 1850, p. 534; Ann. Nat. Hist. X., 1852, p. 56.
26. Notice of the Capture of *Sericomyia borealis* on one of the Cheviot Hills, in August, 1850.—Hist. Ber. Nat. Club, III., 1851 p. 68.

27. Monograph of the family *Apodidæ*, a family of Crustaceans belonging to the division Entomostraca; with a description of a new species of *Apus*, and two species of *Ostracoda* belonging to the genus *Cypris*.—Zool. Soc., Proc., Pt. XX., 1852, p. 1.

28. Monograph of the family *Branchipodidæ*, a family of Crustaceans belonging to the division Entomostraca; with a description of a new genus and species of the family, and two new species belonging to the family *Limnadiadæ*.—Ibid., Pt. XX., 1852, p. 18.

29. Some Remarks upon Entozoa, or Intestinal Worms; with a list of the species at present known as occurring within the bounds of the Club.—Hist. Ber. Nat. Club, III., 1858, p. 142.

30. Description of some new species of Entozoa from the collection of the British Museum.—Zool. Soc. Proc., Pt. XXI., 1853, p. 18.

31. Catalogue of the species of Entozoa, or Intestinal Worms, contained in the collection of the British Museum. London, 1858.

32. Description of a new species of *Cypris*.—Zool. Soc. Proc., Pt. XXI., 1854, p. 6.

33. Notes on the Food of some Fresh-water Fishes, more particularly the Vendace and Trout.—Edin. New. Phil. Jour., VI. 1857, p. 17.

34. Description of two new species of Entozoa.—Zool. Soc. Proc., Pt. XXVI., 1858, p. 224.

35. A Cyclopædia of the Natural Sciences, Botany, Conchology, Entomology, Geology, Mineralogy, Palæontology, and Zoology. Glasgow, 1858.

36. Description of several species of Entomostracous Crustacea from Jerusalem.—Ann. Nat. Hist., IV., 1859, p. 240.

37. Description of a new species of *Tænia*.—Zool. Soc. Proc., Pt. XXVII., 1859, p. 101; Ann. Nat. Hist., IV., 1859, p. 240.

38. Description of a rare Entozoon from the stomach of the Dugong.—Zool. Soc. Proc., Pt. XXVII., 1859, p. 148.

39. Description of some new recent Entomostraca from Nagpoor, collected by the Rev. Stephen Hislop.—Ibid., Pt. XXVII., 1859, p. 231.

40. Description of a new species of Entozoon, *Selerostoma sipunculiforme*, from the intestines of the elephant.—Ibid., Part XXVII., 1859, p. 231.

41. Description of a new species of *Estheria*, from Nagpoor, Central India.—Ibid., Pt. XXVIII., 1860, p. 188.

42. Note on the genus *Cypridina*, Milne-Edwards, with a description of some new species.—Ibid., Pt. XXVIII., 1860, p. 199.

43. Description of a new Entomostracous Crustacean, belonging to the order *Phyllopoda*, from South Australia.—Ibid., Pt. XXVIII., 1860, p. 392; Ann. Nat. Hist., VII., 1861, p. 149.

44. Description of two new species of Entomostracous Crustaceans from India.—*Ibid*, Pt. XXVIII., 1860, p. 412; *Ann. Nat. Hist.*, VII., 1861, p. 324.

45. Description of some new species of Intestinal Worms (Entozoa) in the collection of the British Museum.—*Ibid*, Pt. XXVIII., 1860, p. 446; *Ann. Nat. Hist.*, VII., 1861, p. 228.

46. Description of a new species of *Branchipus* (*B. eximius*) from the Pool of Gihon in Jerusalem.—*Ann. Nat. Hist.*, VII., 1861, p. 209.

47. Descriptions of Entomostraca from the Pool of Gihon.—*Nat. Hist. Review*, ser. 3, vols. IV. and VIII.

48. Note on the occurrence of *Filaria sanguinea* in the body of the *Galaxias scriba*, a fresh-water fish from Australia.—*Ann. Nat. Hist.*, VIII., 1861, p. 269.

49. Note on the *Lernæa cyclopterina*, occurring in the gills of *Cyclopterinus spinosus*, a fish from Greenland.—*Ibid*, VIII., 1861, p. 502.

50. Notice of the occurrence of *Sclerostoma equinum?* in the testicle of the horse.—*Ibid*, VIII., 1861, p. 502.

51. *Cyclopædia of Biography*. London and Glasgow, 1861. The notices of eminent naturalists are by Dr Baird.

53. *Museum of Natural History; a Popular Account of the Structure, Habits, and Classification of the Animal Kingdom*. By Sir John Richardson, W. S. Dallas, Dr Wm. Baird, &c. London, 1859--62.

54. *Memoir of the late Rev. John Baird, minister of Yetholm, Roxburghshire, &c.* London, 1862.

55. Description of some new species of Entomostracous Crustacea.—*Ann. Nat. Hist.*, X., 1862, p. 1.

56. Description of two new species of Cestoid Worms belonging to the genus *Tænia*.—*Zool. Soc. Proc.*, 1862, p. 20.

57. Description of some new species of Entozoa.—*Ibid*, 1862, p. 113.

58. Description of several new species of Phyllopodous Crustaceans belonging to the genera *Estheria* and *Limnetis*.—*Ibid*, 1862, p. 147.

59. Description of some new species of Shells collected at Vancouver Island and in British Columbia by J. K. Lord.—*Ibid*, 1863, p. 66.

60. Description of two species of shells collected by Dr Lyall at Vancouver Island.—*Ibid*, 1863, p. 71.

61. Description of several species of Worms belonging to the *Annelida errantia* and *sedentaria*, or *tubicola* of Milne-Edwards.—*Ibid*, 1863, p. 106.

62. On a new species of British Annelides belonging to the family *Chaetopteridæ*.—*Linn. Soc. Trans.*, XXIV., 1864, p. 477.

63. Description of a new species of Annelide belonging to the family *Amphinomida*.—*Ibid*, XXIV., 1864, p. 449.

64. Remarks on a species of Shell belonging to the family *Dentalida*; with notes on their use by the natives of Vancouver Island and British Columbia by J. K. Lord.—*Proc. Zool. Soc.*, 1864, p. 136.

65. Obituary Notice of Dr Robert Dundas Thomson.—*Hist. Ber. Nat. Club*, V., 1864, p. 133.

66. Description of a new species of Entozoa from the intestines of the Diamond Snake of Australia (*Morelia spilotes*).—*Proc. Zool. Soc.*, 1865, p. 58.

67. Description of a new British Annelide belonging to the tribe *Rapacea* of Grube,=*Annelida errantia* of Milne-Edwards.—*Jour. Linn. Soc.*, 1865, p. 8.

68. Description of several new species and varieties of Tubicolous Annelides=Tribe *Lamivora* of Grube, in the collection of the British Museum.—*Ibid*, 1865, p. 10.

69. On new Tubicolous Annelides in the collection of the British Museum.—*Ibid*, 1865, p. 157.

70. Description of a new variety of *Lepidonotus cirratus* parasitic in the tube of *Chaetopterus insignis*.—*Ibid*, 1865, p. 161.

71. Contributions towards a Monograph of the species of Annelides belonging to the *Aphroditacea*, containing a list of the known species, and a description of some new species contained in the National Collection of the British Museum.—*Ibid*, 1865, p. 172.

72. A Supplement to the Catalogue of the British Non-Parasitical Worms in the collection of the British Museum. London, 1865.

73. Contributions to a Monograph of the *Aphroditacea*.—*Jour. Linn. Soc.*, IX., 1866.

74. Description of a new species of Monœcious Worm belonging to the class *Tubellaria* and genus *Serpentaria*.—*Proc. Zool. Soc.*, 1866, p. 101.

75. Description of two new species of Phyllopodous Crustaceans.—*Ibid*, 1867, p. 122.

76. Notes on some interesting Chinese Shells, with a description of two or three new species of *Unionida* collected at Shanghai by Jonas Lamprey, M.D., &c. By Dr Baird and Henry Adams.—*Ibid*, 1867, p. 489.

77. Note on the *Spiroptera sanguinolenta* of Rudolphi, a parasite found in the heart of dogs in China. By Dr Baird and Dr J. Lamprey.—*Jour. Linn. Soc.*, Nov. 1867, p. 296.

78. Description of a new species of *Ascaris* found in the stomach of the Walrus.—*Proc. Zool. Soc.*, 1868, p. 67.

79. Monograph of the species of Worms belonging to the

sub-class *Gephyrea*; with a notice of such species as are contained in the collection of the British Museum.—*Ibid*, 1868, p. 76.

80. Description of a new species of *Sclerostoma* from the stomach of the African elephant (*Socodonta Africana*).—*Ibid*, 1868, p. 262.

81. Contributions towards a Monograph of the species of Annelides belonging to the *Amphinomaceæ*, with a list of the known species, and a description of several new species (belonging to the group) contained in the National Collection of the British Museum.—*Jour. Linn. Soc.*, X., 1868, p. 215.

82. Description of a new species of Earth-worm (*Megascolex diffringens*) found in North Wales.—*Proc. Zool. Soc.*, 1869, p. 40.

83. Description of some new Suctorial Annelides in the collection of the British Museum.—*Ibid*, 1869, p. 310.

84. Additional Remarks on *Megascolex diffringens*.—*Ibid*, 1869, p. 387.

85. Remarks on several genera of Annelides belonging to the group *Eunicea*, with a notice of such species as are contained in the collection of the British Museum, and a description of some others hitherto undescribed.—*Jour. Linn. Soc.*, X., 1869, p. 341.

86. Description of a new genus and species of Shells from Whydah, on the West Coast of Africa, with some remarks on the genus *Proto* of DeFrance.—*Proc. Zool. Soc.*, 1870, p. 259.

87. Description of some new species of Annelida and *Gephyrea* in the collection of the British Museum.—*Jour. Linn. Soc.*, April 7, 1870.

88. Description of several new species of Shells from the South Sea Islands—Appendix to the "Cruise of the Curaçoa." To be published in 1873.

89. The Lymington Brine Shrimp, and the Fezzan Worm.—*Excelsior*, I., 1853, p. 229.

90. Snails: their long Lives and their Revivals.—*Ibid*, I., 1853, p. 343.

91. The Ormer-shell of the Channel Islands.—*Ibid*, III., 1854, p. 411.

92. Pearls and Pearl Fisheries.—Chambers' Miscellany of Instructive and Entertaining Tracts, No. 115. n.d.

93. Visit to the Island of Serk.

94. Lecture on Meteorology. Read at Yetholm.

95. Stanford's Educational Diagrams of Natural History. No. VI. Myriapoda—Arachnida—Crustacea—Annelida—and Entozoa. By A. White and Dr Baird. No. IX. Reptilia and Amphibia. By Drs Bell and Baird. No. XI. Mammalia. By Dr Baird. London.

JAMES HARDY.

On some Flint Implements and rude Ornaments of Prehistoric People in Berwickshire. By JAMES HARDY.

To an early volume of the Club's "History" (Vol. III., pp. 103--111; 1852) I contributed an account of a group of Cairns and other monumental memorials from the east of Berwickshire; but at that time the method of referring those remains to a definite period had not been attained, and the rude tokens of early art which may have accompanied them, so analogous to the fossils by which the ages of strata are defined, were either disregarded or overlooked. The present article may be regarded as supplementary to the history of those monuments, by furnishing some of the illustrations in which it was defective. These, taken with other information, render it probable that a large proportion of the Cairns and encampments of Berwickshire were constructed by people in a very low stage of civilization; whose weapons and implements were mere chips of flint obtained by barter, or rude adaptations of suitable portions of native rock; in other words, they belonged to the Stone Age. For the present I shall confine myself to some of these evidences derived from the discovery of flint implements, &c., in the cultivated fields, which were either the known sites of former tumuli, or in which there is every probability of their having once existed.

The Engravings from the pencil of our Treasurer are lively representations of the more characteristic specimens; and others, subsequently picked up, of a different type, will, it is to be hoped, be forthcoming at some after stage. The figures are of the natural size; and if any one will compare them with those in Mr Evans' valuable "Ancient Stone Implements, Weapons, and Ornaments of Great Britain," he will at once acknowledge their genuine attributes.

I had been picking up flints of the class of "Scrapers" for some years without being aware of their import, otherwise than as being rude or defective gun-flints, when my attention was arrested by the recent occurrence of a flint along with an ancient interment. On the 10th June, 1872, my neighbour, Mr Hood, apprised me that a flag-stone, which promised to be the cover of a Cist, had been torn up in turnip-making, on the top of Hog's Law, a conical gravel eminence, on the farm of Oldcambus Townhead, near the old

post road, and adjacent to my own residence. The flag was a greywacke slate, which had been obtained from a slate quarry at no great distance, where the stone rises in large slabs, with little effort; and close beside a British "camp," whence the body here entombed may have been transported. It was too small to have covered a grave, and we—for we made the excavation ourselves—had not gone far, till it was obvious that it had been previously broken, and the grave disturbed; and that this was probably the same Cist that had been found on the hill about thirty years ago, when it was first cultivated. Some of the stones only forming the sides remained; being rolled greywacke boulders, and two sandstones, grey and white, which had been brought from the sea-side, distant about a mile. Passing through the gravel, we came upon a tenacious brown clay beneath it, and found embedded in it several portions of a human leg. The excavation was shallow, not three feet below the surface; but I was told that the hill was decreasing in height, repeated ploughings and harrowings having caused the soil to slide to a lower position. It could not be ascertained whether the legs were bent or laid straight out; but the direction was from north to south, and the head had been laid to the north. The bones were rather decayed and crumbly; the soil being so damp as to saturate them with moisture. The fibula was a mere fragment; but the tibia was nearly perfect, and was about fifteen inches long. What remained of the femur, was about the same length, but originally it would be of longer proportion. The femur was considerably curved. The other bones had probably been scattered at the previous disinterment. In returning the clay, the broken-off point of a leaf-shaped flint arrow-head was detected; and this was the only reward we had. See Plate I., Fig. 1. It appears to have been broken from an early period, as the crack is glazed over with a white enamel, which covers the whole flint.

Previous to being in culture, this hill-top was covered with grass. There was no cairn. The name occurs in a Coldingham Charter, and is six or seven hundred years old. We don't know who "Hog," or "Ogge," as it is in the Record, was; but he may have been contemporary with "Arkile," or "Bertolui" (Bartholomew?), and "Emund"—Saxons who gave names to their early possessions in the neighbour-

hood; which, however, have not been so fortunate to adhere to them so long as this. He was certainly not the personage whose pre-existence has now for the first time been disclosed; however old the belief, that the chieftains who were buried on heights had their names attached to them for an enduring memorial. This hill itself is of the tumulus form. Gravel knolls, in many instances, in this district have been selected as prehistoric sepulchres; and I am not aware that in these cases there existed any artificial barrow.

As the field in my occupation, next to this, was also preparing for turnips, and in a state favourable for observation, I was induced to make a search for flints: and two days afterwards I picked up the fine knife, Fig. 7, which is of a dark-coloured flint, and was accompanied by a similar coloured flake; and afterwards near the same spot, the lancet-shaped knife, Fig. 9. Afterwards in autumn, two leaf-shaped arrow-heads of grey flint were found close together, at a short distance from the former. They were carefully wrought all round the margin, but one of them was defective and blunted at the point. In another part of the field I found, on the 13th June, the carefully wrought ear-shaped "scraper," Fig. 5; and afterwards in July, the horse-shoe-shaped "scraper," Fig. 4, which has been fractured at the one side. The working is mostly on the side, half shewn in the engraving. Neither of these could have been "strike-a-lights," as I find on trial that this process fritters away the edge, which in the latter of these is keen and fresh as it came from the maker's hands. Native settlements appear to have once existed in this field, as I have got a very uncouth hollowed out sandstone from it, in which some British matron or slave may have decorticated "bear" or "bigg"; and also one of those puzzling stone-bullets, on which I wrote one of my early essays for the Club, as being connected with a game ("Hist. of Club," Vol. II., pp. 51-68), but which in this and other instances, owing to the smallness of the ball, may have been a sling-stone. Like most of the others, it is of the rock native to the locality—greywacke.

Besides these, I have at various times picked up elsewhere, several other flints which bear traces of having been dressed by human agency; and now submit them to the Club's inspection, along with some other objects of rude art belonging to the same early period. I do not affirm that the whole are

of remote antiquity ; some of them may have been broken gun-flints, or used in striking fire with steel, but others appear to be authentic ; and it may be worth while calling attention to this class of articles mixed up with the cultivated soil, where they are easily detected from there being no native flints to embarrass the search, in order that we may learn something of their distribution, their origin, or their age. It is to be remarked that the leaf-shaped flints appear to denote greater barbarism than the barbed arrow, or "elf-shot," of which there are beautiful Berwickshire examples also ; although I have not been fortunate enough as yet to meet with any.

The following catalogue comprises the particulars of the specimens shown to the Club :—

I. ARROW HEADS.

1. Point of leaf-shaped flint arrow-head from British grave on Hog's-law, Oldcambus, June, 1872. Plate I., Fig. 1.

2. Small leaf-shaped flint arrow-head, wrought on the margin all round ; field, Oldcambus, June 21, 1872. Fig. 2.

3. Chisel-ended form of flint arrow-head, found in a field at Oldcambus, May 30, 1864. See Evans, Figs. 231 and 342. This is a rare type. Mr Greenwell has found it in France ; and only a few examples have occurred in this country. The smaller end was inserted in the notch of a stick. The Egyptian arrow-head was of this form. Fig. 3 (reversed).

II. SCRAPERS.

4. Horse-shoe shaped flint-scraper ; field, Oldcambus, July, 1872. A portion broken off. Fig. 4.

5. Ear-shaped flint-scraper ; field, Oldcambus, June 13, 1872. Fig. 5.

6. Disc or lens-shaped flint-scraper. Found at Crow's Cairn, an ancient stone barrow of great size, Penmanshiel, June 13, 1863. See "Hist. Ber. Nat. Club," Vol. III., p. 105. This is a rare type which Mr Greenwell has only found in the south of England. One similar to it appears to be figured in Jewitt's "Grave-Mounds," &c., p. 122, Fig. 168. It is so small as to resemble a stud, but may have been employed in polishing bone-pins. Fig. 6.

III. KNIVES.

7. Flint-knife, of dark grey flint, carefully wrought. Mr Greenwell considers this to be a good example. Oldcambus, June 12, 1872. Fig. 7.

8. Flint-knife, of grey flint, carefully wrought. From a field

at Penmanshiel, of new cultivation, where barrows existed, 1862. Fig. 8. The same section of ground has since yielded, mixed with bones, a fine bent flint-knife, shaped like a boar's tusk.

9. Lancet shaped flint-knife, of blackish flint, of the nature of a flake. Broken. Fig. 9. Field, Oldcambus, 1872. Mr Howse remarked on seeing this, that it quite resembles the knives employed in Persia for circumcision, brought to this country by Mr Loftus. See Joshua, v. 2.

10. Flint-knife? found in British grave at Frenchlaw by Dr Stuart. This is also a flake, but is doubtful whether a knife or a scraper; the edge is bluntish, and the chipping may be owing to its having been struck to obtain fire. It is very thin; but has a thickened end to hold by. A calcareous coating adheres to it. It is dark coloured. Plate II., Fig. 10.

IV. RUDE RINGS AND ORNAMENTS.

11. Ring of bituminous shale, circularly perforated with a large aperture; bored from two sides as with a flint implement; shaped on the outer edge by rubbing; very rude; perhaps the centre of a necklace. Found in 1860, in a field at Penmanshiel, where formerly existed numerous small tumuli, which are alluded to in Club's "History," III., p. 109. This is quite a foreign object to the district, as much so as the flints. Mr Howse thought it might be of Whitby jet. It leaves a black streak on stone, but does not stain wood. Fig. 11.

12. Whorl, or ring, of burnt brick earth. From a field at Penmanshiel, once full of cairns. Fig. 12.

13. Bead of greywacke slate; perforated as if by a flint implement from two sides; outer rim cut as with a knife. Found in the garden at Penmanshiel. Fig. 13.

V. FLINT-FLAKES.

14. Flint-flake, from the same locality as No. 8.

15. Flint-flake, apparently burnt and wrought; Oldcambus, June 13, 1872.

16. Burnt flint-chip, illustrative of the last; from a grave on Whiteside hill, near Wooler, accompanying burnt human bones dug from a tumulus.

17. Flint-flake, British hut-circle, on a moor, recently ploughed for the first time, Penmanshiel, April 15, 1870. Several tumuli near, mentioned in Club's "History," p. 104, have as yet yielded nothing; but this is indicative of their age. St. David's Cairn was connected with this group. I observed in passing it, many years ago, a greywacke stone, hollowed out like a shallow dish,

which was possibly a mortar for bruising corn in, previous to the invention of querns. The depression was oval.

VI. STONE BALLS.

18. Stone-bullet, larger than a marble, formed of serpentine or some allied stone, being soapy to the touch. Believed to be ancient. Found near Wooler Brewery, May, 1865.

19. Small stone-bullets of greywacke; supposed to be sling-stones. Fields, Penmanshiel and Oldcambus.

On Two Ancient Interments at Wooler and Ilderton.
By the Rev. WILLIAM GREENWELL, F.S.A., &c.

ON two previous occasions I have given an account in our Proceedings of the occurrence of pre-historic burials within the limits of the district to which the Berwickshire Naturalists' Club confines its researches. I propose in the present paper to follow that up by putting on record the facts connected with two burials, which were met with in the neighbourhood of Wooler. The burials in question, though they present no features of novel interest, nevertheless have a claim to notice, inasmuch as when evidence is so scanty, every item which adds to our store of accurately recorded details is some addition, greater or less, to that accumulation of facts from which we hope in time to be enabled to deduce something of a history of, at least, the burial customs of the ancient inhabitants of Britain. And as life and death are so intimately bound up together, and the incidents connected with each are so interwoven, especially amongst people who are in the lower stages of civilization, we may look, from a knowledge of the treatment of the dead, to obtain some insight into the condition of the living.

The two interments to be noticed did not differ much, the one from the other, in the way in which the body had been treated in the process of burial. They were both burials by inhumation, where the body was laid in the grave without having undergone the action of fire in burning; a rite which, however, was widely and extensively practised at the time to which these two interments belong. Each of the bodies had been placed, as is usual in the districts where suitable stone is easily to be obtained, in cists; small chambers of stone sunk below the level of the ground, and formed of four or

more stones, set on edge, and covered in by one or more slabs. In both cases, the land having been under cultivation for a long period of time, it is impossible to say whether a barrow—the mound thrown up over the place of burial to mark the spot where the dead were laid to rest—had ever existed. Although it is true that instances have occurred where it is scarcely possible to suppose that a mound had ever covered the grave; yet the erection of a mound, of greater or less size, is so universal, not only in Great Britain but in almost every part of the world, that it is most probable in these two cases there had once been a barrow, but that all trace of it had disappeared during a lengthened process of tillage.

The first burial was found actually within the precincts of the town of Wooler, and the circumstances of the discovery are somewhat peculiar. Mr Dixon, a blacksmith, of Wooler, had occasion, in June, 1872, to bury his mule, and thought that his garden would form a proper burial ground for the animal. In making the grave, at a depth of three feet below the surface, he came upon a large slab of stone, which being of a nature foreign to the stone of the immediate locality, he justly concluded must have been placed there by the hand of man. His son, who was with him, broke off a corner of the stone, and finding there was a hollow below, a candle was got, and then, to their amazement, they saw, lying at the bottom of the hollow, the bones of a skeleton, contracted after the usual British fashion, the knees being drawn up towards the chin. Mr Dixon then, after removing the skull, proceeded to inter his mule in the burial cist of the ancient British owner; and, if nothing more had been heard of the discovery, it is quite possible that antiquaries of a time long subsequent to our own, might have been sadly led astray as to primitive burial customs, by finding the bones of a mule in company with some of those of a human being. Our fellow-member, Mr Wightman, fortunately, however, heard of the exhumation with the subsequent inhumation, and thinking it probable that some article or other might have been buried with the body, he proceeded to disinter the mule. It happened as Mr Wightman expected; and we have to thank his intelligent forethought that the only thing which had accompanied the interment was not lost to sight: it was a button of inferior jet, or some other form of lignite.

The Cist, which lay nearly due east and west, was formed of four side stones, with two covers; it was $4\frac{1}{2}$ feet long, $3\frac{1}{2}$ feet wide at the east, and $2\frac{1}{2}$ feet wide at the west end, and 2 feet deep. The body had been laid on the left side, the most frequent, with the head to the east; the position of the hands was not observed, but they usually are found placed in front of the chest, or up towards the face. This contracted form of interring the body is one almost universal in pre-Roman burials in Britain; and, indeed, prevails over a great part of the world in old interments, as also in those of modern savages. It is certainly not due to the requirements of space, for I have frequently met with bodies deposited in graves of from 7 feet to 10 feet in diameter, and where the contracted body occupies but a very small space of the area of the grave. I am inclined to refer it to the way in which people with scanty covering during the hours of rest were accustomed to sleep, a position in which, such being the case, they would most frequently die. It has been suggested that this mode of placing the corpse in the grave was due to a fancied resemblance to the position the fœtus occupied in the womb, and that it was sought to lay the dead to rest in mother earth after the fashion they had once occupied before birth; the suggestion does not, however, for many reasons, appear to me to be a plausible one.

The button is conical-shaped, $2\frac{1}{8}$ inches in diameter, and pierced on the back with two holes, which join about the centre, but do not come through the front; through this perforation a thong would be passed, thus constituting a very serviceable dress-fastener. Buttons of a similar kind have been found throughout Great Britain; in Northumberland, two were met with in a cist near Tosson, in Coquetdale. I have discovered several on the Yorkshire wolds, in some cases highly ornamented, and to the number of six in one grave; there placed in front of the chest of the man whose dress they had once fastened, and whose body was accompanied by several implements of bronze. There can be no doubt that these articles served the purposes of buttons, and their occurrence in graves and cists would seem to imply that the habit was to bury the dead, at all events in some cases, in the clothes they wore when alive: this appears to be evidenced by the finding of pins and other fasteners in association with the body, though it must be admitted that

pins might be used to fasten anything of the nature of a shroud as well as the dress.

The bones had gone very much to decay; and the only part of the skeleton which was preserved was the skull, and that only in an imperfect condition. It is quite evident, however, from what remains of the skull, that the buried person was a man, of mature age, and of robust make. For the following account of the skull and the description of its features I am indebted to Professor Rolleston, of Oxford. "The calvaria is brachycephalic; the forehead is low, broad, and sloping. The parieto-occipital region also has the obliquity so characteristic of the male sex. The ridges for the origin of muscles, and the frontal sinuses point, by their extensiveness, in the same direction. The great width, length, and capacity of the skull are combined with a contour which I have several times met with in British skulls of the earlier bronze, but never in the pre-bronze period. All the sutures, in the portion of calvaria left, are obliterated internally, but the Pacchionian pits and the channels for the meningeal arteries are comparatively shallow, and for these as for other reasons, I do not think the owner of this skull was an old man, nor even beyond 45 years of age at the time of death. The calvaria measures in each case approximately: Extreme length, 7·5; extreme breadth, 5·95; circumference, 21·5; giving a cephalic index of '79."

The skull was of that type, which, so far as the limited means at our disposal allows us to judge, appears to have been the prevalent one in Northumberland at the period to which the burial at Wooler may be referred. Two descriptions of heads have been found throughout Britain, which may safely be attributed to a time antecedent to the arrival of the Romans in this country; the one a long one, and the other a round one, and with the latter of these the skull in question is to be classed. The dolicho-cephalic, the long skull, seems, from the evidence of the barrows, to be the earlier form, and to belong to a time before a knowledge of metal was possessed by the inhabitants of Britain: this long-headed people were succeeded, and probably subjected, by a stronger-made, round-headed race; by whom, though they were conquered, they were certainly not extirpated, for numerous remains of them are found in the same barrows, and buried undoubtedly at the same time, with the round-headed people. These latter may be considered as belonging

to the age of bronze, and it is to them that the man who occupied the Cist at Wooler is to be referred. The question, however, is much too large an one to be considered in this brief relation, and it must be sufficient, at the present, to merely thus epitomise it.

The second burial of which I purpose to give an account, was discovered, during the summer of 1872, on the farm of Mr Clark, of Ilderton, and within a short distance of that place. Numerous interments have been met with from time to time in the immediate neighbourhood; and a few years ago a cist was found not very far from the present one, which contained a skull of a markedly brachycephalic character, an account of which will be found in the "Natural History Transactions of Northumberland and Durham," Vol. I., pt. 2.

I am sorry that I am unable, for lack of any notes taken at the time of the discovery, to give a minute description of the size and position of the Cist, or of its contents. It was placed, however, somewhat below the surface of the ground, and consisted, like other similar places of interment, of slabs of stone, set on edge, forming an oblong cist, with a larger stone covering the chamber. It had contained an unburnt body, very few remains of which were left; and there was also found in association with the body, a vase of pottery, to which the name of "Food Vessel" has been given. It was broken in taking it out, and unfortunately but a small part of the vessel was preserved; enough, however, remains to enable me to give a correct idea of its size and shape, as also of the ornamentation upon it. It is $4\frac{1}{2}$ inches high, $5\frac{7}{8}$ inches wide at the mouth, and $2\frac{1}{2}$ inches at the bottom. On the inside of the lip of the urn are two rows of small oblong impressions running round it; on the edge of the lip are diagonal lines of twisted thong impressions, and below the lip are similar but longer impressions, placed diagonally but in the reverse way to those on the edge; below this is a row of oblong impressions, and then three series of thong impressions; below these is a row of diagonal lines, but in a reverse way to the row above; on the shoulder, so to call it, of the vase, is on each edge a row of upright short lines, having between them two rows of oblong impressions; from thence to the bottom the vase is covered with encircling lines, made by short pieces of twisted thong applied to the moist clay.

There can be little doubt, I think, that the name which

has been given to this class of sepulchral vessels correctly describes their use, and that they were intended to contain food for the use of the dead, either with a view of serving the spirit of the deceased on his journey to, or after his arrival at, the other world to which he was supposed to have gone. In some few cases a dark-coloured matter has been found at the bottom of these vessels, which was proved, on analysis, to be of animal origin. They are associated both with unburnt and burnt bodies, though they more frequently accompany the former than the latter; and when they are discovered with burnt bones they never contain them, in this respect differing from the ordinary urns in which bones have been deposited. They vary to a considerable extent in size and shape, and still more so in their ornamentation, though there is a general resemblance in the greater number of them. A frequent form is that which characterizes the specimen from Ilderton, and which is often found to have four or more projections round the shoulder, these being sometimes perforated. When they are perforated, the object of these projections seems to have been to suspend the vessel by; though frequently the piercings are so small that it is difficult to understand how anything sufficiently strong to uphold the vessel can have been passed through them. Those with unperforated projections I should be inclined to think later than those with pierced ears; when the projections had been kept as an ornament, the primary object, that of use, having passed away.

On account of the imperfect condition of the Ilderton vase, it is impossible to say certainly whether it has had any of these projections or not; judging, however, from its general appearance, and on comparison with other vessels, I think it probable that it originally had four of these appendages.

In conclusion, I would urge upon all our members to make a careful note of the occurrence, with the attendant circumstances, of any instance of early burial which may fall under their observation, and to lay it before the Club. It happens continually that interments belonging to pre-historic times are discovered accidentally, in ploughing or other agricultural operations; in some of these cases incidents of intense interest and moment are brought to light, too frequently only to cause a few days' wonder, and then to pass into oblivion for want of some one to record them.

On Insects of the East of Berwickshire taken in Autumn and Winter. By JAMES HARDY.

HAVING had a few spare days during the three past autumns and early winter (Nov.--Jan.), I devoted them to collecting some of the Insects in the neighbourhood, in order to ascertain what kinds survive in that exceptional period, when they are generally supposed to have "shuffled off their mortal coil," or to exist only as larva. As there are many among them not previously recorded for Berwickshire, I have made a selection of the more interesting, which may be useful for future reference. The majority are Brachelytra of obscure appearance and minute size; and they offer a considerable supplement to former county lists.

COLEOPTERA.

- DYSCHIRIUS GLOBOSUS. Borders of a dried up pool.
 BEMBIDIUM MANNERHEIMI. Among dead leaves, in Penmanshiel wood, January; and in stack bottoms on the moor, near Penmanshiel, November.
 ,, CLARKI. On the sandy sea-coast at Ewelairs, near Cockburnspath.
 FALAGRIA SULCATA. Decayed hay, Oldcambus.
 BOLITOCCHARA OBLIQUA. In Polypori, Pease Bridge.
 OCALEA CASTANEA, Var. with labrum black. Stack bottoms, Penmanshiel.
 LEPTUSA FUMIDA. Beneath bark, Pease Bridge.
 OXYPODA OPACA. Abundant in decayed hay, and stack bottoms.
 ,, LONGIUSCULA. Border of a dried up pond.
 ,, EDINENSIS, *Sharp*. Border of a dried up pond, near Oldcambus, November, 1871.
 ,, LENTULA. With the preceding.
 HOMALOTA GREGARIA. Rubbish near a dried up pond, and from the sea-coast.
 ,, EXIMIA, *Sharp*. Among wet moss in winter, Langstruther bog, near Penmanshiel; one,
 ,, LABILIS. Border of a pond; Oldcambus.
 ,, LONDINENSIS. In former years near Penmanshiel.
 ,, ELONGATULA. Marsh on sea-coast, and stack bottoms.
 ,, VOLANS. In agarics at Pease Bridge; and border of a pond, Oldcambus.
 ,, VESTITA. Under sea-weed; Greenheugh, near Oldcambus.
 ,, VICINA. In agarics at Pease Bridge; and in rubbish, Oldcambus.

- HOMALOTA GRAMINICOLA. In decayed hay, and edge of pond.
 ,, ALGÆ, *Hardy*,=PUNCTICEPS, *Thomson*. Under sea-weed.
 ,, OCCULTA.=FUNGIVORA. Numerous in agarics at Pease
 Bridge.
 ,, PICIPES. In agarics at Pease Bridge; and rubbish,
 Oldcambus.
 ,, FALLACIOSA. One, pond rubbish; Oldcambus.
 ,, CIRCELLARIS. Among moss, Pease Bridge, &c.
 ,, EREMITA, *Rye*. Formerly at Penmanshiel; border of
 a peaty pond, Oldcambus.
 ,, EXILIS, *Er*. Wet moss in winter, in Langstruther
 bog, near Penmanshiel; one.
 ,, ANALIS. In grass.
 ,, AQUATICA, *Thomson*,=SUBÆNEA, *Sharp*. In agarics at
 Pease Bridge.
 ,, XANTHOPTERA. In decayed hay, &c., Oldcambus.
 ,, INCOGNITA, *Sharp*. In agarics, Pease Bridge; one.
 ,, VALIDA. In agarics, Pease Bridge; one.
 ,, TRINOTATA. In swarms in decayed hay, and old stack
 bottoms.
 ,, FUNGICOLA. In agarics, Pease Bridge.
 ,, IGNOBILIS. Ditto.
 ,, SÓDALIS, *Er*. Rather abundant in agarics at Pease
 Bridge; also in stack bottoms and decayed hay.
 ,, NIGRA. Decayed hay, Oldcambus.
 ,, ATRAMENTARIA. Dead hedgehog, and decayed hay.
 ,, MELANARIA. Decayed hay, Oldcambus.
 ,, MUSCORUM. Ditto. One.
 ,, FUNGI. Ditto. Common.
 TACHINUS SUBTERRANEUS and LATICOLLIS. In agarics, decayed
 hay, &c.
 QUEDIUS QUADRIPUNCTATUS. Stack rubbish, Penmanshiel; one.
 ,, TEMPORALIS. Ditto. One.
 ,, SUTURALIS. Decayed hay, Oldcambus; two in different
 years.
 ,, SEMIOBSCURUS, *Er*. Decayed hay; one.
 PHILONTHUS ALBIPES. Stack bottoms.
 LEPTACINUS LINEARIS. Decayed hay.
 STILICUS RUFIPES, AFFINIS, and ORBICULATUS. Decayed hay.
 SUNIUS ANGUSTATUS. In decayed hay; also at the roots of grass
 on the sandy sea-coast at Greenhaugh and Ewelairs.
 STENUS NIGRITULUS. At the side of a dried up pond, November,
 1871. One.
 ,, IMPRESSUS. In agarics and decayed hay.
 ,, SUBÆNEUS, *Er*. In decayed hay; Penmanshiel and Old-
 cambus.
Obs. Besides these there were *S. similis*, *unicolor*, and *bupthalmus*.

- SYNTOMIUM ZÆNEUM. Remains of cut grass, Oldcambus.
 LATHRIMÆUM UNICOLOR. In gills of agarics, and in decayed hay, Oldcambus, &c. *L. atrocephalum* is common in winter.
 HOMALIUM LÆVIUSCULUM. Under sea-weed.
 „ RIPARIUM, Thomson. With the preceding.
 „ EXIGUUM. In agarics at Pease Bridge.
 „ CONCINNUM. In hay. *H. rivulare* and *H. fossulatum* also survive the winter in numbers.
 MEGARTHURUS SINUATOCOLLIS. In hay and rubbish.
 PHLÆOBIUM CLYPEATUM. In decayed hay.
 MICROPEPLUS FULVUS, *Er.* Decayed hay, Oldcambus; one.
 BRYAXIS WATERHOUSEI, *Rye.* A pair from Penmanshiel.
 TRICHOPTERYX LATA. Decayed hay, Oldcambus; one.
 CHOLEVA LONGULA. In agarics, Pease Bridge; and among leaves, slate quarry, Oldcambus.
 „ NIGRITA, TRISTIS, CHRYSOMELOIDES, KIRBII, ANISOTOMOIDES, and MORIO. Agarics, dead hay, and dead animals; Pease Bridge, &c. *Ch. nigricans* occurred in June.
 „ FUSCA. Under an old bee-hive, Penmanshiel.
 CRYPTOPHAGUS SCANICUS. In hay, and swarming among the combs of an old bee-hive.
 „ DENTATUS and VINI. One of each in hay.
 ATOMARIA NANA, *Er.* In decayed hay, Oldcambus.
 CORTICARIA PUNCTULATA. Common in stack rubbish and old hay.
 „ CREMULATA. Sandy sea-coast.
 „ DENTICULATA, *Gyll.* Decayed hay, Oldcambus.
 CIS FESTIVUS. On Polypori of the hazel, Pease Bridge; and along with *Octotemnus glabriculus*.
 OTIORHYNCHUS LIGNEUS and RUGIFRONS. Sandy sea-coast.
 BARYPEITHES SULCIFRONS. Stack bottom, Penmanshiel.

HEMIPTERA HETEROPTERA.

- SCOLOPOSTETHUS ADJUNCTUS, AFFINIS, and CONTRACTUS. In decayed hay and rubbish, Oldcambus.
 PERTRECHUS LUNIGER. Decayed hay, ditto.
 DRYMUS SYLVATICUS. Ditto.
 STYGNOCORIS SABULOSUS, and ARENARIUS. Sandy sea-coast, &c.
 ISCHNORHYNCHUS RESEDE, *Panz.* Beat from among thorns and wild rose bushes, Pease Bridge. The true insect.
 IDOLOCORIS PALLIDICORNIS. Leaves of fox-glove; mostly with undeveloped wings.
 „ ANNULATUS. At rest harrow on the coast.
 LIOCORIS TRIPUSTULATUS. Among nettles, Pease Bridge.
Obs. The others were *Tingis Cardui*, *Lygus campestris*, *Antho-
 coris nemorum*, *Nabis ferus*, and *Miris holsatus*.

HOMOPTERA.

ACOCEPHALUS AGRESTIS and RUSTICUS. Decayed hay.

AGALLIA VENOSA. Dry banks among *Helianthemum* and *Plantago lanceolata*.

EUPTERYX BLANDULA. By beating sloe bushes.

„ SOLANI. Abundant on silver-fir, at Pease Bridge.

DIPTERA.

TYPETA ABSINTHII. Wood-rush, Pease Bridge.

DISCOMYZA INCURVA, *Fallen*. Two or three of this curious black fly were picked up in November, among sand reed and other rank grasses, on the sea-coast, at Ewelairs, near Cockburnspath. I bottled it for a *bug*. It simulates *Salda*, in its alternate running and leaping; but, indeed, the other *Notiphilæ* are sidling for a while, skip off suddenly, but their longer wings allow them to escape more readily than this. Both Meigen and Macquart mention this species as having been found in meadows. Mr Haliday, who was the first to record this species as British, obtained it from the wooded cliffs about Isle Oransay, in Skye. (“*Ann. Nat. Hist.*,” III., p. 223.)

APHANIPTERA.

PULEX TALEÆ. Mole-flea. In old ricks of decayed hay, probably from field-mice.

As Berwickshire insects I have also to record CIXIUS INTERMEDIUS, found somewhere on the coast hereabouts; and CAPSUS SCUTELLARIS, from Penmanshiel—a rare species.

Zoological Memoranda. By JAMES HARDY.

CAPTURE OF A BOTTLE-NOSE, (*Delphinus melas*).—The following notice appeared in the “*Newcastle Journal*,” Feb. 6, 1872. “On Wednesday afternoon last (Jan. 31), a whale was seen to enter St. Mary’s Haven, Newton-by-the-Sea. Ten fishermen immediately launched a fishing coble, and set off in pursuit, armed with guns. In attempting to get out of the haven, the whale stranded on the Embleston Rock, and lay for a considerable time quite motionless; and a rope was tied round its tail and secured to the stern of the boat. As the tide rose, the fishermen towed the whale off, and attempted to land it on the beach; but as soon as it found itself in open water, it rushed off at great speed seaward,

dragging the boat stern foremost after it, much to the alarm of its occupants. Before the tow rope could be cut, the whale struck against the rocks across the mouth of the haven, known as the Phills, where it lashed frightfully with its tail, sending up quite a stream of water. A few shots were fired at it, and another attempt was made to beach it, but it again dashed off with the boat, and struck with great force against the rocks, and received a severe stun. Advantage was taken of this, and the monster was got on shore, and secured by anchors and chains. On the tide ebbing it was left high and dry, and soon died. The whale measures 22 feet in length, and 14 feet in circumference. The blubber has been taken out, and will yield a large quantity of oil. The carcass was afterwards cut into three pieces, each piece requiring the united efforts of three powerful horses to remove it." Our President, in order to clear up doubts about the identity of the animal, visited Newton, on March 18th, and "interviewed" an intelligent fisherman. He writes: "The animal was a 'Bottle-nose,' of which we had a shoal stranded here, some years ago, on Shoreston Sands. The measurement is fairly given in the extract; the computed weight was from $3\frac{1}{2}$ to 4 tons. The yield of oil I could not ascertain; but it was in good condition, and proved a very favourable haul for the fishermen."

WHITE MOLE.—Mr Robert Gibson, mole-catcher, Smailholm, caught a large white mole (a male), on the farm of Brotherstone, near St. Boswell's. This is only the fourth he has caught during a long experience. ("Berwick Advertiser," June 21, 1872.) [At Penmanshiel I had two white, or rather yellow, moles, handed to me at the same time. Mr Boyd has also seen this variety at Hetton.]

INSTINCT OF MICE.—My wheat stacks are sometimes built with sticks placed in the centre, which are bound together with oaten straw ropes. One of these was much infested with mice; but they had made their nests not of the stiff wheat straw, but of the straw of the ropes, from its being more pliant for twisting to the required shape; almost every particle of it having been nibbled off, and made a convenience of.

THE HOBBY, (*Falco subbuteo*).—In the "Berwickshire News," June 18, 1872, it is stated: "We have been shown, by Mr Robert Wait, bird-stuffer, a very handsome male

specimen of the Tree Falcon, which was shot lately in this neighbourhood (Dunse). It is $12\frac{1}{2}$ inches long and $28\frac{1}{2}$ broad."

FOOD OF THE KESTREL.—On the 5th July, I surprised a Kestrel, which had just killed a young rabbit. It had commenced eating the brain and the side of the head, and next the neck penetrating to the heart. There were two Jackdaws waiting on beside it, for their share after the hawk had been satisfied.

PIED FLYCATCHER, (*Muscicapa luctuosa*).—There are various recent instances of the occurrence of this pretty species over a considerable extent of country. The Rev. F. R. Simpson writes that it has re-visited him this season, and he has reason to believe that it bred at Middleton Hall, near Belford. Mr R. G. Bolam mentions that one was shot at Linden, by Mr Ames's gamekeeper, and is now at Linden; also that the nest and eggs have been seen at Weetwood Hall, but not the bird. Mr Bold wrote me that a pair was seen at Long Benton, on the 15th and 16th of May. Mr Stevenson has seen it for two successive years at Dunse. Some years since, when passing in company with Mr Jerdon, a shooting lodge of the Earl of Haddington, near Longshaw, on the Alwen water, we saw a pair fly from the creepers in front of the house.

HABITS OF THE PIED WAGTAIL.—On May 31, I observed one at a grassy pool near Oldcambus, repeatedly hovering with spread tail backwards and forwards, almost sweeping the surface, to catch water insects; and then at each course seat itself on stones at the brink till it resumed the hunt, which appeared to be successful at those times when its wing brushed the water. I have also seen this bird rushing excitedly hither and thither, in a zig-zag manner, picking the flies from the points of grass; and on another occasion it seated itself on a stone wall, and darted into the air after insects, always returning to the spot whence it flew up. In the Pebble Burn, I noticed three beautiful Grey Wagtails engaged in the pursuit of moor butterflies; but they did not appear to be very successful.

THE ROCK PIPET.—On December 23, there were numerous winter-gnats, and the small black flies named Borbori, on the high sea-banks. Three of the Sea Pipets were walking among the grass, and, like Wagtails, vibrating their tail

now and then, and making rushes at the Borbori on the grass piles, or diligently picking them off. This bird seldom travels a field-breadth from the sea. I once saw the bird take umbrage to a young rabbit, which had approached it too closely. Having startled the timid animal, it pursued it on wing till it had regained its retreat.

BLUE TIT-MOUSE (*Parus cœruleus*).—This season a pair of Tit-mouses have selected as a place for building their nest, the letter box at Spylaw, near Kelso; and curiously enough, another pair have chosen the letter box at Softlaw. In both instances eggs were in the nest; but some boys having ascertained where the nests were, maliciously cut the box, and took away the eggs. (“Berwick Advertiser,” May 31, 1872.)

BOHEMIAN WAXWING, (*Bombycilla garrula*).—Mr Wilson of Coldingham, writes that on the 11th of May, 1872, a Bohemian Waxwing was seen at Hallydown, and shortly after a bird of this kind was shot at Coldingham, which he has seen and examined. Several years since, my brother observed two of these birds near the post-road, between Penmanshiel and Grant’s House.

FOOD OF THE MOUNTAIN FINCH, (*Fringilla Montifringilla*).—Mr Edward Allen informs me that three years ago, during winter, a large flock of the Mountain Finch visited Alnwick, and fed on the beech mast; and great numbers were caught and destroyed by boys. He writes: “I got information that large flocks of birds were in a wood in the Park. They kept at first to a cluster of firs; but in a few days they took to the beech trees, and fed on the mast. The number was *prodigious*—they moved in clouds; but their number soon diminished, as they were easily caught. A few Blue Tits were always mixed up with them. They continued with us for three weeks, when the weather opened.” This remark is interesting, as the native food of the bird is not sufficiently ascertained. Mr St. John (“Nat. History and Sport in Moray,” p. 281) made the observation, “I have seen them more often about beech trees than any other; but this may be the effect of chance.” Mr Gray (“Birds of the West of Scotland,” p. 138) remarks that Mr Alston found the gizzard of a male in autumn, 1869, “full of fragments of the kernels of nuts, seemingly hazel.” Query, was it not beech mast?

HOUSE SPARROW.—May 31. I noticed the peculiarity of a Sparrow occupied in pulling at the leaves of a cherry tree till

it succeeded in tearing one through the middle, and, although it was quite green, bore it off. Query, to line its nest? or cool its young?

STARLING.—While I was observing the proceedings of a pair that had their nest in the corner of a house at Wooler, the male came home with a worm in its beak, and then flew out with the white dung of one of its young, and dropped it in the garden on its way back to the fields.

JACKDAW.—On May 31, I noticed near a wall side, at two different spots, above the haunt of the Jackdaws, the shells of a partridge egg, which had been freshly devoured there, as the remains of the albumen still adhered to the grass. I blame the Jackdaws, because this is the place where they feast on the booty which they have conveyed from a distance. When they are pilfering corn they assemble here to hide, and then make sallies out when they may venture with safety. A Jackdaw with a dirty white band across the wings has accompanied the flocks in the fields, throughout the season, and nestled in the sea-banks.

HOOPOE.—Mr F. R. Wilson writes: "There is a fine specimen of the Hoopoe preserved at Hirst. The farmer who has it says that it was shot at Newbiggen"; and his information would imply that more had been seen in that vicinity. Mr Cadogan recollects of Hoopoes being seen on the coast, and of three being shot. Some particulars about these birds we owe to the inquiries of the Rev. Edward N. Mangin, Vicar of Woodhorn. The Hoopoe preserved at Hirst Castle was shot about twenty years ago by Mr Rowell, the tenant, at a farm called Moor House, about half-a-mile to the east of Hirst. About the same period, the gamekeeper and his son shot two other Hoopoes at Cresswell. In the summer of 1871, a breaksman at the colliery, who has now left the neighbourhood, shot another Hoopoe on a tree close to the Hirst, and brought it to Mr Rowell to ask him what sort of a bird it was. These four are the only specimens Mr Mangin has heard of.

WHITE HOUSE MARTIN, (*Hirundo urbica*).—Two cream-coloured Martins were reared, this summer, in the interior of the highest story of Wooler Mill; and were seen in the end of July, dashing about as lively as the others, and passing in and out from their mealy domicile. They were mostly conspicuous towards evening, and were very pretty objects. I

believe they escaped the usual fate of albinos, and drew off with the rest of the young birds.

MARTINS ASSISTING TO REPAIR A FALLEN NEST.—Mr John Anderson reports: "My father noticed a rather strange freak among the Martins, at the Marygold (Berwickshire). A pair had built their nest in one of the windows, and had it nearly finished, when it all fell to the ground, owing to the rain. Next day he was wondering what the unwonted stir was among the Martins, which had gathered in a crowd, and when looking at the birds, saw that they all had clay in their mouths, and were waiting their turn to get forward to the nest, which they completed again in about two days."

FOOD OF THE RING-DOVE.—"Mr James Wood, Foulden Bastle, shot on his farm on February 7th, 1872, a wood-pigeon, and found in its stomach upwards of 4,200 clover leaves. This fact will sufficiently show what amount of damage is done to young grass-fields by these birds. Mr Wood also shot a pigeon last year, and in its crop found 3,800 leaves." ("Berwick Advertiser," February 16.) I have observed two concurrent instances, one at Langleyford, and the other in this vicinity (March 25) where the stomach was crammed with clover blades. We must not conclude, however, that at those dates all the birds were "living in clover." On February 6, 1871, in the stomach of one that had been partially eaten by a fox there was nothing but a store of the large yellowish seeds of "Mother-of-Wheat," (*Veronica hederifolia*) and the small polished seeds of the common goose-foot, (*Chenopodium album*). Ring-doves make frequent resort to the seeds of the "Mother-of-Wheat," which become scattered by the harrows among the young wheat plants; they live for a time also on the flower buds of the wild mustard, of which they devour large quantities; and the jointed seed pods of the charlock appear to be a dainty meal. The seeds and leaves of the common chickweed, where it abounds, are eagerly sought after, even for weeks. If they would content themselves with this humble fare they would be tolerated; but it is just when it fails, or becomes stale, that they fall on the leaves of the Swedish turnip, and strip it as completely as a swarm of caterpillars. We all know how quietly they drop down in the early morning, and extract from the soil a promising crop of garden peas, while the owner is asleep. People complain; but this is a mere

trifle compared with their depredations among the leguminous crops in the fields. Out of necessity, or for the sake of variety, they have curious shifts. On the sea-coasts, during the summer, they resort for small shell-fish to the fore-shores. One shot at Akeld during winter had its crop packed with the tops of branches of the Scotch fir. At Wooler, one morning, 14th May, I watched one for about fifteen minutes, engaged among the top boughs of some tall beeches, in picking and swallowing the tender recently developed beech leaves. It appeared to be making an excellent breakfast. I have been told that they are fond of the seed-leaves or cotyledons of sycamore and beech, of which there is annually such an abundant crop in avenues, and beneath the shade of those trees.

POULTRY FOND OF MICE.—It may not be well known that the common domestic fowl are fond of mice. They both give chase to them, and swallow them up. I lately saw a hen snatch a dead mouse from a passing cat, which was bearing it held by the neck to her kittens; and run off pursued by others of the poultry, and poor puss herself, so unexpectedly bereft of her prey. How it ended I did not see.

FOOD OF PARTRIDGES.—In winter, Partridges pick holes in Swedish turnips; and especially they enlarge those which have been bitten out by the hares and rabbits. On February 21st, my steward observed a covey occupied with something equivocal in a wheat field, where the wheat was well advanced. They had been pulling it up to get at the grain. In the stomachs of a pair sent to me at Christmas, which had been shot on this place, there were many clover leaves mixed with a considerable proportion of seeds, of which the majority belonged to the red pimpernel, a copious weed on red sandstone soils. If you pass partridges on the opposite side of a fence, you hear a low warning call; they then clap; and if you look over, or advance, they take flight.

WOODCOCK BREEDING.—Our President writes: Woodcocks are reported by gamekeepers to have bred this summer at Twizell, and at Middleton Hall, Belford. I know the Woodcock was hanging about our links between here and Bamburgh, for quite a fortnight about Easter. My impression at the time was, that they were waiting for wind and weather favourable for their migration—in which it would seem they have after all been disappointed.

SHOVELLER DUCK, (*Anas clypeata*).—Mr Wilson obtained an example, July 25th, 1872, which had been shot by Mr James Glen, Floors (Coldingham), in the pond there. Mr Selby says, “rare upon the Tweed.”

COMMON GULL.—The operation of the gun act has made me acquainted with one of the persecuted children of the sea. A pair of Gulls, this spring, separated themselves from their breeding quarters about Fastcastle, and took up their station on a cliff near Siccar point, a few miles farther up the Firth. I did not at first perceive their intent; but one morning a Gull was seen seated on the bank, with three Jackdaws round it, with which, when I looked over, it appeared to be holding a conference; as it was shaking its head, and uttering sounds not usually heard from a Gull. The light rogues flew off, leaving the Gull at its post. Shortly after I was also ranked as an intruder. One was still on the outlook, and as soon as I approached, both it and its partner dashed out, and circled round and round, with wild anxious cries; and one would pretend a rush towards me, and then consider better of it, and wheel high up. They scattered their droppings when thus alarmed; and when there were companions nigh to join, the clangour grew louder and fiercer and somewhat startling, where before scarcely a sound, not even the waves, ruffled the quiet. The clamour never ceased till I was out of sight. With the success of their strategy, the wild cry was varied by a congratulatory “kecker, kecker”; and then when I disappeared, the bird settled down on its perch, and a low musical note came across the bay. On another occasion, I watched them by keeping out of view. One was seated on the bank when its mate came homeward from the sea. It flew suspiciously over the sentinel, then examined on each side of it, then up the face of the cliff, and then betook itself out to sea; and then returned and slipped quietly into the recess where the nest was situated.

Owing to their present immunities, the Gulls, when they have concluded their fishing, have become more confidential; and increasing numbers associate on the reefs of rocks, where they sit in a crouching attitude, or, when the rocks are immersed, alight on the banks. If disturbed, they fly off silently in a body, with a low flight, always diverging wider and wider as they recede; some of them detaching themselves and returning to their resting place, while the bulk

push forward, sweeping round the precipices and across the gullies, appearing not unlike a frightened flock of sheep as they skim in a white stream along the sloping green banks. Occasionally the remains of grains (husks of oats) may be detected on the cliffs to which they make their resort. I derived this benefit from their proximity, that they cleared a field of turnips of the caterpillars of the diamond moth, with which it was much infested.

TUSK, (*Brosmus vulgaris*).—Mr Wilson states that a young example has occurred off Coldingham. Dr Johnston records it from Berwick Bay. ("Hist. Ber. Nat. Club," I., p. 214.)

FOOD OF THE SALMON KIND.—"On Monday, June 24th, seven herring fry were taken by Mr Landells from the stomach of a grilse 5 lb. weight; a circumstance unprecedented in his experience." ("Ber. Adv.," June 28th, 1872.) In the same newspaper, May 5th, 1871, it is stated that on the 3rd, a gentleman from Berwick, fishing in the Whiteadder, caught, near to Edrom House, a very large yellow trout. "It measured 24 inches long, and $11\frac{1}{2}$ inches in girth; and on being cut up, it was found he had recently swallowed one of the same species, the skeleton of which was upwards of seven inches long—weight 4 lbs."

WEIGHT OF TWEED SALMON IN 1872.—One of 46 lbs., one of 36 lbs., one of 34 lbs., one of 31 lbs., one of 30 lbs., five of 29 lbs., four of 28 lbs., four of 27 lbs., six of 26 lbs., and seven of 25 lbs. Most of these were taken with the rod. ("Land and Water," December, 1872.)

STURGEON.—On August 3rd, 1872, a large Sturgeon was captured in the Tweed, at Yarrow fishery. It was $8\frac{1}{2}$ feet in length, 4 feet 4 inches in girth, and weighed $15\frac{1}{2}$ stones. ("Scotsman," August 10th, 1872.)

FOOD OF THE EEL.—A miller who lives near the Whiteadder informs me that eels are piscivorous as well as carnivorous. His people when they procure fresh haddocks or herrings cleanse them in the mill-lead, which is built with open stone walls; and at those times he sees the eels proceed their full length out of the holes of the wall in which they harbour, to feast on the garbage. He also noticed that when a dead animal had been partially buried in a meadow, numerous slimy tracks communicated between the water and the carcase, which he attributed to eels which had left the

river during the night and crept through the dewy grass to partake of a meal. He also mentioned that he once caught a very large eel which had an entire water rat in its inside, which it was supposed to have swallowed in the same manner as adders do mice and frogs.

FOOD OF *CREOPHILUS MAXILLOSUS*.—This is a ferocious looking beetle, which lurks under carrion, dead moles, &c. On the 16th of August, I was surprised to see it on the head of a field thistle (*Carduus arvensis*), making a determined effort to penetrate the impacted mass of down attached to the seeds. The seeds, I found, were infested with a crimson Cecidomyian larva, and these it probably intended to prey upon.

Ornithological Notes. By Mr T. H. GIBB.

TURTLE DOVE, (*Columba Turtur*).—This elegant little bird is seldom observed so far north as Northumberland; confining itself principally to the southern parts of England, where it arrives in spring, and migrates usually in the beginning of September. I am happy, however, to record the appearance of a small flock on the Northumbrian seaboard, during the latter end of October last; one of which was captured near to Newton-by-the-Sea, and I also heard of another bird having been shot near Hauxley. The former was a young male; probably a bird of the year, as it had not thrown out to its full perfection the black feathers on the neck, and it was altogether of a greyer tint than the adult bird. I have observed them near Henley, on the Thames. The Turtle Dove appears to be a very active little bird, and, like all its congeners, capable of very rapid locomotion. The usual time for the migration of the Turtle Dove southwards appears to be during the early part of September. It might therefore be safe to infer that the birds seen in this locality, during the latter part of October, were individuals which were driven by stress of stormy weather northwards, whilst migrating from some of our more southern counties.

GREY SHRIKE, (*Lanius excubitor*).—During the last year two specimens of this bird have been obtained—one near Rothbury, the other not far from Hawkhill. During their migrations from the north of Europe, they sometimes sojourn with us for a few weeks.

MERLIN, (*Falco aesalon*).—This bold little marauder has been during the year just past more than ordinarily numerous. Several specimens have been shot in the vicinity of Alnwick; and I have also observed more Merlins than either Kestrels or Sparrow-hawks: indeed, for many years past the former have been oftener seen than the two latter birds. This may be accounted for by the fact that the Merlin is a more difficult bird to trap than the species allied to it, which unfortunately fall ready victims to the fatal pole-trap of the gamekeeper. The winter migrants generally have not been so numerous this season.

Alnwick, January 10th, 1873.

Zoological Notes, 1872. By Mr ANDREW BROTHERSTON, Kelso.

WAXWING, (*Ampelis garrulus*), Linn.—An adult female of this elegant bird was shot at Rosebank, Kelso, by J. J. E. Brown, Esq., on the 20th April, 1872. One of the specimens of this bird that are in the Kelso Museum was killed at the same place upwards of thirty years ago.

STARLING, (*Sturnus vulgaris*).—A cream-coloured variety was caught at Roxburgh Castle, June 18th, 1872. It was a young bird.

TURTLE DOVE, (*Columba Turtur*), Linn.—An adult female was shot near Edrington, about three miles west from Berwick, October 21st, 1872. This is unusually late for a migratory bird, although Morris records one shot in Perthshire “so late as the 20th of October, in the year 1834.” This is a rare species on the Borders, but not uncommon farther south, especially in Kent.

NIGHT HERON, (*Ardea nycticorax*), L.—A young male of this very rare bird was shot at Goswick, on the 5th of December, 1872. As far as I am aware, this is only the third specimen recorded in this district: one a male, at the Hirsell, in the spring of 1823; another, an immature female, near Alnwick, November 24th, 1870; and the present instance. In the immature plumage this bird is so unlike the adult, that they have been described as different species by various writers. Morris’s description of the young bird fits this in every respect except the colour of the iris,

which he says is *brown*, while in this it is *reddish-orange*, which is the same as the old bird.

HOBBY, (*Falco subbuteo*).—An adult male was found dead (it had been shot) in Bowmont Forest, 4th June, 1870.

HONEY BUZZARD, (*Pernis apivorus*).—The under-keeper at Newtonden shot a very fine specimen there, on the 22nd May, 1865.

SPOTTED CRAKE, (*Crex porzana*).—One shot at Gradon Moss, 19th October, 1868.

CANADA GOOSE, (*Anser Canadensis*).—There was a large flock of these birds in the district, during the winter and spring of 1866--7, but the only specimens I am aware of being obtained, were shot by Mr Cowe, of Dowlaw, who shot five of them on the 14th May, 1867.

SMEW, (*Mergus albellus*).—A pair of these birds, of which the male only was shot, were observed on a pond near Kelso, 26th January, 1869. It was an adult in fine plumage.

Additions to the Border Fungi. By ARCHIBALD JERDON,
Jedburgh.

AGARICUS (*Collybia*) PROTRACTUS, Fr. One or two specimens in a fir plantation, October, 1872. Remarkable for its long root.

LACTARIUS FLEXUOSUS, Fr. On grass under birch trees, September, 1872. Gills thick and distant, in which respect it differs from most of the Lactarii.

L. VICTUS, Fr. Woods, September, 1872. A small species, the milk of which turns grey.

L. VOLEMUS, Fr. September, 1871. Woods near Langlee and Fernihurst, sparingly. A large and handsome species, and edible, unlike most of its congeners.

L. GLYCIOSMUS, Fr. Fir woods near Hunthill; September, October, 1871. Remarkable for its curious sweet odour.

L. FULLGINOSUS, Fr. Wood near Hundalee; September, 1871.

CANTHARELLUS TUBERIFORMIS, Fr. Woods near Fernihurst, in some abundance; September, 1871. Very much allied to *C. infundibuliformis*: it appears to me difficult to separate the two species.

Note of a Lichen new to the Border Flora. By ARCHD. JERDON.

In the spring of this year (1872) I observed a quantity of *Squamaria gelida* growing on some heaps of stones by the side of an old, disused road, near Glenburnhall, about half-a-mile from the town of Jedburgh. This Lichen is generally found on Alpine (or sub-Alpine) rocks, and it is curious to find it in the above locality. It is a pretty species, the rose-coloured apothecia contrasting well with the pale brownish white thallus. A good deal of what I saw was barren, but but there were several patches in good fruit.

List of Plants gathered in various Excursions this Season (1872). By Dr CHARLES STUART.

- OPHIOGLOSSUM VULGATUM. Abundant after crossing a dean at Raeleughhead, near Dunse.
- SAXIFRAGA HIRCULUS. In great beauty, on 14th August, on the sides of sheep-drains, on left-hand side going up Langtonlees dean.
- SEDUM VILLOSUM. Associated with last.
- ANAGALLIS CÆRULEA. In going towards Hardens, on the right-hand side of road, near Dunse.
- HABENARIA VIRIDIS. On the pastures at Choicelea, and also at Longformacus.
- HYPERICUM HUMIFUSUM. Langtonlees dean.
- MALVA MOSCHATA, var. ALB. There were twenty-four plants of this beautiful flower in bloom at once, opposite Huttonhall Mill, on the last day of July.
- MENTHA SYLVESTRIS. Very plentiful on the Blackadder, above Allanton; Whitadder, opposite Whitehall and Huttonhall Mill; and other places.
- MENTHA PIPERITA. After passing Allanton village about quarter of a mile; a large patch at root of hedge, on left side.
- VICIA LATHYROIDES. Edington hill wood. Identified by Prof. Balfour.
- CORYDALIS CLAVICULATA. Edington hill wood, in profusion.
- EPIPACTIS LATIFOLIA. Plentiful in Mains wood, Chirnside.
- PYROLA MINOR. Edington hill and Mains wood.
- CISTOPTERIS FRAGILIS. Pease dean.

Some New Localities for Plants.

DIANTHUS ARMERIA. Railway bank, near Kirkdean station, Roxburghshire; numerous plants; uncertain how it came there.

W. B. BOYD.

VIOLA HIRTA. Rocky banks near Primrose Hill.

JOHN JOHNSON.

SAMBUCUS EBULUS. Near Preston.

JOHN ANDERSON.

LISTERA CORDATA. Among heather, Lamberton moor.

W. SHAW.

The following were gathered by myself:—

CARDUUS HETEROPHYLLUS. Near the upper end of Roddam dean, on the south side.

GERANIUM COLUMBINUM. Back of Spindleston hill, above Warn Mill.

GALEOPSIS VERSICOLOR. Banks of the Tweed, near Hendersyde Park.

EUONYMUS EUROPEUS. In wood on sandstone, above Wooler Haughhead.

VERBASCUM THAPSUS. On stripe of river gravel, near Wooler water, opposite Middleton wood, Middleton Hall side. Several plants.

POTERIUM SANGUISORBA. On sandstone between Wooler Haughhead and Lilburn Tower. Scarce in that neighbourhood.

J. H.

List of Plants not recorded in "Eastern Borders' Flora."

By ANDREW BROTHERSTON, Kelso.

ADONIS AUTUMNALIS, *L.* Kelso, Ednam, and Newtonlees. Garden escape probably.

RANUNCULUS HIRSUTUS, *Curt.* Abundant at Highridgehall for the last fifteen years. Fields near Yetholm, Kelso, and Ednam. The plants at Highridgehall vary in height from 3 inches (*R. parvulus*, *L.*) to nearly 3 feet.

ERANTHIS HYEMALIS, *Salisb.* Covering a large space at Dryburgh; probably planted.

PAPAVER SOMNIFERUM, *L.* Banks of Tweed occasionally.

CORYDALIS LUTEA, *D. C.* When I was a schoolboy this was plentiful on the Manse garden wall at Ednam; when the wall was plastered it was nearly, if not quite, extirpated.

TURRITIS GLABRA, *L.* Heavyside. *D. Douglas.*

ARABIS HIRSUTA, *R. Br.* Corbie Crag, Makerston.

- HESPERIS MATRONALIS, L. Abundant on a steep bank below
Stitchill linn, and stragglers on Tweedside.
- ERYSIMUM CHEIRANTHOIDES, L. Kelso, Ednam, and Sprouston.
The station at Ednam was newly made gardens in front of the
cottages.
- ALYSSUM CALYGINUM, L. Pastures at Lochtower.
- DRABA MURALIS, L. Plentiful in Rosebank nursery, and Croft-
house. *E. Knox.* Kelso Cemetery. *J. Gray.*
- LEPIDIUM DRABA, L. Banks of Tweed, Kelso; a large patch 9
feet in diameter, and several smaller ones.
- RESEDA SUFFRUTICULOSA, L. Flodden; one plant.
- DIANTHUS ARMERIA, L. Occasionally in cultivated land about
Kelso.
- SILENE QUINQUEVULNERA, L. Do., and Harperton.
- GERANIUM STRIATUM, L. Roadside between Runningburn and
Caldron-brae.
- MEDICAGO MACULATA, *Sibth.* Gravelly places on Tweedside, Kelso,
plentiful.
- „ MINIMA, *Lam.* Do., rare.
- „ DENTICULATA, *Willd.* Do., and roadside, plentiful;
probably all three introduced with wool.
- TRIFOLIUM FILIFORME, L. On lawn in Mr Shiel's garden, Kelso,
the turf of which came from Caverton-edge, so that I have no
doubt it is wild there.
- VICIA TETRASPERMA, *Moench.* Corn fields, Stitchill.
- LATHYRUS APHACA, L. Tweedside, Kelso.
- OENOTHERA ROSEA, Naturalized on do., and on cultivated land.
I don't think this is an escape from the garden, as it is not
worth growing as a flower; it resembles *Epilobium montanum*,
but has a branching habit.
- CARUM CARUI, L. Naturalized in pastures and on the banks of
Tweed, Kelso.
- BUPLEURUM ROTUNDIFOLIUM, L. One plant on "Knowes," Kelso.
- PEUCEDANUM OSTRUTHIUM, *Koch.* Roadside, Dryburgh and
north-east end of Yetholm Loch. ["Road to Orchard, beyond
Boozieburn." *J. A. H. Murray.*]
- PETASITES FRAGRANS, *Presl.* Near Dryburgh Abbey.
- „ ALBUS, *Gaert.* Hendersyde Park woods.
- MATRICARIA CHAMOMILLA, L. Edenhall and Lochton.
- ANTENNARIA MARGARITACEA, *R. Br.* Bowmont water, near
Belford.
- DORONICUM PLANTAGINEUM, L. Plantation at Harperton.
- LACTUCA MURALIS, *D. C.* Hirsell woods, plentiful.
- CREPIS BIENNIS, L. Edenhall, in pastures.
- „ TARAXACIFOLIA, *Thuil.* Edenmouth, in pasture.
- HIERACIUM PALLIDUM, *Fr.* On rocks near Yetholm, and banks
of Tweed near Rutherford.

- CAMPANULA RAPUNCULOIDES, L. I have seen two patches of this on Tweedside; but they were most likely to be garden outcasts, as it is a *bad weed* in many gardens.
- „ PERSICIFOLIA, L. In a plantation at Lochton.
- POLEMONIUM CÆRULEUM, L. On the north side of the Curr, one of the Cheviots.
- PULMONARIA OFFICINALIS, L. Apparently wild at Makerston.
- ANTIRRHINUM ORONTIUM, L. Rutherford in 1870 and 1871, but I could not find it in 1872.
- LINARIA SPURIA, *Mill.* Corn fields, Redden. *D. Douglas.*
- SCROPHULARIA VERNALIS, L. Springwood Park.
- MIMULUS LUTEUS, *Willd.* Naturalized, several places on Tweedside, Newtonlees, and Ednam.
- „ GUTTATUS? On Wooden Anna, a patch 6 feet diameter. *E. Knox.* In a "syke" that runs into Tweed at Trows, there is a larger one—18 feet by 6 feet.
- VERONICA PEREGRINA, L. In the garden at Newtondon. In the description of this plant in "Bab. Manual," 6th edition, "Ped. 4-angular" is a mistake.
- RUMEX MARITIMUS, L. Lithillum Loch, *D. Douglas.* Plentiful about the margin of the pond at Pallinsburn. This is not recorded from this district in the "New Flora of Northumberland and Durham."
- „ HYDROLAPATHUM, *Huds.* Mellerstain canal, and sides of Eden below Mellerstain.
- MERCURIALIS ANNUA, L. Field near Ednam.
- CERATOPHYLLUM—? probably DEMERSUM. I have not got it in fruit. Yetholm Loch, apparently plentiful from the quantity washed to the side after high winds in the autumn. [Mr J. A. H. Murray records *C. demersum* from pools in the Teviot, below Denholm Haugh. "Trans. Hawick Arch. Soc.," 1866, p. 26.]
- CALLITRICHE AUTUMNALIS, L. Yetholm Loch, plentiful.
- SALIX AMYGDALINA, L. Peatrig bog. A characteristic mark of this tree is, that it sheds its bark like the Oriental Plane, which gives it a blotched and spotted appearance.
- „ RUBRA, *Huds.* Banks of Tweed, Rosebank, and near Carham.
- „ COTINIFOLIA, *Sm.* Primside bog.
- „ NIGRICANS, *Sm.* Cheviot, Tweedside at Rosebank, and roadside above Broadloan Toll, near corner of "Duke's dyke."
- GOODYERA REPENS, *R. Br.* Plentiful in Charter's plantations, and other woods to the north.
- LILIUM MARTAGON, L. Abundant at Bemersyde.
- DIGITARIA SANGUINALIS, *Scop.* Stragglers at Newtonlees, Edenbank, and Kelso.

- ALOPECURUS AGRESTIS, L. Edenhall; probably introduced with grass seeds.
- MILIUM EFFUSUM, L. Woods, Kelso, Pinnacle-hill, and Bemer-syde.
- AGROSTIS CANINA, L. Cheviots.
- APERA SPICA-VENTI, Beauv. Kelso Abbey and Edenhall; probably introduced.
- POLYPOGON MONSPELIENSIS, Desf. Rutherford.
- AVENA STRIGOSA, Schreb. Greenlaw.
- POA NEMORALIS, L. Frequent in woods, Springwood, Pinnacle-hill, Wooden, &c.
- „ SUDETICA, L. Kelso, under shade of trees. I found a few large tufts of this last June, and, not having any description of it, I sent a specimen to Professor Babington, who named it *P. Sudetica*. He says, "It is found in Norway and Holstein, as well as more to the south." The station where I found it is not very satisfactory, as it is within private grounds. But according to its distribution on the continent, it may yet be found truly wild in this country, in shady woods, along with *Bromus asper*, *Milium effusum*, *Brachypodium sylvaticum*, &c.
- SERRAFALCUS COMMUTATUS, Bab. Frequent on road-sides and borders of fields.
- „ ARVENSIS, Bab. Near Kelso Abbey.
- LOLIUM ITALICUM, A. Braun. This is now as plentiful on road-sides, &c., as *L. perenne*.

In the above list by far the greater number are introductions; about twenty of them only having any claim to be considered indigenous, viz.:—*Ranunculus hirsutus*, *Turritis glabra*, *Arabis hirsuta*, *Trifolium filiforme*, *Vicia tetrasperma*, *Lactuca muralis*, *Hieracium pallidum*, *Rumex maritimus*, *Rumex Hydrolapathum*, *Ceratophyllum* sp. ?, *Callitriche autumnalis*, *Salix amygdalina*, *rubra*, *cotinifolia*, and *nigricans*, *Goodyera repens*, *Milium effusum*, *Agrostis canina*, *Poa nemoralis*, and *Serrafalcus commutatus*. The others are introductions of the farmer, the gardener, and the manufacturer, or otherwise accidental occurrences. As instances of those introduced by the farmer we have—*Alyssum calycinum*, *Matricaria Chamomilla*, *Crepis biennis*, &c.; by the gardener—*Adonis autumnalis*, *Eranthis*, *Mimulus*, &c.; and by the manufacturer the medicks, *Lathyrus Aphaca*, &c. But in a highly cultivated district like this, it is impossible to say with certainty which are really natives and which are not,

Notice of the Discovery of Psamma Baltica, (the Baltic Sand Reed), on the Coast of Northumberland. By
JAMES HARDY.

DURING the present season, a fine new British grass—*Psamma Baltica*—has unexpectedly been brought to light, growing in abundance on Ross sands, opposite to Holy Island. The botanical public has to thank for this discovery, the Club's veteran friend, Mr William Richardson, of Alnwick. He plucked it in 1871 when crossing Ross Links from Holy Island; and on a subsequent visit in August, 1872, ascertained that it occupied, with intervals, an area of from two to three miles in length. For specimens I am indebted to Mr Richardson and to our President. It is a more robust plant, and taller than the common sea-reed (*arenaria*); the spike is loose, and not compact as in *arenaria*, and is longer, and stouter, thickest in the middle, tapering upwards, somewhat pendulous at the top, reddish-green coloured; rather more like the panicle of *Calamagrostis epigejos* than that of *Ps. arenaria*. The glumes are long and acute. The leaf is involute, roundish. The spike in the examples is 9 inches long; the hinder side is paler and greener than the polished side facing the sun. The differential characters are less obvious than the striking peculiarity of habit in the panicle.

But besides its novelty to us, *Ps. Baltica* has another sort of interest. Several recent German botanists are of opinion that it is not a true species, but a hybrid between *Psamma arenaria* and *Calamagrostis epigejos*. This view was first advanced by v. Roeper, in "Flora Mecklenburgs," II., p. 192; and has been supported by Marsson, "Flora von Neu-Vorpommern," p. 562, 1869, who mentions, and names intermediate forms. Professor Fr. Buchenau, in the "Abhandlungen Nat. Vereine zu Bremen," 1870, p. 212, treating of the Flora of the Islands of East-Friesland, inclines to this side also. A fact on which these authors much rely, is that *Ps. Baltica* rarely perfects its seeds. Dr Buchenau having gathered both *Ps. arenaria* and *Ps. Baltica* in blossom, gives the result of his examination, which he thinks is decisive of the bastard nature of the latter. In *arenaria* the stamens are very stoutly developed, and the anthers hang on all sides in crowds out of the centre of the corolla; in *Baltica*, one never sees more than a few solitary anthers, small-sized,

and withered. If one lays the two corollas near each other on a polished flat surface, the dust dispersed by *arenaria* is very considerable, while from the other scarcely a single pollen-grain is shed out. Very great also is the difference in the abundance of pollen-dust, when we open an anther of each. Under the microscope, the pollen-dust of *arenaria* yields great symmetrical spherico-prismatic grains, compacted together with a polished skin; while in *Baltica* there are small, irregular-shaped, often adherent grains, with a somewhat wrinkled surface. (*ubi sup.*) On the other hand in the number of the same work for 1872 (p. 185), Carl Noldeke is not quite disposed to accept this view. In the Islands of East Friesland, *C. epigejos* is a scarce grass, while *Ps. Baltica* is not rare on those islands, where the *Calamagrostis* fails. On the Northumbrian coast *C. epigejos* is altogether absent, the nearest station being Doddington Moor; which speaks in favour of the separate individuality of *Ps. Baltica*; although we very well know from geological considerations, that the missing plant may now lie beneath the ocean, whose encroachments, even in modern times, are unintermitted along the whole British coast. I may here mention, that another species of *Psamma*, *Ps. australis*, formerly mistaken for *Ps. arenaria*, has within a few years past, been discovered on the shores of the Black Sea and in Corsica*.

Dr Henry Trimmen's description of *Ps. Baltica*, in the "Journal of Botany," December, 1872, made entirely from a large number of Northumbrian specimens furnished by Mr Richardson, is here re-produced:—

"*Rhizome* creeping, with a few barren leafy branches; roots numerous, long, fibrous, given off from the nodes. *Flowering stem*, 4 ft. to 5 ft. high, erect, hollow, glabrous, with three or four leaves; uppermost knot a little below the middle of the stem, reckoning in the panicle. *Leaves*, sheath, smooth, blade 1-2 ft or more long, strongly involute when dry, very gradually drawn out into a long, sharp but weak point $\frac{1}{2}$ in. wide at broadest part when unrolled, upper surface occupied by closely-set projecting ribs, the alternate ones more prominent, slightly rough, not hairy, under (outer) surface plane smooth; ligule $\frac{3}{4}$ in. long when complete, lacerated. *Panicle* slightly topping the uppermost leaf, 8-12 in. long, by about 1 in. broad at widest, cylindrical, attenuated at both ends, lobed, composed of tufts of branches of various lengths some again branched, and pressed to

* "The Bosphorus," by R. du Parquet, p. 15.

the main rachis; all parts of rachis and branches very rough with forward teeth. *Spikelets* nearly $\frac{1}{2}$ in. long. *Glumes* papery, a little longer than the pales, linear-lanceolate, strongly apiculate, nearly equal, the upper very slightly longer, purplish towards the apex, 1-veined, vein green, laterally compressed, keeled, keel rough especially of the lower glume. *Flower* single, very shortly stalked, surrounded with white hairs arising from the stalk about half or a little more than half the length of the flower, club-shaped rudiment of second flower clothed with similar hairs. *Pales* very nearly equal, thin, papery; the lower faintly 5-veined, with two short projecting teeth at the apex, and a sharp, short awn between them slightly exceeding the teeth; the upper 4-veined, terminated by two sharp teeth. *Lodicules* linear, attenuated, more than half the length of the stigmas. *Stamens* three (rarely two?) anthers $\frac{1}{3}$ in. long, narrow, bright yellow. *Stigmas* two, slightly united below, feathery."

On the Rainfall of 1872. By Mr JAMES TAIT.

THE meteorology of the year 1872 will be remembered for many years as the most remarkable that has been witnessed during the present century. All over Britain the weather has been of the most peculiar character. The month of January passed away without frost or snow, except a fall of snow on the 5th, which melted the next, and frost on the 6th, 8th, 15th, 21st, and 22nd. In the first week of February not a speck of snow could be seen on the Cheviot hills; and all that month no snow covered the low grounds, but the Cheviots were covered on the 17th and 18th, though it speedily disappeared. The highest flood of the season in the Tweed was on the 24th February. There was no frost during the month, and the lapwing was heard in the neighbourhood of Kelso on the 19th. The first week of March passed without either frost or snow; but on the 9th there were showers of hail, and on the morning of the 10th hard frost, which speedily gave way; and till the 18th the weather was very mild. At that date sleet and hail showers came on, and from the 20th to the 28th much snow fell, which on the hills accumulated to a great depth. On the night of the 25th and 26th the frost was very severe, and the gooseberry blossom was seriously injured. At the same time the finches

made havoc among the buds of currants, and the crop was in some places completely spoiled. April was cold, and the continued north-east winds destroyed the fruit blossom. On the 21st and 22nd there was a great storm of wind and sleet, and on the 23rd and 24th there were great thunder-storms in the neighbourhood of Kelso, a most unusual occurrence so early in the season. It is not uncommon to hear one or two thunder-peals in April; but a prolonged thunder-storm is very uncommon, and still more rare is it to have two storms on two successive days. Rain and cold continued during the month of May, and heavy snow fell on the 19th, especially in the line of Ruberslaw, the Eildons, and the Blackhill of Earlstoun. Great thunderstorms were experienced on the 21st and 23rd, and the month closed with hail showers, and frost at night. June was remarkable for occasional hot days and great thunderstorms, especially about the 18th and 19th. July was unusually wet and cloudy, with some tremendous thunderstorms, which continued almost incessantly night and day in different parts of the country from the 22nd of July till the 2nd of August. On the 6th of August there was a fall of rain on the Eildons almost unparalleled in the present generation, and there was much damage done in the neighbourhood of Melrose by the torrents rushing from the hills. Seen from the neighbourhood of Kelso, a dense bank of cloud seemed to extend from Ruberslaw, entirely covering the Eildons, and extending along the Lammermoors by way of Greenlaw; the lightning gleaming on the face of the dark cloud, and the roll of the thunder was incessant for some hours. The same locality was visited by another storm of nearly equal severity on the 12th. The harvest was unusually late. Even on the banks of the Tweed there was little grain cut before the 1st of September, and the first week of the month was extremely unpropitious. On the second day of the month it rained incessantly with a north-east wind, and on the third and fourth there were thunderstorms, that on the latter day being accompanied by unusual darkness but not excessive rain. More or less rain fell every day till the 12th, and much grain had sprouted owing to the heat and moisture. The third week showed some improvement, and then for the first time was some of the grain secured in the stackyard. On the 20th and 21st there was considerable frost, which was followed by cold rain and much snow in the

north. The first appearance of snow on Cheviot was on the 25th, and the first severe frost on the 5th October. The first fall of snow was on the 10th of November, and cold weather continued till the 16th. Much rain followed, and the soil had become so thoroughly soaked that drains and ditches overflowed, flooding fields which had seldom been seen covered with water before. On the 12th of December ploughs were stopped with the frost, but only for four or five days. At the same time there was a heavy snowstorm on the Cheviot hills, and a good many sheep were covered by the drift. The month, as a whole, was conspicuous for heavy gales and excessive falls of rain.

The statistics of the rainfall for the past year are so remarkable that we have taken some pains to collect tabular statements for the counties of Roxburgh and Berwick, representing pretty fairly the diversities of climate. We give first the table for the Kelso neighbourhood, compiled by Mr Wemyss, Springwood Park :—

RAINFALL AT SPRINGWOOD PARK.

Diameter of rain-gauge funnel, 10 inches.

Hour of observation, 9 A.M.

MONTH.	Greatest fall in 24 hours.		DATE.	No. of days on which 0·01 or more fell.
	Inches.	Depth.		
January,	2·44	41	24	22
February,	2·23	45	25	20
March,	2·75	57	23	22
April,	2·82	80	21	13
May,	2·84	49	13	19
June,	2·12	49	19	18
July,	3·34	1·02	26	12
August,	3·22	58	12	17
September,	4·20	75	7	21
October,	4·12	80	21	22
November,	3·48	62	15	24
December,	3·44	75	8	22
Total,	37·00			232

The annual average rainfall of the last eighteen years, exclusive of 1872, was 24·39 inches. It will therefore be observed by the above figures that more than the average has fallen during the year. From 1867 to 1870 the rainfall was short; respectively 21·28, 23·68, 22·23, 19·27 inches for those years. In 1871,

owing to the wet autumn months, the average was exceeded, the amount being 25·47 inches; otherwise, till September, it ranked with the four preceding years. The years 1857, 1858, and 1859, were also under the average, whilst 1854, 1856, 1860, 1861, and 1862 were above the average, the nearest approach to the year that has just closed being 1856, which measured 28·28 inches. From these facts it appears, although the rainfall is acknowledged to be exceedingly capricious, that there are periodical periods, extending over some years, when there is a heavy and light fall.

The distance between Abbey Bank, Kelso, and Springwood Park is not more than a mile, and yet the difference in the two rainfalls as observed at the two places is considerable. They are on opposite sides of the Tweed, but there seems no variation in situation to account for the difference.

ABBAY BANK, Kelso.

		Inches.
January,	.....	2·64
February,	.....	2·25
March,	.....	2·77
April,	.....	2·82
May,	.....	2·90
June,	.....	2·25
July,	.....	3·82
August,	.....	2·67
September,	.....	5·48
October,	.....	3·34
November,	.....	3·50
December,	.....	4·02
		38·46

We give next the amount of rain at Milne Graden, in Berwickshire, twelve miles lower down the Tweed than Kelso, and it is within a very small fraction of that recorded at Springwood Park; but it is to be noted that in some months the fall has been less at Milne Graden, while in November and December it was much more. The record is kept by Mr William Renwick, gardener:—

Months	Inches.	Wet Days,
January,	2 3-10ths	10
February,	2	13
March,	1 6-10ths	8
April,	2 4-10ths	11
May,	2 7-10ths	17
June,	2 3-10ths	18

Months.	Inches.	Wet Days.
July,	2 4-10ths	17
August,	3 2-10ths	14
September,	4 5-10ths	26
October,	4 3-10ths	18
November,	5 2-10ths	25
December,	4 3-10ths	18
Total	27 2-10ths	105

Harvest began at Milne Graden August 25th, and finished October 5th; the turnip crop about half the yield of previous year, and best on light land.

We give next the table of rainfall kept by Mr Thomas Riddell at Menslaws on the Teviot, twelve miles above Kelso, and just at the influx of the Rule:—

	Inches.
January,	2 9-10ths.
February,	2 6-10ths.
March,	2 5-10ths.
April,	2 4-10ths.
May,	3 5-10ths.
June,	2 2-10ths.
July,	4 3-10ths.
August,	3 2-10ths.
September,	3 4-10ths.
October,	4 3-10ths.
November,	3 7-10ths.
December,	3 4-10ths.

38 4-10ths.

Seven miles up the Teviot from Menslaws, and in the neighbourhood of Hawick, registers are kept at Lynnwood and Sillerbithall, and the fall is considerably more than at Menslaws. We subjoin the monthly and annual fall at both places:—

LYNNWOOD.		SILLERBITHALL.	
January,	6·1	.....	3·97
February,	4·3	.....	3·32
March,	2·8	.....	2·56
April,	3·0	.....	3·03
May,	3·4	.....	3·66
June,	2·8	.....	2·78
July,	5·5	.....	5·62
August,	4·5	.....	4·22
September,	4·0	.....	3·84

October,	5·0	.....	3·86
November,	5·2	.....	4·92
December,	4·5	.....	4·29
	51·2		46·07
Total Fall in 1871.	Total Fall in 1870.	Total Fall in 1869.	
Lynnwood	28·7	25·5	29·8
Sillerbithall....	28·49	23·0	28·30

During 1872 rain fell on 254 days, as registered at Sillerbithall, and the heaviest fall on one day was 1·25 in. on 26th July.

Still farther up the Teviot is Goldielands, and the fall there was as follows:—

January, ....	....	....	6·1
February, ....	....	....	4·0
March, ....	....	....	2·5
April, ....	....	....	2·4
May, ....	....	....	3·3
June, ....	....	....	2·62
July, ....	....	....	4·8
August, ....	....	....	4·1
September, ....	....	....	3·7
October, ....	....	....	5·1
November, ....	....	....	5·5
December, ....	....	....	4·7
			49·8

Total in 1871, 35·36. Total in 1870, 24·8. Total in 1869, 35·4

The average rainfall for the last ten years, as registered at Goldielands, has been 37·65 in., but in three of those years the rainfall has not been much less than in 1872:—

In 1862 the rainfall was	45·2.
In 1863 " "	45·3.
In 1868 " "	46·6.

These cases are all close upon the Tweed and Teviot, and nearly in a direct line thirty-five miles long, running east and west, but not rising more than the water-fall for the distance. Very different results are obtained if we diverge toward the hills on either side, and particularly if we ascend to upper Teviotdale. In the neighbourhood of Kelso, for example, it is often observed that heavy showers pass along the Cheviots and the Lammermoors when hardly a drop falls at Kelso. Sometimes a thunder cloud will approach very near, and will cross the Tweed about Makerstoun, passing along the high grounds of Smailholm, Nenthorn, and Home

Castle. We subjoin now the record kept by Mr William Purves, at Linton Burnfoot, near Morebattle, seven miles south from Kelso, and close to the hills :—

			Inches.
January,	.....	.....	2·71
February,	.....	.....	2·12
March,	.....	.....	4·07
April,	.....	.....	3·93
May,	.....	.....	4·16
June,	.....	.....	1·98
July,	.....	.....	2·61
August,	.....	.....	3·36
September,	.....	.....	4·54
October,	.....	.....	4·96
November,	.....	.....	4·90
December,	.....	.....	5·53
			44·87

The heaviest rainfall in a short period at Burnfoot was ·52 inches, from ten o'clock at night till six in the morning of July 7; but this was far short of the fall on July 5, 1871, when 1·48 inches fell in four hours in the afternoon. At Mowhaugh, in the Bowmont Valley, twelve miles from Kelso, the total fall for the year, as reported by Mr Telfer, was 47·5 inches.

Ten miles in the opposite direction from Kelso a register is kept at Marchmont House; and from the record subjoined it would seem as if the fall on the Lammermoors had been greater than on the Cheviots :—

MARCHMONT HOUSE.

Rain Gauge	{	Diameter of Funnel	5 in.
		Height { Above Ground	1 ft.
		of Top { Above Sea Level	500 ft.

Month.	Total Depth.	Greatest fall in		Days on which ·01 or more fell.
		24 hours.		
	Inches.	Depth.	Date.	
January,	3·71	·54	10	23
February,	3·69	1·16	24	25
March,	4·09	·73	23	23
April,	3·91	1·00	21	18
May,	3·84	·61	23	24
June,	4·46	·98	18	23
July,	3·70	1·02	26	16

Month.	Inches.	Depth.	Date.	
August,	3·48	·41	16	22
September,	7·37	1·85	25	21
October,	5·38	1·21	21	25
November,	6·26	1·15	15	27
December,	5·21	1·14	17	23
Total.	55·10			270

The rainfall at Marchmont compared with that at Milne Graden illustrates the great variation in the rainfall on the banks of the Tweed, compared with a considerable elevation in the direction of the Lammermuirs. Between the two, in the centre of the Merse, we find a medium fall of rain, as at Cross Hall, Eccles, and Printonan, the statements for which we subjoin :—

	CROSS HALL, ECCLES.	PRINTONAN, SWINTON.
1872	Inches.	Inches.
January,	2·68	1·92
February,	2·24	2·06
March,	3·32	3·19
April,	3·05	2·67
May,	3·31	3·23
June,	3·45	3·30
July,	3·13	2·42
August,	2·88	2·45
September,	5·77	5·90
October,	4·74	4·47
November,	4·11	5·09
December,	4·38	4·31
	43·06	41·01

The record kept at Melrose coincides with that of Marchmont to indicate that the heaviest rains have fallen to the north of Kelso; and the heavy deluges in July and August have helped to swell the amount :—

RAINFALL AT ABBEY GATE, MELROSE.

Elevation above the sea level, 280 feet

Distance from the sea, 30 miles.

Registered by ALEXANDER DODDS.

1871.	Inches.	1872.	Inches.
January,	1·54	January,	4·17
February,	3·49	February,	4·19
March,	1·80	March,	4·26
April,	3·98	April,	3·40

1871.	Inches.	1872.	Inches.
May,.....	1·02	May,	3·76
June,	4·81	June,	3·70
July,.....	3·94	July,	5·15
August,.....	2·38	August,	9·20
September,	2·84	September,	5·64
October,	2·97	October,	5·56
November,	2·59	November,	5·45
December,	3·30	December,	4·43
Total.....	34·66	Total	58·91

South-westward from Kelso a register is kept by Mr Geo. Hilson, solicitor, Jedburgh, at Sunnyside, on the high ground overlooking the Jedburgh Railway Station. The distance is about ten miles from Kelso. The amount of rain is as follows :—

Gage 360 ft. above Sea Level, 10 ft. from Ground.

		Inches.
January, .....	.....	2·69
February, .....	.....	2·56
March, .....	.....	2·71
April, .....	.....	2·56
May, .....	.....	3·71
June, .....	.....	2·04
July, .....	.....	4·27
August, .....	.....	2·97
September, .....	.....	4·91
October, .....	.....	4·36
November, .....	.....	4·04
December, .....	.....	3·43
Year .....	.....	40·25

Towards the west of the county records are kept at Wolfelee, Riccarton, and Deadwater. Wolfelee, the residence of Sir Walter Elliot, is about nine miles south from Hawick and south-west from Jedburgh, and is near the hills on the borders of Liddesdale. The monthly and yearly fall we subjoin, giving also for the sake of comparison the total of two previous years :—

January, .....	.....	.....	6·430
February, .....	.....	.....	4·230
March, .....	.....	.....	4·840
April, .....	.....	.....	3·080
May, .....	.....	.....	3·280

June,	.....	.....	2·460
July,	.....	.....	4·790
August,	.....	.....	3·610
September,	.....	.....	4·040
October,	.....	.....	6·580
November,	.....	.....	6·980
December,	.....	.....	5·860

 56·900

Total Fall in 1871, 37·29. Total Fall in 1869, 43·18.

West from Wolfelee, and at a much higher elevation, is Riccarton Junction, 820 feet above the sea level, and just on the chain of hills which separates Teviotdale from Liddesdale. It is on the Liddesdale side of the hill, about twelve miles from Hawick and thirty-five from Kelso, and is in the parish of Castleton. The rainfall there is as follows:—

Rain Gauge	{	Diameter of Funnel	5 in.	
		Height { Above Ground	1 ft, 6 in.	
		of Top { Above Sea Level	820 ft.	
Month.	Total Depth.	Greatest Fall in 24 hours.	Days on which $\cdot 01$ or more fell.	
	Inches.	Depth.	Date.	
January,	8·16	1·66	17	23
February,	4·64	1·07	24	19
March,	3·72	·67	28	21
April,	3·42	·84	21	17
May,	3·89	·60	7	22
June,	3·99	·74	6	21
July,	5·08	1·68	26	14
August,	4·16	0·65	12	21
September,	5·83	0·84	27	25
October,	6·89	1·44	29	20
November,	7·58	1·11	15	23
December,	6·02	1·29	8	22
Total.....	63·38			248

It may be observed that the high aggregate of Riccarton was exceeded by that of two other stations in the parish of Castleton where gauges are kept. At Kirrdean, in the valley of the Liddell, the rainfall was fully 68 inches; and at Flatt, about six miles farther down the valley, and just on the Borders of Cumberland, it was about the same.

But the highest of all is at Deadwater, a station which

more properly belongs to Northumberland, but is within a stone's cast of the Border line, near the sources of the North Tyne and Liddel. The following is the rainfall :—

January,	.....	.....	.....	9·0
February,	.....	.....	.....	8·0
March,	.....	.....	.....	5·0
April,	.....	.....	.....	3·0
May,	.....	.....	.....	4·0
June,	.....	.....	.....	4·3
July,	.....	.....	.....	6·0
August,	.....	.....	.....	5·0
September,	.....	.....	.....	9·0
October,	.....	.....	.....	9·2
November,	.....	.....	.....	8·0
December,	.....	.....	.....	9·2
				79·7

Total in 1871, 43·3. Total in 1870, 37·5. Total in 1869, 50·3.

It is curious to compare with the above the tremendous rainfall on the Cumberland hills, where the year 1872 has been the wettest on record. The greatest fall was at The Sty, and it was the enormous quantity of about 244 inches; truly a marvellous fall of rain, and greatly in excess of any former year on record. In 1866, 224·56 inches fell at the same place, which is known to be the wettest spot in Europe, and the quantities of rain above noted are said to be the heaviest falls ever recorded except in tropical countries. Of the rainfall in that district a very full and accurate record is kept by Mr Isaac Fletcher, M.P., who resides near Cocker-mouth.

On an Inscribed Stone in the possession of Mr William Wightman, Bank, Wooler.

THE inscribed stone figured on Plate II., is in the possession of Mr William Wightman, Wooler. It was found on the north side of a hill called Whitelaw, the next eminence south-east from Yeavinger Bell. The stone is a very hard gritty sandstone, and bears distinctly the tool marks by which the circles have been cut. The tool must have been of iron or bronze, as the material is too hard to be operated upon by stone implements; moreover, the tool marks shew

that the instrument used had a sharp round point, and must have been held in a similar way to the modern chisel. The marks shew the size of the point. The object of the artist evidently has been to fill the stone with ornament as between the two great circles; and at the corners he has placed smaller circles to suit the space. The similar nature of the circles on all the stones hitherto figured would seem to show that such stones, if monumental, were not legendary, but most probably of a religious character; serving, like the Christian cross, to invite the traveller to pay his devotions on a spot rendered sacred by the emblems of worship. The drawing is nearly one inch to a foot.

ROBT. MIDDLEMAS.

Members elected September 26th, 1872.

ORDINARY MEMBERS.

Thomas Arkle, Highlaws, Morpeth.
 Adam Deas, Dunse.
 James T. S. Doughty, Ayton.
 Captain J. Carr-Ellison, Hedgeley, Alnwick.
 W. T. Hindmarsh, Alnwick.
 Rev. Robert Home, Swinton.
 Rev. Robert Park, Bamburgh.
 Major James Paton, Hundalee Cottage, Jedburgh.
 Henry A. Paynter, Alnwick.
 E. A. Storer, Alnwick and County Bank.
 Captain Thompson, Walworth Hall, Darlington.

LADY MEMBER.

Mrs J. Barwell Carter, the Anchorage, Berwick.

CORRESPONDING MEMBERS.

Andrew Brotherston, Kelso.
 John Ferguson, Allanton, Chirnside.

Rain Fall at Glanton Pyke, Northumberland, in 1872; communicated by FREDERICK J. W. COLLINGWOOD, Esq.: and at Lilburn Tower, Northumberland; communicated by EDWARD J. COLLINGWOOD, Esq.

GLANTON PYKE.		LILBURN TOWER.	
	Inches.		Inches.
January	2·86	January	2·877
February	3·23	February	2·621
March	3·28	March	2·919
April	4·02	April	3·852
May	3·15	May	2·517
June	1·84	June	1·500
July	4·33	July	5·633
August	4·05	August	3·414
September	6·37	September	5·984
October	6·72	October	5·982
November	4·74	November	4·428
December	6·18	December	4·863
	50·77		46·590
Rain Gauge—Diameter of Funnel, 8 inches; height of Top above Ground, 4 feet 4 in.; above Sea Level, 530 feet.		Rain Gauge—Diameter of Funnel, 10 in. square; Height of Top above Ground, 6 feet; above Sea Level, 300 feet.	

Rain Fall at North Sunderland, Northumberland, in the Year 1872. Communicated by the Rev. F. R. SIMPSON.

Month.	Total Depth.	Greatest Fall in 24 hours.		Days on which ·01 or more fell.
		Inches.	Depth. Date.	
January	2·80	·58	24th	22
February	2·75	·87	24th	21
March	3·11	·43	28th	23
April	2·24	·81	21st	14
May	1·98	·27	11, 13	23
June	1·24	·15	2, 8, 9	16
July	2·88	·46	26th	15
August	2·89	·39	16th	16
September	4·64	·95	24th	18
October	6·99	1·61	10th	26
November	4·43	·81	16th	21
December	3·91	1·11	8th	22
Total	39·86	8·44		237

Rain Gauge—Diameter of Funnel, 8 inches; Height of Top above Ground, 1 foot 2 inches; above Sea Level, 70 feet.

General Statements.

The INCOME and EXPENDITURE have been:—

	£	s.	d.
Balance in Treasurer's hands ..	16	14	5
Arrears received	37	12	0
Entrance Fees	5	0	0
Subscriptions	54	6	0
	<hr/>		
	£113	12	5

EXPENDITURE.

Printing	37	13	1
Expenses at Meetings, includ- ing Conveyances, &c. ..	11	5	2
Postage and Carriage	9	18	2
	<hr/>		
	58	16	5
Balance in hand	54	16	0
	<hr/>		
	£113	12	5

Places of Meeting for the Year 1873:—

Chatton,	Thursday, May 15.
Hawick,	„ June 26.
The Bass Rock,	„ July 31.
Chirnside,	„ Aug. 28.
Berwick,	„ Sept. 25.

BERWICKSHIRE NATURALISTS' CLUB.

LIST OF MEMBERS, DECEMBER 31, 1873.

	Date of Admission.
1. Robert C. Embleton, Beadnell, Chathill	Sept. 22, 1831.
2. Sir William Jardine, Bart., Jardine Hall, Lockerby ..	" 19, 1832.
3. Francis Douglas, M.D., Woodside, Kelso	July 30, 1834.
4. David Milne Home, F.R.S.E., LL.D., &c, Paxton House, Berwick	Sept. 21, 1836.
5. Frederick J. W. Collingwood, Glanton Pyke, Alnwick	May 6, 1840.
6. Jonathan Melrose, Coldstream	" " "
7. David Macbeath, Old Charlton, Kent	Dec. 16, " "
8. John B. Boyd, Cherrytrees, Yetholm	Sept. 18, 1841.
9. James Tait, Edenside, Kelso	July 26, 1843.
10. William Dickson, F.S.A., Alnwick	Sept. 20, " "
11. William Brodrick, Little Hill, Chudleigh, South Devon	" " "
12. John Turnbull, 58, Frederick Street, Edinburgh ..	" " "
13. Ralph Carr-Ellison, Dunstan Hill, Gateshead ..	Oct. 18, " "
14. Henry Gregson, Lowlyn, Beal	May 3, 1846.
15. Rev. Hugh Evans, Scremerston, Berwick	" " "
16. Rev. William Lamb, Ednam, Kelso	June 3, " "
17. The Right Hon. the Earl of Home, Hirsel, Coldstream, and 6, Grosvenor Square, London, W.	Oct. 20, 1847.
18. Robert Hood, M.D., 5, Salisbury Road, Newington, Edinburgh	May 3, 1848.
19. Rev. Samuel Arnott Fyler, Cornhill	June 25, 1849.
20. Rev. William Darnell, Bamburgh	" " "
21. Henry Stephens, Redbraes Cottage, Bonnington, Edin- burgh	Sept. 12, " "
22. David Francis S. Cahill, M.D., Berwick	Oct. 18, " "
23. William H. Logan, Berwick	May 1, 1850.
24. William Smellie Watson, 10, Forth Street, Edinburgh	Sept. 18, " "
25. John Craster, Craster Tower, Bilton	" " "
26. William Dickson, jun., Alnwick	Oct. 15, 1851.
27. Matthew J. Turnbull, M.D., Coldstream	June 30, 1852.
28. Sir John Marjoribanks, Bart., Lees, Coldstream ..	" " "
29. Rev. George Selby Thomson, Acklington	" " "
30. William Stevenson, Dunse	Sept. 7, 1853.
31. William B. Boyd, Ormiston House, Kelso	Oct. 12, " "
32. Charles Stuart, M.D., Chirnside	Aug. 16, 1854.
33. Rev. F. R. Simpson, North Sunderland, Chathill ..	" " "
34. The Ven. Archdeacon George Hans Hamilton, Egling- ham, Alnwick	Oct. 25, " "
35. Charles Rea, Doddington, Wooler	June 23, " "
36. George Culley, Fowberry Tower, Belford	" " "
37. William Marjoribanks, Lees, Coldstream	" " "

	Date of Admission.
38. Ralph Galilee Huggup, Norham	July 18, 1855.
39. Rev. Charles Thorp, Eglingham, Chathill	Jan. 31, 1856.
40. Charles Watson, Dunse	Oct. 29, "
41. Rev. Thomas Leishman, D.D., Linton, Kelso	" "
42. George P. Hughes, Middleton Hall, Wooler	" "
43. John Charles Langlands, Old Bewick, Alnwick	June 25, 1857.
44. Frederick R. Wilson, Alnwick	" "
45. Sir Dudley Coutts Marjoribanks, Bart., Upper Brook Street, London	July 30, "
46. Patrick Thorp Dickson, Alnwick	Oct. 28, "
47. William Sherwin, Keswick	" "
48. Rev. Thomas Procter, Tweedmouth	" "
49. Matthew T. Culley, Coupland Castle, Wooler	" "
50. John Clay, Berwick	" "
51. Rev. J. W. Dunn, Warkworth	" "
52. Rev. William Cumby, Beadnell, Chathill	" "
53. Rev. William Procter, Doddington, Wooler	" "
54. John Marshall, M.D., Chatton Park, Belford	June 24, 1858.
55. James Robson Scott, M.D., Scotch Belford, Yetholm	" "
56. Rev. John H. Walker Greenlaw	Sept. 22, "
57. John Stuart, LL.D., F.S.A. Scot., General Register House, Edinburgh	Oct. 27, "
58. John Wheldon, 58, Great Queen Street, Lincoln's Inn Fields, London, W.C.	" "
59. Middleton H. Dand, Hauxley Hall, Acklington	June 28, 1859.
60. Rev. Aislabie Procter, Alwinton, Morpeth	" "
61. Stephen Sanderson, Berwick	" "
62. James Maidment, 25, Royal Circus, Edinburgh	" "
63. Dennis Embleton, M.D., Newcastle	" "
64. Charles B. Pulleine Bosanquet, Rock, Alnwick	Sept. 29, "
65. Rev. John S. Green, Wooler	May 31, 1860.
66. Robert Douglas, Berwick	June 28, 1860.
67. Rev. John Irwin, Berwick	Sept. 13, "
68. John Riddell, St. Ninian's, Wooler	" "
69. Watson Askew, Pallinsburn, Coldstream	Oct. 11, "
70. Rev. Edward A. Wilkinson, Mount Pleasant, Ferryhill, Durham	May 30, 1861.
71. Robert Clay, M.D., 4, Windsor Villas, Plymouth	" "
72. William H. Mackenzie, M.D., Kelso	June 27, "
73. J. A. H. Murray, Mill Hill, Hendon, London, N.W.	" "
74. Charles Douglas, M.D., Woodside, Kelso	" "
75. Archibald Campbell Swinton, Kimmerghame, Dunse	" "
76. Rev. Patrick G. McDonall, Kirknewton, Wooler	July 25, "
77. Thomas Brewis (of Eshott), 23, George Square, Edin- burgh	" "
78. Rev. W. L. J. Cooley, Rennington, Alnwick	" "
79. Rev. William Greenwell, F.S.A., Durham	" "
80. Richard Hodgson Huntley, Carham Hall, Coldstream	Aug. 29, "
81. Sir George H. Scott-Douglas, Bart., Springwood Park, Kelso	" "
82. William Cunningham, Coldstream	Sept. 26, "
83. Thomas Friar, Grindon Ridge, Norham	" "
84. William Wightman, Bank, Wooler	" "
85. James Bowhill, Ayton	May 22, 1862.
86. Rev. John Scarth, Holy Trinity Vicarage, Milton-next- Gravesend	June 26, "
87. Septimus H. Smith, Norham	" "
88. John Paxton, Norham	" "

List of Members.

459

	Date of Admission.
89. John Howison, Architect, Duddingston, Edinburgh ..	June 26, 1862.
90. Charles Anderson, Jedburgh ..	" "
91. Henry R. Hardie, Conservative Club, St. James's Street, London ..	" "
92. J. Scott Dudgeon, Longnewton Place, St. Boswell's ..	July 30, 1857.
93. William Elliott, Jedburgh ..	June 25, 1862.
94. James Tait, Berryhill, Kelso ..	" "
95. Archibald Jerdon, Allerton, Jedburgh ..	" "
96. Rev. J. C. Bruce, LL.D., Framlingham Place, Newcastle ..	July 31, "
97. John Tate, Barnhill, Acklington ..	" "
98. Robert Crossman, Cheswick House, Beal ..	" "
99. Rev. Peter Mearns, Coldstream ..	" "
100. A. Brown, M.D., Coldstream ..	" "
101. William Crawford, Dunse ..	Aug. 15, "
102. George Rea, Middleton House, Alnwick ..	" 28, "
103. Sir Walter Elliot, K.C.S.I., Wolfelee, Hawick ..	June 25, 1863.
104. John Ord, Nisbet, Kelso ..	" "
105. William Dickson, Wellfield, Hawick ..	" "
106. Thomas Robertson, Alnwick ..	" "
107. Alexander Curle, Melrose ..	" "
108. John Edmund Friar, Grindon Ridge, Norham ..	" "
109. William Chartres, Newcastle ..	" "
110. Francis Russell, Sheriff Substitute, Jed-bank, Jedburgh ..	" "
111. William Hilton Dyer Longstaffe, F.S.A., Gateshead ..	" "
112. Robert Middlemas, Alnwick ..	" "
113. James Hardy, Oldcambus, Cockburnspath ..	" "
114. Rev. Edward L. Marrett, Lesbury, Bilton ..	July 30, "
115. Thomas Clutterbuck, Warkworth ..	" "
116. Thomas Tate, Alnwick ..	" "
117. Rev. Adam Davidson, Yetholm ..	" "
118. Lord Henry Kerr, Huntley Burn, Melrose ..	" "
119. Robert Brown, Littlehoughton, Chathill ..	Sept. 29, "
120. Rev. John F. Bigge, Stamfordham, Newcastle ..	May 26, 1864.
121. Edward Allen, Alnwick ..	" "
122. Christopher S. Bell, Stanwick, Darlington ..	Sept. 29, "
123. Robert Wilson, M.D., Alnwick ..	" "
124. J. Towleron Leather, Middleton Hall, Belford ..	" "
125. George Webster, 38, Heriot Row, Edinburgh ..	" "
126. Ralph Forster, Castle-hills, Berwick ..	May 25, 1865.
127. Colville Brown M.D., Berwick ..	" "
128. Rev. James Farquharson, Selkirk ..	June 29, "
129. Henry Richardson, M.D., East Cheswick House, Beal ..	" "
130. Thomas Allan, Horncliffe House, Berwick ..	" "
131. William Henderson, Fowberry Mains, Belford ..	" "
132. Frederick Lewis Roy, Nenthorn, Kelso ..	July 27, "
133. William Watson Campbell, M.D., Dunse ..	" "
134. G. Sholto Douglas, Riddleton Hill, St. Boswell's ..	Aug. 31, "
135. Robert Carr Fluker, M.D., Berwick ..	May 31, 1866.
136. Colonel J. P. Briggs, Bonjedward House, Jedburgh ..	July 26, "
137. Buddle Atkinson, Barmoor Castle, Beal ..	" "
138. James Smail, Galasbiels ..	" "
139. Rev. Dugald Macalister, Stitchell, Kelso ..	" "
140. Rev. Manners Hamilton Graham, Maxton, St. Boswell's ..	Aug. 30, "
141. Andrew Wilson, Coldingham ..	Sept. 27, "
142. J. R. Appleton, F.S.A., Western Hill, Durham ..	Sept. 26, 1867.
143. Geo. Markham Tweddell, F.S.A., Stokesley, Durham ..	" "

		Date of Admission.
144.	Rev. Peter Mackerron, Kelso	Sept. 26, 1867.
145.	Alexander Dewar, M.D., Melrose	" "
146.	William Currie, Linthill St. Boswell's	" "
147.	William Blair, M.D., Jedburgh	" "
148.	Major the Hon. R. Baillie Hamilton, Langton House, Dunse	" "
149.	Alex. Roy Borthwick, St. Dunstan's Villa, Melrose	" "
150.	Rev. G. P. MacMorland, Minto, Hawick	" "
151.	His Grace the Duke of Northumberland, Alnwick Castle	June 25, 1868.
152.	Robert G. Bolam, Weetwood Hall, Belford,	Sept. 25, "
153.	Rev. J. Elphinstone Elliott, Whalton, Morpeth	" "
154.	Henry Hunter, Alnwick	" "
155.	James Brunton, Broomlands, Kelso	" "
156.	Charles Bertram Black, Prior Bank, Melrose	" "
157.	Captain James F. Macpherson, Melrose	" "
158.	Francis Holland, Alnwick	" "
159.	James Heatley, Alnwick	" "
160.	Rev. Matthew Hepple, Wooler	" "
161.	C. H. Cadogan, Alnmouth	" "
162.	Henry Wentworth Acland, M.D., Regius Professor of Medicine, Oxford	" "
163.	Gilbert C. A. Stewart, Melrose	" "
164.	George Allen, Berwick	Sept. 30, 1869.
165.	Rev. James Middleton, Lauder	" "
166.	Robert Romanes, Harryburn, Lauder	" "
167.	William B. Robertson, Lauder	" "
168.	Thomas Broomfield, Lauder	" "
169.	John Brown, Hallidean Mill, Melrose	" "
170.	John Bolam, Chathill	" "
171.	Rev. William J. Meggison, South Charlton, Alnwick	" "
172.	John Dunlop, Berwick	Sept. 29, 1870.
173.	Pringle P. Hughes, Middleton Hall, Wooler	" "
174.	Rev. William Merrilees, Berwick	" "
175.	Rev. James Noble, Castleton Manse, Newcastleton, Carlisle	" "
176.	James Purves, Berwick	" "
177.	George L. Paulin, Berwick	" "
178.	Rev. David Paul, Morebattle, Kelso	" "
179.	Thomas Patrick, Berwick	" "
180.	Rev. Wm. Procter, jun., Doddington, Wooler	" "
181.	Rev. John George Rowe, Vicar, Berwick	" "
182.	John Scott, Berwick	" "
183.	Captain Simpson, North Sunderland	" "
184.	John Pringle Turnbull, Alnwick	" "
185.	Rev. E. B. Trotter, St. Michael's Vicarage, Alnwick	" "
186.	James Wood, Galashiels	" "
187.	George Young, Berwick	" "
188.	Matthew Young, Berwick	" "
189.	Rev. Thomas Brown, F.R.S.E., 16, Carlton Street, Edinburgh	May 11, 1871.
190.	Rev. Thomas F. Johnstone, St. Boswell's	Sept. 26, "
191.	Rev. Thomas Rogers, Durham	" "
192.	Rev. Robert Paul, Coldstream	" "
193.	Francis Walker, Nisbet, Kelso	" "
194.	Rev. T. S. Anderson, Crailing, Kelso	" "
195.	Rev. Robert David Yair, Eckford, Kelso	" "

	Date of Admission.
195. Rev. Ambrose Jones, Stannington, Cramlington ..	Sept. 26, 1871.
196. Andrew Scott, Glen Douglas, Jedburgh ..	" "
197. W. E. Otto, Jed-neuk, Jedburgh ..	" "
198. Rev. L. J. Stephens. Longhoughton, Alnwick ..	" "
199. William Weatherhead, Berwick ..	" "
200. James H. Scott Douglas, Springwood Park, Kelso ..	" "
201. Rev. John R. Scott, Amble, Acklington ..	" "
202. Henry Henderson, Warkworth ..	" "
203. Alexander James Main, M.D., Alnwick ..	" "
204. Rev. John Dixon Hepple, Branxton, Cornhill ..	" "
205. Thomas Arkle, Highlaws, Morpeth ..	Sept. 26, 1872.
206. Adam Deas, Dunse ..	" "
207. James T. S. Doughty, Ayton ..	" "
208. Captain J. Carr-Ellison, Hedgeley, Alnwick ..	" "
209. W. T. Hindmarsh, Alnwick ..	" "
210. Rev Robert Home, Swinton, Dunse ..	" "
211. Rev. Robert Park, Bamburgh, Belford ..	" "
212. Major James Paton, Hundalee Cottage, Jedburgh ..	" "
213. Henry A. Paynter, Alnwick ..	" "
214. E. A. Storer, Alnwick and County Bank, Alnwick ..	" "
215. Captain Thompson, Walworth Hall, Darlington ..	" "
216. John Hutton Balfour, M. D., &c., Professor of Botany and Materia Medica, Edinburgh ..	July 30, 1873.
217. Rev. Evans Rutter, Spittal, Berwick ..	Sept. 25, "
218. Rev. Hastings M. Neville, Ford, Cornhill ..	" "
219. Rev. James Henderson, Ancroft, Beal ..	" "
220. Professor A. Freire-Marreco, Neville Hall, Newcastle ..	" "
221. Charles M. Wilson, Hawick ..	" "
222. Captain David Milne Home, Paxton House, Berwick ..	" "
223. Rev. William Cockin, Lowick ..	" "
224. Rev. William Stobbs, Gordon ..	" "
225. William Allan Jamieson, M. B., Berwick ..	" "
226. James Nicholson, Burton, Belford ..	" "
227. Rev. Joseph Waite, Norham ..	" "

HONORARY MEMBERS.

Miss Elizabeth Bell, Springhill, Coldstream.
 Miss Hunter, Springhill, Coldstream.
 Lady John Scott, Spottiswood, Lauder.
 Mrs Spoor, Togston Hall, Alnwick.
 Mrs Barwell Carter, The Anchorage, Berwick.
 Miss Margaret R. Dickenson, Norham.

CORRESPONDING MEMBERS.

William Shaw, Gunsgreen, Eyemouth.
 John Anderson, Preston, Dunse,
 Thomas Henry Gibb, South Street, Alnwick.
 Andrew Brotherston, Kelso.
 John Ferguson, Allanton, Chirnside.

OFFICERS OF THE CLUB.

FRANCIS DOUGLAS, M.D., Kelso,
 JAMES HARDY, Oldcambus, Cockburnspath, } *Secretaries.*
 ROBERT MIDDLEMAS, Alnwick, *Treasurer.*

*Places Visited by the Members of the BERWICKSHIRE
NATURALISTS' CLUB since 1862 (continued from Vol.
IV., p. 460).*

DATE.	PLACE OF MEETING.	VOL.	PAGE.	PRESIDENT.
	1862.			
Sep. 25.	Berwick	v.	2	John Turnbull, Esq.
	1863.			
May 28.	Newtown St. Boswell's ..	v.	3	
June 25.	Warkworth	v.	10	
July 30.	Cornhill and Wark	v.	14	
Aug. 27.	Longhoughton	v.	17	
Sep. 24.	Belford	v.	93	William Stevenson, Esq.
	1864.			
May 26.	Greenlaw	v.	96	
June 30.	Cheviot—Langleyford ..	v.	99	
July 28.	Ancrum	v.	100	
Aug. 25.	Bamburgh	v.	103	
Sep. 29.	Berwick	v.	184	F. J. W. Collingwood, Esq.
	1865.			
May 25.	Norham	v.	185	
June 29.	St. Abb's Head	v.	188	
July 27.	Hownam	v.	190	
Aug. 31.	Rothbury	v.	192	
Sep. 28.	Berwick	v.	242	Archibald Jerdon, Esq.
	1866.			
May 31.	Eglington and Old Bewick	v.	242	
June 28.	Earlston	v.	244	
July 26.	Beadnell	v.	245	
Aug. 30.	Cockburnspath	v.	245	
Sep. 27.	Kelso	v.	296	Francis Douglas, Esq., [M.D.]
	1867.			
May 30.	Denholm	v.	298	
June 27.	Dunse	v.	299	
July 30.	Cheviot—Dunsdale	v.	301	
Aug. 29.	Holy Island	v.	301	
Sep. 26.	Cornhill	v.	374	James Hardy, Esq.
	1868.			
June 4.	Ayton and Eyemouth ..	v.	375	
„ 25.	Alwinton	v.	381	
July 30.	Melrose	v.	390	
Aug. 29.	Alnwick	v.	398	
Sep. 24.	Chirnside	vi.	1	Sir Walter Elliot.
	1869.			
June 6.	Burnmouth	vi.	4	
„ 24.	Lauder	vi.	6	
July 29.	Newcastleton and Hermitage	vi.	19	
Aug. 26.	Longhoughton, Rock, and Dunstanburgh	vi.	44	
Sep. 30.	Berwick	vi.	102	Rev. G. Selby Thomson.
	1870.			
May 25.	Kyloe Crags and Lowick ..	vi.	104	
June 30.	Edin's Hall	vi.	109	
July 24.	Doddington	vi.	111	
Aug. 25.	Whiteburn, near Gordon..	vi.	116	
Sep. 29.	Coldstream	vi.	177	Wm. B. Boyd, Esq.

DATE.	PLACE OF MEETING.	VO L.	PAGE.	PRESIDENT.
	1871.			
May 11.	Maxton	vi.	179	
June 29.	Whalton	vi.	182	
July 27.	Cockburnspath ..	vi.	187	
Aug. 31.	Alnmouth	vi.	190	
Sep. 28.	Berwick	vi.	289	Rev. F. R. Simpson.
	1872.			
May 10.	Jedburgh	vi.	291	
June 27.	Bamburgh	vi.	294	
July 25.	Cheviot—Langleyford ..	vi.	302	
Aug. 29.	Hume Castle	vi.	307	

PLACES OF MEETING

OF THE

BERWICKSHIRE NATURALISTS' CLUB,

SINCE 1862.

- | | |
|---|--|
| <p>Alnmouth, 1871, vi., p. 190.
 Alnwick, 1868, v., p. 398.
 Alwinton, 1868, v., p. 381.
 Ancrum, 1864, v., p. 100.
 Ayton and Eyemouth, 1868, v., p. 375.
 Bamburgh, 1864, v., p. 103; 1872, vi., p. 294.
 Beadnell, 1866, v., p. 245.
 Belford, 1863, v., p. 93.
 Berwick, 1862, v., p. 2; 1864, v., p. 184; 1865, v., p. 242; 1869, vi., p. 102; 1871, vi., p. 289.
 Burnmouth, 1869, vi., p. 4.
 Cheviot (Langleyford), 1864, v., p. 99; 1872, vi., p. 362; (Dunsdale), 1867, v., p. 301.
 Chirnside, 1868, vi., p. 1.
 Cockburnspath, 1866, v., p. 245; 1871, vi., p. 187.
 Coldstream, 1870, vi., p. 177.
 Cornhill (and Wark), 1863, v., p. 14; 1867, v., p. 374.
 Denholm, 1867, v., p. 298.
 Doddington, 1870, vi., p. 111.
 Dunse, 1867, v., p. 299.
 Earlston, 1866, v., p. 244.</p> | <p>Edin's Hall, 1870, vi., p. 109.
 Eglingham and Old Bewick, 1866, v., p. 242.
 Greenlaw, 1864, v., p. 96.
 Holy Island, 1867, v., p. 301.
 Hownam, 1865, v., 185.
 Hume Castle, 1872, vi., p. 307.
 Jedburgh, 1872, vi., p. 291.
 Kelso, 1866, v., p. 296.
 Kylee Crags and Lowick, 1870, vi., p. 104.
 Lauder, 1869, vi., p. 6.
 Longhoughton, 1863, v., p. 17; Rock and Dunstanburgh, 1869, vi., p. 44.
 Maxton, 1871, vi., p. 179.
 Melrose, 1868, v., p. 390.
 Newcastleton and Hermitage, 1869, vi., p. 19.
 Newtown St. Boswell's, 1863, v., p. 3.
 Norham, 1865, v., p. 185.
 Rothbury, 1865, v., p. 192.
 St. Abb's Head, 1865, v., p. 188.
 Warkworth, 1863, v., p. 10.
 Whalton, 1871, vi., p. 182.
 Whiteburn, 1870, vi., p. 116.</p> |
|---|--|

ERRATA ET EMENDANA.

- PAGE 22, last line for "Border Min, ii., 72," read "Border Min, ii., 166."
- „ 31, line 12, for "do son bon," read "de son bon."
- „ 33, line 36, to "second son George," append the following note:—
 "This is an error, as Mr. James Maidment informs me. The first Earl Douglas had no second lawful son, and was only once married, his first and only wife, Margaret de Mar, surviving him. George, Earl of Angus, was the illegitimate offspring of Margaret Stewart, Countess of Angus in her own right, and widow of Thomas, Earl of Mar, the brother of Margaret, Countess of Douglas."
- „ 53, line 31, for "42 years of age," read "32 years of age."
- „ 56, line 14, for "form," read "forming."
- „ 118, last line, for "coined," read "found."
- „ 182, line 28, delete the words, "a son of Mr. Thomas Brown, one of our oldest members."
- „ 188, last line, for "Eupatoria," read "Eupatorium."
- „ 221. The "Elk's horn" here mentioned, was found by Dr. John Alex. Smith to have belonged to a large antlered red deer,—*"Proc. Soc. Ant. Scot., Vol. ix.*
- „ 295, line 14, for "Asperuga," read "Asperugo."
- „ 304, line 25, for "rocks," read "rock."
- „ 306, lines 17 and 18, for "Juvencies," read "Juvencus."
- „ 311, last line, for "mining," read "draining."
- „ 320, line 6, after "Sav.," delete "7."
- „ 322, lines 5 and 7 from the bottom, for "Báz-na-mah," read "Báz-námah."
- „ 323, line 15 from the bottom, for "Yukalas," read "Yerkalar," and for "Yukalwas," read "Yerkalwar."
- „ 328, line 3, for "Appointed Trustee, A.D. 1792," read "Appointed Trustee, 1758. Died, A.D. 1792."
- „ 332, line 10, for "Mr.," read "Sir."
- „ „ line 13, for "Etherton," read "Etherston."
- „ 334, line 4, for "deed," read "deeds."
- „ „ line 17, for "binding," read "vendors."
- „ 363, line 4, for "sub-ærial," read "sub-aerial."
- „ 370, line 21, for "of great," read "of a great."
- „ 377, line 5, for "boundary," read "breeding."
- „ „ „ 25, for "dregs," read "dress."
- „ „ „ 34, for "uncaptured," read "captured."
- „ 392. Delete "*Pentatoma viridissimum*" from the list.
- „ 424, line 8, for "Ttypeta," read "Trypeta."

N.B.—The view of Wooler from the east, so kindly presented by William Dickson, Esq., F.S.A., is intended to illustrate the article on "Langleyford and the Cheviots." The hill in the distance is Humbleton Hill; and that behind it separated from it by a ravine, is Hard-roads.

I N D E X .

- Abbey Mill, Maxton, page 220.
 Abbey St. Bathan's Chapel at, 131.
 Accounts, 100, 176, 287, 456.
 Alders, power of self-renovation of, 364.
 Alnmouth Chapel, 190, 191.
 Alnmouth Meeting, 190.
Anthomyia Tritici, sp. nov., 139.
 Antiquities, 48, 50, 103, 104.
 Ants, 161, 393.
 Aphaniptera, 424.
 Aphides, 80, 144, &c.
 Arachnida, 264, 394.
Ardea nycticorax, 174.
 Armstrongs of Liddesdale, 20-22.
 Arrowheads of Flint, 290, 413.
Astur palumbarius 318, 367.
 "Aud Dike," or "Roman Dike," 359.
Aurora borealis, on a remarkable, 395, &c.
- Babington, Madam, of Harnham, 185, 240.
 Baird, Wm., M.D., F.R.S., Obituary Notice of, 316; Memoir of, 401; Bibliographical List of his Writings, 404.
 Balks, system of Cultivation by, 355, 357.
 Bamburg, Castle, 295; Parish Church of, 325; Shipwreck of the Bishop's Barge at, 329, 330; Manors of Bamburg and Blanchland, errors as to, 331.
 Barons of Whalton, 232, &c.
 Barrow Stanes, 11.
 Basaltic Rocks of Northumberland, 197, &c.
 Bees and Fossors, 162, 166.
 Belsay Castle, 184.
 Berwick Meetings, 1, 102, 289.
 Berwick, taking of, in 1648, 64, 65.
 Berwickshire Birds, remarks on some, 399.
 Berwickshire Men, their physique, 139.
- Billsdean, 188.
 Birds, 3, 84, 96, 127, 128, 174, 194, 196, 246, 247, 248, 365, 366, 367, 382, 383-5, 399, 425, &c., 433, 434.
 Bittern, 247, 248.
 Black Dikes, 360 and note.
 Blackbird, increase of, 128.
 Black-headed Gull, 366.
 Blanchland, Manor of, 331.
Blasia pusilla, 194.
 Blue Tit-mouse, nest of, 427.
 Bohemian Waxwing, 248, 427, 434.
 Bolam Church, 186.
 Bolam, R. G., Arrival of Birds, &c., 384.
 Border Day and Night Watches on Cheviot, 361, 371.
 Bosanquet, Rev. R. W., on Rock Hall, 44, &c.
 Botanical Notes on Central Berwickshire, 71.
 Botanical Notices, 6, 22, 73, 83, 109, 118, 154, 181, 182, 187, 188, 281, 282, 283, 436, 437.
 Bothwell family as connected with Hermitage, 35, &c.
 Boulders, 369, 471.
 Boyd, Wm. B., his Address, 177; his Botanical Notices, 282.
 Bottle-nose (*Dolphinus melas*), 424.
 Brachycephalic Crania, 347, 350, 418.
 British Camps, 298, 355, 368. v. Camps.
 British Division Walls, 355, 359-361.
 British Hill-forts, Dwellings, Folds, Tombs, &c., 355, 362, 364, 368, 371.
 Bronze Pots, 104.
 Brotherston, Andrew, Zoological Notes, 434; on Plants not recorded in Eastern Border Flora, 437.
 Burnmouth Meeting, 4.
- Cairns Opened, 116, 117.
 Caldgate Burn, 357; Ancient Channel of, 360.
 Camberwell Beauty, 397.
 Camps, 4, 11, 16, 113, 117, 148, 231, 298, 355, 368.

- Canada Goose, 435.
Carex muricata, its history, 54, 57.
 Carr-Ellison, Ralph, on the North-umbrians between Tyne and Tweed, 141; on Stores of Moisture, &c., for support of Gallinaceous Birds, 386; on Fire-blight, and Pruning with Torch Flame, 388.
 Carrion Crow and Sand-piper, 367.
 Castleton, Liddesdale, 43, 44.
 Cattle, horns of, in peat, 369.
 Caves, near Burnmouth, 5; near Lauder, 11.
 Celts, 6, 7, 104.
 Cheviot Hill, 303; Mineralogical character of, 304; appearance of, 356.
 Cheviot Hills, Earthquake on, 225; Entomology of the, 160, 251, 390.
 Chirnside, Meeting at, 1.
 Chlorops, Wheat, 189.
 Cists, 148, 149; British, at Lanton Mains, notice of, 347; at French Law and Edington Hill, 349, 352; at Carr's Fold, 369; at Hog's Law, 310; at Wooler, 415; Ilderton, 419.
 Clark, Rev. J. Dixon, Note on the Opah, or King Fish, 97.
 Cloud-berry, 303.
 Cockburnspath, Meeting, 187.
 Cockburnspath Tower, 189.
 Coins, 118, 121, 301, 346.
 Coldstream, Meeting, 177.
 Coleoptera of the West of Berwickshire, 335, &c.
 Coleoptera, 82, 161, 162, 166, 252, 335, 390, 421.
 Collingwood, Edwd. J., Rain-fall at Lilburn Tower, 98, 175, 285, 455.
 Collingwood, F. J. W., Rain-fall at Glanton Pyke, 98, 175, 285, 455.
 Cospatriek's Castle, 310.
 Coquet Island, 191.
Creophilus maxillosus, food of, 433.
 Crewe, Lord, how he acquired the property of Bamburgh, 333.
 Cuckoo, 96.
 Cumberland's (Duke of) Army, News from, 118.
Cynips lignicola, 250.
 Dane Camps, 360.
 Darnell, Rev. Wm., on the Ancient Parish Church at Bamburgh, 325; on a Shipwreck near Bamburgh, 329.
 Devil's Mitten, 11.
 Devil's Causeway, 231.
 Devonshire Woody Gall of the Oak, 249.
 Dickson, Wm., F.S.A., on the Manors of Bamburgh and Blanchland, 331.
Digitalis purpurea, Gall on, 159.
 Dikes and Hedges, Ancient, 359, 361; Mediæval, 360.
 Diptera, 264, 424.
 Doddington, Meeting, 111.
 Doddington, Notice of, 112; History of, 146, &c; Dod Well, 147; Pele Tower, 152; Church, 152; Clergy, 153.
 Douglas, Dr. Francis, on the Woodcock breeding in Roxburghshire, 196; Notice of *Peucedanum Ostruthium*, 196; on a remarkable *Aurora Borealis*, 395; on an Ancient Scottish Shield, 400; Memoir of Dr. William Baird, F.R.S., 401.
 Douglas, family of, their connection with Hermitage Castle, 27, &c.
 Dryburgh Abbey, 181.
 Dunglas Dean, and Ancient Village, 187.
 Dunsdale Cairn, Mineralogy of, 305.
 Duns Scotus (John) Notice of, 86.
 Dunstanburgh Castle, 47, 85; Legend of, 94.
 Earle, Notice of, 356; British Urns at, ib.
 Earthquake in the Cheviot Hills, and History of Border Earthquakes, 225, &c.
 Earwigs destroying Turnips, 143.
 Edin's Hold, or Hall, Exploration of, 48, 49; Meeting at, 109.
 Edwards, Geo., on a Meteor seen at Coldstream, Aug. 15, 1870, 173.
 Eel, Food of, 432.
 Elk's Horn, 221 (not that but a Red-deer's, see Errata).
 Elliot, Rev. J. E., an Archæological Sketch of Whalton and its Vicinity, 230, &c.
 Elliot, Sir Walter, his Address, 1; on a Goshawk killed at Minto and other Raptorial Birds, and on Indian Falconry, 318.
 Elsdon, Mote-hills, 244, note.
 Embleton, R., O., on Scaphander lignosus, 95.
 Entomological Notices, 80, 160, 300, 306, 335, &c., 343, 390, &c., 433.

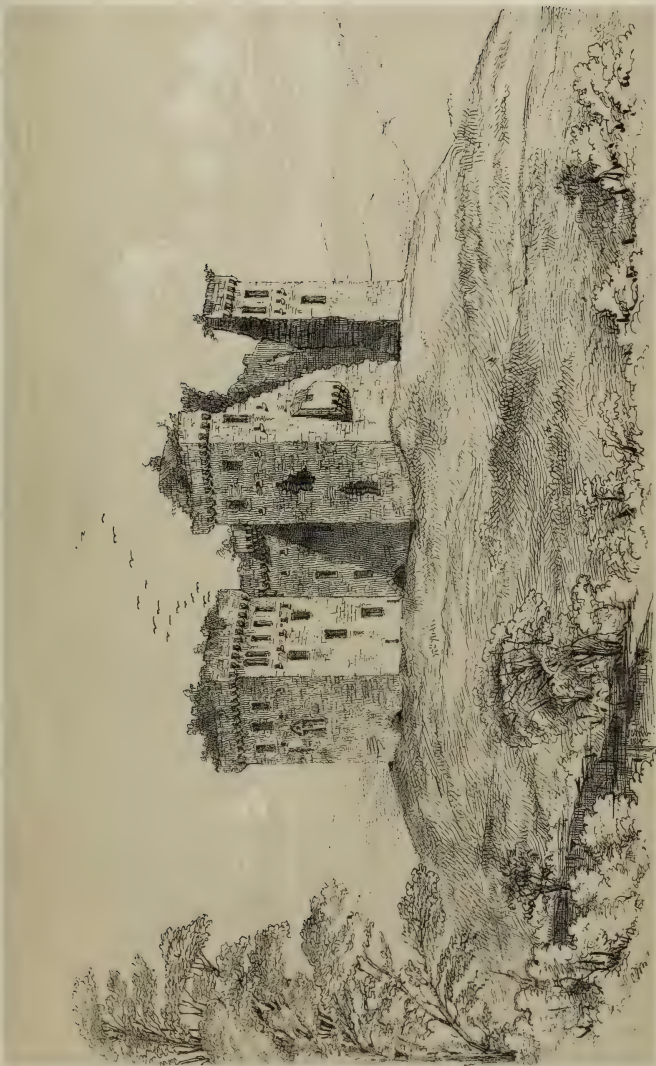
- Entomology of the Cheviot Hills, 160; 251, 390
Equisetum arvense, Knobs at the roots of, 83.
 Ettleton Churchyard, 20.
Euphorbia dulcis, 281.
- Fair Maid Lilliard, 219.
 Fairy Well, 355.
 Falconry in India, 322, &c.
 Fauna of Langleyford Vale, 365.
 Fawcus, Dr. H., Obituary of, 317.
 Fenwick of Rock, 69.
 Fibula found at Edin's Hold, 50; Ancient, 353.
 Fire-blight, or minor effects of Lightning, 388.
 Fishes, 97, 375, &c., 432.
 Fitz-Johns and Fitz-Rogers of Whalton, 233, &c.
 Flint Implements and rude ornaments of pre-historic people in Berwickshire, 410, &c.
 Flint Implements and Flakes, 290, 347, 350, 352, 410.
 Food-Vessel, 419.
 Forest, Signification of, 375.
 Forster, Ferdinand, M.P., Murder of, 69.
 Forster, Sir Claudius, Monument of, 327.
 Fungi, Additions to the Border, 435.
- Geological and Mineralogical Notices, 3, 21, 47, 85, 108, 109, 188, 197, 221, 223, 289, 292, 304, 305, 308, 312, 354, 362, 372, 373, 374.
Geranium columbinum, 299.
 Gibb, T. H., Notice of Night Heron, 174; Ornithological Notes for 1871, 248; Ornithological Notes, 433.
 Glitters, Formation of, 362.
Goodyera repens, 71.
 Goshawk and other Raptorial Birds, Notice of, 318; Occurrence of, 367.
 Graham, Rev. H. M., Notes on Maxton, 217, &c.
 Gray, William, Obituary of, 317.
 Great Bustard 247.
 Greenwell, Rev. W., F.S.A., on Two Ancient Interments at Wooler and Ilderton, 415, &c.
 Grey family, 91, 107, 150.
 Grey Shrike, 433.
 Grouse, Feed on Corn, 128.
 Gull, common, Habits of, 366, 431.
- Habchesters Camp, 4.
 Halo round the head of a gigantic shadow, 370.
 Hanging Stone, 370.
 Harefaulds, 16, 117.
 Hardies of Tollies-hill, 8, 9.
 Hardy, James, on *Carex muricata*, 54; on Turnip Insects and Entomological Notices for 1869, 80; Notes, Botanical and Ornithological, 83; Supplement to the History of the Wolf in Scotland, 129; on Turnip Insects during 1870, 142; Botanical Notices, 154, 283, 437; Contributions to the Entomology of the Cheviot Hills, 160, 251, 390; on an Earthquake among the Cheviot Hills, with Notices of Border Earthquakes, 225; Ornithological Memoranda, 247; on the Devonshire Woody-gall of the Oak on the Borders, 249; How the Hermit Crab escapes from a trap, 268; *Euphorbia dulcis*, its history, 281; Obituary Notices, 316; on a Shipwreck near Banburgh, 330; on British Cists, &c., at Edington Hill, 351; on Langleyford Vale and the Cheviots, 353; on Migratory Birds, 383, 384; on an Aurora Borealis, 396; on the Camberwell Beauty and other Lepidoptera, 397; Biographical List of the Writings of Dr. William Baird, 404; on Flint Implements and Ornaments of pre-historic Berwickshire people, 410; on Insects of the East of Berwickshire, 421; Zoological Memoranda, 424; on the Discovery of *Psamma Baltica* on the coast of Northumberland, 441.
Haltica nemorum (*Phyllotreta undulata* and *P. nemorum*), 142.
 Hawick, Sepulchral Remains in its vicinity, 50, &c.
 Hawthorns of Langleyford Vale, 363.
 Hedgehog, 97.
 Hemiptera and Homoptera, 82, 161, 165, 172, 260, 263, 392, 393, 423, 424.
 Hen-harrier, 247.
 Herit's-dyke, 11, 17.
 Hermitage Castle, 22, &c.
 Hermit Crab, how it escapes from a trap, 268.
 Hilson, John, Notes on a Cist at Lanton Mains, 347, &c.

- Hirse (Millet), derivation of, 158, note.
 Hirundo urtica, desertion of its former haunts, 84.
 Hislop, Robert, on Coleoptera in the neighbourhood of Nenthorn, &c., 335, &c.
 Hobby, 425, 435.
 Honey-Buzzard, 435.
 Hoopoe, Occurrence of, 428.
 Hospital at Broomhouse, 221.
 House Martin, desertion of its haunts, 84; White variety of, 428; Repair of a fallen nest by, 429.
 House-Sparrow, 427.
 Howick Hall, 48.
 Humble-bees, 128.
 Humbleton Hill, its ancient walls, 360.
 Hume Crags and Castle, 308, &c.
 Hymenoptera, 263, 293.
 Inscribed Stones at Edington Hill, 3, 351; at Rowtin' Linn, 112; on Doddington and Horton Moors, 113, 114, 148, 149, 244; at Whitelaw, 453.
 Insects of the East of Berwickshire, 421.
 Interments, Ancient, at Wooler and Ilderton, 415.
 Jackdaw eating partridge's eggs, 428.
 Jedburgh Abbey, 291; Ancient Graves at, 348, 349.
 Jerdon, Archd., Notice of Euphorbia dulcis, 211; Arrivals of Summer Birds, 383; Additions to Border Fungi, 435; on a Lichen new to the Border Flora, 436.
 Jerdon, T. C., Obituary of, 317.
 Jet-button, Ancient, 417.
 Johnston, Mrs Dr., Obituary of, 193.
 Johnstoneella Catharina, 284.
 Joughs, 3.
 Kate's Kist and Kate's Hair, 370.
 Kestrel, Food of, 426.
 Kettles Camp, 355.
 Kingfisher, Pugnacity of, 194.
 King's Chair, 355.
 Knight, Rev. Thomas, Obituary of, 316.
 Knives of Flint, 413.
 Kyleo Crags, Meeting at, 104.
 Kyleo, History of, 105, &c.
 Laidly Worm, 297, 298.
 Lake Dwelling, supposed, 117.
 Lamberton Kirk, 4, 5.
 Lampris guttatus, 97.
 Langleyford Vale and the Cheviots, 353, &c.
 Lark, blind and lame, 96; scarcity of, 127.
 Larus minutus, Notice of, 84.
 Latch or Letch, 368.
 Lauder, Meeting, 6.
 Lauder, Fort, 12; Bridge, 13.
 Lauderdale, Duke of, 10.
 Lawson of Rock, 63.
 Lead Mine at Rock, 70.
 Lepidoptera, 81, 82, 397.
 Lichen new to the Borders, 436.
 Linnæa Borealis, 71.
 Little Bittern, 248.
 Littledean Tower, 180, 219.
 Longhoughton, Meeting, 44.
 Longstaffe, W. H. D. (F.S.A.), on a Find of Groats at Embleton, ranging from Edward III., to Edward IV., 121, &c.
 Maitland Family, 15.
 Mangerton Tower, 21.
 Maxton, Meeting, 179.
 Maxton, Notes on, 217.
 Meeting Stones, 11.
 Members Elected, 2, 99, 102, 176, 286, 454.
 Merlin, 434.
 Mertoun House, 181.
 Meteor seen near Coldstream, 173.
 Mice, Instinct of, 425.
 Middlemas, Robert, on the Red or Common Squirrel, 268; Memoir of George Tate, F.G.S., 269; on an Inscribed Stone found at Whitelaw, 453.
 Midside Maggie, 7, &c.
 Midsummer Bon-fire, 242.
 Migratory Birds, Arrival and Departure of, 382-385.
 Miliun effusum, History of, 157.
 Milnholm Cross, 19.
 Missel-thrush, Habits of, 367.
 Mock Moon, 196.
 Moisture, on Stores of, &c., 386.
 Mole, White, 425.
 Mother Cary's Chicken, 224.
 Mountain Finch, Food of, 427.
 Names of Places on Cheviot, 357.
 Newcastleton, Meeting, 19.
 Night Heron, 174, 435.

- North Sunderland Pele Tower, Notice of, 345.
- Northumbrians, on the Stature, Bulk, and Colour of the Eyes and Hair of, 133; between Tyne and Tweed, 141.
- Ceananthe crocata* eaten by sheep, 22, 159.
- Oliver, William, Notes on Natural History, 127.
- Opah, or King Fish, 97.
- Orchis pyramidalis*, Notice of, 173.
- Ornithological Notes, 84, 96, 127, 246, 247, 433. See Birds.
- Partridge, Food of, 128, 430.
- Peregrine Falcon, Food of, 368; Notice of, 400.
- Pest Knowe, 411.
- Peucedanum Ostruthium*, 196.
- Picus Major*, 3.
- Pied Flycatcher, 426.
- Places of Meeting, 99, 174, 284, 289, 291, 294, 302, 307, 456.
- Plants, rare Genera and Species of, found on the Tweed and Gala, in 1868, 73.
- Plants, Notices of, 71, 173, 176, 196, 292, 295-300, 303, 304, 308, 309. See Botanical Notices.
- Poa Sudetica*, Notice of, 440.
- Postman's Rig, 311.
- Poultry, feed on Mice, 430.
- Procter (Rev. Wm., jun.) on Dodington, 146, &c.
- Procter-steads, near Dunstan, 45.
- Proctors of Shawdon and Rock, 60.
- Psamma Baltica* discovered by Mr. Richardson, 441.
- Purple Sandpiper, 248.
- Pygmy Gull, 84.
- Quail, 247, 400.
- Queen Mary's Visit to Hermitage, 42.
- Querns, Ancient, 313, 349, 353, 369, 370, 412, 415.
- Rainfall, Statements of, 98, 175, 285, 455.
- Rainfall of 1872, on the, 443.
- Ram-ay, Lord Bothwell, 13.
- Rat, some curious habits of, 398.
- Ravens, 128, 248, 400.
- Redbreast Nest, curious, 96.
- Ring-dove, or Wood-pigeon, food of, 367, 429.
- Ringly Hall, 222.
- Ring-Ouzel, Nest of, 96.
- Rings and Ornaments, British, 414.
- Rock, de, family of, 53, 62.
- Rock Hall, 44, 45; its History, 57.
- Rock-pipet, Habits of, 426.
- Roman Road, 149.
- Rooks in hill pastures, 367.
- Rory's Gair, 370.
- Salkelds of Rock, 59, 63.
- Salmon, Food of, 432; Weight of those of the Tweed, 432.
- Salmonidæ of the Tweed, Experiments on, 375.
- Sand-grouse, supposed re-appearance of, 344.
- Scandix *Pecten-Veneris*, names of, 159.
- Scaphander *lignarius*, 95.
- Scott, Dr. J. Robson, Arrival of Summer Birds at Belford (Bowmont water), 385.
- Scrapers of Flint, 413.
- Sea-borne Reeds, Notice of, 83.
- Shaw, Wm., Botanical Notices, 283.
- Sharp Monument at Bamburgh, 327.
- Shield, Ancient Scottish, 400.
- Shoveller Duck, 431.
- Silver Chain found, 18.
- Simpson, Rev. F. R., Rainfall at North Sunderland, 98, 175, 285, 455; on a Mock Moon, 196; his Address, 238; on the Sand-grouse, 344; on the Pele Tower at North Sunderland and some Coins, 345; on Migratory Birds in 1872, 382.
- Sirex Gigas* and *S. Juvencus*, 306.
- Siskin at Langleyford, 367.
- Slips of peat originating lines of stones on hill-faces, 371.
- Smail, James, Zoological Notes, 96.
- Smew, 435.
- Soulis, family of, 26.
- Sparganium simplex*, History of, 154.
- Spiders of the Cheviot Hills, 264, 394.
- Spiders of Berwickshire, 267.
- Spindleston Hill, 296, 297.
- Spotted Crane, 435.
- Spottiswood House, 119.
- Squamaria gelida*, 436.
- Squirrel on Rule water, 53; near Alnwick, 268.
- Stamford Manor, 86.
- Standing Stones, &c., 244, note.
- Starling, Habits of, 366, 400, 421; White do., 434.

- Steropus madidus*, its Food, 82.
 Stone-balls, 3, 104, 415
 Stone-heaps and glitters, how formed, 372.
 Stuart, Dr. Charles, Botanical Notes on Central Berwickshire, 71; Notice of *Orchis Pyramidalis*, 173; Botanical Notices, 283. 436; on British Cists at Frenchlaw and Edington Hill, 349; on a Will-o'-the-Wisp near Chirnside, 436.
 Stuart, G. C. A., Account of rare Genera and Species of Plants found on the Tweed and Gala in 1868, 73.
 Sturgeon, 432.
 Swinburn, John, of Capheaton, Murder of, 67.
 Swynhoe of Rock, 63.
 Tait, James, on the Rainfall of 1872, 443.
 Tate, George, F.G.S., on Dunstanburgh Castle, 85; on the Stature, Bulk, and Colour of the Eyes and Hair of native Northumbrians, 133; on the Basaltic Rocks of Northumberland, 197; Obituary of, 192; Memoir of, 269; Writings of, 279, 280.
Teucrium Scorodonia, Monstrosity of, 159.
 Thirlestane Castle, 12; Convent, 11.
 Thomson, Rev. G. S., his Address, 101.
 Thunderstorm, Great, 194.
 Tollies-hill Girdle, 7.
 Torch-flame, Pruning by, 388.
 Trees on Cheviot, were they ever numerous? 374, 375.
 Tron-tree, 107.
 Tuedian Sandstone and Limestone, 354.
 Tufted Duck, 248.
 Tughall of Rock, 62.
 Turnbull, John, on a Chapel at Abbey St. Bathans, 131.
 Turnip Insects, 80, 112.
 Turtle-dove, 433, 434.
 Tusk Fish, 432.
 Tweed Commissioner's Report on the Salmonidæ, 377, &c.
 Tweeden Burn, 21.
 Urns, British, 347, 348, 356, 357, 419.
Vanessa Antiopa, Occurrence of, 397.
 Velvet Scoter, 248.
 Wagtail, Pied, Habits of, 426.
 Water-Rail, 400.
 Waste of rocks on Cheviot, 362, 374.
 Whalton Meeting, 112.
 Whalton Church, 183, 232, 237.
 Whalton and its Vicinity, on, 230.
 Whetstone, Ancient, 353.
 "Whetting Stone, The," at Wooler, 355.
 Whimbrel, 247.
 Whiteburn, Meeting, 116.
 Wild-cat, 53, 298, 371, note.
 Will-o'-the-Wisp, 352.
 Wilson, John, on some curious habits of the Rat, 398; on some Berwickshire Birds, 399.
 Wolf in Scotland, Traditions of, 129.
 Woodcock Breeding, 196, 430.
 Wooler, Notice of, 353.
 Wreckers on the Coast of Northumberland, 330, 331.
 Young, George, on the Salmonidæ of the Tweed, 375.
 Yule-tide, 245.
 Zoological Notes, 96, 434; Memoranda, 424.

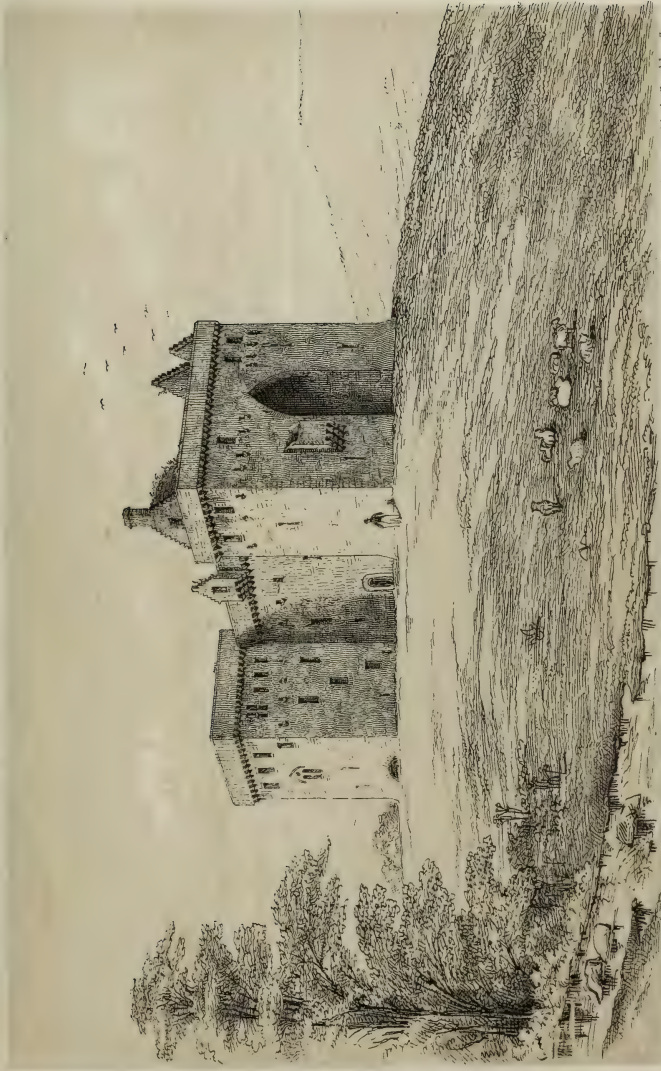




From a sketch by William Scott, Junr.

HERMITAGE CASTLE, CIRCA 1810.



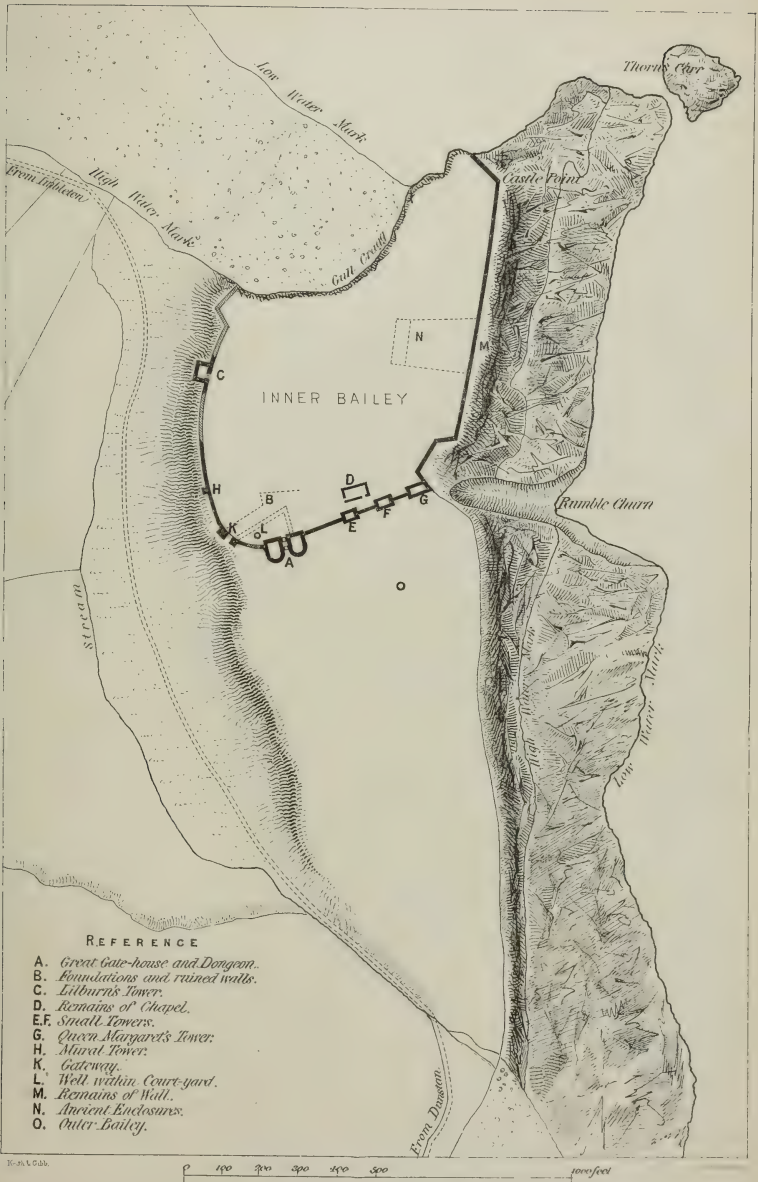


Kerth & Gibb, Liths Aberdeen.

From a Sketch by Lady Elliot.

HERMITAGE CASTLE, IN 1868.





REFERENCE

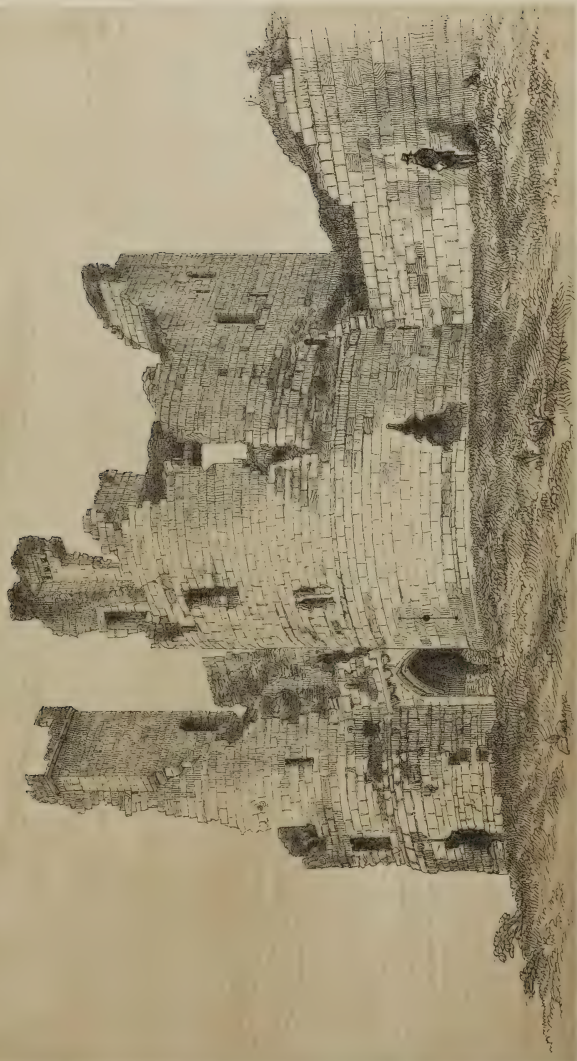
- A. Great Gate-house and Dungeon.
- B. Foundations and ruined walls.
- C. Lilburn's Tower.
- D. Remains of Chapel.
- E, F. Small Towers.
- G. Queen Margaret's Tower.
- H. Maral Tower.
- K. Gateway.
- L. Well within Court-yard.
- M. Remains of Wall.
- N. Ancient Enclosures.
- O. Outer Bailey.

PLAN OF DUNSTANBURGH CASTLE.

Surveyed by R. G. Bolam.

H. 25. C. 6. 11.





From a Photo. by G. Potter.

GREAT GATE-HOUSE AND DUNGEON OF DUNSTANBURGH CASTLE.



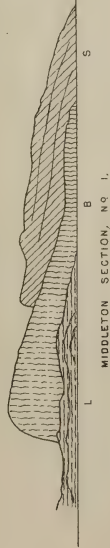


From a Phot. by G. Potter

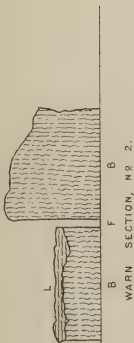
LILBURN TOWER, — DUNSTANBURGH CASTLE.



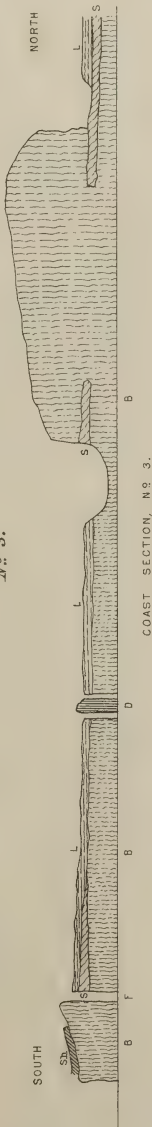
No. 1.



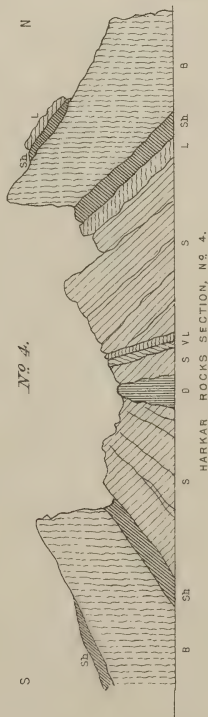
No. 2.



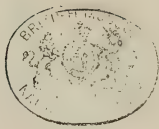
No. 3.



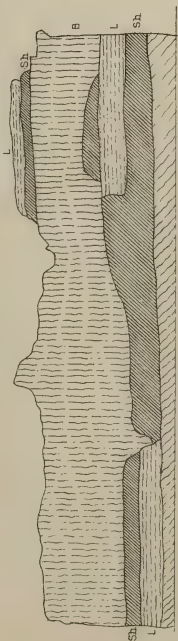
No. 4.



- B. Basalt.
- C. Coal.
- D. Basaltic Dike.
- F. Fracture.
- L. Limestone.
- S. Sandstone.
- Sh. Shale.
- V. Basalt Vein.

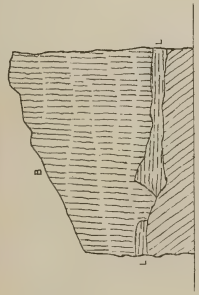


No. 5.



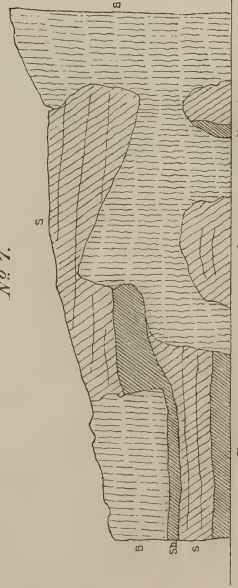
SECTION AT RIGHT ANGLES TO NO. 4.

No. 6.



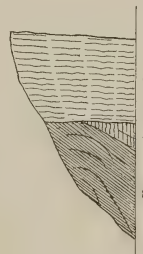
DUNSTANBURGH SECTION NO. 6.

No. 7.



CULLERNOSE SECTION NO. 7.

No. 8.



LITTLE MILL SECTION NO. 8.

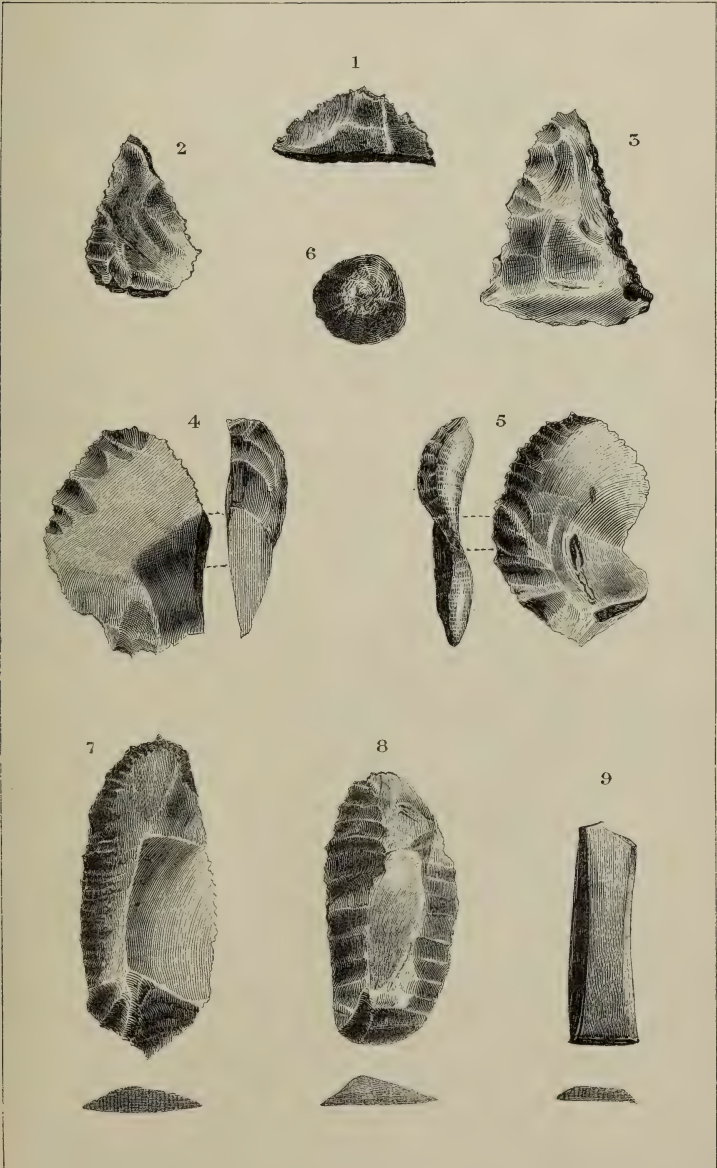
No. 9.



LITTLE MILL SECTION, NO. 9







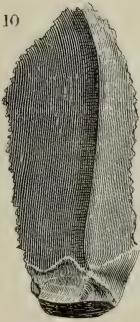
R. Middlemas. Del.

Keith & Gibb, Aberdeen.

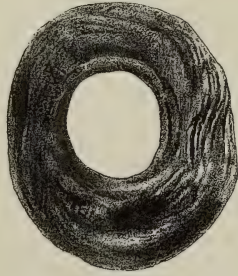
FLINT IMPLEMENTS.



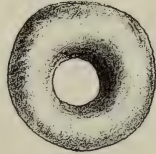
10



11



12



13



14

