



3 1761 08154365 4

*Geog
Mx*

10722

THE
JOURNAL

OF THE

MANCHESTER GEOGRAPHICAL
SOCIETY

///



VOL. XXIX.



PUBLISHED FOR THE
MANCHESTER GEOGRAPHICAL SOCIETY
BY
SHERRATT & HUGHES
LONDON AND MANCHESTER
1913

G
7
M3
v. 29-31

615445
21.7.85



THE
COUNCIL AND OFFICERS
OF THE
MANCHESTER GEOGRAPHICAL SOCIETY
FOR 1913.

Patron.

HIS MAJESTY THE KING.

President.

MR. HARRY NUTTALL, M.P., F.R.G.S.

Vice-Presidents.

The Right Hon. the EARL OF DERBY, G.C.V.O.	Sir FRANK FORBES ADAM, C.I.E.
The Right Hon. EARL EGERTON OF TATTON.	Alderman Sir J. DUCKWORTH, J.P., F.R.G.S.
The Right Hon. LORD ROTHERHAM OF BROUGHTON.	Mr. FREDERICK BURTON, J.P.
The Right Rev. the BISHOP OF SALFORD.	Colonel H. T. CROOK, J.P., V.D.
The Right Rev. BISHOP WELLDON, D.D., Dean of Manchester.	Professor W. BOYD DAWKINS, J.P., F.R.S.
The Right Hon. the LORD MAYOR OF MANCHESTER.	Colonel E. W. GREG, J.P., C.C., F.R.G.S.
His Worship the MAYOR OF SALFORD.	Mr. J. G. GROVES, D.L., J.P.
The VICE-CHANCELLOR OF MANCHESTER UNIVERSITY.	Mr. J. S. HIGHAM, M.P.
The Right Hon. Sir WILLIAM MATHER.	Mr. JOHN McFARLANE, M.A., M.Com., F.R.G.S.
The Rt. Hon. J. F. CHEETHAM.	Mr. E. W. MELLOR, J.P., F.R.G.S., <i>Vice-Chairman of the Council.</i>
Sir W. H. HOULDSWORTH, Bart.	Mr. J. HOWARD REED, F.R.G.S.
Sir C. W. MACARA, Bart.	Mr. C. P. SCOTT, J.P.
Sir HUMPHREY F. DE TRAFFORD, Bart.	Mr. HERMANN WOOLLEY, F.R.G.S.
	Mr. F. ZIMMERN, F.R.G.S., <i>Chairman of the Council.</i>

Trustees.

Mr. H. NUTTALL, M.P., F.R.G.S.	Mr. SIDNEY L. KEYMER, F.R.G.S.
Mr. E. W. MELLOR, J.P., F.R.G.S.	

Honorary Treasurer.

Mr. DAVID A. LITTLE.

Honorary Secretaries.

Mr. J. HOWARD REED, F.R.G.S.

Mr. EGBERT STEINTHAL.

Honorary Secretary (Victorians).

Mr. C. A. CIARKE.

Council.

Mr. W. S. ASCOLI, F.R.G.S.	Mr. T. C. MIDDLETON, J.P.
Mr. J. E. BALMER, F.R.G.S.	Mr. F. S. OPPENHEIM, M.A.
Miss S. A. BURSTALL, M.A.	Mr. T. W. F. PARKINSON, M.Sc., F.G.S.
Mr. C. A. CLARKE.	Mr. ALFRED RÉE, Ph.D.
Mr. C. COLLMANN.	Mr. Wm. ROBINOW.
Mr. GEORGE GINGER.	Mr. J. WALTER ROBSON, J.P.
Mr. J. HOWARD HALL.	Mr. J. STEPHENSON REID.
Mr. Alderman T. HASSALL, J.P.	Mr. T. W. SOWERBUTTS, F.S.A.A.
Mr. RICHARD KALISCH, F.R.G.S.	Mr. GEORGE THOMAS, J.P.
Mr. H. C. MARTIN, F.R.G.S.	Miss L. EDNA WALTER, B.Sc., H.M.I.
Mr. L. EMERSON MATHER, F.R.G.S.	

Honorary Auditor.

Mr. THEODORE GREGORY, J.P., F.C.A.

Secretary.

HARRY SOWERBUTTS, Assoc.R.C.Sc.

CONTENTS.

A	PAGE	C	PAGE
Accounts for 1912.....	61	Carpathian Mountains	144
Additions to the Library	165	Carter, James A., B.A.—Glaciers...	163
Administration of British East Africa.....	17	Cause of Yorkshire Coast Erosion	76
Adriatic Coast, Journey down the	38	Cliff Dwellings, Prehistoric	94
Advent Bay, Spitsbergen.....	119	Coal in Spitsbergen.....	119
Africa, British East.....	10	Coast, Yorkshire, lost towns.....	74
Africa, South, Dr. Livingstone's Explorations	1	Colonial Corresponding Societies...	174
America, Colorado, Mesa Verde National Park	94	Colorado, Mesa Verde National Park.....	94
Ainsworth, John, C.M.G.—British East Africa	10	Commerce and Education.....	6
<i>Anglo-Egyptian Sudan: A Report on the Land Settlement of the Gezira</i>	154	Congress of Pedology, International	153
Annual Meeting, 1913.....	57	Constantinople	28
Antarctic Expedition, British.....	122	Constanza.....	27
Antarctic Expedition, disaster.....	67	Corresponding Societies	172
Arctic Regions, Lost in the.....	66	D	
Atlases added to the Library	167	Danube, River, Course of.....	144
B		Death of Captain Oates.....	139
Bainbridge Oliver—Native Life and Customs in Southern Seas	65	Death of Captain Scott.....	139
Balance Sheet, 1912.....	62	Death of Dr. Wilson.....	139
Balkans and Turkey.....	23	Death of Lieut. Bowers.....	139
Balkans, Highways and Byways in the	35,95	Deaths of Members, 60, 65, 69, 156,	162
Banquet, Livingstone Centenary...	4	Death of Seaman Evans.....	138
Belgrade	33, 111	Dixon, Prof. H. B., Ph.D.— Climbing in the Canadian Rockies	163
Bellamy, C. H., F.R.G.S.—The Balkans and Turkey.....	23, 69	Dobrun	56
Books added to the Library.....	168	E	
Bosnia, Journey through.....	51	Easington	84
Bosnia, travelling in.....	95	Education—Sir H. H. Johnston, G.C.M.G., K.C.B.,	4
Bosphorus, Sail down the.....	27	Eller, Wm.—Lübeck	164
Bowers, Lieut., death of.....	139	Erosion of Yorkshire Coast.....	76
British Antarctic Expedition, 1910-13	122, 160	Europe, England, East Yorkshire	73
British Corresponding Societies...	172	Europe, Hungary, Geology of.....	143
British East Africa Protectorate— John Ainsworth, C.M.G.....	10	Europe, the Balkans.....	35, 95
Brousa, The Green Mosque, &c....	30	Europe, the Balkans and Turkey...	23
Brownell, Thos. W.—Visits to the Holy Land and Northern Egypt.....	67	Evans, Commander E. R. G. R.— British Antarctic Expedition... 122, 160	
Bruce, W. S., LL.D.—Spitsbergen	115	Evans, Seaman, Death of.....	138
Bucharest, description of.....	27	Exchanges with other Societies...	172
Bulgaria and its History.....	24	Expedition, British Antarctic	122
		Explorations of Dr. Livingstone...	1
		F	
		Foreign Corresponding Societies...	175
		Formation of the Soil of Hun- gary—B. de Inkey	143

G		PAGE	PAGE
Gamble, Dr. M.—Life in San Salvador do Congo	157	List of Members of the Society...	181
Geography, importance of, in education.....	6	Livingstone Centenary Banquet...	70
Geology of East Yorkshire—T. Sheppard, F.G.S.	73	Livingstone Centenary Celebration, 1907	70
Geology of Hungary.....	143	Livingstone's Explorations	1
Gravosa	45	Loess of Hungary	148
Greenland, Eastern, Lost in.....	66	Lord Mayor (Mr. S. W. Roysel) at Annual Meeting	63
Gregory, Theodore, J.P., F.C.A., long service of.....	64	Lost in the Polar Regions—Capt. E. Mikkelsen	66
H		Lost Towns of the Yorkshire Coast	74
Healey, Alderman Wm., death of	162	Lussinpiccolo	39
Hercegovina, Journey across.....	47	M	
Highways and Byways in the Balkans — Gilbert Waterhouse, F.R.G.S.	35, 95	Manchester Geographical Society and its Membership.....	6
Hilditch, J., M.R.A.S.—Japan...	162	Maps added to the Library.....	165
History of British East Africa.....	10	Maps, Early, of East Yorkshire...	77
History of East Yorkshire.....	73	Marriage Customs in East Africa	19
Hornsea	88	McMurdo Sound	123
Humber Estuary, Changes of Shores of	79	Meeting, Annual	57
Hungary, formation of the Soil...	143	Meetings of the Society, see Proceedings.	
Hunting in Spitsbergen.....	117	Members, Deaths of, see Deaths of Members.	
I		Membership of the Society.....	6
Inkey, B. de—Formation of the Soil of Hungary	143	Members, List of.....	181
Irvine, James, F.R.G.S., at the Livingstone Banquet	71	Mesa Verde National Park.....	94
J		Mikkelsen, Captain E., F.R.G.S.—Lost in the Polar Regions.....	66
Johnston, Sir H. H., G.C.M.G., K.C.B.—Dr. Livingstone's Explorations.....	1	Minerals in Spitsbergen.....	118
Johnston, Sir H. H., G.C.M.G., K.C.B.—Education.....	4	Missionary Societies	173
K		Mokra Gora, Servia.....	99
Kenya, Mount, discovery of.....	14	Mombasa and its History.....	11
Kilindini, Port, British East Africa	22	Mostar	49
Kilnsea.....	82	Muscovy Company in Spitsbergen	115
Kisumu, Victoria Nyanza.....	22	Museum, Additions to.....	167
Konjitz.....	51	N	
Kremna, Servia	106	Nairobi, Early History.....	16
L		National Park, Mesa Verde, Colorado.....	94
Langdon, E. H., B.A., at the Livingstone Banquet	71	Native Administration	18
Lantern Slides added to the Library.....	167	Native Customs in East Africa...	19
Larparent, G. de H., B.A.—Rhodesia	68	New Members	
Lees, Mrs. H. L., F.R.G.S.—A Visit to New Zealand.....	157	65, 67, 68, 69, 156, 157, 159, 162, 163	
Library Additions	165	New Zealand, A Visit to—Mrs. H. L. Lees, F.R.G.S.....	157
List of Corresponding Societies...	172	Nicholas, Rev. T. F., M.A.—The Gambia River and Protectorate	161
List of Maps, Books, &c., added to the Library.....	165	Nuttall, Harry, M.P., introductory remarks at Free Trade Hall	159
		Nyanza Province, Commissioner of	17
		O	
		Oates, Captain, Death of.....	139
		Oppenheim, F.S., M.A., at Annual Meeting	63
		Oppenheim, S., J.P., death of.....	156
		Osborn, J. A.—The Rhine.....	163
		Osborn, John A.—The Swiss Rhine	69

CONTENTS

vii

P		PAGE	
Pedology, International Congress of	153	Spalato	43
Pedology of Hungary.....	152	Spitsbergen: Past and Present— W. S. Bruce, LL.D.....	115
Philippopolis	31	Spurn Point, Changes of.....	79
<i>Photographic Supplement to Stan-</i> <i>ford's Geological Atlas.....</i>	154	Stair, Earl of, at the Livingstone Banquet	71
Photographs added to the Library	167	T	
Phythian, J. Ernest—Old Castles of England and Wales.....	65	The Balkans and Turkey—C. H. Bellamy, F.R.G.S.	23
Pola	38	<i>The Change in the Climate and</i> <i>its Cause</i>	154
Polar Regions, Lost in the—Cap- tain E. Mikkelsen.....	66	Towns, Lost, of Yorkshire Coast	74
Population of British East Africa	14	Trade in East Africa.....	21
Prehistoric Cliff Dwellings in the Mesa Verde National Park...	94	Turkey and the Balkans.....	23
Proceedings of the Society.....65,	156	U	
R		Uganda Railway	16, 21
Ragusa	46	Ukambani, East Africa.....	15
Ravenser	80	Uzhitze, Serbia	110
Report of the Council, 1912.....	57	V	
Reviews	154	Vardishte, Bosnia	95
Rules of the Society.....	189	Vishegrad	55
S		Visit to New Zealand—Mrs. H. L. Lees, F.R.G.S.	157
Sarajevo	51	W	
Scutari, Asia Minor.....	29	Wainwright, Joel, J.P., at Annual Meeting	64
Scott, C. H., J.P., death of.....	65	Warren, G. H.—Romance of the North-West Passage	164
Scott, Captain R. F., Expedition of	122	Waterhouse, Gilbert, F.R.G.S.— The Balkans.....	35, 69, 95
Scott, Captain, death of.....67,	139	Whaling in Spitsbergen Seas.....	115
Servia and its History.....	24	Wilmore, Dr. A., F.G.S.—Com- mercial Geography of Lanca- shire	68
Servia, Travel in	99	Wilson, Dr., death of.....	139
Sheppard, T., F.G.S.—Geography of East Yorkshire.....68,	73	Withernsea	86
Shrubsole, W. H., F.G.S.—Among the Carpathians	162	Women, position of, in East Africa	19
Shrubsole, W. H., F.G.S.—Buda- pest and the Great Hungarian Plain	65	Y	
Sinaia, Royal Residence, &c.....	26	Yorkshire, East, Geography of.....	73
Skipsea	91	Z	
Smeerenburg	116	Zanzibar	13
Societies, Corresponding	172	Zara, Dalmatia	40
Society, Meetings of, see Proceed- ings.		Zimmern, F., F.R.G.S., re death of Captain Scott	67
Society, Members of the.....	181		
Society, Rules of the.....	189		
Sofia	32		
Soil of Hungary, formation of.....	143		
Southern Party, start of.....	131		
South Pole attained by Capt. Scott	138		

MAPS AND ILLUSTRATIONS.

	PAGE
Dr. David Livingstone.....	<i>Frontispiece.</i>
Sir Harry Johnston, G.C.M.G., K.C.B., F.R.G.S.....	4
 ANTARCTICA—	
Map of District round McMurdo Sound, showing Routes of Expeditions	128
Map showing route of British Antarctic Expedition.....	124
Map showing route of Southern Party.....	134
 ASIA, ASIA MINOR—	
Broussa, Entrance to Green Mosque.....	28
Broussa, Tower of the Citadel.....	26
Mudania, Water-seller on the Station.....	28
 EUROPE—	
Balkans, Sketch Map	36
Bulgaria, Sofia, Entrance to the Palace Grounds.....	32
Bulgaria, Sofia, Private Residences.....	30
Bulgaria, Sofia, Statue of Czar Liberator.....	30
Bulgaria, Sofia, The New Cathedral.....	32
Dalmatia, Spalato, Wall of Diocletian's Palace.....	42
Dalmatia, Zara, Market	42
England, East Yorkshire, Bowen's Map, 1750.....	84
England, East Yorkshire, Leland's Map of the Humber District.....	76
England, East Yorkshire, Lord Burleigh's Chart (temp. Henry VIII)	78
England, East Yorkshire, Map by T. Sheppard, showing the Lost Towns	89
England, East Yorkshire, Saxton's Map, 1577.....	80
England, East Yorkshire, Speed's Map, 1610.....	82
England, East Yorkshire, Tuke's Map, 1766.....	86
Hungary, Lowland Landscape.....	152
Hungary, Mount Szentgyörgy.....	150
Hungary, Orographical Map	143
Hungary, St. Anna's Lake.....	148
Hungary, The High Tatra.....	144
Hungary, The Szulyó Valley.....	146
Rumania, Constanza, Statue of Ovid.....	26
Rumania, Sinaia, The Greek Church.....	24
Rumania, Sinaia, the King's Palace.....	24
Servia, Belgrade, National Mortgage Bank with Statue of Prince Michael	106
Servia, Belgrade, Old Gateway in Fortress.....	110
Servia, Belgrade, Palinula Church, Old Cemetery.....	110
Servia, Belgrade, River Save from Fortress.....	102
Servia, Belgrade, Royal Palace.....	106
Servia, Belgrade, Statue of Prince Michel.....	34
Servia, Belgrade, The King's Palace.....	34
Servia, Belgrade, view from Fortress towards Semlin.....	102
Servia, Kavarna, near Bioska.....	98
Servia, Village, near Stapari.....	98



David Livingston

1813—1873

The Journal

OF THE

Manchester Geographical Society.

* * *

DAVID LIVINGSTONE CENTENARY CELEBRATION.

“DR. LIVINGSTONE’S EXPLORATIONS AND THEIR RESULTS.”

By SIR HARRY JOHNSTON, G.C.M.G., K.C.B., F.R.G.S.

(Addressed to the Society at a Meeting held in the Albert Hall, Manchester, on Friday, March 28th, 1913, to celebrate the Centenary of the Birth of Dr. David Livingstone.)

THE lecturer dealt on this occasion mainly with the aspect of Livingstone as an African explorer, describing to the Society—and illustrating his description copiously with lantern slides—the problems of South African geography solved by Livingstone, and others started by him which only received solution at a relatively recent date; he also touched on the great advantages which the British Empire derived from Livingstone’s journeys; on the gain they had been to the knowledge of the world in general and to the cause of philanthropy. Livingstone, he reminded his hearers, was before all things a practical man who never gushed, and his policy of regeneration for the negro was eminently sound.

Commencing with the arrival of Livingstone at Algoa Bay in the early spring of 1841, he took his hearers step by step along the route followed by the great traveller to Bechuanaland; showing us the style of Cape wagon in which Livingstone travelled, with its long team of sturdy oxen. These oxen were also illustrated by a slide which enabled us to realise their very long horns, horns that were mostly set back in their angle with the skull. The lecturer pointed out that the type of draught-ox used in Livingstone’s day was more or less of indigenous origin, derived from the oxen of the Hottentot and even from those of the Damara and Lake Ngami tribes; oxen descended lineally from the first race domesticated by the ancient Egyptians—the so-called *Bos taurus aegyptiacus*, which attained such extravagant dimensions in its size and wide-spreading horns in the

Vol. XXIX. Parts I. and II., 1913.

domestic races of Uganda and Lake Chad. By means of the lantern slides we were enabled to see the harsh, stony country of the karoo and the rugged plateau-mountains of South Africa, with their vegetation of mesembryanthea, aloes and euphorbias. We saw the Orange River at the ford where it was crossed by Livingstone in his many journeys backwards and forwards, and stretching away northwards the track over a desolate stony country between ranges of sterile hills towards Bechuanaland, a country peopled in Livingstone's earlier days solely by bushmen and Korana Hottentots, with here and there an adventurous Grikwa half-caste. All these types were well illustrated by the lecturer's slides. We were enabled to realise the three principal types of bushman still existing—that of Cape Colony proper, with its relatively vertical facial angle and round head; that of the Kalahari Desert, often exceedingly prognathous; and the type of the taller bushmen of the northern regions of German South-west Africa, with its projecting brow-ridges and savage physiognomy. From Bechuanaland, with its goat-keeping people, we passed across the north-east angle of the Kalahari Desert; we saw the type of water-hole at which travellers would pause to obtain refreshment for themselves and their teams of oxen, and of the women—drudges whose business of life it was in those days to suck up the water from the wet sand or mud and pass it into ostrich shells. Then, having in imagination followed Livingstone and Oswell in their toilsome route over this hot desert of sand and stones, we reached with them the reedy shores of the Botletle River and noted the contrast in the scenery. Down the Botletle we floated in canoes or pursued an imaginary wagon route beset with many game pitfalls, till we reached the swamps and open water of Lake Ngami, with its natives in their fishing canoes and its herds of big game, mostly water-frequenting antelopes. From Ngami we passed over a flat region of water-courses and reed-beds till we reached the broad Chobe River at Linyanti. From here the survey of Livingstone's adventures passed on to the main Zambezi at Sesheke. We were shown the typical papyrus swamps, where this great rush grows to heights of nearly twenty feet, and the equally extravagant development of *Phragmites* reeds, with their pampas-like plumes of creamy-white. Up the Zambezi we travelled in imagination till we reached the rich forest country on the flanks of the mountains which give rise to the southern affluents of the Congo. We passed with Livingstone

through the southern limits of the empire of Mwata Yanvo, crossed the Kwango River, where it flows through dense, sombre forests, since the scene of much wrong-doing and turbulence in rubber collecting; then we journeyed over the beautiful hill scenery of Central Angola until we reached with Livingstone the shores of the Atlantic at the city of Sao Paulo de Loanda.

Once more gaining the Upper Zambezi, we were shown the splendid scenery of the Victoria Falls, the "rain forest" and the tree on which Livingstone carved his initials. Types of the natives of this region were also exhibited, and in the company of Livingstone the lecturer's listeners were taken down the Zambezi to Tete and to Quilimane.

Resuming the story of Livingstone in the next phase, we passed in review his six years of martyrdom when he and his companions—Sir John Kirk and others—were attempting in the face of tremendous obstacles to survey the Zambezi and all its principal tributaries, and to find practical ways of reaching the waters of Lake Nyasa on the one hand, and the smooth navigable reaches of the Upper Zambezi on the other. The scenery of Nyasa, the Shire Highlands and the beautiful Shire River was well illustrated by slides; so also were the lofty Livingstone Mountains at the north end of Nyasa; together with the impassable Quebra Baço rapids of the central Zambezi. Photographs actually taken by Livingstone and Kirk were thrown on the screen, and we saw the Lady Nyasa in course of construction, the unsuitable Ma-Robert steamer with which Livingstone commenced his exploratory work in 1859, and the better constructed Pioneer.

The last seven years of Livingstone's life as an explorer were dealt with in detail. The lecturer described Zanzibar as it was in 1866, and the scenery along the upper reaches of the Ruvuma River, as well as in Yaoland, south-east of Lake Nyasa. Reaching the south-west coast of that lake with Livingstone, we saw the superb groves of *Raphia* palms, which he so much admired. We crossed with him in spirit the Luangwa River, seeing the actual track over which he must have passed as it wound through a scrubby forest of *hyphæne* palms and gum-trees. We scrambled up the rugged slopes of the Muchinga Mountains, crossed the swampy Chambezi more or less where it was first discovered by Livingstone, and were shown the beautiful rock, mountain and forest scenery round the south end of Lake Tanganyika as described by the great traveller and as illus-

trated by modern photographs. The lecturer exhibited drawings of his own showing the approaches to the towns of great chiefs in former days through ghastly avenues of skulls, skeletons, and half-decayed corpses, erected on trees and stumps to testify to the greatness of the chief dwelling within the neighbouring enclosure. It was scenes like these that were vividly described by Livingstone in his Journals of 1867-68. We followed his course as he discovered first the south end of Tanganyika, next the north end of Lake Mweru and the great River Luapula (the Upper Congo), then we passed southwards to Lake Bangweolo, and again north to Tanganyika, and across Tanganyika to Ujiji, and once more westwards till we had reached the Lualaba-Congo at Nyangwe. Then we were shown the mighty forests of Manyuema, with their giant chimpanzies and pygmy elephants; the villages of the inhabitants, their fine physical type, and many other things seen and recorded by Livingstone. A photograph was shown of the tree, still existing, under which Livingstone and Stanley met at Ujiji. Then followed the last scenes and landscapes of Livingstone's exertions, together with the people whom he must have encountered on the way—the handsome Batusi, the ruffianly Ruga-ruga; the mountains he had to traverse, and, above all, the rivers and swamps he had to wade through or be carried over before he reached the village of Chitambo near the south end of Bangweulu, where he finally laid down his life on May 1st, 1873.

The lecturer was careful, with many slides, to show us all the principal tribes of African natives with whom Livingstone came into contact; and he spoke warmly of the remembrance of Livingstone which still lingers in the minds of the oldest Arabs and negroes who dealt with him on his last journeys.

“ EDUCATION.”

By Sir HARRY H. JOHNSTON, G.C.M.G., K.C.B., F.R.G.S.

(Addressed to the Society on Saturday, March 29th, 1913, in the Midland Hotel at a Banquet held to complete the Celebration of the Livingstone Centenary.)*

You have entertained me here to-night with direct reference to the celebration of the hundredth year since the birth of David Livingstone, and in a very kind acknowledgment of my

* See also page 70.



SIR HARRY H. JOHNSTON,
G.C.M.G., K.C.B., F.R.G.S.

attempts yesterday evening to illustrate the exploring work of David Livingstone in South and Central Africa. In a sense, therefore, it may have been expected from some of you that in returning thanks for your reception of me I should once more speak on the subject of Livingstone. But I feel that though the subject of Livingstone is far from exhaustible in one address, I have said enough about him for the present, at any rate, to a Manchester audience, which is pretty well conversant with the main facts of Livingstone's life. I prefer, therefore, to take up your time rather by pointing the moral of Livingstone's work, in the direction of the importance of educating the young of all classes of our community so that they may be able to make the utmost use of the opportunities offered to the members of a roving race outside the limits of the United Kingdom. What was it that made Livingstone's journeys of such exceptional interest and far-reaching importance, even to those who study them at the present day, when he has been in his grave in Westminster Abbey for nearly forty years? The fact that Livingstone took full advantage of his educational opportunities, which, it must be admitted, were of a very exceptional nature for the period in which his youth was spent. It required the exceptional greed for knowledge which a Scot possesses and the exceptional importance attached in Scotland a hundred years ago to the value of education, for Livingstone—a poor factory boy and factory operative in later years—to pick up such wonderful and such varied learning in Blantyre and in Glasgow in the 'twenties and 'thirties of the last century. But just as James Bruce and Mungo Park made their journeys in North-east Africa and in Nigeria so profoundly interesting because they started on them equipped with a sound Scottish education, so Livingstone's work would not have attained the permanent value it possesses if he had not before he entered Africa at the age of twenty-seven years, acquired some knowledge of Egyptology, botany, geology, zoology, philology, history, and even ethnology—for we may class as a department of the Science of Man, the astrology and ancient magic which in a half-forbidden way he endeavoured to study whilst still working at the loom. His researches in this direction at once interested him in the imperfect religions, fables, and empiric practices of the Africans, and created for him soon after he settled in South-central Africa a means of unlocking the native mind.

Education is the most crying of all needs for the people of the British Islands at the present day. It is one of those directions in which we cannot afford to sit down contented and to say that we have enough. Competition in education is akin to competition in physical fitness and in perfection of warlike armaments. Unless we are mentally and physically equal to the best, and superior to the mass of the world's population, we shall lose the foremost place amongst the civilised peoples of the world.

Manchester of all cities next to London, should feel this, for increase of education means increase of knowledge, and that tends to increase the commercial activity of Great Britain. Manchester exists for little else than commerce. Though a healthy city, and though its climate and that of Lancashire generally is exceptionally suited to the promotion of certain manufactures, it would never be able to offer the attractions of a health resort or a playground, though it might become a great educational centre.

Since, therefore, Commerce is the *raison d'être* of Manchester and commerce depends so exceptionally on geographical knowledge, I am amazed at learning on this visit to Manchester, after something like ten years, that the Manchester Geographical Society has only a fellowship of about 700, instead of numbering amongst its members every adult man and woman of Manchester and its suburbs with incomes of £150 a year and upwards. We have most of us been startled to learn from his own lips that the present Chairman of the Manchester Chamber of Commerce has hitherto remained outside the Manchester Geographical Society; and although he makes full amends to-night by securing his election, it is an important indication how much Manchester wants waking up, how little she appreciates the value of the right kind of education and the exceptional importance of geography in local education.

At the present time several political pontiffs have come northwards into the busy parts of industrial England to orate on the subject of education. But you will observe that all their arguments and all the long and acrimonious disputes that have gone on in the Press during the last ten years, or in Parliament, are solely directed to the question of *who* is to educate our youth and *how* and *where* the education is to be carried out. Nothing has been said by anyone, at any rate of any political prominence, as to *what* the education is to be, what the infants,

the children, the youths and the young men and women are to be taught. Consequently, those who frame the curricula of our State schools, our public schools, and our universities, are still allowed to continue their worship of ancient fetishes and to waste the time and the eyesight of our young people in teaching them things which are either best reserved for specialists or which, even, have grown absolutely useless to the present generation. Take, for example, the time-wasting nonsense known as Logic with a capital L. This is mainly based on the tedious catch-phrases, puzzle-pages and vaticinations which have come down to us from Aristotle and his predecessors—Greeks of acute minds but with the limitations of their age—people who had a great deal of time to spare, who were little concerned about what they ate and drank and wore, owing to the delightful climate in which they lived and the rude plenty with which they were surrounded, and who delighted to spend their time in the porch, the temple, or the shady orange grove, in cross talk and back chat. To all sane people of the present day it must surely seem that Logic as a solemn subject of study is sheer waste of time. The best logic is the accomplished fact, the fist, the dollar, the sovereign, the kiss, or the policeman. Yet we find in the examination papers set for entry into one of our great Government Departments two years ago, a high ratio of marks given for logic of the Aristotelean brand and such questions as these solemnly propounded:—

“What has been the relation of intuitionism to utilitarianism in British Moral theory before Mill?”; and “What reasons have we to believe that other persons exist?”; “All idealism must be a subjective idealism. Criticise this.” “Can the claim that the *Dictum de omni et de nullo* is the fundamental number of syllogistic inference, be sustained?”

Can one conceive that a future consul or a diplomatist who has wasted time over this nonsensical word-spinning is any the better fitted for pushing—as he ought to do—the sale of Manchester goods in China? Or for securing better terms for British commerce in any new commercial treaty with France, Germany or Russia? Do you suppose that those remarkable men who command the great liners of our never-sufficiently-honoured-or-appreciated mercantile marine, equip themselves with the study of Logic, or learn to make Latin verses, or to waste their time in other educational futilities, before embarking on a career which is one of the most heroic

we know of, and one in which mental balance, acuteness of judgment, and moral stamina are required to a high degree? Have any of the great manufacturers of Lancashire scored high marks in Logic? Are there even, I would venture to ask, many that have retained any particular knowledge of Euclid, or that have shone in the making of Latin verses, or in "moral and metaphysical philosophy"? The farce of the whole thing is that from the type that is educated at Eton and the older universities we derive most of our modern statesmen, and we may have a Chancellor of the Exchequer like the late Lord Randolph Churchill, who arrives to take charge of the national finance, and yet has not even mastered the principle of decimal arithmetic, and who asks his private secretary, when he is glancing at statistics, the meaning of those "damned dots." Until recently a great proportion of the time of the youth of this country was practically wasted on the uncritical study of what was called Scriptural history, that is to say, the history in ancient times of the countries of the Near East. This is a subject of profound interest to the specialist, but may well be reserved for those who are going to specialise in Oriental history. As regards the mass of the people in these Islands, all that they need to know of history—and they need to know a great deal—is *modern history*, dating back, it may be, no farther than the beginning of the sixteenth century. All that goes before can be taught them pleasantly and easily in a few chapters, as it were. If they desire as students of mankind to take up ancient, classical, or mediæval history as a special subject they can pursue this, that, and the other ramification; but merely to be practical citizens of Great Britain and of the world they require chiefly to know the history of the nineteenth century and the early twentieth, and something of what occurred in the eighteenth, seventeenth, and sixteenth, and led up to the great nations of to-day and set going the rivalries and ambitions with which we now have to contend. As a matter of fact, much of the geography and history which is taught in our elementary State schools, and even in our great public schools, is very faulty, ancient, prejudiced, and not sufficiently brought up to date.

This last is more especially the feature of our teaching of Geography. The average clerk in a Manchester house of business ought to know all the geography of South and Central America (for example). It is little use to him to be instructed

in the condition of Guatemala as it was thirteen or twenty years ago, or Haiti in the 'seventies of the last century, or Siam as described by pioneers of exploration twenty-five years ago. Though our universities have no reason to blush for the admirable works on geography, ancient and modern, which they issue from their presses, the manuals which are in use in the elementary, and even the public schools, are often sadly lacking in recent and accurate information. But as there are other speakers to come after me, I do not wish to waste your time, and I want to come to the point and make a full, concrete suggestion in regard to the kind of education that Manchester should promote. I do not mean for specialists, for Egyptologists, for students of the balance of power in the Mediterranean basin 3,000 and 2,000 years ago, but for young men and young women who have to earn their living and who have to unite in continuing to maintain us as the greatest trading nation on the surface of the globe. The following, therefore, in my opinion, are all subjects of elementary importance, though not all of them need be dealt with in great detail:—

(1) A knowledge of *the English language* and its derivation. This can include just that slight amount of Latin and Greek that all educated people require to know in order to be able to appreciate the meaning and pronunciation of many British words. (2) *French*. (3) *German*. (4) Just sufficient mathematics—that is to say, *arithmetic* and *book-keeping*, but no Euclid or Algebra—to enable people to keep accurate accounts and to do business. Higher mathematics need only to be taken up specially by those who are going to become engineers, astronomers or statisticians. (5) *History*, mainly modern, especially the English history for the last 150 years. (6) *Natural science*—principally an elementary knowledge of *botany* (so that people may appreciate the value and the beauty of plants and trees), *zoology* (including a glimpse into the nefarious work of insects and the origin of germ-diseases), *geology* (so that they may realise something of the past history of the earth), *chemistry*, and *geography*. *Geography*, indeed, might be regarded as the mother of natural science teaching. The earth should be treated as a newer and vaster Bible in which the purpose of God may be spelt out for our education and enlightenment as it is written in rock and gas, in crystal and basalt, in fossil and in flint implement, in the carving of the Alps and the history of the nations.

BRITISH EAST AFRICA PROTECTORATE.

EARLY HISTORY, DEVELOPMENT. THE NATIVE TRIBES AND
THEIR PROGRESS.

By JOHN AINSWORTH, C.M.G., F.R.G.S.

(Addressed to the Society in the Geographical Hall, on
Thursday, October 2nd, 1913.)

I WOULD preface my remarks by an allusion to the early history of what is now known as British East Africa.

The coast of East Africa has a very ancient history, dating back to the days of the Phœnicians, some 600 years B.C. A detailed account of the coast, however, was not attempted until about 150 A.D., when Ptolemy's writings were produced. Subsequently an Egyptian wrote "A Pilot's Guide to the Indian Ocean" (date unknown) wherein reference is made to certain points on the East African Coast. There is considerable evidence of ancient forms of civilization at various points on the coast to-day, notably on the islands forming the Lamu archipelago, where there are to-day the remains of ancient towns or cities which in several instances bear signs of interference and alteration by people subsequent to the date of the original buildings; also at Mambui, Malindi, Mombasa and Wasin, all of which are places on the coast. Many of these buildings are probably due to the migration of Himyarites, who came from Southern Arabia; of these movements, however, there is no accurate history, and even tradition is somewhat vague on the point.

It is believed, from the evidence of coins dating between 712 A.D. and 1163 A.D., found at Makadishu in Italian East Africa and at Kilwa in German East Africa, that the Chinese visited East Africa at varying intervals. There exist also slight traces of Egyptian influences at Malindi.

Up to about the tenth century tradition is, as I have said, very vague as to any migratory movements affecting East Africa, but from the tenth century the information obtainable is more accurate as regards the colonisation of the coast. Some time before the year 1000 Arab chronicles ascribe the foundation of the town of Mombasa, or Mvita, to the Arabs, and at a somewhat later period the foundation of Malindi, Kilifi and the

towns in the Lamu archipelago to Arabs and Persians. These towns apparently reached a considerable degree of prosperity and civilization, for somewhere about the year 1328 the Arab geographer Ibn Batuta, who at that time visited the coast, described them in that sense.

The authentic history of the coast commenced from the 7th April, 1498, when the first Portuguese expedition, under the command of Vasco da Gama, anchored off Mombasa; he, however, failed to enter the harbour owing to difficulties of navigation, and consequently sailed for Malindi (about 65 miles further north), where he was well received. From this time commenced the Portuguese conquest of the East Coast. They carried on various wars, but remained in possession until 1585, when a Turkish Corsair named Ali Bey visited the coast and claimed the sovereignty for his Sultan. He was well received by the people of Lamu, Faza and Mombasa, and with their help he succeeded in driving the Portuguese from most of their settlements; the next year, however, he left the country with a large amount of plunder estimated at about £600,000. The Portuguese immediately sent an expedition from Goa in India and severely punished the people who had aided the Turks.

Between 1586 and 1589 a warlike tribe called the Zimbas, hailing from somewhere south of the Zambezi, over-ran East Africa, and even laid siege to Mombasa.

The Turks again invaded the coast in 1588 and took Mombasa in that year, but were finally repulsed by the Portuguese in 1589, when the Turkish Leader Ali Bey was captured. In the same year the Portuguese finally defeated the Zimbas.

In 1592 the Portuguese made Mombasa the capital of their East Africa possessions. The present fort of Mombasa, commenced in 1593, was partially completed in 1595. The Portuguese occupation of the coast continued through many happenings up to 1698.

On March 15th, 1696, the Arabs laid siege to Mombasa. This siege, which is known as the great siege, lasted for thirty-three months, when the Portuguese garrison, reduced to eleven men and two native women were put to the sword. This occurred on December 12th, 1698. Subsequent expeditions were organised by the Portuguese, and sent to reconquer the coast, but met with no success. In 1727, however, owing to internal troubles amongst the Arabs, one party sent a deputation to Goa offering to place themselves under Portuguese protection.

In response a Portuguese fleet left Goa for East Africa, and as a result of several operations Mombasa capitulated to the Portuguese General on the 12th March, 1728. Within a few weeks the whole coast was again under Portuguese rule, which, however, was of short duration, for on the 29th November, 1729, they were again driven from Mombasa and from East Africa. This was the end of Portuguese authority in this part of the world.

The Arabs thereafter retained their hold of East Africa. In 1739 the Imam of Oman appointed a Governor (Wali) to Mombasa. This official, however, subsequently threw over his allegiance and transformed himself into an independent chief. His example was followed by the King of Pate (near Lamu). For eighty years the families of these chiefs ruled their respective areas and were at constant war with one another.

In 1809 the Court of Muscat again commenced to be active in East Africa affairs. The result of its activities was that Mombasa itself was threatened and the Mazrui chief, the descendant of the transformed Governor of eighty years previous, applied in 1823 to Capt. Vidal, of H.B.M.'s ship "Barracouta," who was at that time cruising in East African waters, for assistance, which was refused. Notwithstanding this refusal, the Mazrui chief hoisted the British flag on his own authority. This resulted in Capt. Owen, of H.B.M.'s ship "Leven," in February 1824, establishing a provisional Protectorate subject to the approval of the British Government. The British Government, however, repudiated the Protectorate, which was withdrawn two years later.

The power of the Mazrui family was broken by Muscat in 1837. In 1832 Seyid Said transferred his capital from Muscat to Zanzibar, where an officer appointed from Oman had governed from 1784. Under Seyid Said's rule Mombasa, Lamu and other East African ports developed in importance.

Seyid Said died at sea in 1856, when a dispute arose between his two sons, which resulted in the total separation of Muscat and Zanzibar. The Governor-General of India arbitrated in the rival claims, and the result was that the East Africa possessions became the property of Zanzibar.

In 1875 the Egyptians, in furtherance of their policy at that time of Imperial expansion made an attempt to occupy the northern part of the coast and did occupy Kismayu for some

months that year, but subsequently departed on representations being made to the Khedive by the British Government.

Seyid Bargash succeeded to the throne of Zanzibar in 1870. In 1877 Seyid Bargash offered to the late Sir William Mackinnon (or to a company to be formed by him) a concession under lease for seventy years of the customs and administration of the dominions with certain reservations in respect of the islands of Zanzibar and Pemba. The negotiations were, however, not proceeded with because the British Foreign Office would not at the time support the matter. The 1886 the limits of the dominions of the Sultan were settled by an international convention.

In 1887 the Sultan granted a concession of his mainland dominions lying between the Uмба river and Kipini to the British East Africa Association (this meant a strip ten miles deep along the coast). Witu, on the mainland opposite Lamu, was at this time deemed an independent Sultanate, while Lamu remained Zanzibar territory. Germany, in 1885, declared a Protectorate over Witu, and subsequently claimed Lamu. After considerable negotiations and the definite cession of that part of the Sultan of Zanzibar's mainland dominion situate south of the Uмба river, and which was already occupied by Germany, and of the island of Heligoland in the North Sea, any differences between Germany and ourselves were set right, and Witu and other territory north of the Tana river came under the company's rule. The British East Africa Association was reconstructed as the Imperial British East Africa Company and received a Royal Charter on September 3rd, 1888. The Chartered Company commenced the administration of the country early in 1889. No serious attempt, however, was made to administer the interior until 1891. Up to that time our efforts were directed to the occupation of the coast towns, to exploring expeditions and to the acquisition of Uganda. A route was opened from Mombasa to Uganda, and food depôts with officers in charge were established at intervals along the route.

It must be understood that the authority of the Sultan of Zanzibar did not extend into the interior beyond the ten mile limit, and that the country outside the ten mile strip was at the time of the advent of the company almost unknown. It had been but seldom penetrated. In 1849 the late Doctor Krapp explored part of the interior, and reported the existence

of Mount Kenya. In 1882 Doctor Fischer, a German, made a journey from Mount Kilima-Njaro to Lake Naivasha where he was prevented from proceeding any further, and was obliged to return. The late Joseph Thomson succeeded, in 1883, in journeying through Masai-land to the north-east corner of the Victoria Nyanza. A Hungarian named Count Teleki accompanied by Lt. Von Höhnel, explored the interior during 1887 and 1888. And then came the work of the officers of the Imperial British East Africa Company. The company's pioneer officers include the names of Sir F. Lugard, Sir F. J. Jackson, the late Sir Francis de Winton, the late Sir George Mackenzie, J. R. W. Piggott, the late Clifford Crawford, E. J. L. Berkeley, C.B., C. W. Hobley, C.M.G., A. D. Mackinnon, C.M.G., S. S. Bagge, C.M.G., Col. Eric Smith, C.B., the late C. W. Jenner and my own.

The Chartered Company surrendered its charter on July 1, 1895, when the Imperial Government, through the medium of the Foreign Office, took over charge of the country. More than a year previously the Foreign Office had taken over Uganda. The East Africa Protectorate therefore really dates from July 1st, 1895. At this time, however, its western boundary extended only to the Great Rift and to the western confines of Kikuyu. In 1902 the limits of the territory were extended to the Victoria Nyanza and Mount Elgon. In 1905 the control of the Protectorate was transferred from the Foreign Office to the Colonial Office.

The Protectorate, as now constituted, comprises about 180,000 square miles, and contains a population of approximately 3,000,000 blacks, about 18,000 Indians and some 3,500 whites, including traders, settlers, missionaries and officials. The principal coast town is Mombasa, with a total population of about 20,000. Mombasa was the capital of the Protectorate until 1908 when the new town of Nairobi, 327 miles in the interior, took its place.

With regard to the Indian population, it is as well to remember that Indian traders came to the country about two hundred years ago; the descendants of these early pioneers had amassed considerable interests on the coast long before we came upon the scene. With the advent of the railway their trading instincts forced them along with the construction, which in itself was carried out by Indian coolie labour. These traders have now spread out into the uttermost corners of the Protectorate;

they are also established in Uganda, along the higher waters of the Nile, and also in German East Africa. Their interests are therefore very extensive in East Africa to-day.

The Arabs, once the predominant factor on the coast, now remain a more or less picturesque reminder of the past.

My first introduction to East Africa was in 1889, when I proceeded there in the service of the late Imperial British East Africa Company. I remained at Mombasa, with the exception of an interval of three months, during which time I was in India, until the end of January, 1892, when I proceeded into the interior. From 1892 to July, 1895, I was in administrative charge, under the Chartered Company, of the district of Ukambani.

The company, after five years' control, during which time a good deal of pioneer work was performed and a basis of administration commenced amongst most of the tribes, handed over their responsibilities to Her Majesty's Government. Nominally the Chartered Company handed over on the 1st July, 1895; actually, however, the transfer was effected in November of that year.

In 1892 I commenced what eventually proved a satisfactory connection with the important tribe of Wakamba and succeeded in five years in bringing them under administrative control. Towards the end of 1892 I got into touch with the warlike Masai, resulting three years later in a most friendly understanding and the voluntary submission of this tribe to our rule. During the same period we succeeded in extending our administration over the important Kikuyu tribe.

I do not wish it to be understood that these times were entirely peaceful ones or free from anxiety; on the contrary, from time to time it was necessary to undertake punitive measures in different districts, but never against a whole tribe; there were for some time factions among the more distant tribesmen who delighted in continuing some of their old barbaric customs in the way of murder and pillage, and who resented interference in such amusements. With such people it was necessary to deal. Patience, tact and perseverance, however, added to the increasing conviction that the white regime had come to stay and meant to keep the peace had its result, and peace and order came to be more or less the normal state of affairs.

The Imperial Government, through the medium of the

Foreign Office, took over the active work of administration in November, 1895, when I was appointed to the charge of the interior territory of what then became the East Africa Protectorate which at that time extended from outside the ten mile coast strip to the Great Rift Valley (half-way to the Victoria Nyanza). The area placed in my charge was termed the Ukamba Province, and contained some 38,000 square miles of territory with about one million native inhabitants. The headquarters were at a place called Machakos. Subsequently the area was found too large for one Province, consequently it was divided and an additional Province was formed.

The Government extended its administration beyond the limits actually occupied by the Chartered Company, and so the pioneer work continued. We were a handful of British officials imbued with a definite determination to do our best for the native tribes and the country. At times, what with climate, new conditions, languages to master, native stupidity, conservatism and superstition, the task seemed almost hopeless; it was, however, apparently ordained that progress should be made, and so we are succeeding. In the early days all the natives viewed us with suspicion; they would not help us in any way; very often they would not sell us food; in many and various ways either passive or deliberate obstruction faced us. Our supplies were carried on the heads of coast porters, and our mails, which only reached us on the average once a month, were brought up by the same means. Ultimately all this changed and the natives became ready and willing helpers. Our police, once recruited in Zanzibar and on the coast, were gradually replaced by picked men from amongst the different interior tribes.

At the end of 1895 the first rails of the Uganda Railway were laid at Kilindini, on the island of Mombasa. The rails reached what is now Nairobi (327 miles from Mombasa) in 1899. In that year I moved from Machakos to Nairobi, which was then a large extent of grass plain with low hills and forest on the west and north. The laying out of a town was commenced in 1900. To-day the town of Nairobi contains some very fine streets, some imposing buildings, it is lighted by electric light, and has a most excellent water supply piped in from the hills. It contains four churches, a masonic hall, several hotels, some very fine shops, banks, a theatre, and has an up-to-date telephone service. Some thousands of trees have been planted along the

roads. There is a racecourse, where meetings are held under the auspices of the East Africa Turf Club. Cricket, football, tennis, golf and other sports are common at all centres in the country. Some of the tribesmen have taken to football. I remained in charge of the Ukamba Province with Nairobi as my headquarters until 1906.

In 1907 I was appointed to the Commissionership of the Nyanza Province where I have since been.

The railway reached Kisumu at the head of the Kavirondo Gulf on Victoria Nyanza in 1901 and the first passenger train from the coast arrived there in December of that year. Kisumu, which is now a well-laid-out and thriving town, is the terminus of the line.

The railway had occupied just six years in building; it cost, inclusive of steamers placed on the great lake, nearly six millions sterling. Its completion meant a new era for East Africa. Without the railway East Africa could never have reached any degree of importance or prosperity, as there are no navigable waterways leading into the real interior. With the railway East Africa is undoubtedly prospering and will ultimately become an important country.

I propose later on giving you a few figures to show you how the undertaking has progressed commercially.

THE ADMINISTRATION.

The Protectorate as a whole is administered by a Governor with Executive and Legislative Councils. The whole area is divided into seven provinces, each in charge of a Commissioner. Each province is divided into a number of districts, each in charge of a District Commissioner with Assistant District Commissioners.

The country originally consisted of a number of native districts and of large areas of uninhabited lands. Of the latter large tracts have been marked out for European settlement, and have already to a considerable extent become occupied by settlers. Forest reserve areas have been marked out, while we have some extensive game reserves wherein the fauna peculiar to the country is preserved. Small settlements of Indian cultivators have also been established where suitable. The boundaries of the native districts have been defined and all native rights therein respected. Our policy in these districts is to use the native authorities to rule their own people, but

subject to our supervision. We consider that in these districts their own laws, purified where necessary, are best suited to their own requirements and are best calculated to make for peace, order and contentment in the land. Outside the native districts the ordinary law of the Protectorate applies.

NATIVE ADMINISTRATION.

The native form of administration varies in different districts; generally, however, it is worked under one of the following two systems—(1) by the chief, with the assistance of a council or councils of elders; (2) by the elders themselves under a patriarchal system. No native authority under (1) can deal with anyone except members of their own tribe; under (2) with any but members of their village. Under (2) inter-village matters are arranged by a joint meeting of elders.

In native locations persons who are not natives of the particular tribe who may be accused of offences inside the tribal limits must be tried by the Protectorate Courts.

Natives convicted by a native court can appeal to the District Commissioner. The Provincial Commissioner can, when considered necessary or desirable, require any case to be re-heard either before himself or before a District Commissioner, either in the presence or otherwise, of the Council, and may reverse or confirm the original judgment.

Tribes consist of clans; each clan has its own local council. Inside the clan or tribe individuals are held responsible for acts against a member of the clan or tribe, but family of offender, where the latter is unable to pay a fine, may be joined in responsibility.

Offences by a member or members of one tribe against a member or members of another tribe were deemed by native law as tribal acts; in other words, an individual act was taken as the act of the tribe, and any reprisal might be attempted against the tribe as a whole. Now, however, inter-tribal offences are dealt with by the administration.

Land.

Land within the tribal limits is the common property of the tribe, and so long as any member of the tribe beneficially occupies he maintains the right to occupation. No non-member of the tribe can occupy land without the consent of the chief and council. A non-native cannot acquire land in a native

district except by consent of the Crown, which would not be given if the application applied to native land.

It is highly probable that in the process of time, when the native occupants realise the value of land from the producing point of view, they will themselves move in the direction of demanding a change in the communal system of tenure and will wish to become individual holders or owners.

Police, etc.

In native locations the local councils and elders maintain peace and order. They have a system of village police and headmen. Protectorate police, *i.e.* the Government police, are, under normal conditions, not employed in the native districts. They may, however, in exceptional cases and under a magistrate's warrant, proceed into a native location or district.

Roads.

The Protectorate Government constructs main roads, both inside and outside of native locations. Subsidiary roads and tracks in the native areas are made and maintained by the local councils.

Women.

Amongst all the tribes woman occupies a subordinate position to man. Her lot is, however, not a hard one. In particular young marriageable girls have as a rule a fairly good time, and amongst most tribes, a fair amount of liberty. As, however, a prospective husband is required to pay a marriage price to the father of the lady they are in fact a more or less valuable asset to the family. A girl may choose her own husband, and so long as he is not of her clan (marriage in the clan is usually prohibited amongst many of the tribes), and, further, provided that he is not an imbecile or a confirmed cripple (marriage of imbeciles or cripples is practically forbidden), and he is able to make the necessary payment there is no objection. The preliminaries are then arranged, but in some of the districts it is necessary, as a very important part of the ceremony for the bridegroom to capture the bride, as she is not supposed to leave her clan except by capture. The bridegroom collects some friends and proceeds to the bride's village, where, on arrival, he is opposed by the male relatives of the bride, the rival parties indulging in, at times, a severe struggle with sticks. If the bridegroom's party is defeated he must try again, and so on

up to three times. If he succeeds his party carries the bride to the bridegroom's home where she settles down. If he fails on the third attempt to capture the bride her parents arrange to bring her over and are given presents by the bridegroom.

A woman cannot own property (tools for tillage, cooking pots, clothes, personal ornaments and such like things are not deemed to be property in this connection). She can, however, hold property. With many tribes a married woman has certain cattle handed to her on the birth of a male child; any increase from such stock remains with her. The male children, on reaching maturity, have a claim on such cattle. Female children belonging to the same mother share in the milk produced by such cattle or receive milk from other cattle belonging to the father, but have no claim on any stock. Therefore a girl on being married takes no property to her husband. A widow goes to the eldest male survivor of her late husband, and any children she may have become his children. (The idea underlying this custom would seem to be to prevent the poverty of the widow and her children, particularly female children. The male survivor is required to assume responsibilities of the late husband; the successor would be the eldest son if of age.) A widow can, with the consent of the eldest male relative, remarry, but must leave her children.

Women do most of the work in the fields, but are amongst most tribes assisted by the men. She does all the cooking, the cutting and carrying of firewood, the carrying of water, the grinding of corn. Huts are usually built by the men.

Amongst all the tribes polygamy is practised, the number of wives being limited by the man's wealth. Each wife has her own hut.

Women have no direct voice in the affairs of native government; they have, however, in some things considerable influence with their husbands and sons. Most of them are very conservative and slow to advance with the times; there are, however, not wanting present day signs to show that a change is coming. Up to a year or two ago the women of Kavirondo were almost universally naked, to-day large numbers of them have taken to covering themselves.

NATIVE DEVELOPMENT.

I have already stated that we use the native authorities to look after their own people. We are doing what is possible to

educate the tribes to a system of developing their tribal lands and producing economic produce for export. The basis of all native development is industry. Industrious natives mean a prosperous country and also mean increased trade in the way of export of raw produce to Europe and the demand for manufactured articles in return. The following figures which deal with the Nyanza Province will serve to show you how we are progressing in this connection:—

1907, native raw produce exported, nil.
1912, „ „ „ over 17,000 tons.

During the same periods the revenue paid in by the natives of the Nyanza Province in the form of direct taxation reads as follows:

1907	£18,900
1912	72,100

I must allude to the good work being performed by many of the mission societies in the country. I am glad to say that between missionaries and ourselves there exists the most sympathetic understanding on the subject of native development and betterment.

Trade.

Trade in the country is growing yearly in importance. The raw products exported from East Africa consist principally of sesame, copra, ground nuts, various grains, hides, skins, cotton, wild rubber, coffee and fibres. The total exports in 1912 were valued at £333,000.

As regards the import trade, East Africa is, to a considerable extent, a distributing centre for Uganda and parts of German East Africa. The total imports are therefore not all consumed in East Africa; how the proportions work out I cannot say. The total imports during 1912 reached a value of £1,330,000, including cotton goods valued at £394,000.

Up to a few years ago the whole of the trade with the natives was conducted under a system of barter. To-day money in the shape of rupees and cents has taken its place practically everywhere.

THE UGANDA RAILWAY.

The line runs from Mombasa to Kisumu, its length is 583 miles; the time required for the journey is two days and two nights. The line ascends from nearly sea level to an altitude of

8,320 feet, and then descends to just under 4,000 feet at Kisumu, the terminus on Victoria Nyanza.

Kilindini, on the island of Mombasa, is the coast port, and here we have railway piers and sidings, large storage and custom's sheds, heavy cranes and very considerable bustle. We are now proposing to build a deep water pier so that ocean steamers can lie alongside the railway piers. At the terminus we have extensive piers and warehouses. The trains run alongside the steamers and passengers and luggage can be transferred in a few minutes from the train to the steamer. There are at present five fine steamers launched; four of these are passenger and cargo boats combined, each having superior accommodation, twin screws, electric light and other up-to-date conveniences. A few years ago native canoes provided the only means of crossing the lake; then came a small steamer, the "William Mackinnon"; then some sailing craft, and now these fine steamboats. There is also a well-equipped dockyard and a dry dock at this point.

The railway, which was run at a loss of £60,000 in 1903-4, realised a profit of £2,600 in 1904-5, and in 1911-12 a profit of £131,000. A great deal of this success is due to the development of Uganda, that part of German East Africa near the lake and the Nyanza Province.

The gross railway earnings include the earnings of the lake steamers. The total earnings of the railway and steamers in 1911-12 amounted to £360,000 and the expenditure to £229,000. The traffic from the lake during the last year necessitated the ordering from home of additional trucks and engines which are being supplied as quickly as possible.

A branch line has been constructed by the Magadi Soda Company from Magadi Junction (281 miles on the Uganda Railway) to Soda Lake, nearly one hundred miles west of the main line. Very shortly large quantities of soda will be exported from East Africa. A branch line is also being pushed out from Nairobi towards Kenya. Other branch lines are contemplated.

There are signs of progress in most parts of the country. With these remarks I bring this address to a close.

THE BALKANS AND TURKEY.

By C. H. BELLAMY, F.R.G.S.

(Addressed to the Society in the Geographical Hall on Tuesday,
March 11th, 1913.)

AMONGST the many romantic pages of European history there are certainly none more romantic nor more interesting than those recording the histories of the Balkan States, either as independent kingdoms and empires, or in subjugation to their once all-potent lord, the Sultan of Turkey; or in their revolt from his domination, and their gradual assumption of independence, national wealth, and the advantages and blessings of modern progress.

The pity of it all is that this advance in material prosperity should have been checked by the terrible war which has been raging for the last few months, and which, when I was in these countries in July 1912, was threatened, but no one, so far as I could gather, really expected would ever take place.

Fortunately for the Balkan States, their countries have not been the theatre of the war, as they attacked the Turk in his own country, but the immense amount of treasure expended, the thousands of valuable lives lost, will no doubt check their progress and cripple their resources for many years to come.

The Balkan Peninsula has been in modern times what the Low Countries were in the Middle Ages—the cockpit of Europe. It is there that the eternal Eastern question had its origin; it is there, too, that the West and the East, the Cross and the Crescent, meet. But to understand the great problems which still await solution in South-eastern Europe, and are once more pressing themselves upon the attention of all thoughtful men, it is important to have some knowledge of Balkan history. The mutual jealousies of Bulgaria and Serbia, the struggle of various races for supremacy in Macedonia, the alternate friendship and enmity of the Russian and the Turk, are all facts which have their root deep down in the past annals of the Balkan States. Few persons in Western Europe seem to remember what has never been forgotten in the Peninsula,—and this is forced upon you over and over again as you visit their towns—that there was a time when the Servian and Bulgarian Empires were great Powers, and their respective

rulers governed with the proud title of Czar a vast realm, which is still the dream of ardent patriots. Bearing this in mind, we shall the better understand many things we shall see.

The Bulgarian Empire of nine hundred and a thousand years ago, under the Czars Simeon and Samuel, ran from Mesembria, on the shore of the Black Sea, to Mount Rhodope, and then right across the Peninsula from Mount Olympus to the Albanian coast opposite Corfu. With the exception of a few ports, all Albania was Bulgarian, as was also nearly the whole of the present kingdom of Servia. Before the Magyar invasion, Czar Simeon seems to have included part of Roumania in his dominions, and it is possible that portions of Hungary and Transylvania owed his sway. Bulgaria, under his auspices, was—what she has never been again, but what she still aspires to be—the dominant state of the Balkan Peninsula.

Then, like a page of romance, we learn how this mighty empire crumbled away before the assaults of its enemies, and came under the power of the Greek Emperors; and how, one hundred and sixty-eight years later, Bulgaria was delivered by John Asên, who founded and consolidated the second Bulgarian Empire, of almost equal territorial importance to the first.

After the lapse of two centuries this empire fell, and the nation came under the domination of the Turks for nearly five hundred years. In the early part of the nineteenth century the revival of the spirit of independence began. One result of the Turco-Russian War was the constitution of the principality of Bulgaria, and the autonomous province of Eastern Roumelia, and the election by the National Assembly at Tirnova in 1879 of Prince Alexander of Battenberg as their first Prince.

Nor does the history of Servia lack its romance. Out of a loose federation of chiefs the Servian monarchy was gradually developed, its golden age beginning with the accession of Stephen Dusan in 1336. Never has the power of Servia been so great or the Servian dominions so vast as under the sway of this mighty ruler, who raised his country to the rank of an empire, equipped it with a complete code of laws, and made it respected all over Eastern Europe. Under the weak rule of his son his empire slowly melted away, and in the struggle with the Turks the Servians were vanquished at the famous battle of Kossovo, on June 15, 1389, a battle which for five centuries decided the fate of the Balkan Peninsula.

In the first quarter of the last century Servia began to feel



C. H. B.

Fig. 1. Sinaia. The King's Palace.



C. H. B.

Fig. 2. Sinaia. The Greek Church.

after her lost independence, and in 1817 Milosh Obrenovic was elected Prince of Servia, which dignity lasted in his family until it was exchanged in 1882 for the title of King.

Nor are the histories of the other Balkan States wanting in romance and interest. Roumania, the name adopted at the union of the two principalities of Wallachia and Moldavia, has been subject to Hungary and Poland, to Austria and Russia, as well as Turkey; and only emerged from the supremacy of this latter Power in 1859, the coping-stone of Roumanian independence being set by the proclamation, on March 26, 1881, of Prince Charles as King of Roumania.

Montenegro was an independent State in the fourteenth century, from which time to the nineteenth, its history has been a record of battles and raids against its neighbours, and at a time when the whole of south-eastern Europe, to the very gates of Vienna was trembling before the Turks, the Montenegrins managed to vindicate and maintain their independence. A new era began with the reign of Peter II, from 1830-51, and the present ruler, now a King, waged successful wars against the Turks, and by the Treaty of Berlin in 1878, obtained full recognition of his sovereignty.

Mediæval and modern Greece affords the student of history one of the most remarkable romances he can desire. The great Byzantine Empire dwindled away, especially under the inrush of the Ottomans, and in the later middle ages she became subject to the Venetians and other foreign rulers, eventually seeming to lose all national character and spirit under the Turkish subjection. Byron's scathing lines fitly express this condition:—

“ 'Tis Greece, but living Greece no more!
So coldly sweet, so deadly fair,
We start, for soul is wanting there.”

But her national soul woke in the War of Independence in 1821, and success followed the uprising. King Otho was elected in 1832, and henceforth Greece has existed as a recognised independent kingdom.

About the Turks I need not say much. When they came to Europe they were a great people—a great military people. In manners and customs they were probably not more cruel or barbarous than the peoples they conquered; in the middle ages everywhere folk were cruel beyond belief. In point of

power and organisation and military skill, however, they were greatly superior, and they were led by Sultans who, in many cases, had a genius for generalship. But beyond conquest they had no ideas. They camped on vanquished territory, and forced the people to feed them, and this policy they have pursued right to our time.

I entered the Balkan Peninsula by way of Roumania, coming from Budapest by the northern route via Arad and Brasso, crossing the Eastern Carpathians by the Tomos Pass, 3,330 feet high. My first stop was at Sinaia, where is the King's summer residence in the mountains. It is a little paradise, and the Roumanian aristocracy fly here in the summer to their charming villas in order to escape the heat of the capital. The King's chateau, a building in a mixture of styles, is on an eminence, a good height from the road, but not enclosed by hedges, fences, or railings, so I wandered up the height right to the doors, and all around the grounds, without the slightest let or hindrance. King Charles is greatly honoured by his subjects, and his popular consort "Carmen Sylva," is adored by the people. In the town is the Greek Church and Monastery, the service at the former, with its hidden choir and no instrumental music, giving me one of those thrills that I had experienced at similar services of the Greek Church in Russia. Peculiarities in costume were very noticeable. All the drivers of carriages have a long robe of dark velvet, with a belt of a bright colour, or some gorgeous and fearful thing of mystic design. The workmen and peasants wear their shirts outside their trousers, or perhaps it is a second shirt or smock, coming down to the knees, and pleated.

The railway ride from Sinaia to Bucharest, the capital, revealed some of the natural riches of the country. We passed a number of extensive salt works and innumerable oil tank waggons; even the locomotive of our train was driven by oil, so we were quite prepared to find an important city, Bucharest having over 300,000 inhabitants, with many fine public buildings. It is one of the gayest capitals that I know, and in proportion to its size rivals Vienna and Paris in animation, for at midnight it is as lively and gay in the centre of the city as at midday, and some of the cafés never close, day or night.

The city is divided into two unequal portions by the dirty river Dimbovitza, which is crossed by fifteen bridges, one side being the modern and the other the old town. In this latter are



C. H. B.

Fig. 3. Constanza. Statue of Ovid



C. H. B.

Fig. 5. Broussa. The Tower of the Citadel.



found the Arsenal, Barracks, Law Courts, the Parliament House, and several interesting old churches, especially the Metropolitan Church. It was built in 1656, and its interior is adorned in the lavish manner peculiar to churches of the Greek faith, the precious stones in the ikons being reputed to be worth many thousands of pounds; but the city's finest church is the Domnitza Balasha, in the new town, recently erected in the true Byzantine style.

Bucharest claims that she has got the finest Post Office in the world, and there is some foundation for her claim. Her streets are being widened and embellished on every hand. The railway system of the country is being reorganised, no expense is being spared, the immense bridge over the Danube being a remarkable engineering achievement. She is exploiting her vast stores of natural oil, and if she has given concessions to foreign companies, they are hedged round with restrictions for the benefit of the country. But, as in many another new country, corruption and bribery are rampant in official circles; the taxes are very onerous, and press heavily upon all classes. However, under the enlightened sway of King Carol, Roumania is working out her own redemption, and, with her immense natural resources of oil and magnificent steppes for the cultivation of corn, maize, etc., will undoubtedly occupy a leading place in the Balkan States.

As I travelled down to the coast I saw how well the fertile country is cultivated, and at Constanza are the largest and most substantial grain elevators I have ever seen—larger even than the Canadian ones. Constanza, besides being a busy Black Sea port, formerly known as Kustendje, is a pretty watering-place, which, with its casino, revived memories of Ostend and Monte Carlo. In the centre of the town is a bronze monument to Ovid, as this is practically the site of the ancient Tomis, the place of his banishment and death.

Here we embarked on a splendid Roumanian Government mail steamer for Constantinople, leaving at nearly midnight. Next morning, soon after breakfast, we had traversed the so-called Black Sea, and were nearing the entrance to the Bosphorus.

The sail down this narrow strait, dividing Europe from Asia, is of enchanting interest, not only on account of the teeming recollections of past events, which have helped to make the world's history, some of them sometimes tinged with mytho-

logical and legendary garnishings, but also because of the seductive beauty of the landscape. The sentinel lighthouses, Anaduli and Rumili, guarding the entrance, with their reminiscences of Jason and his Argonauts; the two Genoese fortresses, with their moles, from which a chain was stretched across the narrow strait in times of necessity; the famous Gulf of Buyukderé; Therapia, the summer residences of the Ambassadors; the Giant's Mountain; the Castles of Europe and of Asia; the place where Darius crossed on a bridge of boats with his army of 700,000 Persians; "The Sweet Waters of Asia," so well known to readers of Pierre Loti's charming romance of "Désenchantées"; the modern palaces of Charagan, Yildiz Kiosk, Dolma Baghtcheh, and Beylerby, all these and other intensely interesting sights, lead up to the point where right ahead was Stamboul, with domes and minarets standing out against the sky, stretched on her broad hills, upon each of which rises a gigantic mosque with leaden domes and golden pinnacles,—Saint Sophia, white and rose-coloured; Sultan Ahmed, flanked by six minarets; Suleiman the Great, crowned with ten domes; Sultana Valide, mirrored in the waters of the Golden Horn; the mosque of Mahomet the Conqueror; and the conspicuous mosque of Selim; whilst houses and other buildings reached down to the water's edge in what appeared to be inextricable confusion, ending with Seraglio Point. On the left is Scutari, extending her amphitheatre of hills, covered with gardens and villas; and so the legendary fairy-like scene gradually increases in splendour till we reach the crowning apotheosis at the moment when the Sea of Marmora opens out before us, and we see the *tout ensemble* of Constantinople. Great and magnificent city, the dream of my boyhood, the aspiration of my youth, indelible memory of my life!

Surely in no other way should the traveller approach this classic site, even the approach by the Sea of Marmora is not so interesting; but to enter the city by the railway, the greater part of which is in a cutting, and then to detrain in a very ordinary railway station, to emerge in an evil-smelling quarter, is to lose all that is beautiful, and is enough to destroy all the glamour of a visit.

Constantinople teems with curiosities, which are so well known that I need only mention a few in passing. The Galata Tower, which is in Galata, the business portion of the city, is nearly six hundred years old, and is now used as a watch-tower



C. H. B.

Fig. 4. Mudania. Water-seller on the Station.



C. H. B.

Fig. 6. Broussa. Entrance to the Green Mosque.

for the firemen. Galata Bridge, connecting with Stamboul on the other side of the Golden Horn, the microcosm of the Orient. The Hippodrome, which in the golden days of the great Byzantine Empire was "the axis round which the Byzantine world revolved." Here emperors were proclaimed, and victorious generals celebrated their triumphs; here criminals were executed and heretics burned; here wild animals were exhibited and athletic sports held. The Egyptian obelisk came from Heliopolis, and was placed here by Theodosius the Great; the Serpent Column brought by Constantine from Delphi, and the obelisk of masonry of unknown constitution add to the interest of this famous square. Then there is Stamboul, with its wealth of mosques, and I can only speak of one—that of St. Sophia, with an interior which has a stupefying effect on the visitor as he enters, with its enormous vault, a bold architecture of semi-domes, measureless pilasters, gigantic arches, colossal columns, galleries, tribunes and porticoes, upon all of which a flood of light descends from a thousand windows. Knowing well all the great cathedrals of the world, I am bound to place it first in respect to its majesty and stupendous effect.

One of the ceremonies to be seen in Constantinople is that of the Sultan going to Selamlik, as his going publicly to pray is called. This is every Friday at about noon, this being the Moslem Sabbath. I was fortunately stationed so near to where the carriage of His Majesty stopped, that I was able to take snapshots of him. The Dancing and Howling Dervishes must be seen, as well as the Turkish Priests and Softas.

Pera is the modern or European quarter of the city, and a complete contrast to Stamboul. It is a small edition of Paris, full of shops and better-class residences. All the Embassies are here.

Scutari is the fourth division of the city, and is on the Asiatic shore. Being on the same continent as the holy cities of Mecca and Medina, it is considered to be holy ground, and so all pious Turks wish to be buried here if they can afford the expense, the result being an immense cemetery, three miles long. But to English people its chief interest is the English Cemetery, where so many of the soldiers who died during the Crimean war lie buried, and behind which is the hospital where Florence Nightingale ministered.

Also on the Asiatic shore, I visited Mudania, a fairly prosperous seaport, and took train for Broussa, the old capital of

the Ottoman Empire, at the foot of Mount Olympus, that giant of the Bithynian Mountains. The town is one of the most oriental that I have ever visited. Modernity has not yet reached it; this makes it one of the most interesting places in all Turkey, and at the same time it is one of the most beautiful. In the period of its wonderful prosperity and at the zenith of its glory, it became the resort of the then world of literature, art and fame. Soldiers of fortune, artists, poets, historians, holy men, and dervishes thronged to it from Persia, Khorassan, and the far-distant Bokhara; mosques, colleges and other public buildings arose, and a palace upon the size and grandeur of which Osmanli historians love to dwell, was erected. Earthquakes, fires and wars have done much to destroy this glory, but even to-day the number of mosques is so great that it is playfully said that there is one for each day of the year, and that the pious Moslem need never enter the same mosque twice in the same year. Beside the mosques there are the tombs of several Sultans, some of which are perhaps more remarkable than the mosques. The Green Mosque alone is worth going a pilgrimage to see, for it is one of the most perfect specimens of Mussulman art, in which are seen the blending of the Arabic and Persian styles. Its principal entrance reminded me of the Moorish work at the Alhambra, in its marvellous hanging honeycomb carved work and its arabesques. In the Great Mosque, in the centre of the great dome is an opening, through which rain and snow may enter, and below is a fountain or tank, the latter having goldfish in it. I must not omit to mention the Citadel, from the top of whose rocky escarpment may be seen the whole of the city, a strange picture to Western eyes, with its domes and minarets, the background being the long range of mountains, with the giant peak of Olympus still exposing patches of snow in July.

Leaving Constantinople by rail, we soon passed San Stefano, where the Treaty was signed at the conclusion of the Russo-Turkish War of 1878, then crossed the Lines of Tchatalja, where so much fighting took place during the late war; then passed Lule Burgas, where the Turks were so badly defeated, and after a nine hours' journey arrived at Adrianople. The railway station is at Karagatch, two miles away from the town, on the way to which I crossed the Rivers Maritza and Tundja, the former being a very important river in Turkey and Roumelia. The town is very well protected by forts on the hills



C. H. B.

Fig. 7. Sofia. Private Residences.



C. H. B.

Fig. 8. Sofia. Statue of Czar Liberator.

all round, as becomes a city near the frontier of the country. Amongst its numerous mosques that of Selim II is the most noteworthy, the dome being one metre higher than that of St. Sophia at Constantinople. The city takes its name from the Emperor Adrian, who founded it A.D. 117—136.

At the next station of importance we quitted Turkish territory, and entered Eastern Roumelia, making a stop at Philippopolis, its capital, a town of about 45,000 inhabitants, on the River Maritza. There are not many buildings of interest beyond the old mosque, its churches and military club; but its chief interest lies in the fact of its having been the scene of the revolution which separated it and Bulgaria from Turkey in 1885.

Here we had one of those experiences that all travellers in the heart of the Balkans must expect, unless they are polyglots. It is said that there is only one hotel where a meal in the European sense of the word can be obtained, and we set out to find it. But from one end of the town to the other we absolutely failed to find a single sign in Roman characters. So whilst the name of the hotel was affixed to it, yet it was in those barbaric characters that only an Oxford pundit—or his equivalent—can read. Then we hit upon the happy idea of showing the natives the name of the hotel in our guide book, but if their characters were Greek to us, ours were also Greek to them, and not even the intelligent policeman could read them. Eventually we got there, and perhaps enjoyed our lunch all the more for the hunt we had had after it.

The Bulgars are a fine race of men, especially the hearty young countrymen in homespun garments and hide sandals, all well clad; clean-limbed, upstanding young fellows of eleven or twelve stone, with healthy, smiling faces. The peasant people own the land which they till so carefully. Even amongst the poorest in the villages it is the exception to find a man who is not a landowner.

Bulgaria is one of the greatest rose gardens of the world. Few parts of Europe have been so often laid waste; in few has the ground been so plentifully drenched with blood, century after century. In none, perhaps, have so many different races fought for the mastery. But when the warlike storm has spent its force fresh roses spring up, filling the land with fragrance and bringing a rich material reward to its children. Some of

these rose gardens are sixty miles long, and from them the world gets its principal supply of attar of roses. We are told that the damask roses, one hundred thousand of which give only one ounce of attar, must be picked before the sun shines on them else they withhold half their fragrance. A pound of the oil fetches from £15 to £18.

Sofia, the capital of Bulgaria, is one of the cleanest cities in Europe. All the principal streets are paved with tiles, the shape and size of a brick, and they appear to stand the traffic admirably, and all of these streets have electrical trams running through them. At the time of my visit there was quite a mania for building and re-building, the climax being a magnificent new cathedral, which, after six years' work, was nearly completed. Sofia is the only town in the country of over 50,000 inhabitants. In 1887 it was estimated to have a population of about 20,000, whilst to-day (that is, before the war) its inhabitants number about 100,000; and in these twenty-five years it has been completely metamorphosed, the same quarter of a century having entirely changed the country. Then, there were no railways in Bulgaria proper—only some two hundred miles of line, constructed under the auspices of the Turkish Government, were open to traffic in Eastern Roumelia—now, Bulgaria possesses some twelve hundred miles of railways, besides nearly two hundred under construction.

I was fortunate in seeing the people dressed in holiday attire, and was struck with the great diversity of costumes to be seen. Here was a peasant in his skeep-skin coat, his baggy trousers, and his gaiters of strips of cloth; then comes a young Sofian exquisite, who might have been imported direct from Bond Street or Paris. During a service in the old cathedral I saw the ladies in Parisian or Viennese costumes elbowed by peasant women who had come in from the country all dressed in their Sunday costumes—the yellow or white handkerchief on the head, the short goat's hair coat, the white skirt, embroidered with black, the heavy silver chains and clasps, the brilliantly-coloured knitted stockings, showing some way above the ankle, and then the pointed Balkan shoes, like a man's. Out of curiosity I counted the plaits in which one girl's hair was braided and hanging down her back, and found there were twenty, and entwined into the plaits were a quantity of coins, besides which she had a number of coins and medals stitched



C. H. B.

Fig. 9. Sofia. Entrance to the Palace Grounds.



C. H. B.

Fig. 10. Sofia. The New Cathedral.

into the plastron on her breast. All were dark and swarthy, and seemed to be exceedingly devout in the performance of their religious duties, but I doubted whether any real religious life penetrated below the surface.

Leaving Bulgaria and entering Servia, Nisch is the first large town we stop at,—an important centre on the railway system, as here is the junction for Uskub and Salonica,—and once the capital of the country. It is defended by several forts and a citadel, and is noted as having been the birthplace of Constantine the Great.

Right across the country, a hundred and thirty miles away, is Belgrade, the present capital, its Servian name signifying “White Town.” It is quite on the frontier line of the country, being bounded by the Rivers Save and Danube, and, despite the blue colour given to the Danube by a well-known song, I found that here its waters are yellow, whilst those of the Save are blue, and they flow along side by side for some distance without mixing. The opposite shores of these rivers are Hungarian. From the old Citadel, which is full of historical associations, we had a splendid view of the city, and also the confluence of the two rivers.

The city is being gradually transformed; it has some fine streets of shops, a cathedral, a statue of Prince Michel—the great emancipator of the Servian nation from the Turkish domination, a rather mean Parliament House, called the Skouptshina (a modern building being in course of erection), and a royal Palace; but the most interesting spot to me was the site of the old Palace, where King Alexander and Queen Draga were so barbarously butchered some half-dozen years ago, to the eternal disgrace of the present King Peter and his party. I made a pilgrimage to the spot where, a few hours after their assassination, they were buried like dogs, and the only memorial of them is a withered wreath, which I was told only cost six francs when new! *Sic transit gloria mundi!*

What the future may have in store for these valiant Balkan States is difficult to predict, but certain it is that the tide has turned, and they have now got the Turk under their heel. Whether or not they are destined to be the means of driving him out of Europe, they will now have the opportunity of showing that they can govern the greater part of his territory in Europe in a more righteous and humane manner than his.

That they will do so, my observations during my journey lead me to believe is a certainty, although my reading of history shows that neither side have been without faults in the past, and even the present war, avowedly undertaken to uproot Turkish oppression and misrule, has apparently degenerated into a war of conquest.

The illustrations are from photographs taken by the writer.



C.H.B.

Fig. 11. Belgrade. The King's Palace.



C.H.B.

Fig. 12. Belgrade. Statue of Prince Michel.

HIGHWAYS AND BYWAYS IN THE BALKANS.

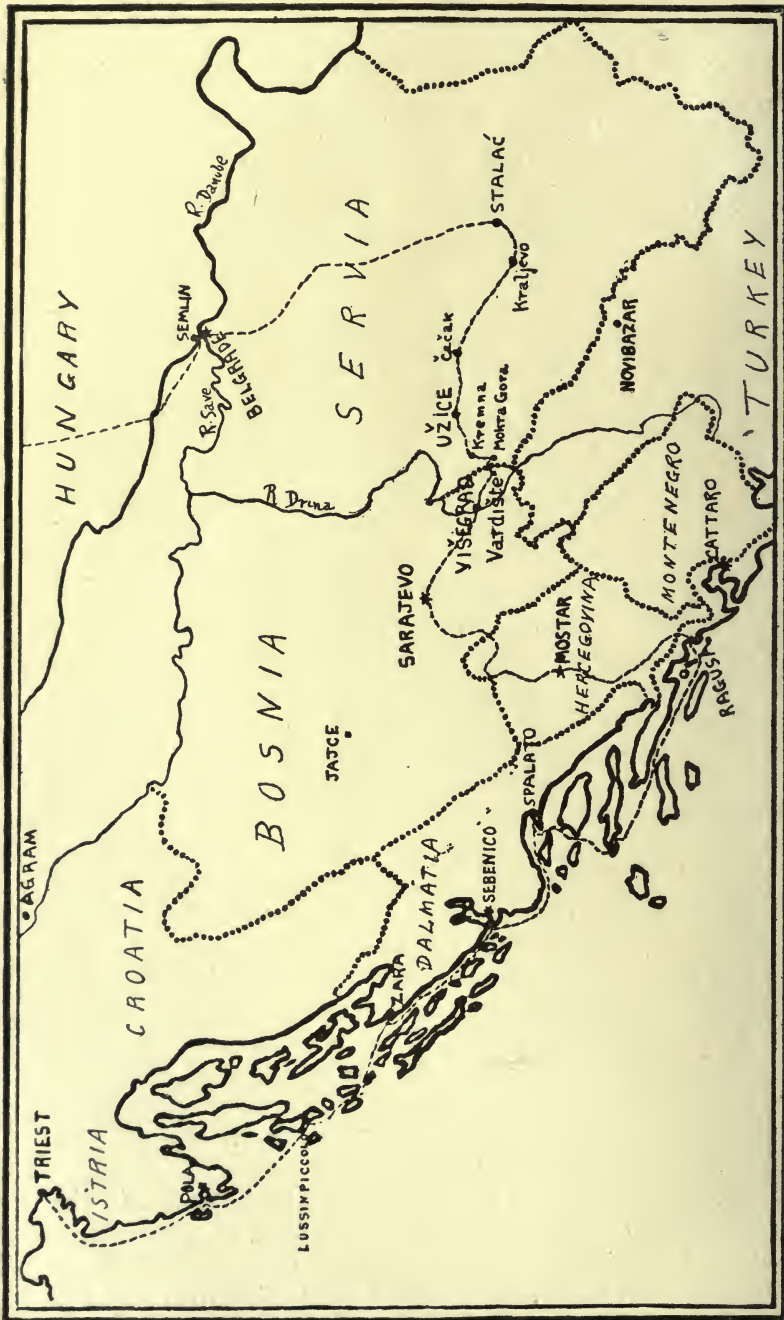
By GILBERT WATERHOUSE, F.R.G.S.,
English Lecturer in the University of Leipzig.

(Addressed to the Society in the Geographical Hall on
Tuesday, March 4th, 1913.)

I.

A JOURNEY to the Balkan States usually implies to the ordinary traveller a monotonous ride in the Orient Express via Vienna and Budapest to Belgrade and Sofia, with perhaps—if he be more than usually enterprising—a return journey via Constantza and Bucharest. This may be called entry in state by the front door. The tourist who wishes to come into real contact with the people—and, incidentally, obtain better value for his money—will do well to try one of the numerous “backdoors” and travel third class on the railway. This involves of course a certain amount of discomfort, though much can be done with an air-cushion and patience. Of course a knowledge of at least two languages, German and Serbo-Croatian, is a *sine qua non*. Servian and Croatian are two names for what is practically the same thing, though the Servians, being members of the Greek Orthodox Church, use the Cyrillic characters, whereas the Croatians are Roman Catholics and use the ordinary Latin type. German, or better Italian, will carry one right down the Adriatic coast from Triest to Cattaro, the usual port of entry for Montenegro and Albania. In Bosnia and Hercegovina German is generally understood, except by the peasants, who speak as a rule Croatian only. In Belgrade one can manage with German and French, less easily with English. For the country districts and provincial towns of Servia away from the main line of railway a knowledge of the native tongue is indispensable. This is not a very terrible matter, as the present writer learnt sufficient in two months, working two or three hours a week, to carry him from Sarajevo to Belgrade.

I left Leipzig on July 31st, 1912, by the 1-20 a.m. in the through carriage for Triest, and by seven had crossed the Danube and was drinking a welcome cup of coffee in historic Regensburg. At Landshut we left the Munich line, and the country grew more and more interesting, until finally the



The thin dotted line shows the route of the lecturer.

G. Waterhouse.

Tyrolese Alps came into view at Freilassing, whence a short run took us across the Austrian frontier to lovely Salzburg, with its castled rock rising proudly from the plain and the snow-clad peaks behind. Then the train entered the rugged valley of the Bruck and climbed in painful spirals to Bad Gastein. Higher still and higher we crawled, amidst scenery of a grandeur that baffles description, until we reached the summit of the Tauern. Then down we thundered along the foaming Drave to Villach. Beyond Villach the line left Carinthia and entered Carniola, passing through Veldes, one of the most romantic spots in Europe, but as yet quite unknown to English tourists. The eye had just time to take in a lake, an island in the lake, a chapel on the island, a castle, and the sun-kissed Karawanken, before the train entered the side of the mighty Triglav and left the scene behind. Up we crawled to the Julian Alps, and down we flew into the vale of Isonzo. Beyond the picturesque old town of Görz, which stands on the bluest of blue rivers, appeared the forbidding mass of the Karst, a stony mountain range on which scarcely a blade of grass will grow. For over an hour we pounded slowly uphill through a land of stones and stunted bushes until we reached Opchina, the last halt. From here there was a glorious view of the Gulf of Triest, with the city lights twinkling brightly far below.

Twenty minutes later I was picking my way along the dusty, evil-smelling quay to the Piazza Grande. The Hotel Delorme, where I had intended to spend the night, was deserted and closed, so I installed myself at the Hotel Volpich close by.

Early next morning I boarded the Austrian Lloyd steamer *Baron Gautsch* at the Molo San Carlo. She is one of two large turbine vessels that maintain the tri-weekly service between Triest and Cattaro. They were both built in England. I emphasize this fact because they were the only articles of British manufacture that I did see throughout the whole of my journey, with the single exception of the old suspension bridge at Budapest. I am told that neither the *Baron Gautsch* nor her sister ship, the *Prinz Hohenlohe*, gave complete satisfaction to the Austrian Lloyd (presumably owing to faulty specifications), and both had to be partly rebuilt to adapt them to the requirements of the service.

Apparently there was nothing wrong with the engines of the *Baron Gautsch*, for we were soon moving at a good speed across

the Gulf of Triest and down the rocky coast of Istria. This portion of the voyage is about the only place on the Austrian side of the Adriatic where it can be really rough, for beyond the island of Lussin the vessel enters the land-locked waters of the Dalmatian Archipelago, which it never leaves, except for an hour or so round the Punta Planka, until Gravosa is reached. The whole coast is barren, and, with a few intervals, monotonous. It is said that in former days dense forests extended right down to the sea, but the Venetians, who established their rule from Triest to Montenegro, cut down all the trees to build their houses and ships. Then the rain washed the soil into the sea until only the bare rock was left and nothing more could grow. In many places low stone walls have been built across the hill-sides to hold back the soil and attempts made to grow vines and olives. The phylloxera has wrought havoc with the former, and I am told the imported American vines do not thrive very well in the shallow soil. A quantity of very tolerable red wine is produced, notwithstanding.

Our first stop after leaving Triest, was Pola, the first of the wonderful natural harbours with which the Adriatic coast is so richly endowed. The entrance is strongly fortified and the inner harbour has two basins, one for commerce and the other for warships. Across the entrance a stone mole, designed to repel the attacks of submarines and about three-quarters of a mile long, is in course of construction. There is a big naval workshop, with an enormous cantilever crane, visible from the sea, and three floating docks. Photography was out of the question here. Indeed, I had been requested to leave my camera in charge of the steward and was unable to make use of it until I landed at Zara in the evening.

There was a large crowd on the quay to see us in, and the arrival of our sister ship, the *Hohenlohe*, from the other direction, added to the noise and bustle. The vivid colours worn by the Italian women and a sprinkling of picturesque Slavonic costumes made a pretty picture. The inhabitants of the coast towns of Istria and Dalmatia, as far south as Zara at least, are practically Italians, though their blood is probably as mongrel as the dialect they speak. However, the near future will see the substitution of Croatian for Italian as the principal language of Dalmatia, owing to the encouragement of the former and neglect of the latter language in the schools.

As the *Baron Gautsch* stopped for three-quarters of an hour in Pola, I had time to go ashore for a meal, which I obtained in a plain, barn-like restaurant about a hundred yards from the quay. It was crude but satisfying, and cost less than a crown and a half ($1\frac{1}{3}$) including beer, about one-third the price of the luncheon on board the steamer.

In addition to being the principal naval station of Austria-Hungary, Pola has much to interest the antiquarian. It was originally a Roman colony, founded a generation before our era, and was honoured more than once with the residence of different Roman emperors within its walls. The principal remains are the great amphitheatre (198—211), the Temple of Augustus (8 A.D.), and the Triumphal Arch of the Sergii (erected soon after the battle of Actium, 31 B.C.), all of which are in an excellent state of preservation.

Leaving Pola we soon left the Cap Promontore, the most southerly point of Istria, behind and entered the Quarnero, an expanse of open sea which can become decidedly unpleasant when the erratic *Bora* blows. Gradually the first islands came into view, Unie, Cherso, and Lussin, and shortly after three o'clock we were lying in the sheltered and commodious harbour of Lussinpiccolo.

What surprised me in most of these harbours on the Adriatic coast was the depth of water and the nearness of the landing-stage to the centre of the town. Only in Spalato had I to walk any distance to and from the steamer. Here in Lussinpiccolo the *Baron Gautsch* lay moored on one side of the street, so that from the deck I could see into the houses on the other side. As in Pola, the arrival of the boat seemed to be the great event of the day, and the town woke up from its afternoon nap to see us in, and by the time we were berthed the quay was thronged with elegant idlers, perspiring travellers, importunate hawkers, and noisy luggage-porters.

Lussinpiccolo rises gently from the sea, and the slopes are dotted with trim gardens of sub-tropical plants. I believe figs and dates, agaves and eucalyptus, as well as oranges and lemons flourish here, but had no time to go ashore and investigate. The island is only about half a mile wide at this point, so the houses on the crest of the hill have a sea-view on both sides. Thanks to its sheltered situation and mild climate, Lussinpiccolo enjoys great favour as a winter resort. Somewhat similar, but quieter, is Lussingrande, about two miles away on the eastern side of

the island, which is about twenty miles long, but nowhere more than three miles wide. The name Lussingrande is misleading, as Lussinpiccolo is now four times as large.

Another run of about three hours between islands of no particular importance, brought me to Zara, the capital of Dalmatia. The only feature of interest in the landscape was the Velebit, a curious range of barren mountains on the Croatian mainland. Running parallel with the coast for about sixty miles it forms a spur of the Dinaric Alps and consists of a series of rugged peaks, which resemble the teeth of a saw. The average height is between five and six thousand feet. They become more distinct towards Zara, but beyond that point recede again towards the Bosnian frontier.

Zara is picturesquely situated with the sea on three sides. The Riva Nuova forms a pleasant promenade about half a mile long, and has a stone pier for ships, most of which, however, still seem to use the old harbour behind the town. As we sailed up to the quay I noticed one of the hotels mentioned in my guide-book, and determined to make my way to it. There is really only one first-class hotel in Zara—the Bristol, on the Riva Nuova—but I had made up my mind to be economical and “rough it” if necessary, as by always putting up at the best hotels one misses a good deal of the local colour. But I had reckoned without the local odour. This is an offensive and penetrating compound of hot air, kitchen smells, stale food, putrefying street refuse and deplorable sanitation. I had met it before in Prague, where a glass of water means cholera or typhoid, and have since learned to regard it as peculiar to Slavonic countries.

It took me some time to push my way through the crowd of shrieking, gesticulating villains who wanted to relieve me of my luggage. As I carried all my belongings on my shoulders in two capacious rucksacks, I had no need to spend a penny on luggage porters from start to finish of my two thousand mile journey. Opposite the landing-stage is the Porta Marina, the principal entrance to the city from this side. Thinking to take a short cut I ascended some steps and found myself on the old fortifications, now a pleasant promenade. After making a considerable circuit I discovered the entrance to the Hotel de Ville in a wretched alley dignified with the name of Via San Demetrio. The proprietor and his satellites at once swooped down on me and hustled me through the evil-smelling ground-

floor premises up a horribly dark and creaky staircase. However, I obtained a tolerably clean and bright room with a pleasant outlook over the old harbour for 2K. 40, *i.e.* two shillings.

The position of the peninsula of Zara with regard to the mainland is precisely that of the right thumb with regard to the rest of the hand. Between the thumb and forefinger lies the old harbour, entered from the north, while the Riva Nuova represents the nail-side of the thumb. The town was formerly fortified, but the old wall has been entirely demolished along the sea-front and turned into a promenade on the other three sides. I found the walk round the north end very pleasant, though short—in fact, one could walk right round the town in about twenty minutes.

There are only three things to do in Zara. In the morning it is interesting to visit the daily market held on the Piazza dell' Erbe, in the afternoon it pays to doze in the coolest possible place, and in the evening everybody who is anybody strolls up and down the Riva or sits at a dirty table in the only café and watches the rest stroll up and down. While I was there an orchestra of three performers was doing its worst.

The Riva Nuova is rather imposing, as it possesses the only row of tolerably clean-looking buildings in the town. Behind this screen is one of the most appalling collections of dark entries and filthy hovels in Europe, though parts of Spalato run it very close. Few of the streets are even four yards wide, the majority, I should think, considerably less. I always had the impression while in Zara that I had taken the wrong turning and was somewhere on the back-premises, but should presently reach the street. Many of the buildings are historically and architecturally interesting. The old church of S. Donato dates from the beginning of the ninth century, when Zara and the adjacent country were under Byzantine rule. The foundations are Roman, and likewise much of the material utilised in the construction. Close by stands the Cathedral of S. Anastasia, one of the most noteworthy ecclesiastical buildings of Dalmatia. The campanile was completed in 1893 from the plans of Sir T. G. Jackson. Of the existing city gates the finest is the Porta Terra Ferma on the land-side. It is the work of Sanmichele, and the great lion of St. Mark over the archway reminds us that Zara was once subject to Venice. The language of the inhabitants is still Italian, and German

is not always understood. The country people speak Croatian. It seems probable that Italian will eventually yield to the combined attacks of German and Croatian and disappear from the Dalmatian coast.

Zara being the capital, and therefore crammed with officers and government clerks, aspires to be fashionable. I found it intensely amusing to sit in the café on the Riva and watch most elegantly appparelled ladies walk through the ruts and dust of the quay with the utmost indifference. They seem to spend most of the day somewhere indoors. I say *somewhere*, for the houses that come up to a Western European standard of decency would not total a score.

The principal attraction of Zara is decidedly the market, held every morning on the Piazza dell' Erbe. When I looked out of my window about six a.m., I could see a stream of peasants disembarking from the rude sailing vessels in which they had come over from the neighbouring islands. A sleepy gendarme examined their baskets and parcels before allowing them to pass through the gate, so I presume a local duty is levied on certain articles. The men wore as a rule handsome waistcoats and curious little round, red caps, barely covering the crown of the head. I never could understand why they did not fall off at the slightest movement, unless the natural grease of the hair kept them on. The accompanying photograph gives a fairly good idea of the costumes worn by the women, though the vivid colours must be left to the imagination (see Fig. 1). Like the men they wear rough sheepskin sandals and a kind of coarse woollen gaiter. The skirt is of dark material, but a brightly coloured apron is often worn as well. The bodice is usually a dazzling white with wide, embroidered sleeves. The most beautiful part of the dress is the head-cloth or scarf. These vary in quality, the better ones being richly embroidered in colours. They are usually on sale in the market or the adjoining streets, and the best can be had for five or six crowns (4-5 shillings). Thinking I might do even better further down the coast, I did not buy, and have regretted it ever since. Two days later, in Spalato, I was asked thirty crowns for a scarf which would have cost me five in the market at Zara.

I left Zara about midday in the *Danubio*, of the Consortium Dalmatia line. She was neither so large nor so speedy as the *Baron Gautsch*, but far more free and easy, the passengers



G.W.

Fig. 1. Market, Zara.



G.W.

Fig. 2. Wall of Diocletian's Palace, Spalato.

numbering barely a score, and the absence of turbine-vibration added greatly to the pleasure of the voyage. It was a lovely day and the sea as calm as a pond. Indeed, it can scarcely be anything else here owing to the innumerable islands which protect the channel almost the whole way. The coast was much the same as the part I have already described—barren headlands, with here and there a few vines and olive-trees. Further inland, I believe, the cherry is much cultivated for the preparation of *maraschino*, also a kind of pyrethrum, the blooms of which are employed in the manufacture of insect powder.

About four o'clock I noticed a castle on a hill apparently about a mile inland. I had no idea it was the port of Sebenico, but presently a little gap in the coast-line appeared, the ship turned almost at right-angles and entered the narrow but deep channel which leads between strongly fortified cliffs into the wonderful land-locked harbour. After Pola and Cattaro, Sebenico is the most important naval station on this coast, so the camera had to repose unused at the bottom of a rucksack for a while. This was a pity, for there are few places so picturesque in all Dalmatia. I went ashore for a few minutes and visited the Cathedral, which was begun about the middle of the fifteenth century and occupied nearly a hundred years in construction.

As most of the officers and crew went ashore to stretch their legs, the aborigines were able to wander on and off the ship as they liked, and we were so pestered with the attentions of filthy children whining for kreutzers that I was well pleased when we again got under way. Shortly before nine in the evening the lights of Spalato appeared, and within half an hour I had established myself beneath the roof of the Hotel Troccoli.

Although Zara is the official capital of Dalmatia, Spalato is the largest town, having a population of 31,000, of whom over 3,000 reside in the Stari Grad or Old Town. This portion of the city is quite the most interesting feature of Dalmatia, for it is contained within the four walls of the Emperor Diocletian's palace, which was commenced about 290 and completed about 305 A.D. It presents indeed a vastly different appearance from what it did in Roman days. The four outer walls, though still preserved almost in their entirety, are disfigured by thousands of windows, added by the inhabitants in the course of centuries (see Fig. 2). Huts and hovels of all kinds have been built in

all situations, in front of the walls, outside them, and even on the top. The interior is honeycombed with narrow alleys, many of them barely five or six feet wide. Even the principal square, the Piazza del Duomo, is only about twenty yards by ten. This space is really the old peristyle of the palace, and much of the original architecture is preserved. The Cathedral of St. Doimo, dating from the fifteenth century, stands on the site of the mausoleum of Diocletian, which is now preserved in the local Archæological Museum. Three of the four gates of the palace, Porta Aurea, Porta Argentea, and Porta Ferrea, still remain, although the original thresholds are several feet below the present surface of the ground.

About four miles away to the north-east is the site of the Roman colony of Salona. For many years it was one of the most important ports on the Adriatic, but with the decline of Roman power, it suffered repeatedly from the attacks of the Goths and Huns, and was finally sacked and almost entirely destroyed by the Avars in 639. The inhabitants fled to the Dalmatian islands, but returned to the mainland to found a new city within the walls of Diocletian's palace. The site of Salona was not completely deserted until the twelfth century. Excavations were systematically undertaken in 1818, and, though the work is still in progress, practically the whole of the city has been laid bare.

The new town of Spalato is clustered round the *stari grad*, and, with the exception of a few quite modern buildings, the general character and atmosphere are the same. The streets are generally narrow and filthy, the houses low and evil-smelling. The lowness of the buildings and the narrowness of the streets are to a certain extent unavoidable owing to the violence of the "bora," a peculiar land-wind to which the whole Dalmatian coast is exposed. So furiously does it blow at times that not only men and animals but also houses are swept into the sea. In certain towns it is the custom to stretch ropes across the streets, to which unfortunate wayfarers may cling, and so avoid being swept off their feet.

The part of Spalato through which I passed on my way to the summit of the Monte Marjan was typical of Dalmatian towns. It consisted of one steep narrow street, rising in broad, shallow steps between two rows of low, whitewashed hovels, from which the foulest odours emanated. The hard cobbles were strewn with garbage, and whenever I put my foot down a

cloud of bloated flies rose noisily into the air. Hideous hags and filthy children were squatting on the steps and in the doorways, and as evening fell a procession of men and pack-animals returning from market filled the place with strident cries. I noticed one tiny donkey heavily laden with two large packs and carrying a man and boy as well.

The view from the summit of the Monte Marjan amply repaid me for the hot climb. The mountain takes the form of a promontory almost entirely surrounded by water, the wide bay of Spalato with its busy harbour lying to the south, and the Salona inlet extending to the north-east. A brand-new road has been cut to the summit through a growing forest of young pines, so that within a very few years the Monte Marjan will provide the traveller with a pleasant retreat from the heat and stench of the town.

As I had planned to leave Spalato by the Austrian Lloyd midnight boat, in order to travel as far as Gravosa with an old college friend who was taking his annual trip to Albania, I spent the evening at a dirty café near the quay. It boasted an orchestra of one player, his instrument being a harp, to the accompaniment of which he sang a number of Italian ditties. The audience consisted for the most part of dirty but not inappreciative Dalmatian labourers, and the general effect, with the gentle ripple of the water close by and the city lights across the bay, was not unpleasant.

Shortly before midnight the *Prinz Hohenlohe* came alongside, and I was glad to see a familiar face again. We ignored the conventions, spread our belongings over a quiet corner of the deck, compared notes, and dozed as well as we could until some cold water was swilled on to us in the early morning from the deck above. During the night we had called at Lesina, and about seven we made fast in the spacious harbour of Gravosa, the starting-point of the railway to Hercegovina and Bosnia. Here I disembarked, leaving my friend to continue his journey to Cattaro, and found modest but decent quarters in the Hotel Austria.

Gravosa itself is little more than a timber-yard, but it is the port for Ragusa, which lies about a mile and a half away, beyond the Lapad peninsula.

In former days Ragusa was a port of considerable note, but nowadays cannot be approached by large vessels. A republic was established here in 663 by Byzantine refugees from

Epidaurus, which had been destroyed by the Avars in 656. It remained under Byzantine protection until 1204, and then acknowledged the sway of Venice until 1356, and subsequently of Hungary until 1453. Its golden age lay in the short period from 1427—1437. In 1453 Ragusa was again threatened by Venice and sought the protection of the Osmanli Turks, paying a tribute which rapidly rose from 1,500 to 12,500 ducats. In 1684 the authority of Hungary was again asserted, and the little republic remained under the protection of that kingdom for over 100 years. In 1796 the French levied a tax of one million lire and definitely occupied the place in 1806. Two years later Ragusa ceased to be a free republic, and in 1809 was incorporated with the kingdom of Illyria, all of which passed to Austria in 1814.

At the present day Ragusa is a sleepy town of 14,000 inhabitants, mostly Slavonic, Italian being very little spoken. Its Slavonic name is Dubrovnik. The climate is mild in winter and the vegetation sub-tropical, agaves and cactus growing luxuriantly in the open air.

During my stay the heat was so terrific that sight-seeing offered no attraction. The inhabitants were huddled together motionless wherever there was shade to be found. The sea was as smooth as glass and the air so still that the flags on the city walls hung without a quiver for half an hour at a stretch. As night fell, however, it grew cooler, and I walked down the Stradone, the finest street in Dalmatia, and through the Porta Ploce, along the road which leads to Ragusa Vecchia and Castelnuovo.

Facing the harbour of Ragusa lies the beautiful island of Lacroma, on which King Richard Cœur-de-Lion is said to have been wrecked when returning from Palestine. A storm rising and the ship being in great danger, the king made a vow to erect a church wherever he might safely land. The ship was driven ashore on the island of Lacroma, and Richard would have built a church on the spot had not the Raguseans persuaded him to build them a cathedral instead. This he did, but the building perished in the great earthquake of 1667, which laid most of the town in ruins. This disaster also accounts for the uniform architectural style of the Stradone, all the houses—formerly the residences of the local nobility—having been erected soon after.

It is a pleasant walk from Ragusa to Gravosa in the cool of

the evening. For some distance pleasant villas, with gardens gay with all kinds of delicate plants and shrubs, line both sides of the road; but from the top of the hill there is a fine, unobstructed view over the whole Adriatic. When I reached Gravosa, it was quite dark, so after a good supper in the Petka Restaurant, which must have improved out of all recognition since Mr. de Windt described it, I returned to my own modest inn, ready for a good night's rest. Early next morning I left by train for Mostar.

The line from Gravosa into the interior proceeds first along the picturesque valley of the Ombla, a curious river which emerges as a broad stream from beneath a wall of rock, only two or three miles from the coast. The train mounts slowly but persistently, doubles on its own tracks and penetrates the most mysterious tunnels, in which it performs queer evolutions, often changing direction completely. Besides offering magnificent panoramic views of the Hercegovinian highlands and the Adriatic, the line is interesting for technical reasons, for in the space of a very few miles it climbs about 2,000 feet. At last the gradient grows less severe, the train gathers speed, the sea disappears from view, and nothing is to be seen except the stony tableland of Hercegovina extending on every side.

As far as the eye can see there is nothing but rocks and stones, with dwarf trees struggling to obtain a scanty nourishment in the crevices. Occasionally one sees in some hollow a little pocket of soil, only a few square yards in area, but carefully cultivated. And all day long the sun beats down, hot and blinding, upon the white stones. Such is the general aspect of southern Hercegovina.

Not that the country is entirely without fertile portions. Beyond Hum the line enters the Popovopolje (Priest's field), a truly wonderful valley, drained—and watered—by the curious river Trebinjchitza, which rises near Trebinje on the Montenegrin frontier, flows through the Popovopolje and disappears into the earth near the village of Hutovo. Whether the waters pass by some subterranean way to the swamps of Gabela or return to form the mysterious Ombla is uncertain. The great feature of the Popovopolje is the fact that in the winter it is a lake twenty miles long, one-half to two miles wide, and 50 to 120 feet deep. As spring advances the water subsides, disappearing into holes called *ponori*, until only the river Trebinjchitza is left, and this too disappears in the hot season. At the end of autumn the

water rises again, and the whole valley is submerged. After each inundation the land is of course sufficiently enriched; it never requires manure. The climate is mild both in summer and winter, and is favourable to the cultivation of vines, olives, apples, plums, figs, cherries, quinces, tobacco, and various kinds of grain, principally maize. The surrounding mountains are bare and stony, with scarcely a trace of vegetation. On their lower slopes, just above the winter level of the lake, are scattered about twenty villages, with some 5,000 inhabitants in all. The population is almost entirely Orthodox Christian and has a reputation for skill in masonry.

Curiously enough, the lake, in spite of its periodical disappearance, contains fish, though of one kind only, called *gaovice*. They are about the size of an anchovy and are said to have a good flavour. When the water subsides they disappear into the *ponori*, or ground-holes, and remain there during the summer.

The Popovopolje is rich in antiquities of various kinds, graves tumuli, castle ruins, etc. I heard also of a cave at Vjetrinitza, which contains rock-carvings.

The valley ends at Hutovo, beyond which place the train enters a bare mountain pass and descends rapidly to the valley of the Narenta, which it crosses at Gabela, the junction for the port of Metkovitj. From time immemorial the Narenta estuary has afforded the easiest access from the coast to the interior, and near Gabela can be seen the remains of the old Venetian fortress which protected this trade route. The district is low-lying and unhealthy. Rice is cultivated and malaria is common.

Henceforward the scene became more lively. The natives exhibited a greater variety of dress, owing to the presence of a strong Mohammedan element. Fez and turban began to mingle with the round, embroidered caps of the Orthodox Christians. At each station appeared a Turk, selling water or syrup, with his huge, fantastic pitcher and limited supply of drinking-vessels. On such occasions Western European notions of decency are apt to become irksome to the thirsty traveller.

It was between Gabela and Mostar that I first saw the costume of the Hercegovinian Mohammedan women. It resembles nothing so much as a military overcoat, with the collar turned up and so adjusted that it covers the head and projects forward horizontally over the face. The sleeves, not

being utilised, are stitched up and hang limply, the person of the wearer being entirely concealed in the body of the coat.

Proceeding up stream from Gabela, the train passes an old Roman camp, and then the picturesque town of Pochitelj, formerly a nest of bandits. It is spread like an amphitheatre over a steep hillside and is remarkable for its mosque and castle.

Mostar did not belie its reputation for being one of the hottest places in Europe, for when I arrived about noon the heat was terrific and I was glad to take refuge in the cool chambers of the Hotel Narenta. Here all visitors to Mostar must stay, or run the risk of being eaten up by *papadaci* and kindred insects in the common *hans*. The place certainly deserves the excellent reputation it enjoys. On one side flow the clear, blue waters of the Narenta, on the other lies a shady, well-kept garden.

The capital of Hercegovina is surrounded by bare and rugged mountains, on whose lower slopes are a few struggling vineyards, which produce a surprisingly good red wine. The climate is tropical, 90° in the shade being an everyday occurrence in the summer, so that walking about is a torture. The nights too are hot, though often enlivened by the attentions of *papadaci*, busy little creatures of the mosquito type. Vegetation is scanty, except in the immediate neighbourhood of the river, where pomegranates, mulberries and figs flourish.

The population is largely Mohammedan, though the Greek Orthodox and Roman Catholic communities are considerable. There are about thirty mosques, with graceful minarets, from which at sunset the *mujezins* sonorously proclaim the *aksham* or evening prayer.

The Greek orthodox Christians of Hercegovina make an excellent impression, being generally tall, fine, independent fellows. I am told they differ considerably in character from the Bosniaks.

The Roman Catholic community in Mostar has had a precarious existence. Until 1850 the Vicar of Hercegovina was not allowed to walk the streets, except at night or in disguise, and the local Turks opposed the erection of a church or ecclesiastical building of any kind. In 1847 Raphael Barishitj, being Vicar, obtained a *firman* from the Sultan sanctioning the erection of a bishop's house. The local Mohammedans would have killed him in spite of this permission, had not the Vizier

Ali Pascha supported him. Even then the workmen had to construct the house with weapons by their side. But these exciting days have passed, and the Turks of Mostar have been tamed.

Before the annexation by Austria of Bosnia and Hercegovina, little hindrance was offered to the photographer in Mostar, but since that date the regulations have been made more stringent. Foreign visitors are no longer allowed to make use of a camera at all without the express permission of the Corps Commander. That would not be so bad perhaps, if he were accessible, but I was politely informed that the gentleman in question was stationed at Ragusa, the place I had left five hours before. Those who wish to take photographs in Mostar must therefore enter the country by way of Ragusa and interview the Corps Commander there.

The chief feature of the town is the bridge, which some have supposed gave it its name (*most*=bridge; *star*=old), a conjecture not accepted by the best authorities. It was built in 1566, in the reign of Suleyman II, by a local architect, and has a height of 95 feet and a width of 75 feet. At each end stand guard-towers, which formerly served as powder-magazines and prisons. With its construction the Orthodox Christians connect a legend, according to which two young lovers were walled up alive in the masonry to propitiate the *vila*, or river fairy. On each side of the bridge extends the bazaar, which, though inferior to that at Sarajevo, is not without interest.

The streets of Mostar are fairly clean, the hard stone with which they are paved giving off little dust. In the mornings they are thronged with caravans from the surrounding country, led by dirty ugly women. Water is too precious to be used for any purpose except drinking.

North of Mostar the valley of the river Narenta becomes more fertile, especially round Jablanitzza. Cherries, plums, chestnuts, walnuts, and wild pears grow in profusion, and fine forests clothe the mountain sides. The Prenj range rises close at hand, culminating in the Lupoglav, a distinctly striking peak of about 6,500 feet.

The railway between Mostar and Sarajevo is again a fine piece of engineering, one section of nine miles being worked, owing to the steepness of the gradient, on the rack-system. At Ivan, 3,000 feet above sea-level, it crosses the watershed between the basins of the Adriatic and the Black Sea.

The most interesting spot between Mostar and Sarajevo is the little Hercegovinian town of Konjitzza, on the Narenta. The river is crossed by a fine bridge, built by Vizier Achmed Sokolovitj in 1715, though the local Christians wrongly ascribe it to the Bosnian king Hvalimir, who lived at the end of the seventh century.

Konjitzza, now a quiet little town of about 2,000 inhabitants, was formerly a centre of the most violent fanaticism. In the Middle Ages it was an important frontier station between Bosnia and Hercegovina, and became associated with the curious sect of the Bogumils, who appeared in the twelfth century as an heretical offshoot from the Greek Church. They were probably of Bulgarian origin and the name is generally taken to mean "God, have mercy." The principal feature of their creed was the position they gave Satan, regarding him as the first-born son of God, who rebelled and founded the race of man. In 1446 they were persecuted by the Bosnian Diet and allowed neither to build new churches nor to repair old ones. Over forty thousand emigrated to the neighbouring Principality of Hercegovina and many settled at Konjitzza. But when the Turks overran the country, Mohammedan fanaticism took the place of Christian intolerance, and the Bogumils were driven into hiding, emerging only to turn Mohammedan. A few families kept their faith for centuries, and the last, the Helezh family, is said to have done so almost until the Austrian occupation in 1878.

Beyond Konjitzza the line leaves the Narenta and enters the valley of the Treschinitza. Here the gradient is sometimes as much as 1 in 2, and of course the rack-system has to be used. Towards the summit at Ivan, where a German colony from South Tyrol is settled, the air grows cooler, and emerging from a long tunnel we find ourselves in the more temperate climate of Bosnia. After a short run through fertile and well-watered country the train enters Sarajevo, the capital.

It was quite dark when I arrived, and as the few inns near the station were full to overflowing, I had to tramp to the town, about a mile away, before I could find quarters. The next morning, I was kindly received by our Consul, Mr. Freeman, and Mrs. Freeman, and was able to inquire about the remoter parts of Bosnia through which I proposed to pass. As the Consular Secretary, Mr. MacFarran, was familiar with a portion of my intended route, he was able to give me much

valuable information. The district beyond the Drina, in the neighbourhood of Vishegrad, was apparently little visited, and the Servian frontier village of Mokra Gora had acquired an evil reputation—which, as far as my own journey was concerned, I found to be quite undeserved. Mr. MacFarran thought that only two English travellers had ever crossed the Serbo-Bosnian frontier at this point before.

The population of Sarajevo is about 52,000, of whom almost 20,000 are Mohammedans. The Greek Orthodox Christians form the next largest section of the community, then come the Roman Catholics and the Jews, in about equal numbers. These latter are of a peculiar race and are called Spanioles. They were expelled from Spain in 1571, and settled by the Turks in Bosnia, where they have prospered exceedingly. Their language is a mongrel form of Spanish.

Sarajevo offers many interesting features of Oriental life. On Easter Monday, for example, a marriage market is held in the yard of the Greek Orthodox Church, and every Thursday the dance of the Howling Dervishes may be witnessed at Sinan Tekija. My time, unfortunately, was too short to allow me to see this.

The centre of interest is the Charshija or Turkish Bazaar, which consists of about sixty lanes of crazy shops, and presents a fascinating picture with its variety of wares and costumes. The merchants are nearly all Turks, the Spanioles having removed to the more modern streets. Business is carried on, with short intervals for prayer and ablution, from early morning until sunset, when the *mujezin* proclaims the *aksham* or evening prayer from the minaret. Then every good Mohammedan shuts up his shop and goes home to his family in the suburbs. There is no hurry here, but a good deal of noise on market-days when the alleys are thronged with a picturesque crowd, and the cobbles covered with mountains of melons, gherkins, paprika, onions, and the like. On the butchers' stalls, strips of meat, chiefly mutton, are exposed to the delicate attentions of swarms of flies, and are examined, fingered, and rejected again and again before the customer makes a purchase. Beggars sit whining at every corner, but the pariah dogs that used to keep them company have been exterminated.

The merchant sits cross-legged on a strip of carpet, and philosophically drinks his thimbleful of coffee or rolls a cigarette. In the winter he warms his hands at a little fire

burning in a metal brazier. There is no hurry and purchases are never effected without a lengthy argument, which usually ends in the vendor's receiving, without the slightest sign of disappointment, two-thirds or one-half of the original price.

Cheap European goods are now sold in large quantities in the bazaar, but genuine Oriental work is neither dear nor rare. Beautiful embroidery, beaten copper, knives, swords and inlaid work can be obtained on all sides. With reference to native industries it must be mentioned that the Austrian Government has done much for their encouragement. A Persian carpet-designer, for example, was engaged to instruct native work-people in the art of carpet-weaving.

In the Charshija stands the Begova Dzhamija, a mosque famous throughout Islam, built by Ghazi Husrev Beg, 1526-30. It is the largest of Sarajevo's hundred mosques. In the court-yard stands an ancient lime-tree, beneath which is the fountain where the devotional ablutions are performed. Europeans are allowed to enter the building, and I should have availed myself of the privilege but for the presence of numerous filthy beggars, in various stages of disease and affliction. To crown all a corpse was stretched beneath the portico.

There are about fifty Turkish cemeteries in Sarajevo, but as they are never attended to, their appearance, though picturesque, is dilapidated. The headstones, which have assumed almost every position except the perpendicular, vary in form according to the rank of the deceased. A low turban carved on the headstone denotes a merchant, a pointed one a Dervish, an egg-shaped one a janissary. A sort of stone canopy resting on columns is often erected over unusually important people. The grave-stones of women are all alike, except that a pointed one denotes a wife or mother.

As I again had difficulties with the military authorities about photography, I stayed only two days in Sarajevo, leaving at 8 a.m. by the new Eastern Railway. The line encircles the south-east of the town, near the cemetery of the Spanish Jews, and passes through the suburb of Bistrik, whence a fine view of the city is obtained. Then it enters a tunnel and emerges in the land which the Bosniaks vaguely describe as "behind God's back."

Like the main line from Gravosa, the Eastern Railway is a splendid feat of engineering. Its object is, I believe, mainly military, for it leads to Vardishte and Uvatz, two tiny stations

situated respectively on the frontiers of Servia and the Sanjak of Novibazar. The total length of the line is about 105 miles, and there are 99 tunnels which together have a length of 8 miles. There are 30 long bridges and 700 smaller viaducts. During construction over $2\frac{1}{4}$ millions cubic yards of earth were removed and $4\frac{1}{4}$ million cubic yards of rock, and $1\frac{3}{4}$ million cubic yards of masonry were laid down.

The line crosses the Bosna-Drina watershed at Pale and enters the valley of the Pracha, following the old trade route to the East. The little village of Pracha was formerly an important settlement of Ragusean merchants. In the fourteenth century it was the seat of a bishop and one of the principal markets of Eastern Europe. The population at one time is said to have been 60,000. It was a very busy place during the operation of Napoleon's Berlin Decrees, because the fear of confiscation by sea forced European merchants to import goods from Asia overland, and the principal trade route from Saloniki passed through Pracha. About one hundred years ago the plague swept away the entire population with the exception of two, Fatma Barushitjka, who lived to be over 100, and Mustafa Fazlitj, who died at the age of 104. The latter remembered having seen more than a hundred fine shops, where only a few miserable daub and wattle huts now stand.

The railway certainly has opened up a new expanse of splendid scenery in these valleys of eastern Bosnia. The forests and ravines, through which the river Pracha has torn its way, were formerly the haunt of Haiduks, and are still inhabited by bears, especially in the neighbourhood of Megjegje, which name means approximately "bears' ford."

This part of my journey was performed entirely in the company of natives, and their costumes and manners afforded me the liveliest entertainment. A little incident at a wayside station brought me into contact with the Bosnian gypsies, who number several thousand. They are not such great beggars as in other European countries and enjoy, on the whole, a slightly higher standing. They are counted as Mohammedans, but are not allowed to enter the mosques. They live a nomadic life, the men taking service as agricultural labourers or drivers of horses, the women telling fortunes and selling medicinal herbs.

The Pracha flows into the Drina, which is the largest river in

Bosnia, and for many miles forms the boundary between that country and Servia. It rises about four hours south of Focha, and flows for the most part through a narrow ravine, which can only be crossed at a very few places. The lower reaches are navigable for large vessels as far as Zvornik for most of the year, but the upper waters are broken and available for rafts only.

The only ford for many miles round is at Megjegje, where the line divides, one branch proceeding *via* Vishegrad to Vardishte, the other terminating at Uvatz on the frontier of Novibazar. Megjegje is said to have a wonderful climate, knowing neither wind nor snow nor prolonged dull weather.

The line to Uvatz follows the Lim Valley and provides the easiest route to Priboj, Priepolje, Plevlje, Sjenitzza and Novibazar, all in the Sanjak. Vishegrad, on the other branch, is imposingly situated on the Drina. In early times it was merely a ford, commanded by a citadel, but it grew rapidly in importance under Turkish rule. The bridge was built in 1571 at the command of Mehmed Pasha Sokolovitch, who afterwards became Grand Vizier, by Macedonian masons from Küprili. It is nearly 200 yards long and has 11 arches, and in the middle are two long inscriptions in Turkish. Many legends are connected with its construction. Bags of gold are said to have been thrown into the Drina to propitiate the river fairy, and the Orthodox Christians tell the usual story of the walling up of two Christian girls as a sacrifice for the same purpose.

Vishegrad was the first important Mohammedan city on Bosnian soil, and the strength of the bridge gave rise to the proverb *ostade kao cuprija na Visegradu*, (It stands like the bridge at Vishegrad.) It is now a town of about 1,600 inhabitants with a fair trade in cattle, plums, and slivovitz (plum brandy).

Beyond Vishegrad the line enters the valley of the Rzav, which is romantic but sparsely populated. Except for an occasional wayside *han* there are few houses to be seen. The only village of importance is Dobrun, inhabited principally by Orthodox Christians, though there are about 250 Mohammedans in the neighbourhood. Everything looks dilapidated, though most of the buildings have been erected since 1878, the whole district having been laid waste during the Servian insurrections against Turkish rule. Its history scarcely goes back beyond Karagjorgje, who fought with varying success against the Turks

about 1804 and became one of the national heroes of the Servians and the founder of the reigning dynasty. Politically, this region beyond the Drina belongs to Bosnia, but in sentiment to Servia. The natives are called Osonostranci, *i.e.* "those dwelling beyond (the Drina)," by the Bosniaks, with whom they do not get on particularly well, being more akin to the Hercegovinians and Servians. They look towards Uzhitze in Servia as their capital, not towards Bosnia.

At Dobrun the curious custom of marriage by capture is still extant. On August 15th the Zbor, or Assembly, is held in the yard of the Orthodox Church amidst a scene of festivity and merry-making. The girls appear in their best dresses, and the young men ride up on horseback; each seizes the lady of his choice and gallops away, pursued by her male relatives. It often happens that the Bosniaks from across the river, who have the finer horses, take the prettiest girls, a circumstance which by no means improves their relations with the Osonostranci. After a few days the husband compounds with the parents for the lady by sending a couple of oxen.

I was not so fortunate as to witness this ceremony myself, but I did fall in with a wedding party at Dobrun, who afforded me considerable amusement. They travelled with me to Vardishte, and the last I saw of them was when they left that station. The bridegroom strutted along in front with the bride's trousseau slung over his shoulder in a yellow handkerchief tied to a stick. Then came the bride with an elderly woman, both weeping, and finally a bodyguard of six of the bridegroom's friends, presumably to prevent the bride from running away. In these parts a wedding is the only gleam of romance in a life of incessant toil.

(To be continued.)

TWENTY-EIGHTH ANNUAL MEETING OF THE
SOCIETY, 1913.

The 28th Annual Meeting of the Society was held, by kind permission, in the Lord Mayor's Parlour, Town Hall, Manchester, on Tuesday, May 6th, 1913, at 3-30 p.m.

The Right Hon. the Lord Mayor (Mr. S. W. Royse) presided.

The following members and friends attended:—Miss Qualtrough, Mrs. H. Sowerbutts and Mrs. Tatham, Messrs. Balmforth, G. I. Blake, C. A. Clarke, J. W. Goodwin, J. W. O'Leary, F. S. Oppenheim, M.A., J. A. Osborn, Alfred Ree, Ph.D., J. Stephenson Reid, Harry Sowerbutts, A.R.C.Sc., George Thomas, J.P., W. J. Tyne, Joel Wainwright, J.P., Thos. Wilcock, S. W. Williams, W. H. Zimmern and others.

Apologies were read from Messrs. Harry Nuttall, M.P., F.R.G.S., F. Zimmern, F.R.G.S., D. A. Little, and J. Howard Reed, F.R.G.S., the Rt. Rev. Bishop Welldon, D.D., Professor W. Boyd Dawkins, F.R.S., J.P., and Mr J. G. Groves, D.L., J.P.

The Lord Mayor read the letter which he had received from the Chairman of the Council. Mr. Zimmern said—"that it had been his privilege and pleasure to attend these meetings for 25 years and more. The welfare and useful influence of the Society were a real concern to him, and he should be happy to devote thereto such services as lay in his power."

The Minutes of the Twenty-seventh Annual Meeting, held on May 9th, 1912, were taken as read, a full report appearing in the *Journal*, Vol. XXVIII, page 37.

The following Annual Report and Balance Sheet were submitted by the Secretary, who made explanatory references to the principal matters dealt with in the Report.

REPORT OF THE COUNCIL

FOR THE YEAR ENDING DECEMBER 31ST, 1912.

THE Council have the pleasure to report that the work of the Society has been actively maintained during the year.

The weekly meetings held during the winter months have

been well attended, and the Council desire to express their thanks to all those who have given valuable help.

The important and comprehensive character of the lectures delivered will be seen from the following list:—

- “ Portsmouth and the British Association.” Mr. J. Howard Reed, F.R.G.S.
- “ From the Dogger to the Downsing.” Mr. E. Hare Wakefield.
- “ The Canyon of the Tarn.” Mr. A. H. Garstang, F.R.S.L.
- “ Italy.” Mr. M. Seifert.
- “ Some Thoughts upon Iceland.” Rt. Rev. Bishop Welldon, D.D.
- “ Persia.” Mr. W. Leonard Flinn.
- “ China, Past and Present.” Mr. R. Kalisch, F.R.G.S.
- “ The Tragedy of Philae.” Mr. F. F. Ogilvie.
- “ Ancient Egypt.” Mr. J. Stephenson Reid.
- “ The White Nile.” Mr. E. W. Mellor, J.P., F.R.G.S.
- “ On Safari in East Africa.” Mr. H. K. Eustace, F.R.G.S.
- “ East Africa.” Mr. T. A. Edwards, F.R.G.S.
- “ South Africa revisited.” Mr. T. A. Edwards, F.R.G.S.
- “ Life among the Hottentots and Bushmen.” Rev. Austin S. Rogers.
- “ Atlantic to Pacific, across the Canadian Rockies.” Mr. C. H. Bellamy, F.R.G.S.
- “ My Life among the Indians.” Mr. W. McClintock, M.A.
- “ British Guiana.” Rev. W. L. Broadbent.
- “ A Visit to the Highlands of Brazil.” Mr. J. Cardwell Quinn.
- “ The Mafulu Mountain People of British New Guinea.” Mr. R. W. Williamson.
- “ Among the Pigmies in Dutch New Guinea.” Dr. Eric Marshall.
- “ My Visit to New Zealand.” Dr. Tempest Anderson, F.G.S.
- “ To the Tonga Islands in pursuit of a Shadow. Rev. A. L. Cortie, S.J., F.R.A.S.
- “ How we reached the South Pole.” Capt. R. Amundsen, F.R.G.S.
- “ Pathways of the Past.” Miss Kate Qualtrough.
- “ Farthest West.” Mrs. S. Simon.
- “ A Journey round the World.” Mr. J. Stephenson Reid.

These addresses, with the exception of five, were delivered in our own Hall; three being given in the Houldsworth Hall, one in the Free Trade Hall, and the other at the University.

The lecture given in the Free Trade Hall on November 29th by Captain Roald Amundsen proved financially successful, and the Council are pleased that this eminent explorer had such a magnificent reception when he described his journey to the South Pole.

The lectures by Mr. F. F. Ogilvie and Mr. E. W. Mellor, J.P., F.R.G.S., in the Houldsworth Hall, were well attended and the large audiences fully appreciated the able addresses delivered and the fine lantern illustrations (including many photographs in colour) and cinematograph views shown.

The Council thank the Vice-Chairman for the use of his powerful electric lantern for the three lectures in the Houldsworth Hall, and for the Free Trade Hall Lecture, also for engaging the Houldsworth Hall for the three lectures given therein. His generosity and skill are highly appreciated.

The Society maintains its good relations with the Manchester University, and the lecture by Mr. W. McClintock, M.A., proved a great success.

The Council desire to record the indebtedness which the Society owed to the late Mr. N. Kolp, who for some years defrayed the expense of the special prize awarded on the result of the Examination in Geography at the Manchester University.

The Council thank the Rev. J. H. and Mrs. Harris for the loan of about 500 photographs taken by them in West Central Africa. These photographs were well displayed in the Society's Hall, and the Exhibition, which was open for two days in December, was well attended.

The Journal for the whole of 1911 has been issued during the year.

Valuable additions to the Library and Map Collection have been made during the year, full particulars of which will appear in the Journal. The following presentations are worthy of special mention, and the thanks of the Society are due to Mr. W. Booth Leech for his collection of West African books and a large number of lantern slides, to Mr. W. H. Ward for his books on Arctic Exploration, to the Secretary of State for India for the Gazetteers of the States, Districts, etc., of India and Burma, and to the Director of Military Operations for copies of the Maps issued by the War Office, all of which the members are invited to examine and study.

The Council cordially acknowledge the gift from Messrs. Lafayette, Ltd., of the large Portrait Group of the Members prepared in celebration of the Twenty-first Anniversary.

The services so freely given by the Victorians in lecturing, and in acting as Stewards at the Free Trade Hall and other meetings are highly appreciated.

The Council deplore the exceptionally heavy loss by death of members during the year, as follows:—

- Mr. Rudolph Bornmüller.
- Mr. J. C. Blake, F.R.G.S.
- Mr. John Cocks, J.P.
- Mr. G. T. Cook.
- Mr. George Galloway, J.P.
- Mr. J. Hall, J.P.
- Mr. N. Kolp.
- Mr. Julius Kullmann.
- Alderman Sir Bosdin T. Leech, J.P.
- Mr. George Pearson.
- Mr. Thomas Pearson.
- Mr. R. Cobden Phillips.
- Mr. H. Lloyd Price, F.S.A.A.
- Mr. Daniel Sharrocks, J.P.
- Mr. John R. Smith.
- Mr. H. Stadelbauer.
- Mr. S. T. Woodhouse.

Mr. Noah Kolp, Alderman Sir Bosdin Leech, and Mr. R. C. Phillips were members of the Council, and Messrs. J. C. Blake, Geo. Galloway, N. Kolp, and J. Kullmann were original members.

The Balance Sheet for the year with the Report of the Honorary Auditor is appended.

It will be seen that there is a deficiency of £34 on the Revenue Account for the year.

The number of members on December 31st, 1912, was 690, the elections during the year having considerably outnumbered the losses by death and resignation.

This large accession of new members will be a great help to the Council for the immediate future, but further additions to the membership are urgently needed to advance the work of the Society, and especially to enable the library and map collection to be improved. Donations for this object will be welcomed.

REVENUE ACCOUNT.

YEAR ENDING DECEMBER 31st, 1912.

Dr.					Cr.
	1911.				
£ s. d.	£ s. d.				£ s. d.
120 2 10	10 10 0				
141 15 10	505 1 0	68 3 1	By Members' Subscriptions :—		
158 5 5	43 6 3	91 7 8	Life (Transferred to Re-	10 10 0	
110 10 0	12 12 0	156 15 3	serve Account).....		
114 19 8	5 15 0	110 10 0	Ordinary	479 17 0	
6 18 3	12 4 10	118 17 4	Associate	41 9 6	
6 10 7	1 12 7	" Commission and Expenses, New Mem-	Societies	10 10 0	
2 2 8		" bers, and Collection of Subscriptions	Victorians	531 16 6	
		" Books, Maps, Binding, &c., Library ...	" Dividend on Shares in Bldg. Co.....		
		" Repairs to Furniture	" Income Tax returned.....	1 15 10	
			" Bank Interest	1 6 1	
			" Donation, Mr. W. A. Arnold	5 0 0	
			" Deficiency, carried to Balance Sheet ...	34 11 6	
		<hr/>		<hr/>	<hr/>
		£574 9 11		£574 9 11	

BALANCE SHEET, DECEMBER 31ST, 1912.

LIABILITIES.		ASSETS.	
	£ s. d.		£ s. d.
To Sundry Creditors	121 16 10	By 52 Shares of £10 each fully paid in the M.G.S. Bldg. Co. Ltd., as under:	
" Subscriptions paid in Advance.....	66 3 0	27 shares purchased.....	103 7 6
" Life Membership Reserve Account.....	115 10 0	25 shares presented.....	250 0 0
" Kirkpatrick Endowment Fund.....	50 0 0		
" Balance at December 31, 1911	115 17 0	" Subscriptions in arrear.....	353 7 6.
Less deficiency for 1912	34 11 6	" Cash in Bank.....	16 5 6
		" Cash in Hand.....	59 5 11
			5 16 5
			65 2 4
			£434 15 4

NOTE.—The Furniture, Fittings, Books, Maps, etc., Lanterns, Slides and Stock of Journals, which are insured for £1,000, are not included as Assets in the above Statement. There are 46 Life Members (of whom one is Honorary), and the subscriptions of 34 of this number have been taken as revenue in years prior to 1908.

I have audited the above Balance Sheet and certify the same to be correct. I have inspected the Certificates for the Shares in the Building Company

THEODORE GREGORY (F.C.A.),
Honorary Auditor.

April 22nd, 1913.

The Right Hon. the Lord Mayor, in moving the adoption of the Report and Balance Sheet, said that the work of the Society was very important to the people of the district. The lectures were of great interest and also of educational value, and enabled the members to form opinions about parts of the earth which they were unable to visit. He had attended many of the meetings, especially since he became Lord Mayor, and had always found them both interesting, and most profitable. The Society deserved a larger measure of support than it now received from the citizens of Manchester, and should not be handicapped by a deficiency. For a very small subscription the members had at their command a fund of useful knowledge, and he hoped that all the members that were needed would be forthcoming in the near future.

Mr. F. S. Oppenheim, M.A., in seconding the resolution, which was carried unanimously, spoke of the valuable series of weekly lectures given during the year, and of the special meetings, when distinguished explorers, men of world-wide reputation, such as Captain Amundsen, described their experiences. In such a centre of industry and commerce, where raw materials were obtained from and finished goods sent to practically every part of the world, civilised and uncivilised, it was an extraordinary thing that only 690 ladies and gentlemen should support the Geographical Society, and that, too, after it had existed for 28 years. There could be only one reason for it—the work of the Society was not sufficiently known. Their members could do much to remedy this, and the press might aid them by adequate encouragement in its columns.

The Society had done much to advance the knowledge of geography in various directions, particularly in regard to the teaching of geography. The members of the Society had given great assistance to the University in connection with the two previous Lecturers in Geography, and the Council were at present considering a proposed Scholarship or Fellowship in Geography at the University.

In conclusion, he referred to the *Journal* of the Society, which could be brought up to date and improved if the Society was adequately supported.

The Secretary announced that the retiring officers and Council, with the addition of Miss S. A. Burstall, M.A., Miss L. Edna Walter, H.M.I., B.Sc., Messrs. L. Emerson Mather,

F.R.G.S., T. W. F. Parkinson, M.Sc, F.G.S., W. Robinow, J. Walter Robson, J.P., to the Council, had been nominated.

Mr. J. A. Osborn, in moving the Resolution:—"That the officers and Council, as nominated, be elected," expressed, on behalf of the members, thanks to the retiring officers and Council for their services during the year. Mr. A. Balmforth seconded the resolution, and it was passed unanimously. (See list with title-page.)

Mr. C. A. Clarke referred in appreciative terms to the great indebtedness of the Society to Mr. Gregory for his valuable services to the Society as Hon. Auditor for the 28 years of its existence, and moved the following resolution:—"That the best thanks of the Society be given to Mr. Theodore Gregory, F.C.A., for his services as Hon. Auditor, and that he be re-elected." Mr. J. W. O'Leary seconded the resolution, which was carried unanimously.

Mr. Joel Wainwright, J.P., mentioned the great courtesy and kindness with which the Lord Mayor met the heavy demands upon his time by the various societies and public institutions of Manchester, and, after expressing the Society's appreciation of the interest which the Lord Mayor evinced in its work, moved:—"That the best thanks of this meeting be tendered to the Lord Mayor for the use of his Parlour, and especially for his kindness in presiding over the meeting." Mr. J. Stephenson Reid seconded the Resolution, which was passed unanimously with applause, and suitably acknowledged by the Lord Mayor.

Proceedings of the Society.*

January 1st to June 30th, 1913.

The 924th Meeting of the Society was held on Tuesday, January 7th, 1913, at 7-30 p.m.

In the Chair, Mr. David A. Little.

The Minutes of the Meeting held on December 20th, 1912, were taken as read.

The election of Mr. A. R. Whitfield as an Ordinary Member was announced.

The Chairman referred to the death of Mr. C. H. Scott, J.P., who had been a valued supporter of the Society for twenty years, and moved that the sympathy of the members present be conveyed to his relatives. The resolution was passed by the members rising in silence.

Mr. J. Ernest Phythian gave a lecture on "The Old Castles of England and Wales." The address was illustrated with lantern slides, many prepared from photographs of celebrated paintings of the castles.

On the motion of the Chairman, it was resolved that the sincere thanks of those present be tendered to Mr. Phythian for his very interesting and instructive address.

The 925th Meeting of the Society was held on Tuesday, January 14th, 1913, at 7-30 p.m.

In the Chair, Mr. J. Stephenson Reid.

The Minutes of the Meeting held on January 7th were taken as read.

Mr. W. H. Shrubsole, F.G.S., gave a lecture on "Budapest and the Great Hungarian Plain," illustrating his remarks with many fine coloured and other slides.

On the motion of the Chairman it was unanimously resolved that the best thanks of the meeting be given to Mr. Shrubsole for his intensely interesting address so well illustrated.

The 926th Meeting of the Society was held on Tuesday, January 21st, 1913, at 7-30 p.m.

In the Chair, Mr. F. Zimmern, F.R.G.S.

The Minutes of the Meeting held on January 14th were taken as read.

The election of the following Members was announced:—Ordinary: Messrs. Arthur Carr, John Hilditch, S. P. Leah, T. F. Wilkinson, and Robert Young; Associate: Miss S. Boyes and Mr. H. S. Beck.

Mr. Oliver Bainbridge gave a lecture on "Native Life and Customs in Southern Seas." The address was illustrated with original lantern views.

* The Meetings are held in the Geographical Hall, unless otherwise stated.

On the motion of the Chairman, seconded by Thakur Shri Jessrajsinghji Seesodia, a hearty vote of thanks was passed to the lecturer for his very interesting and instructive lecture, so splendidly illustrated.

The 927th Meeting of the Society was held in the Houldsworth Hall, on Tuesday, January 28th, 1913, at 7-30 p.m.

In the Chair, Mr. F. Zimmern, F.R.G.S., Chairman of the Council.

Captain Ejnar Mikkelsen, F.R.G.S., gave a lecture entitled "Lost in the Polar Regions."

A short report of the lecture is here given :—

" Captain Mikkelsen was the leader of the expedition which set out from Copenhagen in June, 1909, to search for the bodies of Erichsen and his companions and also for the records of their disastrous expedition to the north-eastern portion of Greenland. In April, 1910, Captain Mikkelsen and Engineer Iversen left the rest of the party and set off northwards alone. They were successful in finding Erichsen's records, but on returning to the place where they had left the ship found that she had been sunk by the ice. For over two years they were lost, but late in 1912 they were found on Bass Rock Island, where they had spent three winters, by a Norwegian fishing vessel and were rescued. Lord Curzon, who presided at the lecture which Captain Mikkelsen gave to the Royal Geographical Society, said that the explorer had 'endured privations such as had seldom fallen to the lot of any living man.' Last night Captain Mikkelsen, who was heard by a large audience, showed a great number of views illustrating the course of his travels—first the Esquimaux, who welcomed him to the East Coast of Greenland, the dogs of the expedition, and a view of an Arctic hare watching the strangers observantly and without nervousness. He gossiped pleasantly about the habits of life on Polar expeditions. It appears that after about ten days of the real hardship the habit of washing begins to seem unnecessary and to be dropped, and Captain Mikkelsen showed views of his party which fully bore out this statement. There was an exciting bear-hunt in the recesses of a cavern. The bear was very necessary for food, and had to be sought for in the dark. The narrative reached the point at which Captain Mikkelsen and Engineer Iversen set off northwards alone with provisions for 100 days and 15 dogs. The lecturer described the finding of a kitchen of the Erichsen expedition, and the cairns containing the results of the scientific work which that expedition had done. After this the lecture was a description of the sufferings on the unlucky return journey of the two men, Captain Mikkelsen's own illness, cured at last by a fortunate 'bag' of seagulls, accounts of daylight delirium, dreams of 'sandwiches,' and so on. When the two men at last reached Shannon Island, in November, they found that the ship had been destroyed and abandoned, and that their companions had been taken home by a sealer. They remained on Shannon Island till the following June. Many months were

afterwards spent on Bass Rock—there was a third winter in the course of which they smoked 50lb. of tea. ‘One night Iverson heard someone speaking down on the beach. It was 28 months since we had heard anyone speak but ourselves. Then we saw a great big man who said “How do you do?” Behind that man we seemed to see an army of men, though there were only eight. In two days we had smoked all the tobacco they had on the ship; in four days we had eaten all their potatoes.’ Captain Mikkelsen had shown photographs of himself and his companion, almost beyond the likeness of humanity from the sufferings they had undergone. These photographs were taken when twenty-two months more had to be undergone. They were in astonishing contrast with the splendidly set-up young man who was giving the lecture and who was so warmly applauded at the end.”

—*Manchester Guardian.*

The slides were well shown by the Vice-Chairman, Mr. E. W. Mellor, J.P., F.R.G.S., with his powerful electric lantern.

Mr. J. Howard Reed, F.R.G.S., moved, and the Chairman seconded a resolution thanking the lecturer for the intensely interesting account which he had given of his expedition. The resolution was carried with acclamation.

The 928th Meeting of the Society was held on Tuesday, February 4th, 1913, at 7-30 p.m.

In the Chair, Mr. George Ginger.

The Minutes of the Meetings held on January 21st and 28th were taken as read.

The election of the following Ordinary Members was announced : Messrs. Leo. Crosland, C. J. Simpson, Charles McDougall, and Robert McDougall.

Mr. Thomas W. Brownell lectured on ‘Some Impressions of Visits to the Holy Land and Northern Egypt,’ and illustrated his remarks with a large number of fine slides, mostly original.

The Chairman moved and it was unanimously resolved that the thanks of those present be given to the lecturer for his very interesting address.

The 929th Meeting of the Society was held on Tuesday, February 11th, 1913, at 7-30 p.m.

In the Chair, Mr. F. Zimmern, F.R.G.S., and later on, Mr. R. Kalisch, F.R.G.S.

The Minutes of the Meeting held on February 4th were taken as read.

The Chairman (Mr. Zimmern) referred to the death of Captain Scott and his four companions in the following words :—“We meet to-day in exceedingly sad circumstances. A great calamity has befallen us, our Society, all geographical societies, and the world at large by the death of a noble man and his noble companions. I feel, as you will feel with me, that societies like ours must give expression to their grief at such a calamity. Captain Scott was a friend of ours. I may perhaps be allowed to tell you that he was an intimate personal friend of mine—he and his wife and boy. If you also knew him, as some of you no doubt did, you would know him for an extraordinary

man, a lovable man, a man of sterling qualities, courage, bravery, intelligence—a leader of men. What he has gone through; how he died; what records he left you have seen in the newspapers. I need not repeat it but his appeal to the public to look to those who were dependent on him is a true sign of his splendid character. There he lies, buried in those desolate regions at a time when we were thinking of preparing a hearty welcome on his return, in order to assure him of our admiration for his deeds. Unhappily that welcome cannot now be given. He fell a victim to duty. His was real British valour—the valour which has made this country great. He was a true English sailor, intelligent, resourceful, full of scientific enthusiasm. In memory of our friend I ask you to rise from your places in silence.”

The large audience then rose.

Mr. Albert Wilmore, D.Sc., F.G.S., addressed the members on “Some Studies in the Commercial Geography of Lancashire,” illustrating his remarks with diagrams prepared mainly from the Commercial pages of the *Manchester Guardian*.

Mr. Kalisch, on behalf of the Meeting, offered sincere thanks to the lecturer for his very instructive address.

The 930th Meeting of the Society was held on Tuesday, February 18th, 1913, at 7-30 p.m.

In the Chair, Mr. T. W. Sowerbutts, F.S.A.A.

The Minutes of the Meeting held on February 11th were taken as read.

The Election of the following Members was announced:—Ordinary: Messrs. W. H. Colt, Charles Garnett, and Walter Green; Associates: Mrs. Prescott, Miss Prescott, Miss Ruth Taylor, Miss Mary Taylor, and Mr. C. H. Cox, B.Sc., L.C.P.

Mr. Thomas Sheppard, F.G.S., gave a lecture on “The Geography of East Yorkshire, illustrated by Chart and Plan.” The lecture, which was illustrated with many lantern slides, dealt mainly with the changes which had taken place at the mouth of the Humber.

The Chairman moved, and it was unanimously resolved, that the thanks of the Meeting be given to Mr. Sheppard for his very interesting lecture.

The 931st Meeting of the Society was held on Tuesday, February 25th, 1913, at 7-30 p.m.

In the Chair, Mr. F. Zimmern, F.R.G.S.

The Minutes of the Meeting held on February 18th were taken as read.

The Chairman mentioned that a Manchester Fund in memory of Captain Scott and his Companions had been inaugurated, and made an appeal for each Member to contribute to the Fund, to show his sympathy with the relatives.

Mr. Gerrard de Hockspied Larpent, B.A., gave a lecture on “Rhodesia.” (See vol. xxviii, page 30.) The lecture was illustrated with a large number of fine lantern views.

The Chairman, on behalf of the Meeting, thanked the lecturer for his interesting address, so well illustrated.

The 932nd Meeting of the Society was held on Tuesday, March 4th, 1913, at 7-30 p.m.

In the Chair, Mr. F. Zimmern, F.R.G.S.

The Minutes of the Meeting held on February 25th were taken as read.

The Election of Mr. E. Segalla as an Ordinary Member was announced.

Mr. Gilbert Waterhouse, lecturer at Leipzig University, gave a lecture on "Highways and Byways in Dalmatia, Hercegovina, Bosnia, and Servia." (See page 35.) The lecture was illustrated with lantern slides from photographs, mainly taken by the lecturer, supplemented by photographs supplied by the Austrian Government of places where permission to use the camera could not be obtained.

Mrs. H. L. Lees, F.R.G.S., moved, and it was unanimously resolved, that the appreciative thanks of the Meeting be given to Mr. Waterhouse for the very interesting account which he had given of his journey.

The 933rd Meeting of the Society was held on Tuesday, March 11th, 1913, at 7-30 p.m.

In the Chair, Mr. J. Stephenson Reid.

The Minutes of the Meeting held on March 4th were taken as read.

Mr. C. H. Bellamy, F.R.G.S., of Tourcoing, gave a lecture on "A Journey in the Balkans and Turkey." (See page 23.) The lecture was illustrated with lantern views prepared from photographs taken by the lecturer on the journey.

Mr. R. Kalisch, F.R.G.S., moved, Mr. W. T. Blease, who accompanied the lecturer on the journey, seconded, and it was unanimously resolved that the hearty thanks of those present be given to Mr. Bellamy for his very interesting account of the journey, and for the lantern views shown.

The 934th Meeting of the Society was held on Tuesday, March 18th, 1913, at 7-30 p.m.

In the Chair, Mr. F. Zimmern, F.R.G.S.

The Minutes of the Meeting held on March 11th were taken as read.

The Election of Messrs. Councillor C. E. B. Russell, M.A., Gilbert Waterhouse, and A. Blass as Ordinary Members was announced.

The Chairman mentioned the loss by death of Mr. R. H. Watt, a member for twenty-two years, and the members showed their sympathy with Mrs. Watt by rising in silence.

Mr. John A. Osborn gave a lecture on "The Swiss Rhine: a Scientific Study of Scenery." The lecture was illustrated with many fine lantern views.

On the motion of the Chairman, it was unanimously resolved that hearty thanks be given to Mr. Osborn for his very interesting and instructive address, so well illustrated.

The 935th Meeting of the Society was held in the Albert Hall, Peter Street, on Friday, March 28th, 1913, at 7-30 p.m., and was arranged in celebration of the Centenary of the birth of Dr. David Livingstone.

Mr. Harry Nuttall, M.P., F.R.G.S., presided.

Sir Harry Johnston, G.C.M.G., K.C.B., F.R.G.S., gave a lecture on "Dr. Livingstone's Explorations, and their Results," illustrated with lantern views. (See page 1.)

The Right Hon. the Lord Mayor moved, and the Right Rev. Bishop Welldon seconded, a resolution thanking the lecturer for his interesting address. The resolution was passed unanimously.

The 936th Meeting of the Society took the form of a Banquet, in celebration of the Livingstone Centenary and in honour of Sir Harry Johnston, G.C.M.G., K.C.B., F.R.G.S., and was held at the Midland Hotel, on Saturday, March 29th, 1913, at 7-0 p.m.

The President of the Society, Mr. Harry Nuttall, M.P., F.R.G.S., presided, and, in addition to the distinguished guest, there were present among others:—

The Right Hon. the Lord Mayor (Mr. S. W. Royle) and Mrs. Frazer; the Right Rev. Bishop Welldon, D.D., Dean of Manchester; the Right Rev. the Dean of Christ Church; Mrs. Harry Nuttall; the President of the Chamber of Commerce and Mrs. Langdon; the Right Hon. the Earl of Stair, President of the Royal Scottish Geographical Society; Mr. James Irvine, F.R.G.S., Vice-Chairman of the Liverpool Geographical Society; Mr. E. R. Wethey, F.R.G.S., Vice-Chairman of the Leeds Geographical Society; Mr. W. S. Ascoli, F.R.G.S.; Mr. and Mrs. W. E. Ashworth; Mr. J. E. Balmer, F.R.G.S.; Mr. E. Bermúdez, Consul for Nicaragua, and Mrs. Bermúdez; Rev. Canon W. H. Binney, F.R.G.S.; Mrs. A. de Bolivar; Mr. E. J. Broadfield, LL.D.; Mr. Harry Cousins, A.M.I.C.E.; Mr. C. Dreyfus, J.P., and Mrs. Dreyfus; Mr. T. A. Edwards, F.R.G.S., and Mrs. Edwards; Mr. E. Roose Evans; Mr. and Mrs. H. Forsyth; Mr. and Mrs. F. C. Gibbons; Mr. George Ginger; Mr. J. H. Greenhow, Norwegian Consul, and Mrs. Greenhow; Alderman J. Griffiths; Mr. and Mrs. W. Harper; Mr. and Mrs. W. R. Hesketh; Mr. John Houghton; Mr. and Mrs. E. Hoyle; Mr. and Mrs. Richard Jones; Mr. and Mrs. M. Kalisch; Mr. H. Kirkpatrick, J.P.; Mr. A. Knudsen, Danish Consul, and Mrs. Knudsen; Mr. H. G. Langley, Consul for Peru and Bolivia, and Mrs. Langley; Mrs. H. L. Lees, F.R.G.S.; Mr. and Mrs. Walter Lees; Mr. D. A. Little; Mr. W. Macmillan; Mr. McPherson; Rev. J. Ross Murray, M.A.; Miss Neild; Mr. and Mrs. Alfred Nicholson; Mr. Norbury Nuttall; Mr. Raymond Nuttall; Mr. F. S. Oppenheim, M.A.; Mr. S. Oppenheim, J.P., Consul for Austria-Hungary, and Mrs. Oppenheim; Miss Qualtrough; Dr. and Mrs. A. Rée; Mr. J. Howard Reed, F.R.G.S., and Mrs. Reed; Mr. and Mrs. W. M. Reekie; Mr. and Mrs. J. S. Reid; Mrs. R. H. Reynolds; Mr. and Mrs. Thomas Robinson; Councillor and Mrs. C. E. B. Russell; Captain T. Schlagintweit, German Consul, and Miss Schlagintweit; Mr. Harry Sowerbutts, A.R.C.Sc.; Dr. and Mrs. W. J. Sprott; Mr. S. Sternberg; Mr. Walter Taylor; Mr. Wm. Thomson, F.R.S.Ed.; Mr. W. H. Ward; Mr. Gilbert Waterhouse; Mr. W. Welsh; Mr. and Mrs. W. H. Whitby; Mr. and Mrs. S. W. Williams; Mr. R. T. Williamson, M.D., F.R.G.S.; Mr. J. Woolfenden; Mr. Hermann Woolley, F.R.G.S.; Mr. F. Zimmermann, F.R.G.S., and Mrs. Zimmermann.

The loyal toasts were proposed from the Chair, and duly honoured.

The Chairman, in proposing the toast of Sir Harry H. Johnston, said that in Sir Harry Johnston they had a worthy successor to Livingstone, and one whose life had indeed been varied, and whose explorations had been of a most important character. Sir Harry Johnston had occupied a very prominent position in the Livingstone Centenary Celebrations in different parts of the Kingdom, and had suggested a definite and permanent shape to the ideas in regard to a Memorial.

Sir Harry H. Johnston, in responding to the toast, said :— (see page 4.)

Mr. F. Zimmern, F.R.G.S., Chairman of the Council, in proposing the toast of "The Lord Mayor and Corporation of the City of Manchester," gave some personal reminiscences of his life in Manchester, and contrasted the present conditions of the City with its condition a generation ago.

The Right Hon. the Lord Mayor, in responding to the toast, gave much information in proof of the importance of the work of the Corporation, and in illustration of its extension during the period referred to by the proposer of the toast.

Mr. E. H. Langdon, B.A., President of the Chamber of Commerce, in proposing the toast of the Society, first referred to the remarks by Sir Harry H. Johnston on Education. He claimed for Manchester that it was doing all it could for the promotion of the useful education of which Sir Harry Johnston had spoken. He pointed to the work of the evening continuation schools and the general endeavour of the municipality to further commercial education. Mr. Langdon also called attention to the work of the Manchester University in the Faculties of Commerce and Art for instruction in Geography and in the subjects needed for traders. One complaint Mr. Langdon made was that the consular service was so underpaid that it was difficult to find able men to enter it. Mr. Langdon concluded by giving some particulars of the history of the Society, and by commending the useful work it was doing in spreading a knowledge of Geography.

Mr. J. Howard Reed, F.R.G.S., Hon. Secretary, responded to the toast, giving further details of the history of the Society, and hinting at some of the work which could be done if the Society was adequately supported.

Mr. F. S. Oppenheim, M.A., proposed the toast of "Kindred Societies and Guests," and made special reference to the Royal Scottish and Liverpool Geographical Societies.

The Right Hon. the Earl of Stair, President of the Royal Scottish Geographical Society, in responding, said that in Scotland the memory of Livingstone was held very dear. He was the pioneer of civilisation in Central Africa, he put forth great efforts in the suppression of the Slave trade and he led an exemplary Christian life. It was to the great city of Manchester, whose cotton trade was known throughout the world, an interesting fact that David Livingstone began life as a worker in a cotton factory. He then mentioned the large gathering which Sir Harry Johnston had addressed in Scotland in celebration of the Centenary of Dr. Livingstone's birth, and he hoped that something in Education of a permanent nature might be arranged as a result of these celebrations.

Mr. James Irvine, F.R.G.S., said :—I have the honour to represent

the Liverpool Geographical Society, and in supporting the Right Hon. Earl of Stair in response to the toast of "Kindred Societies," I desire first to say for my Council that they have always received the most hearty advice and cooperation, in connection with Geographical matters, from the Manchester Geographical Society, and I am requested to take this public opportunity of conveying their thanks to Mr. Harry Sowerbutts, the experienced and courteous Secretary of the Society.

Ladies and Gentlemen, we are assembled here to-night in memory of Livingstone, born in very impoverished surroundings, buried at the close of a magnificent life in Westminster Abbey, and leaving a record behind him which for all time must continue an inspiration not to Great Britain alone but to the world.

We are also assembled to do honour to one who caught up that inspiration in his early manhood, and who has given the best years of a strenuous life to carry on the great work begun by Livingstone.

The guest of the evening is also a great traveller, and still better, a great worker in the cause of African civilisation and the general elevation of the countries which he has visited and more than one of which he has so wisely and courageously governed.

It is now over thirty years since I first had the honour of knowing Sir Harry Johnston personally, and during the generation which has passed since then his name has been prominently before all who have thought of Africa; Geographically, Scientifically, or Philanthropically.

Geography owes much to the guest of the evening, as British East Africa and Uganda are alike indebted to Sir Harry Johnston for magnificent exploratory work when these countries were practically unknown: Science owes much, for has he not in all his books, especially in those two great and beautiful volumes on Uganda, done splendid service, including the discovery of the Okapi, and the same recognition must be accorded to the two epoch-making volumes on Liberia: then lastly, and I am inclined to appreciate most of all, that Philanthropy, as touching Africa, owes much to Sir Harry Johnston. There is evidence on every page which he has written that his primary impulse was towards the natives, elevating them and obtaining for them advantages which led to comfort and happiness hitherto unknown—and in this direction I rejoice to recall that, from first to last, he has on one public occasion after another, boldly asserted his favourable experience of the work of Christian missions among the heathen.

I close with two estimates of our guest, directly opposite of each other. The first is contained in the preface to his volume on the "Congo"; he says, "I have not ventured to make this work a record of novel exploration, nor of scientific research, for I lack the necessary ability." The other side of the picture is from an able publication recently issued, and is brief, thus:—"Sir Harry H. Johnston knows more about Africa than any other man living." We honour Sir Harry for his modesty, but we all prefer to believe the evidence of the last witness.

Sir Harry Johnston, in proposing the toast of "The Chairman," referred to various points which had been raised by the various speakers.

The Journal

OF THE

Manchester Geographical Society.

* * *

THE GEOGRAPHY OF EAST YORKSHIRE,
ILLUSTRATED BY CHART AND PLAN.

By T. SHEPPARD, F.G.S., F.S.A.Scot.

*(Addressed to the Society in the Geographical Hall on
Tuesday, February 18th, 1913.)*

Where life and beauty,
Dwelt long ago,
The oozy rushes
And seaweeds grow
And no one sees
And no one hears
And none remembers
The far off years.

It is the olden,
The sunken town
Which faintly murmurs
Far fathoms down
Like sea-winds breathing
It murmurs by,
And the sweet waters tremble,
And sink and die.

THESE beautiful lines, translated from the Danish, might have been written in reference to some of our old Yorkshire coast towns, though they really well describe a similar story in the Baltic. And of our Danish ancestors in the Baltic, as of more recent Danish ancestors on our own shores, as well as of the places in which they dwelt, it can be said that "Nothing of them that doth fade, but doth suffer a sea change, into something rich and strange. Sea nymphs hourly ring their knell. Hark, now I hear them, ding dong bell!" These words, or some much like them, were written centuries ago, but the same changes then recorded yet take place, and as one town vanishes another appears. Like our own little lives, these places go and

Vol. XXIX. Parts III. and IV., 1913.

leave not a wrack behind. But the world still goes on, and the alterations wrought are of little moment save to the antiquary and historian.

Seas more late in form and date
 Spredde owre the self-same strande ;
 And many a change most wylde and straunge
 Reversedd the sea and lande.

Thus if wee Nature's workes exhume
 Or owre past history raunge,
 We find both mann and Nature's doome
 Is one perpetual change.

Antiquaries revel in dipping into the past history of their country, and when they have got as far back as they can they leave the task to the geologists, who "rin up the hill and down dale, knapping the chucky stanes to pieces wi hammers like sae many road-makers run daft. They say 'tis to see how the world was made." At any rate, that is the opinion expressed in "St. Ronan's Well."

When, therefore, it so happens that one has delved a little in both geological and archæological fields he is able to give a less prejudiced narrative of the past history of a changing district such as East Yorkshire, than one who views it through a single set of spectacles.

Twenty-four years ago the late John Roberts Boyle wrote his "Lost Towns of the Humber," in which he carefully summarised the information bearing upon the area, contained in such works as Thompson's "Ocellum Promontorium," Poulson's "History of Holderness," "The Meaux Chronicle," and papers on early maps of Spurn, by Lewis L. Kropf, published in the "Hull and East Riding Portfolio." He also quoted from documents in the Public Record Office and elsewhere, and brought the whole together in the learned style that was so much his own.

As a frontispiece to the book was a map showing the positions of the Lost Towns of the Humber, as he considered them to be, of which, however, more will be said later.

The preface to that work contained the following sentence: "I hope hereafter to supplement this book by a similar one on 'The Lost Towns and Churches of the Yorkshire Coast.'"

I understand that this hope was realised as far as the first chapter was concerned, and that it was actually written, put

into type, and a proof sent to the author. A copperplate of Hornsea Church was also engraved. But that was all. The copperplate was lost, though I have seen a print from it. The proof was never returned to the printers, and, as so often happens, the work was never completed.

Often I urged Mr. Boyle to do this work, and, as this cannot now be, I have tried to do it myself. The work has given me the advantage of finding out the various sources from which he obtained information, and in addition I have secured many interesting facts which were apparently unknown to him. Furthermore, it has revealed a few ways in which "literary men" occasionally endeavour to bridge over the gaps in the history of the places with which they are dealing.

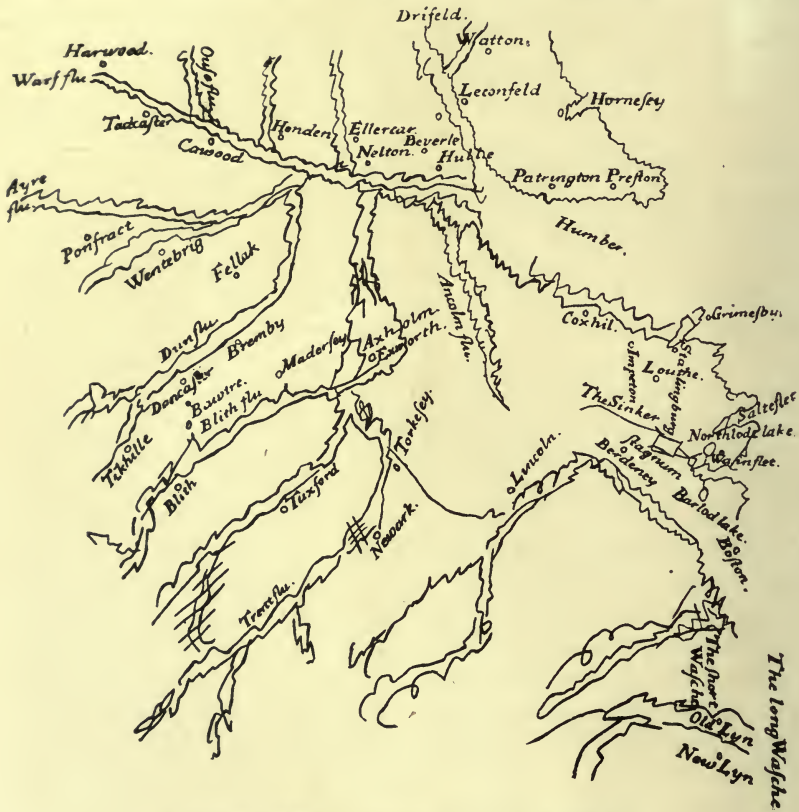
First, with regard to the cause of our Lost Towns. In some parts of the world, notably in Scandinavia and the Baltic, there is an actual change taking place in the land levels. One part of the coast is gradually rising above the waters; another is as surely sinking.

These changes are gradual, and in the mere lifetime of a man may not seem of much moment; but as centuries roll on the changes are more pronounced; seaports become dry and away from the shore, or inland towns and villages are gradually submerged beneath the waves. In other parts of the world, as in the Mediterranean, the West Indies, or the Far East, volcanoes and earthquakes cause more sudden changes, and in a few weeks, or even a few hours, towns are overwhelmed, are buried, or sink beneath the sea, or, as quickly, new land is thrown up and the waters recede. In other areas, as at the mouths of the Mississippi and the Nile, the land grows seaward by the mere accumulation of débris brought down from the higher ground, such detritus being deposited as the rivers' waters reach the sea. On these deltas the sea-coast villages of one race are the inland homes of the next.

But none of these causes operated in Yorkshire. Volcanic action, though not unknown, is here a thing of the geological past. There has certainly been no upheaval nor depression since the earliest appearance of man in the area. The Humber, though a mighty estuary, is fed by a few comparatively small streams, and even much of the sediment within its banks has been brought from the Holderness coast outside. It is not responsible for any seaward extension of the land, nor for very much erosion within its area.

No, the coast changes in East Yorkshire are simply and solely due to the ceaseless and merciless wearing away of our shores by the frosts and rains and storms and currents and tides, and by the accumulation of this eroded material at Spurn and within the Humber.

Our soft glacial clays and gravels and sands, which form the coast from Bridlington to Easington, are eroded at the rate of



Leland's Map of the Humber District
(Temp. Henry VIII.)

seven feet a year for the whole thirty-four miles. A moderate calculation shows that nearly two million tons of material are washed away yearly. This is equal to a loss of an acre or more a mile each year. On the basis named, it means that a strip of land about three and a half miles wide has disappeared since the Roman invasion, representing 115 square miles of land, an area equivalent to that upon which London is built.

And these are not merely fancy figures. They are based upon reliable geological and antiquarian evidence, upon actual measurements, upon fair calculations, upon the evidence of the Domesday Book and other old documents, upon reports and monographs and papers innumerable, and, perhaps more important than all, the evidence afforded by maps.

I would like to emphasize the value and importance and interest of the study of old maps. Among the many hobbies that I have to keep me out of mischief is that of collecting old maps and charts, and as these date back to the time of Henry VIII. it will be readily understood that they contain much information of value to our inquiry, especially as many include representations of churches and houses and villages which are remindful of the well-known inscriptions on the tombstones of ancient mariners, viz., "The sea gat 'em." It is also curious to observe, in the older days of publishing maps, how a cartographer "revised and brought up to date" a map by erasing the date from the plate, by altering the design of the scroll, by inserting a ship in the sea, or by taking one out; or even by omitting the name of the "generous benefactor" by whose financial assistance the plate was prepared in the first instance, this particular change probably taking place after the death of the person in question! These methods of issuing "revised editions" (not altogether unknown to-day) explain how it is that a map bears the arms and initials of Queen Elizabeth, and is even dedicated to her Most Gracious Majesty, though bearing a date well on in the reign of Charles II.

However, taking the reliable maps and charts, we can get a remarkable record of our coast changes. Beginning with Lord Burleigh's wonderful parchment of the time of Henry VIII., then examining Saxton's map of 1577 (the first engraved map of Yorkshire), Speed's better-known map of 1610, the fine series engraved by various Dutchmen in the seventeenth century, Greenville Collins' Chart of 1684, Warburton's map of 1720, Moll's, Scott's, Jeffreys', Tuke's, Smeaton's, and other later maps, down to our own time, we see how first one landmark goes, one church, one village, followed by another and another as we come to more recent times; and on Tuke's map of 1786 we find indications merely of "Hartburn washed away by the sea," "Hyde washed away by the sea," "Site of the Town of Hornsea Beck," "Site of Hornsea Burton," "Site of the ancient church at Withernsea," and so on.

Of course, we have a Kilnsea, a Withernsea, and a Hornsea with us to-day. But these are not the same places that are shown on these earlier maps. As the sea has washed a house or church or a stable away new buildings have taken their places, and these have naturally been built further inland; thus gradually the places have made a strategic movement to the rear. We possess plans of Kilnsea, Owthorne, Withernsea, etc., with their garths and fields and drains, even showing churches, churchyards, and vicarages, the very sites of which to-day, after a lapse of a single century, are out to sea.

We can see these changes ourselves. I do not confess to being particularly patriarchal, but at many points along the coast I can remember having seen houses, farm buildings, roads, and fields which are now washed away. I even have photographs of places that have gone, and photography is a comparatively modern art.

Naturally, at times reports of land losses get exaggerated, and writers are apparently tempted to let their imagination run riot. But I think the following gem, quoted from one of the weekly papers issued in 1906, is the most glaring instance of journalist "enthusiasm" that I have ever read:—

"On the coast of Yorkshire there are two noses of hard rock that the sea can *eat* but slowly [a poetic thought!]. They are Flamborough Head and *Spurn Point* [!], and between them lie 33 miles of coast, which the North Sea is swallowing at the rate of three yards in every twelve months. At Withernsea, just to the north of Spurn Point, houses *go over the cliff almost daily* [!]. Some little time ago there lived at Withernsea an old fisherman who, despite the warnings of his friends, persisted in declaring that the sea would never harm him or his. . . . There were two houses between the old fellow's cottage and the crumbling cliff edge. . . . One rough night, however, a "biting nor-easter" hurled the "ramping breakers" against the shore to such purpose that first one house went and then the other. Then the wall of the old fisherman's cottage collapsed because of the disturbance to the foundations, and he awoke in the grey of the morning [so far he had slept!] to find himself looking straight from his bed on to the green waters of the North Sea."

'Tis perhaps some satisfaction to know that Ananias was a journalist!



Fig. 2. East Yorkshire. Lord Burleigh's Chart (temp. Henry VIII).
 Upon which several lost towns are represented.

It is this so-called "nose of hard rock," Spurn Point, upon which so very much depends when we come to consider changes in the area and the positions of the important lost towns of South-east Yorkshire. It is made up entirely of fine sand and gravel brought down the east coast by the tide. This material, on reaching the waters of the Humber estuary, is precipitated, and forms the growing tongue of land which slowly and irresistibly is approaching the Lincolnshire shore. At present it is about four miles long—the hardest four-mile walk I know!—yet is so narrow that at high tide a person can easily throw a stone into the sea on one side, and another into the Humber on the other, without moving his position. Its rate of growth can fairly well be ascertained by the distances at which the light-houses have been moved from time to time in order to keep near the point. We have details of these from the time of Charles II, who granted a patent to Justinian Angell (the only Yorkshire male angel that I know of!) to continue, renew, and maintain lights at Spurn, to the present time.

In the year 1428 Richard Reedbarrow had a light at Spurn, but its position is not known. A little time ago I was fortunate enough to secure the original reports, sketches, maps, plans, etc., prepared by Smeaton when he was asked to report upon the changes at Spurn and make suggestions for its proper lighting. It has also been my good fortune to examine MSS. and charts in the British Museum, dating as far back as the sixteenth century, some of which have not been seen by previous workers; as well as a remarkably fine sequence of maps and navigators' charts, showing the various phases in the history of this long, narrow sandbank.

It will be understood that as the Spurn grows and extends there must come a time when the space between the Point and the Lincolnshire shore is hardly sufficient for the tidal waters of the estuary to pass in and out, and a break must occur in the bank, thus forming an island. If we go back to geological times it is possible that a number of such extensions, and a number of such islands, have existed. Doubtless it was at some such period in its history that an island was formed upon which Ravenser and Ravenser Odd were built. Then, as the sandbank gradually extended southwards, the waters rushing in and out of the Humber would wash away the sand island, and the town built upon it became "entirely blotted out and consumed." In quite recent times breaks have occurred,

allowing water to pass through; but these have been repaired by groynes or similar artificial structures.

I wish it to be clearly understood that Spurn Point the sandbank is distinctly an appendage to the south-east corner of our Riding. It is fastened on, as it were, like a tail. And as the coast-line has changed its position by denudation, so must the position of the dependent sandbank have altered. If, therefore, in Roman times, the Holderness cliffs were two or three miles to the east of their present position, it seems clear that the Spurn must have been thus far out to sea. In this way it becomes evident that when the Danes landed in the year 867 and planted their standard, the Raven, originating the town of Ravenser; when Baliol with his army embarked there in 1332; when Bolingbroke, afterwards Henry IV, landed there in 1399, when Edward IV arrived there in 1471; when, in fact, this important town, which sent two members to Parliament, existed; it was much to the east of the present Spurn Point.

This fact seems to have been overlooked by Boyle; hence the great difference between the positions of Ravenser and Ravenser Odd as represented on his map, and as shown on one I have prepared. Boyle apparently assumed that the position of the Spurn Point has been stationary, and he had not allowed for its westerly trend as the cliffs were worn away.

This town of Ravenser, referred to in ancient Sagas, mentioned in Shakespeare (I still stick to Shakespeare in spite of the cranks) which supplied Hull and Grimsby with merchants when it fell, and earlier was far more than a rival to either, is a fair example of the thorough way in which all trace of a place may disappear. If it had been possible for a photographic survey to have been taken—as is now being done with disappearing Hull—what a valuable record we should possess!

There *may* possibly be a church bell or two in the East Riding, removed from the church at Ravenser; it is just possible that the cross now at Hedon, formerly at Burton Constable, still earlier at Kilnsea, *may* have been at Ravenser, though I can find no evidence; but with these possible exceptions we have nothing whatever belonging to the place.

Some time ago in reading an anonymous article on coast erosion in one of the popular monthly magazines, I saw a small view of "Ravenser" said to have been copied from a fifteenth century illuminated MS. Later the article was reprinted almost entirely in a little book on Lost England, by



Fig. 3. East Yorkshire. Saxton's Map 1577, the earliest engraved Map of the County.



a Mr. Beckles Willson, but the view did not again appear. It seemed clear therefore either that the author of the book was the author of the anonymous article, or he had "lifted" it, without acknowledgment, into his book. So I wrote him asking the source of his drawing, but he had forgotten! The publishers knew nothing of it. It was certainly not at the British Museum, and the authorities there agreed with my view that it was probably a forgery. The miniature showed a wide lane leading to a church, partly hidden by a dark building: a row of houses on each side, (but they were not, as we should have expected, gable-end on with the street); trees behind the houses, and with a nondescript churchyard cross to the right of the road. The whole thing was a mystery.

However, quite recently, in examining Poulson's "Holderness" (which Mr. Willson quoted) I came upon a practically identical view; the church in the distance, hidden by a dark building; the wide street, the houses on each side, and even the windows and doors identical, and the trees all there; but instead of the cross was the initial letter I. But it was labelled *Sutton*, and represents Sutton-in-Holderness as it is to-day! Thus, by a strange coincidence, the long-lost Ravenser—washed away hundreds of years ago—was identical with our adjacent village of Sutton-upon-Hull. Or is it possible that the author was inspired by the view of Sutton in making an alleged view of Ravenser, and forgot to say so?

The other lost Humber towns enumerated in Boyle's book are "Tharlesthorpe, Frismersk, East Somerte, Orwithfleet, Sunthorpe, Old Ravenser, and Ravenser Odd." It is quite possible that, as he suggests, the sites of some may be covered by the great growth of land now known as Sunk Island, though an island no longer. This land, of course, was originally an island, which was *sunk* at high water, but it gradually grew and extended until it was eventually joined to the mainland; in the same way as is Broomfleet Island near Brough. Read's Island, still an island, is another great area of land reclaimed in recent years, and doubtless owes its origin to the material brought down from the denuded Holderness cliffs, aided by the detritus carried down the Ouse, Trent, and Hull. Other places have disappeared, including Burstall Priory, a view of which was published by Buck early in the eighteenth century. The buildings of this priory eventually provided the material for protecting the Humber shore close by, just as Her Most

Gracious Majesty, Queen Elizabeth, generously gave permission to the people of Bridlington to build piers from the stones of Bridlington Priory, left by her father, Henry VIII, after he had pillaged the place and even stripped the roof for its lead!

Whether the sites of the Humber's lost towns, as indicated by Boyle, are correct, we may never know. With the exception of Ravenser and Ravenser Odd, already referred to, it seems likely that he has located their probable positions as definitely as is possible with the meagre records available.

When we come to the lost towns of the coast, however, we seem to be on firmer ground, so to speak; at any rate there seems to be fairly substantial evidence of the positions of the numerous places mentioned.

To a large extent this evidence occurs upon maps and charts, which were prepared years ago, but in the cases where the places have been washed away before the date of our earliest known charts, the documentary evidence has been so complete that there has been little difficulty in placing them.

To begin with, then, I have taken Ravenser or Ravenspurn, and Ravenser Odd, away from the Humber, and placed them outside the present Spurn, thus claiming them as lost towns of the coast. Ravenser sent members to Parliament in 1305; two years later it taxed its inhabitants in order to defend its walls. In 1346 a ship was sent from Ravenser to the King's Navy; nine years later bodies were washed from the town's graveyards, and by 1361 the floods drove the merchants to Grimsby and Drypool, on the east of Kingston-upon-Hull. In 1390 all trace of the town was lost.

Had Ravenspurn remained, with its wharves and quays and warehouses, what insignificant places Hull and Grimsby might have been to-day!

Kilnsea, the "Chilnesse" or "Cold Nose" of Domesday, is the southernmost coast town that has gone. In Allen's "Yorkshire" (1829) is a charming picture showing the ruined church and tower on the edge of the cliff; and part of the building on the beach. Seven years previously, in addition to the church, there were thirty houses. On the ordnance map of 1852 there were still six or seven houses shown, and the foundations of the church were at the then half tide-mark.

The "Blue-Bell" at Kilnsea (the Blue Bell is the name of an inn!) was erected in 1847, and built into its walls is a slab with the information that it was then 534 yards from the



Fig. 4. East Yorkshire. Speed's Map. 1610.

cliff. The last time I was there I stepped the distance out, as carefully as the circumstances permitted, and estimated it to be 200 yards. In 1899, at an exceptionally low tide, a party of us saw the few remains of old Kilnsea church, just as far out as it was possible to go—about 250 yards from the cliff edge. That was probably the last occasion upon which any trace of the building was ever seen. Fortunately a map exists showing the disposition of the church and churchyard, pond, street, etc., and we have some views of the church and cross. In the few houses which to-day are flattered by the name of “village” are numerous alleged relics from the old township, but I notice that each time I go there seem to be more, and soon, doubtless, the very beer and cheese will have been rescued from “owd Kilnsea choch.”

In early times Kilnsea was of some importance, and even in the middle of the sixteenth century we find Holinshed, in his “list of ports and creeks as our seafaring men doe note for their benefit upon the coasts of England” includes Kilnsea, or as he called it Kelseie, as the place is still pronounced by Holdernessians. In Lord Burleigh’s chart, issued a little later, there is a note opposite Kilnsea to the effect that “ships of good Burden may ride and land here to no annoyaunce to the countreye.”

In 1837 a work was published by one “Geffrey de Sawtry, Abbot,” and was innocently entitled “The Churches of Holderness.” The book is exceedingly scarce, but I obtained the late E. S. Wilson’s copy. It is really a scurrilous record of the immoral practices and robberies and neglects of apparently all the various vicars of the churches of Holderness. Of Kilnsea it states: “The church has long since been swept away; and the tower, which stood many years after, a valuable landmark for seamen, fell with a tremendous crash, in the autumn of 1830. This is therefore another churchless village; but having a population of nearly 200, they have set apart a room for divine service in which it is performed every third Sunday, weather permitting; otherwise, it is reported, the worthy pastor, feeling for his flock, grants them an indulgence to remain indoors, and takes the same himself.” For many years, the bell, which was dated 1700, was suspended over a beam in a stackyard, and was “tolled” by throwing stones at it! which seems to have been an improvement on Hood’s “And they told the Sexton and the Sexton tolled the bell.”

In recent years the low cliffs of Kilnsea have been washed away, together with the artificial embankments which had been erected; and hundreds of acres have been covered by sea-water, which wasted the crops, spoilt the wells, and ruined the district generally.

To the east of Kilnsea there was once a place called Sunthorpe. The village is referred to in the *Meaux Chronicle*. To-day the "oldest inhabitant" knows not even its name.

Easington, which yet has a church, one or two public-houses, a fine aisled tithe-barn, and a few shops, was a place of influence in Domesday times. Drogo the brewer (there was beer in Norman days) had 13 villanes, four borders and a plough there, and Morcar had 15 carucates of land to be taxed, presumably on "Form 4" or something of that sort. Chancellors of the Exchequer existed in those good old days, but usually died young! There were then 2,400 acres in Easington. In 1880 there were only 1,300 acres. There was a haven for ships at Easington in the sixteenth century, judging from a passage in the *Meaux Chronicle*, but this had apparently disappeared two centuries later when Holinshed compiled his "List of Creeks."

The loss of land here is perhaps as great as anywhere on the coast. In 1776 the church was 1,056 yards from the cliff edge; in 1882 it was 850 yards only, a loss of two yards a year for over a century. A practical example of the way land has here depreciated by sea and flood occurred quite recently, when Firthholme House Farm, with buildings and 130 acres of land, was sold for £650, whereas the mortgagees had lent £4,000 on it some years ago!

"Mount Pleasant Cottage," Easington, built in 1876, bears a stone which records that it was then 616 yards away from the sea. To-day it is about 460 yards away; a loss of over four yards a year.

Other places near Easington, referred to in old documents, but which are now no more, are Northorp, Hoton, and Turmarr. The last place had disappeared as long ago as the fourteenth century. Yet as a remarkable instance of the way in which names cling to a district, a field north of Easington, where there is a depression in the cliffs, is still known as Turmarr Bottoms, though no one can tell us why.

The district round Easington was evidently of importance in Roman times, and I have obtained some vases, coins, oyster



Fig. 5. East Yorkshire. Bowen's Map. 1750. (It will be noticed that Sunk Island was really an island at that time.)

shells, etc., from an old Roman refuse heap, and from the sites of their dwellings there.

At Hollym, Withernsea, Aldbro', and other coast townships, Roman remains are recorded; formerly much more frequently than is the case nowadays. Inland in Holderness, except at Swine, and Halsham, there are no such records. This seems to point to the fact that in Roman times there was a road along the cliffs, with a station at its southern extremity, guarding the Humber. Yet this road has gone as completely as have the Romans themselves. But the Goths and Vandals were the wind and the waves!

In 1346 the Abbot of Meaux complained that his lands at Dymelton (Dimlington) had been reduced considerably in value because of the waters of the sea. Were he living to-day he would probably have joined a doctors' panel for a living! Of Dimlington nothing now remains. For twenty years I have measured the distance between the beach and the ruins of the old "chapel" near the cliff top. I have seen the distance get less and less. When I measured it first it was nearly forty yards away. The last time I measured it, it was ten yards distant. The tenant of the adjoining farm then pulled down the last of this ruin, which had stood the storms of six or seven centuries, and probably it now forms part of a pigstye.

At Out Newton, close by, was once a village, with its church. A list of the plate and vestments therein is given in "Inventories of Chirch Goods, York, East Riding," in 1552. In a Parliamentary Survey of the East Riding in 1650, it is recorded that "there is a chapel at Out Newton—and is much decayed; the hamlet being fit to be annexed to Holmpton parish, being not a mile distant!" Those who know anything of the village of Holmpton will understand what a low ebb Out Newton had reached even at that early time.

In the reign of Henry III there was a "Lord of Out Newton"—it mouths well, and I would suggest the name for some of the un-numbered lords yet to be created.

The present Withernsea is all that is left of two former important townships, Owthorne, or Sister Kirke, and Withernsea. Each had its church, the sites of which are now far out to sea. The nearness of the two edifices gave rise to the legend that they were built by two rival sisters. This not uncommon theory is applied to many others, including the two churches at

Barton-on-Humber, although the difference in the dates of them is several hundred years.

Withernsea itself, sometimes described as Seathorne (though the Seathorne of Domesday was Owthorne), contained 800 acres at the Inclosure in 1794. A century later there were 745 acres, a loss of 55. To-day there are less.

The original Withernsea (Witforness) township and church were much to the east of the present place, it being decided to re-erect the church on Priest Hill, as long ago as 1444. In 1488 the new (present) church was consecrated, but in the time of good King Hal it was described as "much decayed," and remained in ruins—as shown by several photographs and engravings—until about fifty years ago.

Owthorne, sometimes referred to in early times as Torne, has shared a usual fate. According to Reid's "Geology of Holderness," "Even since 1822, the date of the old Ordnance Survey, the village of Owthorne, with a church and twelve houses, has been entirely swept away, and Owthorne and Withernsea Meres have both disappeared."

In Thompson's "Ocellum Promontorium" is a fine view of Owthorne Church as it was in 1800; quite close to the cliff edge. Poulson, in his "History of Holderness," gives a very similar view—the main difference in Poulson's sketch being that a flag is shown as flying on the tower! Poulson also gives an excellent side view, showing the church as it was in 1797, and this one does not seem to have been pirated from any other source!

Poulson, although not usually poetical, gives the following quaint account of Owthorne, under date 1841:—

"A few years since, before the sea engulfed the last relict (*sic*) of Owthorne Church, a more touching and interesting spectacle could scarcely be witnessed by a reflecting mind than these "Sister Churches." Owthorne Church, standing like a solitary beacon on the verge of the cliff, perpetually undermined by the billows of the ocean, and offering a powerless resistance to their encroachments. The churchyard, and its slumbering inmates, removed from time to time down the cliff by the force of the tempest, whitened bones projecting from the cliff, and gradually drawn away by the successful lashing of the waves; and after a fearful storm, old persons tottering on the verge of life, have been slowly moving forth and recognising (!) on the shore the remains of those whom in early life they had known and revered. The old church still remained; but the wide



Fig. 6. East Yorkshire. Tuke's Map. 1766.

fissures in the walls, and the shattered buttresses, plainly told it must soon fall in the common wreck. In 1786 the sea began to waste the foundation of the churchyard. In 1787 there were two bells in the tower, and the third broken. In 1796 the church was dismantled; and in 1816, after an awful storm of unusual violence, the waves having undermined the foundations, a large part of the eastern end of the church fell with an awful crash, and was washed down the cliff into the sea; many coffins and bodies in various states of preservation were dislodged from their gloomy repositories, and strewn upon the shore in frightful disorder. These relics of departed greatness found a new place of sepulture in Rimswell. In 1822 the chancel, nave and part of the tower were gone. In 1838 there was scarcely a remnant of the churchyard left."

The book on "The Churches of Holderness," to which reference has already been made, informs us that "during the washing away of the chancel of the old church, the coffin of a former rector was exposed, and the rector and clerk at that time *fought* for the ownership of the lead coffin!" and "a skull, which projected from the cliff of Owthorne burial-ground was observed to be occupied by a robin redbreast, where she, undisturbed, built her nest and reared her brood."

In Rimswell Church there is a plan of Owthorne prepared in connection with the Inclosure Act of 1806. Though of so comparatively recent a date, it seems strange to see the positions of the streets, fields, houses, public drains, church and vicarage, the sites of all of which to-day are at dead low-water mark.

Newesham or Newsom, formerly within the parish of Owthorne, has likewise disappeared, and little information in reference to it seems available. Someday, possibly, some of our "popular" writers may provide us with a sketch of its main street, but at present I am not able to show one. The place is referred to in a deed as late as 1662. In the times of Domesday the scribe spelt the word as N I U U E H U S U M, probably as near the phonetic as he was able. In the reign of Richard II the chapel at Newsome was "conveyed" to Kirkstall. Later, the sea conveyed it, whither?

Waxholme is another township of which but little remains. In Speed's map (1610) a mere is shown at Waxholme, with a stream which joined the river Hull. Of the fourteenth, fifteenth and sixteenth centuries are many documents in which are

references to Waxholme. It once had a chapel, which was given to Kirkstall by the Abbot of Albermarle in 1394.

Sand-le-Mere, or Sandlemarr, north of Withernsea, shared a similar fate. What is left of the mere, now dry, remains so by an artificial embankment which keeps out the sea. A "preventive watch-house," which was built at Sand-le-Marr in 1800, was over 84 yards from the cliff in 1833. To-day part of it is in pieces, on the sands. Even so long ago as 1841 the following by no means glowing account of the place was written by the Holderness historian:—

"Sandley Marr is now the site of a poor cottage on the cliff, one mile from Tunstall, and is destitute of all attraction except the green luxuriance of broad acres, and the wide and solitary expanse of the German Ocean. The beach affords excellent materials for the repair of the Holderness roads."

Monkwike (Domesday M O N C U U I C) has gone. In the reign of William the Norman there were in Monkwike "two carucates of land to be taxed, land to two ploughs. Six villanes have there three ploughs, and they pay ten shillings." Not a bad record for those days.

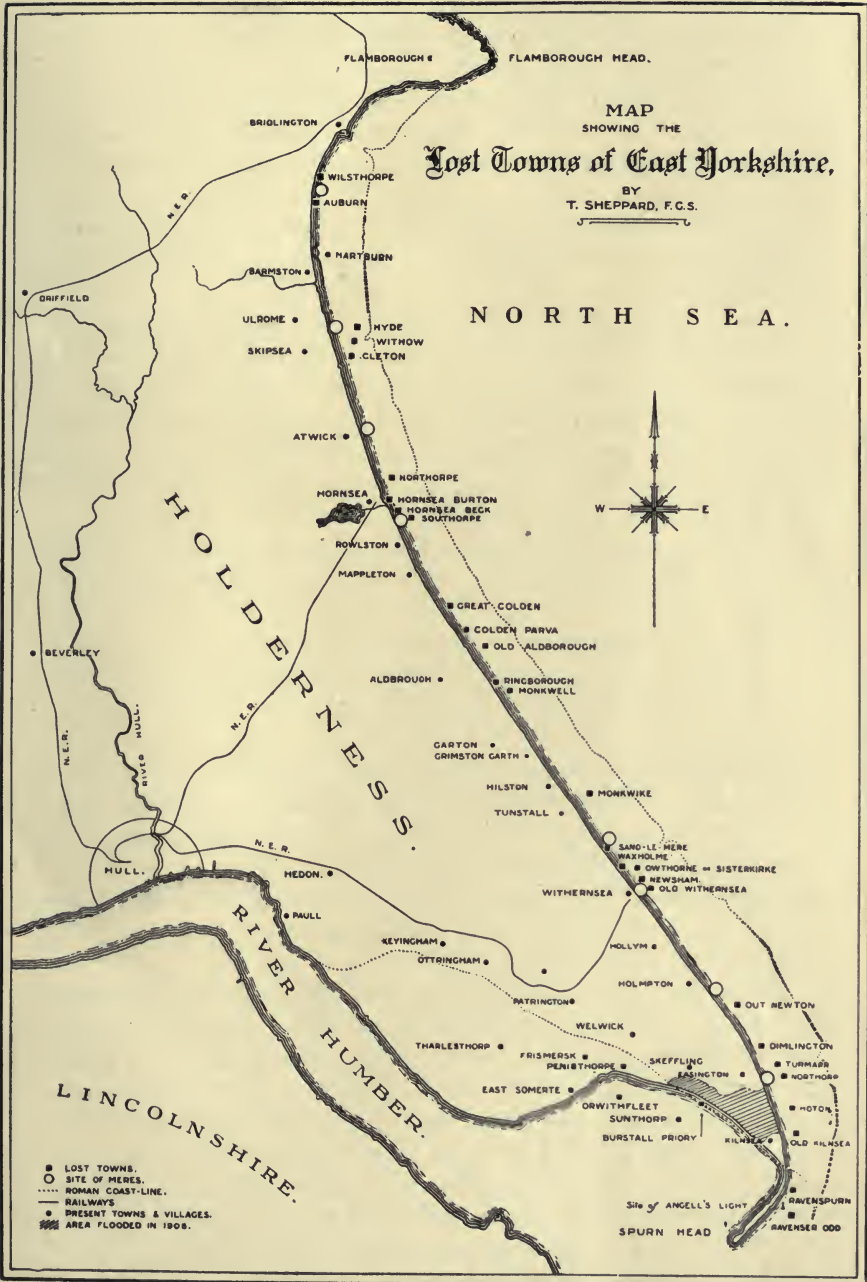
At Hilston, too, there has been great waste. The church contains remains from a much earlier building. There has been also much loss at Grimston.

Monkwell, like Monkwike, is another lost township; it was once near Ringborough.

The present Aldborough is much to the west of the original village of that name, and even in the quaint present-day church there are Saxon remains which were probably rescued from the former building—now washed away. This will be understood when it is borne in mind that actual measurements show that in less than eighty years—a man's lifetime—there has been lost a strip of land 370 feet in width, along the whole front of the township.

At Colden Parva, or Little Colden, was once a chapel, which, like so many in Holderness, was conveyed to Kirkstall in the reign of Richard II. But the chapel, and the village, were swept away about 1690, though Poulson records that "the living exists though the chapel has been destroyed!"

At Hornsea, perhaps, have been some of the most remarkable changes in our coast-line. Not only was there once an important port there, with pier and landing-stages for ships, but there were townships of a considerable size at Hornsea Burton



and Hornsea Beck. In addition were Northorp and Southorpe—the north village and south village respectively; which have likewise gone.

Lord Burleigh's chart shows a large creek at Hornsea. In the reign of James I Hornsea pier was repaired at a cost of £3,000, a very considerable sum in those days; and 2,500 trees were used for the work.

Meaux Abbey held 26 acres of arable land in Hornsea Burton in 1334. About sixty years later only one acre remained!

In the reign of Charles II., when small copper currency was so scarce that publicans and traders issued their own tokens for purposes of exchange, there was one Benjamin Rhodes at Hornsea, who in 1670 issued a halfpenny token; on the obverse of which is a representation of a ship. This seems to be an indication that shipping was of some moment at Hornsea, even in those days.

In connection with Hornsea Church there is a tradition, often quoted, that the following lines were formerly inscribed on the steeple:—

Hornsea steeple, when I built thee
Thou was ten miles off Burlington
10 miles off Beverley, and 10 miles off sea

Hornsea Church has no steeple; and certainly at no time since the church was built was it anything like "ten miles off sea."

That coast erosion is occasionally an advantage is shown by the fact that in 1770 the corpse of a murderer and smuggler named Pennel (or Pannell) was bound round with iron hoops and hung on a gibbet on the north cliff, until such time as the "ornament" was washed away.

Hornsea Mere is the last of the Holderness Meres. There were formerly very many, but all are either artificially drained or have been "tapped" by the sea. Remains of a former Hornsea Mere, to the east of the present one, were exposed in the recent storms, and in the peat which once formed the margin of that mere, I found bones of pike, shells of the swan mussel, and remains of other animals; and of plants, showing that this second Hornsea Mere much resembled the present one.

The fishing in the mere has always been of some importance, and it is interesting to find that so long ago as 1260 both the Abbot of Meaux and the Abbot of St. Mary's, York, claimed

the right of fishing there. They were evidently both sportsmen, and decided to settle the dispute by combat. After a fight which lasted all day, the Abbot of St. Mary's champion beat that of the Abbot of Meaux, and the Abbot of Meaux fished there no more.

An interesting MS. plan, dated 1778, has recently come into my possession. It shows a "fish-house," and, what apparently was previously unknown, a duck decoy. A "spaw" is also shown near the village. That was in the days when "spaws" were fashionable, and we are informed that this Hornsea spring had a "Victriolic (*sic*) Quality nearly as strong as Scarborough Spaw."

A little north of Hornsea is Atwick (Domesday, Attingwick, the town of Attings); with its old-time market cross, which has been an admirable base for measurements to the cliff edge. During the past century the land has been washed away here at the rate of six feet a year. This village, however, is still intact. But to the north-east of it was Cleeton or Clayton, (*said* to be the "clay town" from the nature of its subsoil), every vestige of which has gone. In Skipsea to-day certain fields are known as "Cleeton-lands," which name seems to be about the only remaining record of this one-time township.

In Domesday times, however, Skipsea was apparently included in Cleeton, the latter being by far the most important place. In "Cletune" Harold had 28 carucates of land, and as many ploughs. "Drogo has there two ploughs and six villanes with one plough, and one hundred acres of meadow."

Even Skipsea formerly had its mere, and I well remember that one of my earliest geological excursions—a quarter of a century ago—was to Skipsea, where I obtained the skull and antlers of a red deer from the old mere bed, and was told by a villager that they often dug up the bones of the animals which had been drowned in the Flood. This Skipsea mere, like that at Hornsea, was formerly famous for its fishing; and from an Inquisition held at Waghen about 1288 it appears that Robert de Chester then enjoyed the tithe of fish in Skipsea Marr, and no doubt quite as large fish were caught, and quite as interesting fish stories were told, in the thirteenth century as are to-day.

I examined Poulsen's "Holderness" to see what he had to say about this section of the coast line; but from the following sentence which occurs there I can only conclude that the author had been revelling:—"Mr. Pennant, the tourist, states that in

his time large masses of amber are found here upon this coast, but it has disappeared about seven years ago."

At Skipsea is an unusually fine British earthwork, and close by the oldest lake-dwelling ever found in England, also of British date, was discovered some years ago; but "that is another story."

Hyde or Hyth, "in Saxon a port or haven," is another lost town respecting which we know little, except that its site is now far out to sea. It is not specifically referred to in the Domesday book, and was no doubt then included in the five and a half miles of Cleeton. Hyth was referred to in the days of Edward II, and even so early as the reign of Edward III the people of Hyth had some twentieth century methods; inasmuch as they petitioned for a reduction in the assessments, though in their case the cause was the "devastations of the sea."

From an Inquisition held at Hedon in the year 1400, it seems that the convent of Meaux had been receiving a total of £46. 13s. 4d. from Ulram (Ulrome), Cleeton and Skipsea (the last place including "Villam de Hythe"). And it is important to notice that of this amount (a very large one for those days) no less a sum than £30 was received from Hyth "chiefly on the tythe of fish" which was reported to be "all destroyed." This tithe therefore obviously referred to the fresh water fish, which would disappear as the sea waters reached the lake. The Chronicler of Meaux enables us to date the loss of Hythe, as he distinctly records that it took place in 1396. This means that the site of Hythe is further out to sea than any place of which we have a record.

Withow, an adjoining village, was referred to in the Waghen Inquisition of 1288. To-day, on the Skipsea cliffs, a hollow, once the bed of a mere, is still referred to by the people there as Withow Hole. They know not why; that part of the cliff has always been called Withow Hole. They never heard of a lost village of Withow, and in that name is still preserved the last surviving relic of the long-lost village.

Hartburn or Hertburn, is another place with a similar story. On Tuke's map of 1786 it is merely recorded as "washed away by the sea," whereas Dade refers to it as "a little vill. or tything, in conjunction with Winkton, depopulated and totally extinguished."

Auburn. As one walks along the sands and sand-dunes south of Bridlington to-day a convenient place for a refreshing

cup of tea is Auburn House—or what is left of it. Perched at the cliff edge is half a house, the sea has got the other. This half is all that remains of the village of Auburn. For years and years first one house and then another has gone. But, oddly enough, when part of the last building had been taken the sea ceased its work, and formed protecting sand-dunes instead. These preserve for us the last of Auburn. This change is no doubt due to the coast protective work in recent years at Bridlington.

At Burton Agnes, when the wind is in a certain quarter, the murmuring of the sea at Auburn can be heard. 'Tis said to be a sign of rain. But the good people of Burton Agnes say they hear "Auburn Dolls Sobbering" or "Auburn Dolls Soddering." They can't tell you what it means, but that's what they have "always said." It *may* possibly have some reference to the sighing and sobbing of the people of Auburn as their homes were washed away long, long ago.

Formerly the main highway from Hull to Bridlington was along these cliffs, and the old stage coach owners, in their printed bills, drew special attention to the glorious coast scenery along the route. To-day the road has all gone until we reach Bridlington, where what is left of a one-time important thoroughfare leads to a golf course! Recently, while walking along the sand-dunes near Auburn House, I found the old iron milestone, which announced that to Bridlington was three miles, and Beverley twenty, though the traveller would find it a long twenty miles, that way, to-day. On the Cardigan Road at Bridlington is a smaller milestone and a mounting block; but if the traveller were to follow its direction he would find himself toppling over thirty feet of cliff, "on the road to Beverley!"

Wilthorpe, nearer Bridlington, has a similar history, or lack of it. And even in Bridlington itself we have records of great changes; though artificial sea-walls, groynes, and piers will probably stay the sea for many years to come. But I must not begin with records of the past at Bridlington; the story, though of great interest, is too long to commence here.

Such is the story of our lost towns. A story of great changes; a story of the manner in which one part of our country has gone, and another has been formed. And thus:

The Earth hath gathered to her breast again
And yet again, the millions that were born
Of her unnumbered, unremembered tribes.

But for all that it is pleasant to reflect, as we walk along our ever varying coast-line that

“There is not lost
 One of earth’s charms ; upon her bosom yet,
 After the flight of untold centuries,
 The freshness of her far-beginning lies,
 And yet shall live.”

PREHISTORIC CLIFF DWELLINGS IN THE MESA VERDE NATIONAL PARK.

A new wagon road to the prehistoric Cliff Dwellings in the Mesa Verde National Park, located in South-western Colorado, twenty-five miles from the town of Mancos, on the Rio Grande Southern Railroad, has just been completed by the United States Interior Department. This road will also be available for automobiles by June 1st if the Department consents to allow motor-cars in the Park. Heretofore these picturesque and mysterious ruins, which are said by archæologists to be the best-preserved of any in North America, have been all but inaccessible by reason of the long horseback ride over a precipitous mountain trail; now, however, two seasons’ work by the Government has made the trip an easy and enjoyable one for all classes of tourists. A new lodging camp, with excellent accommodations, has been established at Spruce Tree House, one of the principal ruins.

Dr. Joseph Kossuth Dixon, leader of the Rodman Wana-maker Expedition, who visited the ruins last fall, said: “If the people of the United States and of foreign countries knew about these wonderful Cliff Dwellings the Mesa Verde National Park would become the Mecca for sightseers.”

HIGHWAYS AND BYWAYS IN THE BALKANS.

By GILBERT WATERHOUSE, F.R.G.S.,
English Lecturer in the University of Leipzig.

II.*

THE Austrian police-lieutenant at Vardishte strongly advised me not to attempt to reach Novibazar under the prevailing circumstances. The ordinary Turkish frontier guards would probably have been replaced by Albanians, who might make it very difficult for me to cross the frontier from Servia, and the district generally was so disturbed that it would be wiser to keep away from the Sanjak altogether. As it was, I was doing a sufficiently risky thing in entering Servia from the west at all, as the natives were exceedingly difficult to get on with, not to say treacherous. His own countrymen never crossed the frontier, as all German-speaking people were sure to meet with a hostile reception, and lucky if they escaped without pecuniary loss or physical injury. Perhaps, as I was English, I might be better treated, but he could not say for certain. He remembered an Englishman coming once before—a tall, muscular man, who spoke broken German. He thought he was an engineer, but could not learn exactly what sort of a time the Servians had given him. Did I carry a revolver? Thus encouraged I produced an automatic pistol, which he eyed approvingly. I might have to use it, he said, but would do well to keep it out of sight until needed. With this parting injunction ringing in my ears I prepared to enter the land of the Serb for the first time.

I had come that day by the Eastern railway from Sarajevo to the frontier station of Vardishte. My companions in the third class carriage had been principally picturesque Bosnian peasants, with whom I maintained a stumbling conversation in the Serbo-Croatian tongue, relieved occasionally by a chat with the train-guards in German. At Vardishte my exit was barred by a stalwart *gendarme* who demanded my papers. He pretended to read my passport with great solemnity for several

* See page 36 for map in the first part of the Paper.

minutes and then returned it with the air of a man who had done his duty. I was now free to leave the station, but as the *gendarme* was the only civilised person in sight, with the exception of the railway officials, I determined to get as much out of him as I could. I was going across the frontier to Servia, I said, and should be exceedingly obliged if he would use his influence with the peasants to procure me a couple of horses and a guide to take me to Uzhitze, the first important Servian town. The English Consul in Sarajevo, I added, had told me that the *gendarmes* as a rule were very fine fellows and usually very willing to assist travellers. The authority he could assume with the natives by virtue of his position would no doubt induce them to meet my requirements, if he would kindly exert his influence on my behalf. Thereupon he unbent a little and said that if ordinary baggage-animals would do, he thought he could arrange for a couple to be brought early next morning to the station inn. I thanked him profusely, and, as it was now nearly four o'clock, proceeded to look for lodgings.

They could not accommodate me at the inn, as it was full of soldiers. In fact, the population of Vardishte consists mostly of soldiers. However, I was directed to the Post Office, a long, low building about a quarter of a mile up the hill, and told they had a spare room there. The interior of the Post Office, which was also the only grocery-shop in Vardishte and a tavern as well, consisted of one long room with a portion curtained off. The woman in charge spoke Croatian only, but as my study of the language had been confined principally to the words and phrases I was likely to use, I had no difficulty, here or subsequently, in obtaining what I required. She said I could have a room for the night and indicated the space behind, or rather beyond the curtain, for this article was more of an ornament than a screen, two beds, a table, and most of the other furniture being in full view of customers at the counter. As everything seemed fairly clean, and I had set out on my journey prepared for all kinds of discomfort, I did not much mind this lack of privacy.

After enjoying a wash—by which I mean going outside with about a gill of water in a glass decanter, pouring it over my hands, and moistening my face with a damp handkerchief—I set out to explore the neighbourhood, leaving my camera at the bottom of my rucksack.

Vardishte is not much of a place, though important as being

the terminus of the Eastern railway, by which Austrian troops can be rapidly concentrated on the Servian frontier. Another branch, designed for a similar purpose, terminates at Uvatz, opposite Priboj in the Sanjak of Novibazar. The Servian frontier station of Mokra Gora, less than two miles distant, is hidden from Vardishte by a hill, on the top of which a Servian custom-house is perched. Within a mile of the station there are less than a score of wooden farm-houses, with perhaps eight or nine larger and more solid buildings for the garrison. I followed a road up a hill to the north-west until I obtained a fairly extensive view and then sat down to enjoy the cool of the evening.

On my return I met my friend the *gendarme*, who was apparently coming off duty for the day. He stopped and explained very sheepishly that I could not have the horses, as he had just remembered that animals were not allowed to cross from Bosnia to Servia, owing to the risk of spreading disease. Would I come with him and see the lieutenant, who might see some way out of the difficulty and would in any case like to see me? I did so, and was very courteously received. After again showing my papers and answering a few formal questions I enjoyed a very pleasant chat, the substance of which I have already set down. Before the evacuation of the Sanjak by Austria, I was informed, travellers could come and go fairly freely, but since then conditions had become much more uncertain. I should certainly do well if I got through to Belgrade without mishap. The lieutenant then pointed out the Servian custom-house on the hill, and told me I must be quite sure to go there immediately and have my luggage examined in due form and then present myself again at the chief custom-house in Mokra Gora. He was afraid it was quite impossible to get horses in Vardishte to take me to Uzhitze and very unlikely that I should get one at Mokra Gora either, as the Servians regarded all strangers—all German-speaking strangers at least, as possible spies, and would probably refuse to supply me with a horse, even though there were one available in the village. I should almost certainly have to walk the forty-eight kilometres to Uzhitze. On arriving there I must not fail to call on the *nachelnik* (burgomaster) at once to present my papers. Above all I must be exceedingly careful how I used my camera, unless I wished to be arrested on suspicion of being a spy. On the whole, I had better not use it at all until I reached Belgrade.

I inquired if I might take a photo in Vardishte, but he regretted the responsibility was more than he cared to assume. Thereupon he again expressed the hope that I should receive better treatment than Austro-Hungarians and Germans - usually received, wished me a safe arrival in Belgrade and left me to my own devices.

I felt sure that these fears on my behalf were genuine and not dictated by a desire to discourage Englishmen from poking into these regions. Still, I had acquired sufficient knowledge of the Servian character from other sources to feel confident that the way the natives treated me would depend entirely on the way in which I approached them. Nevertheless, I had heard evil things of Mokra Gora in the English Consulate at Sarajevo, and was fully prepared to walk to Uzhitze if necessary. I felt no embarrassment on account of my luggage, as it was compressed into two capacious rucksacks, weighing together between thirty and forty pounds.

Returning to my quarters, I obtained some eggs, bread, and milk, and boiled myself some soup over my portable spirit-stove. Then the proprietor of the establishment, who, unlike his wife, spoke a little German, informed me that I might find the room rather noisy and could have another at the back of the house if I preferred. It seemed fairly clean, so after a perfunctory examination of the bed by the light of my electric pocket-lamp, and a precautionary spraying of the bed-clothes, I took off my putties and boots and enjoyed a good night's rest. The removal of so much apparel was all the undressing I did until I reached Belgrade. More than once I wished I had kept my boots on.

The next morning I made an early start, and by half-past five had reached the crest of the hill along which the frontier runs. A little group of two or three figures perched on the sky-line some distance away personified the suspicion with which Servia regards her big neighbour. They were frontier guards, ever on the alert for signs of military preparations in the vale below. Before me rose the low, square, whitewashed watch-house. Another figure in a neat grey uniform appeared, eyed me with astonishment as I mounted the last rise, and awaited my arrival with dignity. I wished him good-morning, dropped my bags at his feet, and the dreaded ordeal began.

I soon made friends with the Customs officer on the hill. He pretended to read my passport with the same solemnity as the



Fig. 3. Serbia. Kavarna, or Inn, near Bioska.



Fig. 4. Serbia. Village, near Stapani.

Austrian *gendarme*, but waxed very sociable when I introduced myself as an Englishman interested in the Servian people and anxious to see the country. I was going to empty the contents of one rucksack on the ground while he examined the other, but he stopped me and said he had seen enough. He could not speak German; in fact, the Servians did not care to see Germans and Austrians in their country, but Englishmen were different. I apologised for my scanty knowledge of Servian, but he laughed, and said, *Razumjete vetj dosta* ("You understand enough already"). He supposed I was going to Belgrade. I said I was, and hoped to procure a horse in Mokra Gora to take me to Uzhitze. Thereupon he offered to accompany me back to the village and see what could be done. On the way he changed me ten Austrian crowns into Servian money with scrupulous exactness, and resolutely refused to accept a single *para* for his trouble.

Half-way down the hill we met two peasants, who eyed me in a manner the reverse of friendly. My companion then explained that I was English, and wished to hire a horse to take me to Uzhitze. I passed my cigarettes round, which were graciously accepted, and the ice was broken. Yes, they had a horse, but it was working in the mountains, and would have to be fetched. They would want eight *dinars* for the trip to Uzhitze, and I must pay them something down, as it would take several hours to bring the horse down from the mountains, and they did not want to find me gone when it came. I handed over an Austrian two-crown piece, which the elder man spat on, either for luck or in contempt, and pocketed. I had reason to remember this coin, as I shall presently relate.

They were a pair of magnificent brigands, these peasants, and their dark, drooping moustaches gave them an air of great fierceness, which was perhaps more apparent than real. They wore sandals of sheepskin and loose gaiters, bound round the calves with thongs of the same material, through which a knife of crude native workmanship was thrust ready for use. I afterwards secured one of these trophies for a *dinar* (tenpence) from a peasant in the train on the way to Kraljevo. The Servian men wear white breeches and a kilt or apron of the same colour, which reaches almost to the knees. These garments are secured about the waist by a sash, the many folds of which serve as a receptacle for provisions, weapons, and other odds and ends. The shirt is also white, and partly covered by a small,

open waistcoat, which varies in magnificence according to the means of the wearer. The outfit is completed by a blue serge cap, which fits fairly tightly on the head, and has a peak at each side.

When the earnest money had been paid over a noisy dialogue ensued between my companions and a little figure in a farmyard down below, beyond the stream. Presently I was informed that a woman had been sent for the horse, and I must wait for it at the chief Custom-house, which lay immediately below. With this the two peasants bade me a curt good-morning and departed.

It was about six o'clock when we reached the Custom-house, and after my new friend had introduced me to two of his colleagues and explained my requirements he returned to his post, though not before all three had posed for a photograph. The others then did their best to entertain me with a concertina until about eight, when the arrival of one or two superior officers put an end to their hilarity. At nine I was still waiting. Shortly afterwards the monotony was broken by the arrival of a stout, jovial Servian from Vardishte. He said he had not been allowed to leave the station, being without passport, and had been obliged to return to Vishegrad and wait two days until it arrived. He was delighted to meet me, and assured me the landscape at Mokra Gora was a hundred times more beautiful than the accursed country beyond the hill, shaking his fist vehemently in that direction. He regretted he could not go with me to Uzhitze, as his business was taking him through the forest to Bajina Bashta, but assured me that the horse would arrive in due course, and that I should complete my journey without the slightest difficulty. He pointed out with pride a coloured picture of King Peter inside the Custom-house, and also a fearful medley of men, horses, artillery, and smoke, which he said was a picture of Servians in battle. He assured me that there was no nation in the world to equal them in martial valour, a sentiment I heard expressed at least once a day by every man with whom I conversed until I crossed the Save.

When the commanding officer arrived about ten I was sitting on the steps trying to kill time by shaving with cold water and no mirror. He seemed amused, but heard all about me from his colleagues within, and sent for my passport, which he decorated on the back with an inscription in Cyrillic characters. I

expect he entered my name in his register as "Grey." Before the present Government came into power I believe English travellers in the Balkans were all set down as "Lansdowne." The prominence given to the Foreign Secretary's name and the insignificance of one's own is the greatest beauty of the English passport. I shall long remember the fellow-traveller in the train between Budapest and Vienna, who asked to see my passport out of curiosity, read it with awe, and returned it gingerly with the assurance that he could not too highly appreciate the singular honour of having met a member of the English Parliament of such high distinction as myself.

At eleven I was still sitting on the steps, making soup from tabloids over a spirit-lamp. Again I was interrupted, this time by a young peasant who introduced himself as Lazar Somethingovich, and said he was going to be my guide to Uzhitze. The horse had not yet arrived, but would I go with him to the farm and have some dinner? I decided that they had had enough of me at the Custom-house and went. The farm was a mere collection of hovels on a hill-side, but I welcomed it as an agreeable change of scene. Pigs, fowls, and small children were scrambling sociably about the yard, and a woman, who was either Lazar's wife or sister-in-law—I could not quite gather which—grabbed at my hand to kiss it. I was rather startled at first, though I soon afterwards discovered that it was the custom for women in these parts to kiss the hands of strangers, even their own countrymen, presumably in token of subjection. There is evidently scope for a women's suffrage crusade in Western Servia.

Whenever my conversation with Lazar broke down—and my powers were, of course, very limited—the woman had a turn, speaking at twice the speed and with less than half the success. However, after putting minute questions concerning my person, occupation, and ancestry, and getting little out of me except *Ne razumijem* (I don't understand), they reverted to the subject of food, and I understood a little more. Taking me into the principal hovel, they asked me if I would have some mutton, indicating a piece of meat which was just visible through a film of blue-bottles. I said I was passionately fond of eggs. They have their faults sometimes, but are impervious to blue-bottles until the shell is broken. And so I had two eggs and Lazar devoured the mutton. About half-past twelve he gave a shout of joy, and pointed out a black speck moving rapidly down a

steep trail. It resolved itself into the horse, in charge of Lazar's sister, and in due course reached the farm.

It really seemed now as though my troubles were at an end. The horse was fed and watered; Lazar put on his best cap, and devoted his energies to packing my luggage in the saddle-bags. When all was ready he told the elder woman to bring the horse, which was now quietly grazing close by, and I thought another five minutes would see me in the saddle and on the road to Uzhitze. But apparently the horse had ideas of his own on the subject. As the woman approached to seize his halter he blinked suspiciously, wagged his ears, and moved on a little. She began to run, so did he, and before we had time to realise what was happening he had hopped over the low fence which surrounded the yard and was galloping at full speed through a field of Indian corn, with the woman running after him. Her frantic shouts only served to spur him on, and, leaving the field, he gave his heels a final fling and vanished into the forest. Meanwhile Lazar was stamping about the yard, fuming and cursing. He now sent the other woman to join the chase, and kept up a running fire of invective until their answering voices died away in the distance. Then he decided it was about time he went himself, and left me with the pigs and two small children.

As I had quite made up my mind not to be disconcerted or annoyed by anything, I amused myself with my camera for about an hour until the younger woman returned, thoroughly exhausted, and disappeared into the hut without a word about the horse. About half an hour later the elder woman came back, equally done up. She informed me that Lazar was still after the horse, and would no doubt catch it. But when he turned up, about half-past two, furious and weary, with his face streaming with perspiration and clothes soiled and torn with scrambling over the stones, the horse was not with him. After again cursing the two women systematically for what he regarded as their negligence, he besought me to wait an hour or so and then he would try again. I said that if the horse did not return by three o'clock I should proceed on foot. Then, to the surprise of everybody, it actually did appear. It left the forest and began to graze unconcernedly at the top of the maize field. Thus encouraged Lazar and his satellites set off again, with some corn in a box this time. As they approached, the animal seemed to reflect a little, then turned round and ambled



Fig. 5. Servia. River Save from Fortress, Belgrade.



Fig. 6. Servia. Belgrade, view from Fortress towards Semlin (Hungary).

gently into the wood, increased its pace to a trot, then to a gallop, and the chase began once more. Within half an hour the three were back again, breathless and bad-tempered, but without the horse. By this time I had had enough of the game, and told Lazar I was going to walk to Uzhitze, or at least until I found a horse that could be caught. In vain did he assure me that it would come back of its own accord at nightfall, and promise to make an early start next morning, if I would only spend the night in the village *kavarna*, or inn, a wretched shanty at the foot of the hill. I was so sick of Mokra Gora that I did not care where I slept as long as it was somewhere else, I said, remembering that I might have been more than half way to Uzhitze if I had trusted to my own legs at the beginning of the day. With these words I shouldered my rucksacks and left him on the verge of tears. I expect he took it out of the horse when he caught it.

Leaving the steep path which led to the farm, I descended into a fairly wide road, which I presumed would take me to Uzhitze, as there was a line of telegraph wires along it. A young Servian was walking a few yards ahead, so I hastened to overtake him and inquire the way. As he seemed a pleasant sort of fellow I introduced myself as an English teacher, whereat he was much interested. It seemed he was himself going to Kremna, a little village some ten or twelve miles away, where I had planned to spend the night. He was apparently not averse to having a companion, and shared with me some delicious apples he was carrying. I, too, was glad to make a new friend, though I should have liked him better if he had walked more slowly. Either he did not realise that I was carrying nearly forty pounds of baggage on my shoulders, or else he was secretly amusing himself by trying to run me off my legs. However, after we had been going about two hours, he did offer to take one of my rucksacks, and I was glad to see that he soon began to grunt and slacken speed.

We had not been long on the way before another man overtook us. My companion told him all about me, although they spoke so rapidly that I could not understand half they said. The newcomer was apparently a Post Office clerk. He had a bag full of money, and evidently saw a chance of doing business as a money-changer. I fear he was disappointed in me. Presently we reached the cluster of houses which forms the principal portion of the village of Mokra Gora. A battered old tin

box hung up outside one of them seemed to indicate the Post Office, so I told the clerk I wanted some stamps for a postcard I had written earlier in the day. About a dozen men were loafing about the doorway, and, of course, they were all astonished to see a stranger and curious to know my business. I heard surly growls of suspicion, but the youth with the apples explained that I was English; the atmosphere cleared, and a more friendly interest was shown in me. The man who seemed to be in charge asked me to go inside, and the crowd surged in after me. Had a Martian suddenly left his planet to visit the earth he could scarcely have made a greater sensation than I did in the Post Office at Mokra Gora. They asked me my name, but it sounded so uncouth that I was requested to write it down on a large sheet of official paper. Even then they could not read it until I wrote it a second time in Cyrillic capitals, whereupon they managed to pronounce it quite tolerably. Only when the general curiosity had been satisfied did the postmaster remember that my business with him was to buy a ten-para stamp, not to recite an autobiography.

Eventually I got clear, and continued my journey with some satisfaction, confident that the general atmosphere was friendly and that I had little to fear from the natives as long as I approached them openly and cheerfully answered all questions. The Post Office clerk came no further, but the youth with the apples in his handkerchief was still tearing along at breakneck speed talking to me over his shoulder. He seemed very anxious to learn what I carried in my rucksacks, and was much interested to hear I had some books with me. Indeed, he could scarcely believe me until I showed him a German-Croatian dictionary, which he fingered with awe, being quite unable to decipher the Latin characters. This curious reverence for books reappeared when we happened to pass a priest. Just for the sake of conversation I inquired who it was, and he replied: "The pope. He reads books!" as though the ability to read were the height of human wisdom.

It was on this walk to Kremna that I first fully realised the subordinate position of Servian peasant women. We met at least a dozen, and not a single one failed to stoop and kiss our hands. An incident also occurred which impressed me very strongly, and testifies to the simplicity and sturdy honesty of the people of these parts. A group of men were standing talking by the wayside, and as we exchanged the usual greeting one

of them called to me to stop, and came to me, holding out a coin in his open hand. I looked at the coin, which was an Austrian two-crown piece, then at the man, and recognised the peasant to whom I had given the earnest-money for the horse nearly twelve hours before. "Where is the horse?" he asked. I replied that it had run away into the forest and Lazar had not been able to catch it. Thereupon the man pushed the coin into my hand, wished me a brief good-afternoon, and turned away. I soon discovered that this refreshing straightforwardness was a characteristic of all the Servian peasants with whom I came into contact. When I reached Belgrade the British Minister, to whom I told the story, said that the Servian is at his best in these remote western parts of the country, but often demoralised and treacherous to the east of the main line of railway.

Presently we reached a high hill, round the side of which the road, which was in a fair state of repair, wound in long zigzags. Taking what he called a short cut, my companion proceeded to give me the severest gruelling I have ever had. But for the few springs of clear, cold water at which he stopped to quench his thirst—the Servians drink gallons of water and little of anything else—thus allowing me to get my breath at intervals, I think I must have collapsed by the way. I had eaten practically nothing all day except two eggs and a few lozenges of concentrated food, and was consequently feeling tired and hungry. It seemed ages before we reached the top of the pass, where we rested by mutual consent, and the cool evening breeze revived me. My companion now thought the opportunity had come for a thorough investigation of my luggage, so I emptied my rucksacks for his inspection. He gazed in wonder on my camera, and when I had explained its use as well as my knowledge of Servian would allow wanted to have his photo taken on the spot, although the sun had now set. After replenishing my vocabulary from a pocket-dictionary I tried to point out that the presence of *sunce* (sun) was necessary for the production of a *slika* (picture), but he seemed only half convinced. Then my spirit-lamp claimed his attention for a while, but what charmed him most was a collapsible knife and fork. He sadly wished to buy it from me, and was very downcast when I said I needed it for my own use. However, I succeeded in restoring his good spirits with a present of two safety-pins, with which I proceeded to fasten his shirt-sleeves, and I can honestly say that I have never seen a man more delighted with a present in my life.

The village of Kremna now lay below us—part of it, at least, for Servian villages are very elusive. It is always difficult to tell where one finishes and the next begins, so scattered are the houses. Indeed, it is possible to walk for an hour or more and still be in the same village. For instance, Stapari, through part of which I passed the next afternoon, was indicated on my map in three different places five or six miles apart, and the same is true of many others.

My companion had now reached his destination, and prepared to leave me. He said there were two *kavarnas*, or inns, in Kremna; in fact, one was close at hand, and he indicated a building I should have mistaken for a cowshed. I said I should prefer the other, whereupon he told me to follow the road a little further and I should pass it. Although my feet were weary, I plodded along for another half-hour, and then decided to camp out for the night. It was a lovely evening, fine and warm. Darkness was rapidly falling, and in the distance I could hear the peasant women calling the cattle home. About two hundred yards away a straggling line of bushes betrayed the neighbourhood of a river. Altogether it was a pleasant spot, so I spread out my things on a grassy slope about fifty yards below the road, filled my can with water from the river—no easy task owing to the steepness of the banks, the thick bushes, and the shallowness of the stream—lit my lamp, and prepared to enjoy a well-earned rest. Then suddenly, as I was meditatively listening to the bubbling of the water and grinding a soup square to powder, somebody came galloping along the road at a great pace, caught sight of me and my belongings in the field, and shouted, "Who is that?" I waited for the question to be repeated, and then answered wearily: "I don't understand Servian. I am an English traveller." Contrary to my hopes, my questioner, instead of minding his own business and going away, dismounted and came to me in the field, bringing his horse with him. As it seemed a superior sort of animal I saw the man must be a person of authority, and I should have to be careful. He pointed at my lamp, over which the water was now boiling merrily, and kept on saying it was not allowed. I answered his observations with a monotonous chant of *Ne razumijem*, thinking he would get tired and leave me to my own devices. But he really was in earnest, and almost foamed at the mouth, so I thought it convenient to understand a little more. When he saw me make a move to extinguish the lamp



Fig. 7. Serbia. Belgrade, National Mortgage Bank with Statue of Prince Michael.



Fig. 8. Serbia. Belgrade. Royal Palace.



and pack up he grew quite amiable, and said that the English were a fine nation, but I really could not sleep out and make fires in the open. There was a farmhouse close by, he informed me, and a *kavarna* about fifteen minutes further along the road. I thought it hopeless to attempt to explain that I wished to sleep out to avoid sleeping in, so I left the field, whereupon my disturber shook hands very affably, mounted his horse, and galloped away in the direction of Mokra Gora.

After about ten minutes I began to feel tired, and sat down on a heap of stones to chew another food tablet and think things over. A mouthful of wine from my flask put me on my feet again, so, shouldering my rucksacks once more, I trudged forward. As I was leaving a small wood I heard a curious howling, and saw a light coming from a building just ahead. As the door was open I guessed it was the inn, and entered. When I stepped out of the darkness into the dimly-lighted room the noise, which proceeded from a quartette of natives, apparently drunk, ceased abruptly, and all eyes were turned on me. The inn consisted of one long, whitewashed room only, with a sort of counter in one corner, which served as a bar. Round the four or five rickety tables perhaps a score of Servians were gathered playing cards, singing, and drinking *rakia*, or sugar and water. The host, with an assistant or two, was attending to a small fire placed breast high on a raised hearth in the wall opposite the doorway. He immediately brought me the customary glass of sugar and water, and inquired my wishes with courtesy and dignity. Yes, he said, I could have a room for the night, also eggs, bread, and milk. While the food was being prepared the other guests were gazing at me open-mouthed in wonder, and I answered the usual round of questions, and also took the opportunity of inquiring if I could hire a horse to take me to Uzhitze the next day. The host said it was a long journey, and would cost me eight dinars (about six-and-sixpence). Considering that a man would have to go with me to bring the horse back, it was very cheap, so I made the bargain, and was told the horse would be ready at six o'clock the next morning.

The ladder outside the building, up which I was conducted to my sleeping quarters, looked as though it might have led to a fowl-house, and the room itself looked a mere loft in the dim light of the lantern, but I was too tired to be fastidious. One of the young men knelt down to remove my boots, but my putties were beyond his powers, so I dismissed him and began to explore

the apartment. It contained a table and two beds, nothing more. Fortunately the walls had been recently whitewashed, so the place was not obviously verminous. Perhaps I was too tired to notice much, for I slept soundly until five. Nevertheless, when morning dawned I saw enough to make me draw on my boots without delay and make a speedy exit.

Then came the fearful ceremony of washing. Producing a decanter, which held about half a pint, the innkeeper poured the contents over my hands as I rubbed them together. This is usually the beginning and end of the proceedings, so he seemed mildly surprised when I brought out a cake of soap and asked him to repeat the operation. However, he submitted with a good grace, and I kept him busy for some time. Not knowing the Servian for "bucket," I was rather at a disadvantage, though I doubt whether the establishment possessed such an article, and, even if it had, I might perhaps have been loth to use it.

While I was busy with my breakfast a man came up the road leading a horse, which he proceeded to tie up at the inn door. After contemplating the animal for some time, I began to wonder whether this could really be my horse. After my experience of the previous day I had begun to regard horses as beyond the bounds of possibility for me. Still, as this one remained quietly standing by the door, and nobody seemed ready to take it away, I ventured to inquire whether the horse was for me or not. "Oh, yes!" said the innkeeper; "it is only waiting for you." The owner then arranged my rucksacks on the saddle. I mounted, and off we set at a dignified walk. Presently we reached a farm, and my new companion said he was not going with me himself, but would send a *momak*, or servant, with me. I could pay for the horse at the end of the journey.

Milosh, the *momak*, was a quaint figure. He was short, thick-set, and elderly. He limped badly, had only one eye, and his neck was swollen to twice its natural size with goitre. He plodded steadily ahead, and the horse followed patiently and tirelessly, bearing me and my luggage. Like all Servian horses, it was small, but very tough and wiry, and as nimble as a cat. It carried me uphill and down until late in the afternoon without the slightest sign of distress. Occasionally, when the path became so steep as to be dangerous or so stony that the horse could scarcely pick its way, it would stop as a sign that I must get off and walk a little.

For the first few miles the road was good, and I felt that I was really making progress. After the previous day's delay it was a relief to be moving even at a walking pace. My way lay through a pleasant valley, fertile and fairly well populated. We passed through one or two straggling villages, Meany, Bioska, and it was at the latter, I think, that we stopped for lunch (see Fig. 3). The inn was similar to the one in which I had spent the previous night, though somewhat larger. Water with sugar was brought, and Milosh produced from some part of his person a piece of coarse bread, resembling a door-mat in appearance and texture, also a wooden box containing thick, yellow fat of some kind. He divided the bread, lathered his own share with the grease, and pushed both across to me. I asked him if we could have some beer, and he asked the proprietor, who replied, "Ima" (there is), and went on smoking. Milosh said we would have some, so a large wooden case, which seemed to have been reposing for years in one corner of the inn, was opened, and I was supplied with a bottle that held nearer a quart than a pint. It was villainous stuff, so I did not wonder that Milosh preferred another glass of *rakia*, a low-grade spirit consumed by the poorer classes. *Slivovitz*, or plum brandy, is a more expensive beverage. The ordinary Servian is temperate, and drinks more water than anything else.

When we had finished and the horse was sufficiently rested I paid the bill, which amounted to about sixpence all told, and off we set again. Passing through a small village (Fig. 4), we came to a high hill, up which we toiled for about an hour. The road then led across a high plateau, which commanded an extensive view towards the Sanjak of Novibazar. Presently my guide left the main track for a path to the right, saying that we should in this way save an hour. For a mile or two it led through a fine glade of oak trees, but then emerged on to a wild expanse of barren and stony moorland. So rough did the road now become that my horse could scarcely find a foothold between the stones, and I was obliged to dismount several times and walk a mile or two. At last we reached the north-eastern edge of the plateau, and came in sight of our destination, the town of Uzhitze, lying some two or three miles ahead in the deep valley below our feet. The descent was at first extremely steep, and the path at one point so narrow that I had to walk behind the horse. Since midday we had seen very few people, but now began to meet the peasants returning from

market. We stopped beside a spring where a small party was halted, and Milosh proceeded to explain me and my business to everybody present. They were all consumed with curiosity, but very friendly, and wished me a pleasant journey. It is astonishing what quantities of water these Servians drink. Whenever we passed a spring Milosh would stop, put his head into it, and take in long draughts like a horse. I fancy this rough-and-ready method of drinking any kind of water anywhere has something to do with the prevalence of goitre in these parts.

I shall never forget the awful cobbles with which the streets of Uzhitze are paved. The descent into the town was fairly steep, and we plunged into a crowd of peasants returning from market with horses, cattle, and other animals. By the wayside sat a beggar, who was producing weird sounds from a fearful weapon of music called a *guzla*. At last we entered the main street, and drew up at a little den with which Milosh was apparently familiar. He seemed to think that I should be satisfied to spend the night there, but I was firm, and insisted on being taken to the best hotel. Here we parted—I glad to have reached a more or less civilised place, he delighted with a present of 60 paras (6d.) over and above the hire of the horse.

The Hotel Ilija Grbitj is the leading hostelry in Uzhitze, which is not saying much. For a dinar and a half (1s. 3d.) I was provided with a room which boasted two beds, two pairs of slippers, a jug with about a pint of water, and a washbowl about eight inches across. Luxury indeed after Vardishte and Kremna! However, the cooking was very good, and I really enjoyed my supper on the little ramshackle verandah before the door. Here I got into conversation with several officers and Customs officials, who waxed eloquent, and gave me much advice and information when I told them I was English.

Uzhitze is an enterprising little place with about 7,000 inhabitants and a brisk trade in cattle and agricultural produce. I was informed with pride by my new acquaintances that it boasted electric light, a luxury enjoyed by no other Servian town except Belgrade. They told me I had done well to visit Uzhitze, as I was thus seeing the real Servia. Belgrade was merely a degenerate cosmopolitan city.

It was too late in the day to take photographs, so after a disjointed but friendly conversation on the verandah, in the course of which I learned, to my great surprise, that the railway had



Fig. 9. Serbia. Belgrade, Old Gateway in Fortress with Lieut. Djuritj and Mr. Todorovich.



Fig. 10. Serbia. Belgrade, Palinula Church, Old Cemetery. Burial place of King Alexander and Queen Draga.

just been completed as far as Uzhitze and that one train was running to Stalatj daily at 6 a.m., I retired for the night. By this time I had given up my intention of proceeding to Novibazar. It was clear to me that my equipment scarcely provided for delays and emergencies, the distances seemed to be much greater than I had calculated, and I realised that if I had any further difficulties in obtaining horses I might find myself stranded miles from anywhere. The next morning, therefore, found me at the station along with a crowd of travellers and spectators, for the inhabitants had not yet grown accustomed to their new toy, and turned out in large numbers to look at the trains. The carriages, I observed, were made in Berlin, the locomotives in France or Belgium, I forget which. I am inclined to think that Britain does not share as largely in the trade of Servia as she might.

Leaving Uzhitze, the train entered a narrow gorge, and then proceeded to Pozhega along the broad and fertile valley of the Morava. The general character of the country is hilly, but well wooded and watered. Along the banks of the river there are fine stretches of rich pasture and fields of maize and tobacco. My companions in the train were, of course, all natives. Opposite to me sat two women, who rolled cigarettes and spat about incessantly. One man, who sold me his knife for a dinar, asked me the usual string of questions, and, learning that I was unmarried, pointed to three or four women in the carriage, who were listening intently, and suggested that I should take my choice. I extricated myself with difficulty. Meanwhile we passed several important towns—Chachak, Trstenik, and Kraljevo, the latter only a good day's ride from Novibazar. The heat was intense, and at every station my companions left the train to refill their water bottles at the pump. At last, about two in the afternoon, we reached Stalatj, an important junction between Belgrade and Sofia, and I had time for a good lunch before proceeding northwards.

Then followed a long but not uninteresting ride in a badly-lighted and abominably stuffy carriage via Jagodina and Lapovo to Belgrade. On the way the weather changed completely, and I felt glad that I was not on the road to Novibazar. Lightning flashed, thunder rolled, and by the time I reached the capital, about 9.30 p.m., the rain was falling in torrents. After some difficulty I reached the Hotel Balkan. The streets were in an appalling condition. Where they were paved the cobbles

seemed to come right through my boots, and elsewhere I sank up to the ankles in mud. Repairs were apparently in progress. The cobbles were being taken up all over the town, and wood blocks were being laid down. I saw only the first stage of this process, and as the war broke out immediately after I left I very much doubt whether any progress has been made with the wood blocks.

Next morning, as I was leisurely breakfasting in the restaurant, I fell into conversation with a talkative Servian gentleman at the next table. He was busy spicing his food with *paprika*, which, he remarked, was a fiery stuff—like the Servian character. Then he proceeded to dilate on the warlike temper of his race, a subject on which I was already singularly well informed. However, learning that I was English, he became even more amiable, introduced himself, and volunteered to show me the town, an offer which I gladly accepted, especially as he said he was on good terms with the military authorities, and I might take photographs practically anywhere I pleased.

Few towns in Europe are more picturesquely situated than Belgrade. On the western side it is washed by the Save (Fig. 5); on the east by the Danube, which here receives the waters of its great tributary. The old fortress, crowning the heights at their confluence, commands a fine view of both rivers (Fig. 6), together with the low, flat island known as the great "War Island," and in the distance the Hungarian fortress of Zimony (Germ. *Semlin*, Serv. *Zemun*).

Belgrade (Serv. *Beograd*, i.e., White Town) was, when I saw it, a flourishing city of about 60,000 inhabitants, with a large proportion of foreign residents. True, the streets were in an appalling state, being either rudely paved with cobbles or uneven setts (Fig. 7), or else, like the main thoroughfare (Fig. 8), in a condition of utter upheaval. Still, several fine buildings were in process of construction, and some were already completed, e.g., the National Bank, before which is a fine statue of Prince Michael Obrenovich, who was assassinated in 1868 (Fig. 7). The Royal Palace (Fig. 8) is a very respectable structure, and will certainly look much better when the street in which it stands is set in order. Other important buildings are the Cathedral and the University.

The most imposing feature of Belgrade is the fortress. Originally known by the name of Singidunum, it was first a

Celtic, then a Roman stronghold. After changing hands at least a dozen times before the fourteenth century, it was held by the Servian kings until 1427. Then it became a bone of contention between the Hungarians and the Turks. After being repeatedly captured and recaptured, it was again held by the Servians from 1807 to 1813, when it was wrested from them by the Turks, in whose possession it remained until 1866. In that year the energy of Prince Michael, helped by diplomatic pressure from the Great Powers, procured its restoration to Servia.

My new friend, Mr. Kosta Todorovich, was of great help to me here. He introduced me to Lieutenant Djuritj, the Adjutant, who introduced me to a Colonel, who passed me on to a General, who presented me to the Governor, who graciously gave me permission to take photographs within the fortress itself. I was informed that this privilege had never been granted to any foreign visitor before, in which case the pictures shown in Figs. 5, 6, and 9 are unique.

I shall always remember with the deepest gratitude the trouble my new friends gave themselves on my behalf. They explained to me the history of the fortress and explored with me some of its innermost recesses, taking me to parts to which ordinary visitors are not allowed access. The most I could do in return was to take their photographs, and so Fig. 9 shows Mr. Todorovich and the Adjutant standing by one of the gates overlooking the Save. The marks of bullet and shell are plainly visible on the heavy wooden door and adjoining wall. After a long scramble round the ramparts (Fig. 6) I was taken down a deep shaft, at the bottom of which lies an inexhaustible well of drinking water. Tunnels have been constructed in all directions beneath the hill, and great was my astonishment when, after a long descent through dark and damp subterranean passages, I was told that I was standing beneath the river bed. In spite of all these devices the citadel is not equal to the task of resisting a modern siege, and I was informed that in case of attack by Austria the Servians would not defend Belgrade but retire into the interior.

It may sound incredible, but it is none the less true, that during my journey through Servia, only about a month before the outbreak of the war, I never heard the slightest rumour that any such event was likely to take place. It is true that everybody I met in Belgrade was talking about war, but it was war

with Austria, not with Turkey. Austria-Hungary was the possible enemy, and my Servian friends were so confident in their courage and military skill that in imagination they were already before the gates of Vienna. I often wonder whether they took the field against the Turks and whether they are still alive.

After leaving the fortress I paid a short visit to the British Minister, and then turned my steps to the gloomy Palinula Chapel in the Old Cemetery (Fig. 10). Here, in 1903, the bodies of the slaughtered Alexander and his Queen were unceremoniously interred—not even side by side. The history of the Servian princes during the nineteenth century is little more than that of a blood feud between the Obrenovich and Karagjorgjevich families. In 1804 Gjorgje Petrovich, or Karagjorgje (Black George), the son of a swineherd, fought with temporary success against the Turks, but was eventually defeated and forced to leave the country. In 1815 Milosh Obrenovich, of equally illustrious descent, headed another national rising with better success, and became a sort of prince. Presently Kara-Gjorgje returned, and there were two Richmonds in the field, each apparently jealous of the other. In 1817 Kara-Gjorgje was murdered, and Milosh Obrenovich reigned undisturbed until 1839, when he abdicated and went abroad. He was succeeded by his son Milan, who died the same year. Milan's brother, Michael, followed, and reigned until 1842, when he was deposed, and a Karagjorgjevich came to the throne in the person of Alexander, son of Kara-Gjorgje. In 1859 he too was deposed, and old Milosh was recalled. His death in 1860 again made room for Michael, who reigned until 1868, when he was murdered, presumably by partisans of the other side. His successor was his cousin, Milan Obrenovich, who made the ill-fated match with Natalie and abdicated in favour of his son, Alexander, in 1889. The murder of Alexander and Draga put an end to the Obrenovich dynasty, and so King Peter Kara-Gjorgjevich has some prospect of dying a natural death.

In the evening I left Belgrade by steamer, and spent a night at Semlin, whence a pleasant run of about six hours took me to Budapest and Western civilisation.

N.B. For typographical reasons it has not been possible to keep the correct spelling of Serbo-Croatian words and names in all cases.

SPITSBERGEN: PAST AND PRESENT.

By WILLIAM S. BRUCE, LL.D., F.R.S.E.

*(Addressed to the Society in the Geographical Hall on
Tuesday, October 21st, 1913.)*

SPITSBERGEN, along with Bear Island, was discovered by the Dutch in 1596. But the British were the first to exploit the commercial resources of the country when, in 1604, the Muscovy Company, of London, sent a ship thither which brought back a valuable cargo of walrus ivory from Bear Island. In 1609 Captain Poole, of the Muscovy Company, discovered good coal in Spitsbergen, and it is a striking fact that this valuable discovery was not followed up until the present century. Hudson visited Spitsbergen in 1607 in the "Hopewell," and reported many whales; and in 1610 Poole visited and explored Prince Charles Foreland, and named some bays and anchorages on the west coast. He captured 120 walruses, 21 reindeer, and 30 bears, besides reporting an abundance of whales. Britain followed up the reports of Hudson and Poole, and started regular whale fishing with two ships sent by the Muscovy Company in 1611. The following year there were four British whalers on the scene, and one Dutch and one Spanish whaler in charge of two British masters. In 1613 King James granted a charter to the Muscovy Company, giving them sole right to the whaling industry in Spitsbergen seas, with power to exclude all other ships, British or alien. This year eight British ships visited Spitsbergen, including one for discovery and the "Tiger," 250 tons with 21 guns, for protection. While King James had given British whalers the charter of whaling monopoly, the Dutch also received a commission granted "by the Grave Maurice for to fish in Spitsbergen," and the Dutch fared badly at the hands of the British. In 1618, however, the Dutch made serious reprisals, having no less than 23 ships in Spitsbergen waters compared with the Muscovy Company's 13 with two pinnaces. Many inducements had been made by the Muscovy Company to get men to winter in Spitsbergen, but without success. In 1630, however, a British party deserted

by their ship, consisting of Edward Pelham and seven others, successfully wintered at Recherche Bay, and were found alive and well the next year.

British, Dutch, French, and Danes were fishing at this time, and it was nearly all harbour fishing. Ships anchored close to the shore, and huts were built. Besides huts they had warehouses, furnaces, coppers, and boilers for the boiling out of the blubber. The shores were busy with coopers and other workmen, and the whales were towed ashore and there flensed, the blubber was boiled down, the oil casked, and the casks floated off and hoisted on board. The division of bays amongst the nations had been a matter of much dispute and trouble. Britain, first in the field, claimed exclusive rights, but the Dutch resisted the claim, and Danes and French Basques also claimed right of access. But all the bays from Close Cove (Cross Bay) and Deer Sound (King's Bay) down to Horn Sound were generally admitted to be British. The principal resort of the Dutch was at Mauritius Bay, in the north-west of Spitsbergen, where Smeerenburg (or Blubber-town) developed, which is now known as Smeerenburg Sound. The remnants of this and other Spitsbergen settlements are marked to-day by traces of the boiling furnaces, by remains of wooden houses, and by many graves of men and women. In Smeerenburg Sound there is a place known as Grave Point, where about 200 coffins and skeletons lie half unearthed, and there are many similar sights on a smaller scale all round the shores of western Spitsbergen. At this time the Dutch had both a chapel and a fort at Spitsbergen, and sent up about 4,000 tons of shipping, or fully 20 ships. In 1632 the Danes attempted to assert rights over Spitsbergen, and, being prevented by the Dutch, went to Jan Mayen and pillaged and destroyed the Dutch station there selling the plunder at Rouen. Consequent on this, and the successful British wintering by Pelham in 1630, the Dutch received a new charter to keep in continuous occupation—in short, to colonize in Smeerenburg and Jan Mayen. Wintering parties were left at both places; those at Jan Mayen all died, but the seven in Spitsbergen survived the winter. Next year, 1634-35, other seven wintered in Spitsbergen, but all died by February, because they largely lived on "all manner of necessaries" provided for them instead of living a healthy life hunting for reindeer, bears, and other fresh food.

In the British whaling fleet at this time the Muscovy Com-

pany alone brought home 1,100 tons of oil and employed 1,000 men, and their annual tonnage was 3,500. Soon after this Hamburg ships took part in the fishery, and then French ships increased, but the bay whaling declined, and then the Dutch especially took to whaling at sea. The Dutch ceased to fish at the end of the eighteenth century, and during the nineteenth it passed entirely to British, and more especially to Scottish ships, but this fishing was mostly away from Spitsbergen in the open sea. In recent years Scotland alone has held the field in this bowhead, or Greenland whale fishing, but mostly in Greenland waters and Davis Straits. Alas! two years ago for the first time the Dundee whaling fleet was lying idle in the docks with not a single ship sent out to Arctic seas. On the other hand, the twentieth century has seen a revival of whaling in Spitsbergen by Norwegians, but the results, at first satisfactory, are now no longer so, and it seems likely that it will not be worth while continuing much longer. This whaling was for the finner and not for the bowhead whale.

Many of these British whalers were also explorers, and, as already noted, British men-of-war and exploring ships often accompanied the whaling fleet to Spitsbergen. Fotherby made extensive discoveries, especially in the north, while Poole explored Prince Charles Foreland and many of the western bays. Marmaduke discovered Hope Island and Edge Island. The British also discovered Wiche's Land and North-East Land.

Russian trappers frequented Spitsbergen in the eighteenth century and till the middle of the nineteenth, and Norwegian trappers have hunted there during the latter half of the nineteenth century. There are still some few of these so-called hunters left, but they have done such wholesale slaughter, with not only firearms and traps but with poison, that now Western Spitsbergen is a desert. In many places that I visited in 1912 and in 1909 not a single fox was to be seen where arctic and blue foxes abounded in previous years, and in fertile valleys where herds of reindeer used to roam only skeletons and carcasses are now to met with. Ptarmigans have also been slaughtered, and only wild pink geese re-echo their warning cries in glens where there is no other living creature to respond to them. During the recent British expedition (1912) very few eider ducks, no white whales, and one seal were met with in Icefiord, and everywhere in Spitsbergen all were scarce. The walrus is never seen in West Spitsbergen now, and only a few bears

wander there in winter time. The sooner such brutal massacre by so-called hunters is stopped the better, if the fauna of Spitsbergen is not to be entirely wiped out. Nor have so-called sportsmen been free from blame in this matter. The only way to stop it is for one strong country to take Spitsbergen under its wing and to stop all killing for a number of years until the animals have time to recover, and then to regulate hunting, both on sea and ashore.

Economic development in Spitsbergen at the present day is almost confined to the west coast. The warm surface drift from the Atlantic and the prevailing westerly winds make that coast readily accessible all summer. Ice seldom interferes with navigation at that season; in fact, but for the freezing of the fjords, the west coast could often be reached in winter. The east coast is much less accessible owing to pack ice.

British interests, which, together with American, are the most important in Spitsbergen, are chiefly centred in Bell Sound, Ice Fjord, and Deer Sound (King's Bay), as well as Prince Charles Foreland, but a British company also claims land in Stor Fjord, on the east.

Most of the west coast and its hinterland has been prospected for minerals, and almost every part of any value has been laid claim to. In fact, so numerous are these claims, though many of them are derelict, that they have begun to overlap.

Almost every mile of the long and much-lauded Ice Fjord has been claimed by one company or another. In Green Harbour is situated a Norwegian whaling station and a Norwegian Government wireless telegraphy station. The whaling station, we learnt in 1912 on our last visit, had had little success in whaling that season, and was likely to be given up. The powerful wireless station which was set up in 1911 by the Norwegian Government seems to be out of all proportion to the commercial claims Norway has in Spitsbergen, which are not nearly of such great importance as the American and British ones. It is true there is a land whaling station and another floating one in Green Harbour, but the wireless station is of no use to them, and especially also in view of recent results. There are also many claim boards here and in Spitsbergen elsewhere set up by Norwegians and Swedes, and in too many cases those individuals or companies attempt to "jump" territory previously claimed by others. In Green Harbour one Norwegian company has made several holes along a coal seam where the

chief work has been done by the Americans. There are also the so-called Norwegian hunters, who have practically exterminated the game in Western Spitsbergen, and in summer two or three Norwegian tourists' boats go to Spitsbergen. But these Norwegian interests cannot justify the erection of a costly wireless station, the subsidising of a small boat to carry the mails to and from Tromsö, and the financing of survey expeditions, which must one and all be of political significance only.

In Advent Bay the Americans, after about ten years' work, have wonderfully developed the country, and it was reported that the company had orders for 45,000 tons of coal for shipment during the summer of 1912. This coal has a high calorific value, and is very well suited to steam-raising purposes. The engineers on board two ships with which I have been associated assured me that this coal is almost equal to South Wales coal; this is borne out by analysis. The seams are of a good thickness, and crop out on fairly steep faces above the sea, where they are reached by level adits. The coal is carried to the jetty by a wire ropeway. The American company is well supported with capital, and is continuing to extend the equipment of its well-equipped coal workings and settlement. This summer a veritable forest of timber has been put ashore, and rapid progress was being made with the erection of many more houses and stores. Wireless communication to Europe, *via* Green Harbour, has been established. The demand, in fact, for this Spitsbergen coal has apparently increased at such a rate that during the summer of 1912 there was insufficient accommodation for the number of miners and others, about 300, employed. This, indeed, appears to have been the cause of a serious strike, which the Americans faced with successful results by replacing all the malcontents, mostly Fins and Swedes, with other more willing workers. Some of the leading workers are British, and this contingent of expert miners, who have given great satisfaction, seems likely to be increased. Our American cousins are to be congratulated on the businesslike way in which they have developed these Spitsbergen coal deposits. As mentioned above, they have been backed with plenty of capital. That capital has been used judiciously but freely, and with satisfactory results; and if the mineral resources of Spitsbergen are to be fully developed it is necessary to have, in the first place, plenty of capital, a considerable part of which must be spent in prospecting by capable geologists and expert mining engineers, and

to have that preliminary work followed up in the way the Americans have done in spending freely and wisely large sums on equipment. Besides the present workings another mine is being opened on the opposite, i.e., the east side of Longyear Valley. A busy coal jetty, steam shovels, wire ropeway, ships, coaling, and stores going ashore for the winter all indicate serious business, while a herd of a hundred pigs, a bull, and some cows, as well as fowls, indicate present domestic comforts of the inhabitants of the rapidly-developing Longyear City.

The fact that during the winter the temperature, on account of the proximity of the warm Atlantic waters, is higher than that of many large American cities, and the prevalence of fine weather in that season add to the progress of this American settlement. The darkness of winter is easily overcome by electric light.

Next to the American, British capital has done most to develop the mineral resources of Spitsbergen. On the opposite side of Advent Bay a British company has a coal mine, and has shipped a large quantity of coal, but the work has not been followed up as at the American mine. In Bell Sound two British companies have extensive claims, and have done detailed prospecting work, especially in relation to coal deposits, while active work in marble-quarrying by a British company is going on in Deer Sound. Prince Charles Foreland, English Bay, and the land from Sassen Bay to Klaas Billen Bay have all been exploited by British companies, as well as extensive territory right across Spitsbergen to Wybe Janzs Water (Stor Fiord). Altogether over 7,000 square miles of territory are claimed and have been worked upon by British companies.

In 1911 a conference was held in Christiania at which Russia, Sweden and Norway were represented, and it was proposed that these three countries should select two representatives each to a common Council for the government of Spitsbergen. Britain was not represented at this conference, though she probably holds at present, and has held in the past, the greatest stake in the country. Naturally America is not interested in the annexation of an outlying archipelago of Europe, but it is probable that American claimants would favour the idea that one country should be responsible for the government of Spitsbergen and not a nondescript international council of three countries, not one of which have the stake in the country that American and British citizens have. No doubt

also Americans would desire to have the protection of a country where mining laws would be conducive to the development of their enterprise in the country. There can be no doubt, in short, that American citizens would be satisfied with, nay, desire, British protection. The clear duty, therefore, of the British Government is to take this step either affirming her act of annexation in 1615 or re-annexing now, instead of giving her adherence to this scheme of triple control.

Organised protection there must be because at present property is not respected in Spitsbergen and there is no security of tenure in mining claims; and the strongest reason of all is that there is an unlimited supply of coal practically equal to the best Welsh coal (within fifty-three hours of British shores) which should not be allowed to be at the disposal of any other European navy but the British Navy.

THE BRITISH ANTARCTIC EXPEDITION, 1910-13.*

By Commander E. R. G. R. EVANS, C.B., R.N.

(Addressed to the Society in the Free Trade Hall on Friday, October 31st, 1913.)

So much has been published concerning the British Antarctic Expedition, the tragic loss of its gallant leader and his four brave companions, whose names we know so well, that there is no need to preface the story by telling you at length how Captain Scott made his preparations. His organisation was complete, his equipment splendid, and no expedition ever left our shores with a better outfit or a more enthusiastic and determined personnel. Thanks to Captain Scott's fine organisation our expedition remained self-contained, even after his death.

On June 1, 1910, the *Terra Nova* left London with most of the members of the expedition. She finally left New Zealand on November 29. Captain Scott had with him fifty-nine officers, scientists and seamen. The *Terra Nova* left New Zealand a very full ship; besides four hundred tons of coal she carried provisions for three years, two huts, forty sledges, fur sleeping bags, bales of clothing, all kinds of instruments, and the hundreds of little items of equipment necessary to a Polar expedition with an ambitious scientific programme. Besides these things which filled our ship's holds and the between deck spaces, we carried nineteen Siberian ponies, thirty-four dogs, three motor sledges, 2,500 gallons of petrol, and our paraffin on the upper deck. The animals were under the charge of Mr. Cecil Meares, who with Lieutenant Bruce had brought them down from Siberia. The ponies after we left New Zealand were taken charge of by Captain Oates, of the Inniskilling Dragoons.

The first exciting incident on the southward voyage occurred on December 2, when we encountered a gale which, in the deeply laden condition of the ship, nearly caused the loss of the expedition. First the engine-room choked, and then the

* Reprinted, with the Maps from the "Geographical Journal" by the kind permission of the Royal Geographical Society.

hand pumps. Heavy seas washed over the vessel, and fires had to be extinguished as the engine-room was feet deep in water. While the pump suction's were being cleared the after-guard formed a bucket discharge party and baled the ship out continuously for twenty-four hours. At the end of this time the gale abated, and we proceeded southward, having come through with no loss save two ponies, and one dog which was drowned.

Proceeding south on the meridian of 179° W., the first ice was seen in lat. 64° S. The ship passed all kinds of icebergs, from huge tabular to little weathered water-worn bergs. The Antarctic pack was reached on December 9, in lat. 65° S., and the ship boldly pushed through for some 200 miles under steam and sail, when her progress was retarded to such an extent that, to save coal, engines were stopped, sail was furled, and the ship lay under banked fires for some days. We spent three weeks in the pack, and emerged on December 30, after pushing through 380 miles of ice. The time was not wasted: magnetic observations, deep-sea soundings, and serial sea-temperatures were obtained. The zoologists and marine biologists secured valuable specimens. Once in open water we proceeded full speed to Cape Crozier, as Dr. Wilson wished to study the embryology of the Emperor penguins during the winter season. Captain Scott was quite prepared to make Cape Crozier our base, if a suitable landing-place was to be found. As no good place was to be seen, we rounded Cape Bird at midnight and entered McMurdo Sound. It was remarkably clear of ice. We passed Shackleton's winter quarters, and noticed his hut at Cape Royds looking quite new and fresh. Six miles farther south the ship brought up against the fast ice, which extended right across the Sound.

On January 4, 1911, thirty-six days out from New Zealand, Captain Scott, Wilson, and myself went across the ice and visited a little cape which looked, and subsequently proved to be, an ideal spot for wintering. This place Captain Scott named Cape Evans. Immediately the winter quarters were selected, out came the stores and transport. Lieutenant Pennell took charge of the ship, Lieutenant Campbell the transport, over the mile and a half of sea-ice; the charge of the base was given to me, while Captain Scott supervised, planned, and improved.

Meares' dogs, Oates' ponies, and Day's motors, supplemented by man-hauling parties, bustled between ship and

shore, transporting stores over the frozen sea. At the cape, Davis, the carpenter, with his willing crew, put up the tent. In less than a week the main party had their equipment ashore.

We will now follow Captain Scott and his companions at the principal base. The weather was so hot when first we landed that the ice melted, and we could wash in fresh water and even draw our drinking water from a cascade. We built ice-caves



to stow our fresh mutton in and for magnetic observations. Outside the hut we soon had fine stables. Directly the construction of the base station was assured away went every available man to lay a depôt. We said good-bye to the ship, and on January 24, 1911, Captain Scott and eleven companions left with two dog teams and eight ponies to lay out a depôt of food-stuffs before the Antarctic winter set in. Nearly one ton of provisions was taken out to a point 144 miles from our base.

This spot was named One Ton Dépôt. The party for the return journey was split up into three detachments. Captain Scott, with Meares, Wilson, and Cherry Garrard, came home with the dogs. Scott and Meares had the misfortune to run along the snow bridge of a crevasse. The bridge gave way, and all the dogs but Osman, the leader, and the two rear animals, disappeared down a yawning chasm. With the greatest difficulty the dogs were rescued. Scott and Meares were lowered by Wilson and Cherry Garrard into the crevasse. They found the dogs twisting round suspended by the harness, fighting, howling, and snapping. One by one they were freed from the trace and hauled up on to solid ice; as each animal regained safety he lay down and slept. It was an anxious period for all concerned. Captain Scott spoke most highly of Wilson, Meares, and Cherry Garrard's behaviour and resource on this occasion.

One party, consisting of the second in command and two seamen, returned from the dépôt with the three oldest and weakest ponies—Blossom, Blucher, and James Pig. The ponies were in very poor condition, and Oates, their master, expected all three to give out on their return march. They were christened by the seamen "The Baltic Fleet." Two of them died owing to the severe weather conditions that obtained at the end of February, but the third pony, James Pig, was a plucky little animal, and he survived. Lieutenant Bowers, in charge of the detachment which built up "One Ton Dépôt," returned after the other two parties. He had with him Cherry Garrard and Crean when on March 1 he was sent across the sea-ice to reach Hut Point. The ponies were tired and listless after their hard journey and in bad condition, and they had to be frequently rested. As they advanced towards Hut Point cracks in the ice became apparent, and when the party reached a crack which showed the ice to be actually on the move, they turned and hastened back—but the ice was drifting out to sea! The ponies behaved splendidly, jumping the ever-widening cracks with extraordinary sagacity. Bowers, Cherry Garrard, and Crean launched the sledges back over the cracks in order not to risk the ponies' legs. Eventually they reached what looked like a safe place. Men and ponies were thoroughly exhausted. Camp was pitched, and the weary party soon fell asleep. Bowers soon awoke, hearing a strange noise. He found the party in a dreadful plight—the ice had again commenced to

break up, and they were surrounded by water. One of their four ponies had disappeared in the sea. Camp was again struck, and for five hours this noble little party fought their way over three-quarters of a mile of drifting ice. They never thought of abandoning their charge, realising that Scott's Polar plans might be ruined if four more ponies were lost with their sledges and equipment. Crean, with great gallantry, went for support, clambering with difficulty over the ice. He jumped from floe to floe, and at last climbed up the face of the Barrier from a piece of ice which touched the ice-cliff at the right moment. Cherry Garrard stayed with Bowers at his request, for little Bowers would never give up his charge while a gleam of hope remained. For a whole day these two were afloat, and eventually Captain Scott, Oates, Gran, and Crean appeared on the Barrier edge, and on seeing them Bowers and Cherry Garrard jumped some floes till they reached a piece of ice resting against the Barrier face, thanks to the return of the tide. Bowers and Cherry Garrard were rescued, and after a further piece of manœuvring a pony and all the sledges were recovered. The other three ponies were drowned. During this trying time Killer whales were about almost continuously, blowing and snorting in the intervening water spaces. Only those who have served in the Antarctic can realise fully what Bowers' party, and also Scott's own rescue party, went through.

By March 4 all the depôt parties were safely, if not comfortably, housed at Hut Point, with the two dog teams and the two remaining ponies. We were unable to return to Cape Evans for six weeks, as the sea would not freeze over properly on account of persistent high winds. We lived in the old hut left by the *Discovery*, and our existence was rather primitive. Meares and Oates perfected a blubber stove. We killed seals, and thus obtained food and fuel. Although rather short of luxuries, such as sugar, we were never in any great want of good plain food, and the time passed agreeably enough. On March 14 the depôt party was joined by Griffith Taylor, Debenham, Wright, and Petty-Officer Evans.

Taylor's party had been landed by the *Terra Nova* on January 27, after the start of the depôt party, to make a geographical reconnaissance. They traversed the Ferrar glacier, and then came down a new glacier, which Scott named after Taylor, and descended into Dry Valley, so called because it was entirely free from snow. Their way led over a deep

freshwater lake four miles long, which was only surface frozen. This lake was full of algæ. The gravels below—a promising region of limestones, rich in garnets—were washed for gold, but only magnetite was found. When Taylor had thoroughly explored and examined this region his party retraced their footsteps and proceeded southward to examine the Koettlitz glacier. They returned from the Koettlitz glacier along the edge of the almost impenetrable pinnacle ice, and part of their journey actually led them through an extraordinary and difficult ice-field. It took two days to negotiate six miles of this surface; the party were then able to get back on to sea-ice, and without mishap marched to Hut Point.

We now numbered sixteen at this congested station, and 15 miles of open water separated us from Cape Evans. The gales were so bad that spray dashed over the hut sometimes, and all round the low-lying parts of the coast spray ridges of ice formed. But at last ice formed which was not blown out, first in little pancakes, which cemented together and formed floes, these in their turn were frozen together, and at last a party of nine made the passage over the new sea-ice to Cape Evans, and on April 13, 1911, they marched into the hut at our main base, dirty but cheerful. The cook soon had all kinds of luxuries prepared for us. Captain Scott was delighted at the progress made by those left in our hut under Dr. Simpson.

And now that communication was established between Hut Point and Cape Evans we settled down for the winter. Thanks to Ponting, our photographic artist, we have a magnificent pictorial record of events. Ponting went everywhere with his camera and kinematograph machine. Even when we came south in the ship he kinematographed the bow of the *Terra Nova* breaking the ice. If a sledge party set out, a penguin appeared, or a pony "played up," or even if a dog broke adrift, Ponting was there with his artillery ready for action. He even had a galloping carriage with his quick-firing cameras drawn by dogs. He would get seals to pose for him if he wished, by his persuasive methods, or by exciting their curiosity. Ponting never missed an opportunity of making an artistic photograph.

We must now hurry through four months' darkness. The first winter seemed to pass very quickly. Every one was busy at his special subject. Dr. Wilson, the chief of our scientific staff, helped us all. He was our Solomon. To "Uncle Bill"

we all went for sound practical advice. Wilson was a friend and companion of Captain Scott, and, indeed, to all in the Expedition.

During the winter months holes were made in the sea-ice through which we lowered a wire fish tray. By this means we caught a number of *Notathenia*. When Atkinson, the Helminthologist, had examined these fish, they were handed to the



cook, who served them up for breakfast. These fish were a great delicacy.

A small hut was erected some 50 yards from the main station to contain the magnetic observatory under Dr. G. C. Simpson, of Simla. His place was at the base station; his important work as physicist and meteorologist prevented him from taking an active part in our sledge journeys. When he was recalled to Simla in 1912, his work was ably continued by Wright, the

Canadian chemist, who made a special study of ice structure and glaciation.

On June 27 Dr. Wilson, with Bowers and Cherry Garrard, started on a remarkable journey to Cape Crozier. Their object was to observe the incubation of the Emperor penguins at their rookery. During this first Antarctic mid-winter journey the temperatures were seldom above 60° , and they actually fell to 77° below zero, that is 109° of frost. The party took a fortnight to reach Cape Crozier, meeting with good weather—that is, calm weather—but bad surfaces, which handicapped them severely. After rounding Cape Mackay they reached a wind-swept area, and experienced a series of blizzards. Their best light was moonlight, and they were denied this practically by overcast skies. Picture their hardships—frozen bags to sleep in, frozen finneskoe to put their feet in every time they struck camp. They scarcely slept at all. And when they reached Cape Crozier, only about one hundred Emperor penguins could be seen. In the *Discovery* days this rookery was found to contain two or three thousand birds. Possibly the early date accounted for the absence of Emperors. However, half a dozen eggs were collected, and three of these are now in our possession. Wilson on his return told us that he picked up rounded pieces of ice which the stupid birds had been cherishing, fondly imagining they were eggs. The maternal instinct of the penguin is very strong.

At Cape Crozier, Wilson's party had built a stone hut behind a land ridge on the slopes of Mount Terror. This hut was roofed with canvas. The same night that the eggs were collected a terrific storm arose. One of the hurricane gusts of wind swept the roof of the hut away, and for two days the unfortunate party lay in their bags half-smothered with fine drifting snow. The second day was Dr. Wilson's birthday. He told me afterwards that had the gale not abated, then they must all three have perished. They dare not stir out of the meagre shelter afforded by their bags. Wilson prayed hard that they might be spared. His prayer was answered; but, as you know, two of this courageous little band lost their lives later on in their eager thirst for scientific knowledge. When the three men crept out of their bags into the dull winter gloom they groped about and searched for their tent, which had blown away from its pitch near the stone hut. By an extraordinary piece of good fortune it was recovered, scarcely damaged, a

quarter of a mile away. Wilson, Bowers, and Cherry Garrard started home the next day. They were caught by another blizzard, which imprisoned them in their tent for forty-eight hours. After a very rough march, full of horrible hardships and discomforts, the little band won through and reached Cape Evans on August 1, having faced the dreadful winter weather conditions on the great ice barrier for five weeks. On their return they wanted bread, butter, and jam most, and loaves disappeared with extraordinary speed. They were suffering from want of sleep, but were all right in a few days. A remarkable feature of this journey was the increase of weights due to ice collecting in the sleeping-bags, tent, and clothing. The three sleeping-bags weighed 47 lbs. at the start, and 118 lbs. on their return. Other weights increased in the same proportion, and their sledge had dragged very heavily in consequence. The three men, when they arrived in the hut, were almost encased with ice. I well remember undressing poor Wilson in the cubicle he and I shared. His clothes had almost to be cut off him.

From this journey we derived additional experience in the matter of sledging rations. Thanks to the experiments made, we arrived at the most suitable ration. This was for the colder weather expected during the second half of the forthcoming Polar journey. It was to consist of 16 ozs. biscuit, 12 ozs. pemmican, 3 ozs. sugar, 2 ozs. butter, 0.7 oz. tea, 0.6 oz. cocoa—equals 34.4 ozs. food daily. This is one man's food per day. No one could possibly eat this in a temperate climate; it was a fine filling ration even for the Antarctic. The pemmican consists of beef extract with 60 per cent. pure fat.

No casualties occurred during the winter, but Dr. Atkinson had a severely frostbitten hand. He had gone out to read a thermometer on the sea-ice 800 yards from the hut. It was blowing and drifting, and Atkinson lost his way in the blizzard. He was adrift for eight hours, but luckily found his way back during a lull in the weather.

During the second half of the winter we were all busy preparing for the sledge expedition to the Pole. Food rations had to be prepared, instruments calibrated, sledges specially fitted to carry the travelling equipment, and our own clothes adapted for sledging according to experience gained in the *dépôt* and winter journeys. Meares and the second in command took parties out and laid *dépôts* during the early spring, and Captain Scott made a coastal journey to the west. These spring journeys

were all interesting in their way, but cannot now be dwelt on owing to time limit.

On October 24 the advance guard of the Southern party, consisting of Day, Lashly, Hooper and myself, left with two motor sledges. We had with us three tons of stores, pony food and petrol, carried on six sledges. The object of sending forward such a weight of stores was to save the ponies' legs over the variable sea-ice, which was in some places hummocky, and in others too slippery to stand on. The first 30 miles of Barrier was known to be bad travelling. The motor party had rather trying experiences, owing to the frequent over-heating of the air-cooled engines. Directly the engines became too hot we had to stop, and by the time they were reasonably cooled the carburetter would refuse duty—it had often to be warmed up with a blowlamp. Day and Lashly, the engineers, had great trouble in starting the motor-sledges. We all four would heave on the spans of the towing-sledges, to ease the starting strain; the engines would generally give a few sniffs, and then stop. It is true that the motors advanced the necessaries for the Southern journey 51 miles, but at the expense of the men who had charge of them. The engineers continually got their fingers frost-bitten tinkering with the engines and replacing big end brasses, which several times gave out. But although the temperatures were low, we were all very happy, and Day was most keen to bring the motors through with credit. They were abandoned a mile south of Corner Camp, but had advanced their weights in turn over rough, slippery and crevassed ice, and thus given the ponies a chance to march light.

The first 30 miles of barrier surface led over very deep soft snow, and, in fairness to the despised motors, they went better over soft snow than any other part of our transport. The man-hauling party, as we now became, marching for a fortnight, covered nearly 180 miles, and halted at a rendezvous on November 15 in lat. 80° 32' south. We waited here six days, and built an enormous snow cairn 15 feet high. We called this rendezvous Mount Hooper, after our youngest member.

On November 21, Captain Scott arrived with eleven men, ten ponies and two dog teams. We heard that they had been delayed partly by bad weather, and had purposely kept down the marches to give the weaker animals a chance. However, every one was well and eager to advance southward. Captain Scott ordered us to continue to go forward in advance of the

dogs and ponies. We marched exactly 15 miles daily, erecting cairns at certain pre-arranged distances, surveying, navigating, and selecting the camping site. The ponies marching by night were able to rest when the sun was high and the air warmer. Meares' dogs would bring up the rear; they started some hours after the ponies, as their speed was so much greater.

Captain Scott's plans worked easily and well. The ponies pulled splendidly, and their masters vied with each other in their care and management. Oates always kept a very careful look-out on his charges. The tough little beasts pulled about 650 lbs. each, and were fed daily on 10 lbs. of oats and 3 lbs. of oilcake. On camping, large walls would be erected by the pony leaders to shelter their animals from the wind, and while this was being done the cook of each tent would prepare the supper hoosh. We were all so happy and full of life on the march over the great ice barrier that we often would wrestle and skylark at the end of the day. We had our good and bad weather, and we had our turns of snow blindness. This ailment was common to the ponies and dogs as well as to ourselves. Depôts were made every 65 miles. They were marked by big black flags, and we saw one of them, Mount Hooper, 9 miles away. Each depôt contained one week's rations for every returning unit. That outward barrier march will long be remembered—it was so full of life, health and hope. Our sad days came when the ponies were killed one by one. But hunger soon defeated sentiment, and we used to relish our pony meat, which made the hoosh more solid and satisfactory.

Day and Hooper were the first to return, their places being taken in the man-hauling party by Atkinson and Wright, whose ponies, Jehu and Chinaman, were first shot. With two invalid dogs, Day and Hooper left us at $81^{\circ} 15'$ and marched back to the base. With only two they had great difficulty in pulling their sledge home, so cut it in half and saved themselves considerable labour. On December 4 we arrived within 12 miles of Shackleton's Gap or Southern Gateway. We could see the outflow of the Beardmore glacier stretching away to our left as we advanced southward that day. Hopes ran high, for we still had the dogs and five ponies to help us. Captain Scott expected to camp on the Beardmore itself after the next march. Luck was against us. On December 5 we encountered a blizzard which lasted four whole days. The temperature rose to 35° Fahrenheit, and the drift was very bad indeed.

The snow was in big flakes, driving from the S.S.E., but as the gale took its course snow was succeeded by sleet, and even rain. The barrier surface was covered with 18 inches of slush. The poor ponies had continually to be dug out from the snow-drifts, which accumulated behind their walls. The dogs suffered less, but they themselves looked like wet rats when Meares and Demitri went to feed them. All our tents, clothing and sleeping-bags were soaked. On December 9 the blizzard was over, and all hands dug out sledges and stores. We wallowed sometimes thigh deep in this Antarctic morass, and after marching for fourteen days on end the remaining five ponies were shot, as no food was left for them. Poor things! they did their job well, and I believe every pony leader gave half his biscuits to his own animal, so they had some little reward for their last march.

As arranged, three teams of four, pulling 170 lbs. per man, now advanced up the glacier. Meares and his Russian dog-boy came along with us for two marches, and then turned homeward. To help us Meares had travelled further south than his return rations allowed for, and for the 450-mile northward march to Cape Evans he and his companion Demitri went short one meal a day, rather than deplete the depôts. It is a dreadful thing on an Antarctic sledge journey to forfeit a whole meal daily, and Meares' generosity should not be forgotten. The advance of the twelve men up the Beardmore was retarded considerably by the soft wet snow which had accumulated in the lower reaches of the glacier. Panting and sweating, we could only make four-mile marches until the 15th. But after that the surfaces were better, and we were far less tired in doing more than twice the distances.

On December 16 we reached Blue Ice, 3,000 feet above the barrier, and, with the exception of little delays caused by people falling into crevasses, our progress was not impeded. Wilson did a large amount of sketching on the Beardmore. His sketches, besides being wonderful works of art, helped us very much in our surveys. We had fine weather generally, and with twelve men the Beardmore glacier was overcome without great difficulty. Of course, we had Shackleton's charts, diaries, and experience to help us. We often discussed Shackleton's journey, and were amazed at his fine performance. We always had full rations, which Shackleton's party never enjoyed at this stage. Our marches from December 16 worked up from 13 to 23 miles a day.

170

Long. E.

180

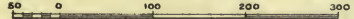
Long. W.

170

BRITISH ANTARCTIC EXPEDITION

1910 - 13.

Scale 1:13,000,000 or 1 inch = 205 Stat. Miles.



Route of Southern Party



On December 21 we were on the plateau in lat. $85^{\circ} 7' S.$, 6,800 feet above the barrier, and fit and ready to go forward. Here we established the Upper Glacier depôt. The third supporting party, consisting of Atkinson, Wright, Cherry Garrard, and Keohane, left us the next day, and marched home 584 miles. They spent Christmas Day collecting geological specimens, and reached Cape Evans on January 28, after a strenuous journey of 1,164 miles. They had some sickness in the shape of enteritis and scurvy. But Dr. Atkinson's care and medical knowledge brought them through safely.

Captain Scott with his two sledge teams now pushed forward, keeping an average speed of 15 miles a day with full loads of 190 lbs. a man. We steered south-west for the first two days after leaving the Beardmore, to avoid the great pressure ridges and icefalls which were plainly visible to the south. On December 23 we came across enormous crevasses which were as big as Regent Street. They were nearly all well bridged with snow, but we took them at the rush and had no serious falls. The dangerous part is at the edge of the snow bridge, and we frequently fell through up to our armpits, just stepping on to or leaving the bridge. We experienced on this plateau the same tingling southerly wind that Shackleton speaks of, and men's noses were frequently frost-bitten. On Christmas Eve we were 8,000 feet above the barrier, and we imagined we were clear of crevasses and pressure ridges. We now felt the cold far more, when marching, than we had done on the Beardmore. The wind all the time turned our breath into cakes of ice on our beards. Taking sights when we stopped was a bitterly cold job, fingers had to be bared to work the little theodolite screws, and in the biting wind one's finger-tips soon went. On Christmas Day we marched $17\frac{1}{4}$ miles, and during the forenoon again crossed a badly crevassed area. Lashly celebrated his forty-fourth birthday by falling into a crevasse 8 feet wide. The laden sledge just bridged the chasm, and poor Lashly was suspended below spinning round with 80 feet of clear space beneath him. We had great difficulty in hauling him up on account of his being directly under the sledge. When he reached the surface, one of the party wished him a happy Christmas and another many happy returns. I will not tell you what Lashly's reply was.

At 7.30 we camped and had our Christmas dinner—extra thick pemmican with pony meat in it, a chocolate and biscuit

hoosh, plum pudding, cocoa, ginger, and caramels, and a mug of water each. We were all so full that we could hardly shift our foot-gear, and although the temperature was well below zero, we lay on our sleeping-bags unable to muster the energy to get into them. The 87th parallel was reached on New Year's Eve, after a short march; we made a depôt here, and the seamen of the party converted the 12-foot sledges into 10-foot ones by the spare short runners we had brought along. This took nine hours, but the reduction in bearing surface was worth it. We saw the New Year in that night with a fine feed of pemmican and a stick of chocolate which Bowers had kept for the occasion.

On January 3, Captain Scott came into our tent and told us that he was sure that he could reach the Pole if my party gave up one man and made the homeward journey short-handed. Of course we consented, and Bowers was taken into the Polar party. On January 4 the last supporting party, consisting of Lashly, Crean, and myself, marched south to lat, $87^{\circ} 34'$ with the Polar party, and seeing that they were travelling rapidly, yet easily, we halted, shook hands all round, and said good-bye.

Up to this time no traces of the successful Norwegians had been seen, and we all fondly imagined that our flag would be the first to fly at the South Pole. We gave three huge cheers for the Southern party as they stepped off, and then turned our sledge and commenced our homeward march of nearly 800 miles. We frequently looked back until we saw the last of Captain Scott and his four companions, a tiny black speck on the horizon, and little did we think that we were the last to see them alive, that our three cheers were the last appreciation they would ever know.

The return of the last supporting party nearly ended in disaster. After the first day's homeward march, we found that we could not do the necessary distances in the nine hours, owing to being a man short. This was serious, and in order not to make my seamen companions anxious, that night I handspiked my watch, putting the hands on one hour, so that we therefore turned out about 4 a.m., making from ten to twelve hours a day. On January 8 we were overtaken by a blizzard, which continued for three days. We dare not stop our marches, and thanks to the wind being with us we were able to push on. But the soft snow spoilt the surface, and

the outlook was so bad we cut off a big corner and saved two days' march, by shaping course direct for the Upper Glacier Depôt under Mount Darwin. This led us over Shackleton's ice-falls at the head of the Beardmore glacier. We descended many hundred feet, mostly riding on the sledge; we had frequent capsize and broke the bow of the sledge. Crean had the misfortune to catch his trousers somehow in our headlong flight and had them torn to shreds. We reached the Upper Glacier Depôt the same day, however, and reclothed Crean, who had left a pair of Mandleberg wind-proof trousers in the depôt cairn with some of his tobacco wrapped up in them.

Returning down the Beardmore, we had some misty weather which hid the land, and we were embarrassed by getting into a mass of ice-falls, pressure ridges, and crevasses. We fell about a great deal, and were two days getting clear. We had no food left, and when we reached the next depôt under Cloudmaker mountain we had marched 17 miles without anything to eat except one biscuit and a mug of tea. To make things worse, I developed scurvy about January 17, when we had 500 miles to go. My condition became daily more serious, until I entirely lost the use of my legs. But I could not afford to give up as I was the only one in the party who knew anything about navigation, and I had to keep them marching until they could see Mount Erebus, or some known landmark. When 75 miles from Hut Point I ordered Crean and Lashly to leave me with my sleeping-bag and some food, and go on, sending out relief if possible. They refused to do this, and strapping me on the sledge, dragged me 40 miles in four days, helped by a southerly wind. When 35 miles from Hut Point we had a heavy snowfall, which made it impossible for Lashly and Crean to move the sledge.

Crean then left us on February 19, and marched for eighteen hours with nothing to eat but a few biscuits. He plodded on solidly through the soft snow, and eventually reached Hut Point utterly exhausted and numbed with cold; but he gave our whereabouts to Dr. Atkinson, who was there with Demetri and the dog-teams, and they came out and rescued us. Lashly undoubtedly saved my life by his careful nursing. It was very brave of him to stay with me, as he only had three meals left, and if relief had not come in time he could never have walked in without food, as he himself was very done after hauling in my sledge-team for over 1,500 miles.

Crean volunteered to come out again with Atkinson, but was, of course, not allowed to.

And now we will turn again to the Polar party itself. They covered the 145 geographical miles that remained in a fortnight. Captain Scott came across Amundsen's dog-tracks soon after lat. 88°, and followed them to the Polar area. Scott, Wilson, Oates, Bowers, and Seaman Evans reached the South Pole on January 17, 1912. They fixed the exact spot by means of a 4-inch theodolite, and the result of their careful observations located the Pole at a point which only differed from Amundsen's by half a mile, as shown by his flag. This difference actually meant that the British and Norwegian observers differed by one scale division on the theodolite, which was graduated to half a minute of arc. Experts in navigation and surveying will always look on this splendidly accurate determination as a fine piece of work by our own people as well as by the Norwegian expedition.

Lady Scott has remarked on the magnificent spirit shown by her husband and his four specially selected tent-mates, when they knew that Queen Alexandra's little silk Union Jack had been anticipated by the flag of another nation. Scott and his companions had done their best, and never from one of them came an uncharitable remark. On January 19 the homeward march was commenced; the party had before them a distance of over 900 miles. They came back at a fine pace over the ice-capped plateau. A blizzard stopped them from travelling on January 25, but otherwise their progress was not retarded materially. Seaman Evans was causing anxiety, and his condition naturally worried Captain Scott and his comrades. But, however great their anxieties, they looked after Evans most carefully, and hoped to pull him through. He was rested on the Beardmore glacier, Oates looking after him while the others made a halt for geographical investigation by the Cloudmaker dépôt. But Evans also sustained a serious concussion through falling and hitting his head, and then the party were greatly hampered. They were so delayed that the surplus foodstuffs rapidly diminished, and the outlook became serious. Bad weather was encountered, and near the foot of the Beardmore poor Seaman Evans died. He was a man of enormous strength, a tried sledge, and a veteran in Antarctic experience. Captain Scott had the highest opinion of this British seaman. He was the sledge-master, and to Evans we owed the splendid

fitting of our travelling equipment, every detail of which came under his charge.

Seaman Evans' death took place on February 17, and then the bereaved little band pushed northward with fine perseverance, although they must have known by their gradually shortening marches that little hope of reaching their winter quarters remained. Their best march on the Barrier was only 9 miles, and in the later stages their marches dropped to 3 miles. The depôts were 65 miles apart, and contained six weeks' provisions; they knew their slow progress was not good enough, but they could not increase their speed over such bad surfaces. The temperature fell as they advanced, instead of rising as expected, and we find them recording a temperature of -46.2 one night.

Poor Oates' feet and hands were badly frost-bitten—he constantly appealed to Wilson for advice. What should he do, what could he do? Poor gallant soldier, we thought such worlds of him. Wilson could only answer, "Slog on—just slog on." On March 17, which was Oates' birthday, he walked out to his death in a noble endeavour to save his three comrades beset with hardships, and as our dead leader wrote, "*It was the act of a brave man and an English gentleman.*"

Scott, Wilson and Bowers fought on until March 21, only doing about 20 miles in the four days, and then they were forced to camp 11 miles south of One Ton Depôt. They were kept here by a blizzard, which was too violent to permit them to move, and on March 25 Captain Scott wrote his great message to the public.

Thanks to Atkinson and the search party, we have all the records of these brave men, and so the surviving members of the expedition can work on them, and for Scott's and Wilson's sakes particularly let us hope justice will be done to these same records.

I must now take you right away from the main party to give you an insight into Lieut. Victor Campbell's work. Campbell's party consisted of Surgeon Levick, Raymond Priestley, geologist, and Seamen Abbott, Browning and Dickason. Lieut. Pennell, who now commanded the *Terra Nova*, took this expedition along the Barrier to King Edward's Land in the beginning of February, 1911. They got within 10 miles of Cape Colbeck, but the most formidable pack ice yet seen lay between them and the ice cliffs of this inhospitable-

looking land. It was out of the question for Campbell to put his hut and gear out on to sea-ice, with no certain prospect of being able to climb the cliffs of King Edward VII. Land. So he and Pennell reluctantly returned to seek a landing elsewhere.

Coal was short, and the season drawing on. The *Terra Nova* steamed back along the face of the Great Ice Barrier, and in the Bay of Whales sighted the *Fram*. The two ships' companies soon made friends, and the commanding officers exchanged calls. Amundsen was anxious for Campbell to winter alongside of him, but Campbell decided to make his winter quarters in another region—it being undesirable to have two expeditions wintering at the same base. Campbell eventually landed at Cape Adare, after vainly searching for a more profitable wintering place. He was most handicapped by the shortage of coal in the *Terra Nova*, which limited the radius of their search.

Campbell and his party did excellent meteorological, geological and magnetic work, and he himself made some very good surveys. Levick made a special study of the penguins, and Priestley, with his previous Antarctic knowledge, made himself invaluable, apart from his own scientific work. Campbell was loud in his praise of the seamen in this party.

Lieut. Pennell, in the *Terra Nova*, revisited Cape Adare after the first winter, took off the party and their collections, and landed them again on January 8 at the Terra Nova Bay, to sledge round Mount Melbourne to Wood bay, and examine this part of Victoria Land. Campbell and his crew returned, after a month's sledge journey to Terra Nova bay, on February 6. They had found garnets and many excellent fossils on this trip. Campbell did some very good work surveying, and has added a good deal to the existing maps.

On February 17, the party began to look for the *Terra Nova*, but as time went on and she did not put in an appearance, Campbell prepared to winter. Pennell, who had brought the *Terra Nova* back to pick this sledge team up, met with ice conditions that were insuperable, and never got within 30 miles of Terra Nova bay. Pennell, Rennick and Bruce did all that any men could do to work their ship through, but communication was impossible that season, and so Campbell was left with only four weeks' sledging provisions to face an Antarctic winter. His party could not have been better chosen to help him through this ordeal. Campbell knew his men absolutely,

and they themselves were lucky in having such a resourceful and determined officer in charge.

On March 1 Campbell selected a hard snow slope for their winter home, and into this they cut and burrowed until they had constructed an igloo or snow house, 13 feet by 9 feet. This they insulated with blocks of snow and seaweed. A trench roofed with sealskins and snow formed the entrance, and at the sides of this passage they had their store rooms and larder.

All the time this house was under construction a party was employed killing penguins and seals, for which they kept a constant look-out. By March 15 their larder contained 120 penguins and 11 seals. After this date gale succeeded gale, and the winter set in with a long round of bad weather.

Campbell and his companions led a very primitive existence here for six and a half months. They only had their light summer sledging clothes to wear, and these soon became saturated with blubber; their hair and beards grew, and they were soon recognizable only by their voices. Some idea of their discomforts will be gleaned by a description of their diet. Owing to their prospective journey to Cape Evans, Campbell had to first reduce the biscuit supply from eight to two biscuits a day, and then to one.

Generally their diet consisted of one mug of pemmican and seal hoosh and one biscuit for breakfast. Nothing for lunch. One and a half mug of seal, one biscuit and three-quarters pint of thin cocoa for supper. On Sunday, weak tea was substituted for cocoa; this they reboiled for Monday's supper, and they used the dried tea-leaves for tobacco on Tuesday. Their only luxuries were a piece of chocolate and twelve lumps of sugar weekly. They sometimes used tea-leaves and wood shavings for tobacco. They kept twenty-five raisins each for birthdays. One lucky find was thirty-six fish in the stomach of a seal, which, fried in blubber, proved excellent. The biscuit ration had to be stopped entirely from July to September.

The six men cooked their food in sea-water as they had no salt, and seaweed was used as a vegetable. Priestley did not like it, and no wonder, for it had probably rotted in the sun for years, and the penguins had trampled it all down, etc.

Campbell kept a wonderful discipline in his party, and as they were sometimes confined to the igloo for days, Swedish drill was introduced to keep them healthy. A glance at their weather record shows how necessary this was. We find one day

snowing hard, next day blowing hard, and the third day blowing and snowing, nearly all through the winter. But there was never a complaint. On Sundays divine service was performed. This consisted of Campbell reading a chapter of the Bible, followed by hymns. They had no hymn-book, but Priestley remembered several, while Abbot and Browning and Dickason had all been at some time or other in a choir.

To add to their discomforts, owing to the state of their clothing and meagre food supply, they were very susceptible to frost-bites, and Jack Frost made havoc with feet, fingers and faces. Then sickness set in, in the shape of enteritis—Browning suffering dreadfully, but always remaining cheerful. The sickness was undoubtedly due to their meat diet, and its ravages weakened the party sadly.

On May 6 Campbell's party sustained a severe disappointment, for they saw what appeared to be four men coming towards them. Immediately they jumped to the conclusion that the ship had been frozen in and this was a search party. The four figures turned out to be Emperor penguins, and although disappointing in one way they served to replenish the larder, and so had their use.

Campbell and his five companions started for Cape Evans on September 30. Progress was slow and the party weak, but thanks to their grit and to Campbell's splendid leadership, this party all got through to the winter quarters alive. Browning had to be carried on the sledge part of the way, but fortunately they picked up one of Griffith Taylor's depôts, and the biscuit found here quite altered Browning's condition.

It seems a pity that full justice cannot be done to all the parties who went forth sledging in various directions, but a single lecture does not permit very full descriptions. Griffith Taylor, the Australian physiographer, with Debenham, Gran, and Seaman Forde, made a most valuable journey along the coast of Victoria Land for geological and surveying purposes. I hope Taylor will deliver a paper on this expedition at some future date. The work of the *Terra Nova* is also worthy of a special lecture; and here I would like to say that Lieut. Pennell, her commander, Lieuts. Rennick and Bruce, Mr. Drake and Mr. Lillie, have worked incessantly in the ship and on the less frequented coasts of New Zealand for nearly three years. They have been ably and loyally assisted by the seamen and stokers of the *Terra Nova*—worthy fellows, whose bye-word has been, "*Play the game.*"

THE FORMATION OF THE SOIL OF HUNGARY.*

By BÉLA DE INKEY (EX-Professor of Geology).

(Communicated by Mr. W. H. Shrubsole, F.G.S., in place of a Report of the Lecture delivered by him on Tuesday, November 18th, 1913.)

ABOUT a thousand years ago seven tribes of Magyars, conducted by their elected chief Arpád, crossed the Eastern Carpathians and took possession of all the land encircled by these mountains and the Danube.

There these hitherto nomadic people settled down and laid the foundation of the Hungarian State.

The land, which thus became national property, also has its history, the opening chapter of which may be found by tracing backward the stages of geological evolution to the period when the outlines of the present features of the land began to be visible.

This period is marked with sufficient exactness as being in the middle of the Tertiary Period, when enormous changes took place in the features of ancient Europe; when, by horizontal movements of large masses of the earth's crust and by compression of the formerly level strata, most of the mountain chains of Europe were uplifted.

Supervening on these changes volcanic energy revived with extraordinary force, and began to build up its own monuments; while elsewhere large tracts of land subsided and formed new sea-basins.

The result was the present contour of the south of Europe, the formation of the Alps, the Apennines, the Carpathians, and the Balkans, as well as the Mediterranean Sea.

The Alps of Switzerland and Austria consist of a group of highly-compressed folds running mainly west and east. But towards the east the pressure seems to have relaxed, and the folds begin to diverge like the ribs of an open fan. On the southern side the folded ridges turn to the south-east, and form the Dinaric Alps around the Adriatic Sea.

* The Society is indebted to the Hungarian State Railways, through Mr. Shrubsole, for the illustrations.

The northern part of the mountain folds turns north-east till it reaches the Danube near Hainburg, the low chain on the opposite bank being the beginning of the Carpathians.

In the angle formed by the divergence of the Alpine folds lies the bay of Gratz, filled up now with the sediment of Tertiary seas.

Around it some of the central branches of the Alpine system extend their diminishing ends eastward, but soon disappear in the Hungarian plains; only one of them seems to survive in the mountain-chain, known as the Bakony Forest, that runs east-north-east, and divides the lesser Hungarian Plain from the Great Alföld.

Differing from the Alps in structure and composition, but due to the same process of side pressure and folding, the Carpathian range describes part of a vast circle around Hungary, enclosing that country on three sides. In the south-east corner of Transylvania the chain bends sharply to the west, and, still marking the boundary of Hungary, extends to Orsova, where for the second time it encounters the Danube, whose picturesque channel separates it from the Balkans.

The land area within the Carpathian ring is mainly a sunken lowland traversed by the Danube, whose entrance into the circle we have noticed as occurring between Hainburg and Dévény.

Crossing first the smaller Hungarian Plain, the mighty stream flows through a lovely channel between large masses of plutonic rocks before it reaches Budapest, and enters with a sharp southward bend into the Great Plain. Unimpeded by any other obstacle, it reaches the southern frontier at Belgrade, and, turning again to the east, runs between Hungary and Servia, soon entering the magnificent gorges between Bázias and Orsova that give the sole outlet to nearly all the waters of Hungary.

For in its course the Danube collects, with some trifling exceptions, all the tributaries that drain the Hungarian soil, as well as those that, coming from the west, have their source in the Alps, and also the northern and eastern affluents which rise within the Carpathian circle.

Westward from Belgrade, or rather from Zimony, the Sáve indicates the natural limit of the Hungarian State, whereas to the north of it the Dráve serves as the boundary between Hungary proper and the annexed kingdom of Croatia-Slavonia.



Fig. 1. Orographical Map of Hungary.

So it is seen that the political boundaries of Hungary are marked out on three sides either by mountain ranges or by rivers.

Only the west side is devoid of natural limits, as the political frontier between Austria and Hungary runs across river valleys and the somewhat hilly land of Styria and Lower Austria.

This geographical configuration proved to be of deciding influence in the historical evolution of the Hungarian State. This is also symbolised by the armorial bearings of Hungary, which show on the right side four white bars, signifying its principal rivers, the Danube, the Tisza, the Sáve, and the Dráve; and on the left three green hills surmounted by the double cross of the Apostolic King Stephen I., showing that the dominions of the Hungarian Crown extend as far as the mountains and the rivers. And so it is, in fact, for the natural boundaries thus traced encircle the land which was first occupied by the conquering Magyars and held throughout all the vicissitudes of history during ten centuries down to the present day.

Whenever the domination of the Hungarian kings was extended beyond these natural limits—as it was more than once in the Middle Ages—it proved to be unstable and of short duration.

These natural boundaries impeded communications on three sides while the facility of intercourse on the west invited communication with the higher civilisation of the western European nations. Therefore the Magyars were drawn into the sphere of western religion and culture, while their natural boundaries sometimes served to keep at bay aggressive barbarians.

The Carpathian mountains are not so lofty as the Alps, and their crests do not reach the line of permanent snow. Still, in many parts of that long chain, the zone of forest trees is far exceeded, and there are found either wild, rocky crests and peaks, with occasional patches of snow in summer, which are the haunts of chamois, bears, and eagles; or softer slopes and grass-covered ridges offering good pasture for cattle and sheep.

The highest summits crown the splendid group known as the High Tátra, where the altitude of 7,000 feet is surpassed by many peaks.

Next in height is the mighty wall of the Southern Carpathians, consisting, as in the Tátra, of granite or closely allied rocks of igneous character. Where the mountain range is

built up mostly by sandstone the elevation is less and the forms are softer, but even here, as well as in several groups of the inner chains, the height of 6,000 feet is attained, and the forest is confined to the lower parts of the slopes. These forests consist of various species of pine and, lower down, of beech and oak. They are more than sufficient to supply other parts of the country with wood, and the rivers descending towards the central lowland facilitate its transport.

While the process of folding and uplifting was shaping the mountainous margin of Hungary, as well as some inner elevations, the interior of this circle was subjected to the contrary process of depression, and was occupied first by the sea, forming a large bay, which was connected with the southern sea-basins, the predecessors of the existing Mediterranean. In fact, the fossil shells found in the Miocene strata lying on the inner slopes of the Hungarian mountains are the direct predecessors of the marine fauna living to-day in the Mediterranean Sea. Therefore this group of sediments bears the name of Mediterranean.

Later on this connection with the sea in the west and south seems to have been interrupted by the continual uplifting of the Dinaric Alps. But then the Hungarian depression found another communication eastward, over the lower part of the mountain margin, with the waters that covered at that time Poland and the south of Russia—that is, the ancient Sarmatia. In consequence we call Sarmatian the sea deposits of this period, whose fossil mollusca are related to forms living now in the Black Sea and in the Caspian Lake.

After some time this connection was broken, and the Hungarian bay changed its character, and became first a brackish and then a fresh-water lake. This was in the period known as the Pontic, or Pannonian. It corresponds to the English Lower Pliocene, and its sandy and clayey deposits, often containing beds of brown coal, occupy large tracts of low, undulating land.

The next period, corresponding to the Upper Pliocene, when the large Pannonian lake was greatly diminished and broken up into smaller basins, is called the Levantine.

During these periods the water level of the Hungarian bay was being continually lowered, the rivers flowing from all sides into it and bringing enormous quantities of sedimentary matter, the central depression was filled up and converted into

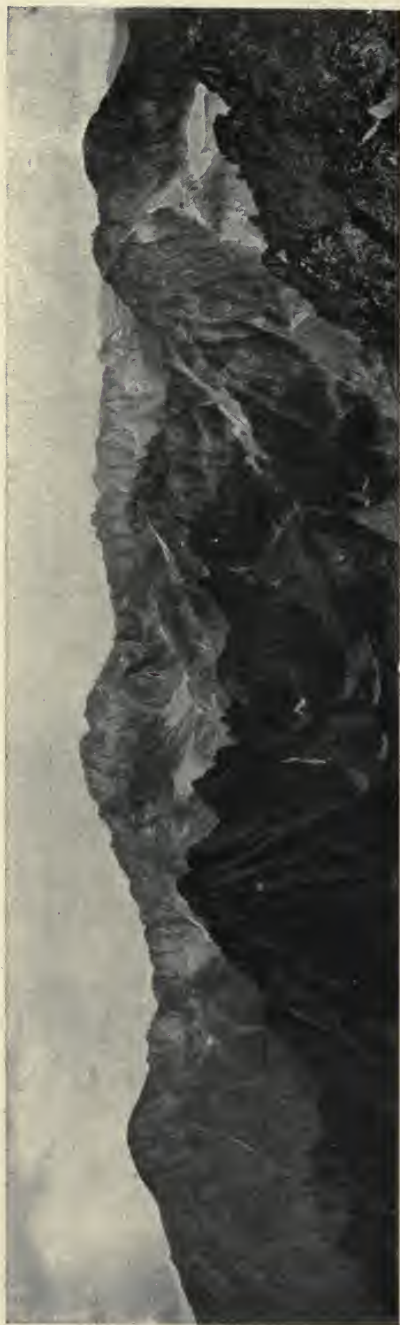


Fig. 2. Hungary. The High Tatra.

a plain diversified by some shallow lakes and extensive swamps. But at the same time the rivers were cutting through the older Miocene and Pliocene deposits, leaving a range of low hills between the plain and the higher mountains.

At the time when great movements in the earth's crust were most active in building the principal mountain chains of Europe—that is, in the Miocene Period—volcanic forces also contributed in great measure to the formation of the present geographical features of Hungary.

Along fissures, probably caused by the one-sided strain that raised the Carpathians, innumerable volcanic vents were opened; enormous masses of molten material and fragmentary ejections issued from them to the surface and accumulated over them, forming either isolated cones, or groups or chains of hills, some being of considerable height.

The volcanic formations are spread over nearly the whole land, but especially on the shores of what was then the Miocene bay, and later on the Pliocene lake. This volcanic activity lasted, according to geological evidence, from the end of the Miocene to the later Pliocene Period, producing first different kinds of andesites and liparites, and, finally, basaltic cones.

After the extinction of the subterraneous fires the volcanic formations were subjected to the destructive powers of the atmosphere, and have lost much of their original height and form; still, what is left contributes many beautiful features to Hungarian landscapes, as, for instance, the fine basaltic cones on the shore of Lake Balaton, the vine-covered hills of Tokay, or the curious hills of Transylvania, from which more gold is obtained than from the whole of the other European mines.

In the preceding pages it has been shown that the principal features of Hungarian territory were worked out in the Tertiary Age, at the end of which not only was every connection with the sea interrupted, but also the Pliocene freshwater lake of the interior was drained and filled up by sediments.

Destruction by running water and accumulation of pebbles, sand, and silt in the lower districts took place in the last stages of this age, and was continued throughout the Pleistocene Period.

Then the climate grew colder; the Scandinavian ice-cap extended far over central Europe, and reached even to the outward rim of the Carpathians, and glaciers descended far down into the valleys.

Such vestiges of the Great Ice Age as are found in the Alps do not occur in the Carpathians, whose summits and ridges are much lower, yet traces of ancient glaciers are not entirely wanting, and ancient moraines, cirques, ice-formed lakes, erratic blocks, and rocks polished and striated by ice, can be seen in many parts of the higher mountain groups, especially in the Tátra and in the Transylvanian Carpathians.

It is certain that the northern ice-drift did not pass over the wall of the Carpathians, although in the inner basin enormous masses of Pleistocene sediments were deposited. Artesian borings on the great Plain have shown that such deposits there attain the thickness of more than 400 feet—that is, some hundred feet beneath the present sea-level,—which proves that the downward movement went on throughout the Pleistocene Period, and possibly this is still going on.

After the Ice Age the climate of these regions became drier and less severe. The land was converted into treeless, grassy plains resembling the great steppes of the interior of Asia. Enormous clouds of dust were swept from the decaying rocks of the mountains and scattered over the lowland, where herds of mammoth, antelopes, horses, and other grass eaters swarmed. Retained between the grass blades, this dust accumulated during many centuries, and formed a loamy soil of yellow colour and fine-grained texture, containing no pebbles nor any remains of animals that live in water, but only small shells of land snails and occasionally the bones of mammals.

The æolian origin of this yellow earth, called “Loess” by the Germans, has been demonstrated by Richthofen, who observed its development in the western part of China. The Loess forms a coating many yards in thickness over nearly all the lower hills and plains of Hungary, and is a very valuable part of its geological deposits, which is highly appreciated by agriculturists as being one of the best soils.

At the close of the Pleistocene Period the geographical aspect of the land was as we find it to-day, and a glance at an orographical map shows the final result of all the changes and processes we have considered in the preceding pages. It is, in fact, a well-defined geographical unity, whose boundaries are traced out by an almost uninterrupted circle of mountains, whose interior plains are watered by the mightiest stream of Central Europe and its confluent, and bordered by lower hills of



Fig. 3. Hungary. The Szulyó Valley, from Nagy-Bittse.

various forms and origin. Now man has taken possession of this land, and lives on the products of its soil.

In considering the quality of the various Hungarian soils it is well to begin by noticing its geological formation, which explains the topographical forms underlying the soil and reveals the raw material from which the soil has been derived.

Crystalline rocks—such as gneiss, primitive schists, granite, diorite, syenite, and eruptive rocks generally—must be regarded as the primary source of all sedimentary formations. Their fine particles, resulting from weathering, are carried off, and give the material for sedimentary layers, or the rocks, remaining in situ, are covered by fresh deposits. By chemical decomposition of their silicates clay is produced, and soluble salts necessary for the nutrition of plants are mingled therewith.

The geological map of Hungary shows that granite, diorite, and crystalline schists enter in large measure into the composition of the Carpathians and of many of the mountain groups in the interior of the land. Even more than these old formations, the numerous Tertiary eruptive rocks, with their easily decomposed masses of tufa and conglomerates, supply the soil with much useful mineral matter.

A certain brown loam called "Nyirok," which covers the surface of these volcanic rocks, is considered to be one of the best soils in Hungary, and the highly-renowned Hungarian wine known as Tokay is grown on decomposed crystalline rocks.

Limestone and dolomite, although frequent in the Hungarian mountains, do not occupy extensive areas by themselves except in that part of the Dinaric Alps in Croatia, which, because of its sterility, has been named the "Karst."

In the Carpathians and in the Bakony the limestone and dolomite hills have retained their soil-covering, and are adorned with fine forests.

A large part of the outer Carpathian chain consists of sandstone called "Karpatsandstein" by Austrian geologists. Its age is partly Cretaceous and partly Eocene. This friable rock does not yield a very fertile soil, but as it is frequently intermingled with layers of clay and marl it is able to produce fine timber, and forms good pasture land.

Rain and rivers have carried the detritus of the sandstones down to the lowlands, and this explains the large amount of sand on the Great Plain. Where this is not protected, either by

a sheet of water or by dense vegetation, it is acted upon by the wind and piled up into unstable dunes, such as are seen in several parts of the Plain, or spread out in sandy wastes.

Great care has always been bestowed by the State authorities on plantations on these sandy tracts in order to arrest the formation of dunes, and edicts and laws to this end are known which were issued in the Middle Ages; yet the most efficacious measure proved to be the planting of "*Robinia pseudacacia*," commonly known as the "False Acacia," which was introduced from America in the eighteenth century.

About forty years ago, when the Hungarian vineyards were devastated by the phylloxera, experiments in the sandy districts proved that vines grown there were immune from attacks of that injurious insect.

The areas formed by Tertiary deposits offer a great variety of soils, some of them being highly valued for agricultural use, as, for instance, the so-called "*Mezőség*," in the centre of the Transylvanian basin.

The origin in the Quaternary Period of the finely-grained marly clay called "*Loess*" has been already noticed. Owing to its formation by wind-blown dust the *Loess* is not stratified, and its loose structure, showing a network of small, vertical fissures and tubes, the vestiges of grass-blades and roots, makes it able to absorb a large part of the rainfall, and at the same time assures easy working of the soil.

The subsoil beneath the *Loess* always contains a considerable quantity of carbonate of lime, which is often found concentrated into marly nodules. It also contains hydrate of iron oxide in the form of small pisolitic granules.

The *Loess* formation covers a large part of the land, and it may be said that nearly half of the best soils for wheat-growing either rests on it or is derived from it. On the slopes of the hills and on higher plateaus, where it has been carved into gently undulating hills, the *Loess* has not been altered since its formation, and there the light-yellow colour of the subsoil is seen merging by degrees into a light-brown upper soil. But in the level tracts of the lowland, the original *Loess* stratum has been frequently inundated and changed into swampy grounds, in which abundant humus was produced which tinted the upper layer two or three feet thick with a dark brown or even black colour that strongly contrasts with the yellow subsoil. This kind of *Loess* soil is remarkably fertile.



Fig. 4. Hungary. St. Anna's Lake, near Tusnád. (Ancient Crater.)



Fig. 5. Hungary. Mount Szentgyörgy, with its Basaltic Columns.

Travelling across the seemingly endless Plain in the middle of Hungary, where alternating fields of wheat and Indian corn testify to the fertility of that brown soil, one is surprised to encounter at times large stretches of barren land destitute of crops, trees, or any other vegetation, except a short, bluish grass turf trodden by herds of cattle and horses, who from a distance seem to float on the trembling waters of the "Fata Morgana."

These alkaline regions, called "Szikesföld" in Hungarian, resemble the alkaline areas in the west of the United States of America or in the interior of the Asiatic continent.

Their origin, also, is evidently due to similar rapid evaporation of water. On the Great Plain the rivers Tisza, Körös, Maros, and Berettyo tend with sluggish flow toward the Danube, with its sole outlet through the rapids of Bázias and the Iron Gates. Frequent inundation having been, as it still is, the consequence of the outlet being very narrow, much of the widespread waters evaporated and left their soluble salts in the ground. Some of these salts are profitable to vegetation; some others, especially the salts of sodium, have a directly noxious effect, not only upon the roots of plants, but also on the soil itself, rendering it heavy and impermeable by water and air.

In fact, the alkali soils, containing even a very small percentage of carbonate of sodium, are, when dry, so hard that neither plough nor spade can work them, whereas in wet weather the uppermost layer turns into a dark, slimy mud equally unfit for agricultural labour.

In ponds and miry depressions the carbonate of sodium accumulates to such a degree that after desiccation in summer time the ground is covered with a snow-like efflorescence which formerly was collected and used as soda.

In less quantity than the carbonate, the sulphates of sodium and magnesium occur in the stagnant waters of the Szik soils, and in some places near to habitations and stables saltpetre is found in efflorescence, evidently formed on a calciferous soil by the nitric acid derived from animal dejections.

Various methods for the reclamation of these alkaline soils for agricultural purposes have been tried, and experiments are still being carried on by the State. The use of gypsum as a means of converting the injurious carbonate into a neutral sulphate of sodium, as recommended by Mr. Hilgard in California, has been proved to be in some degree efficient, but it is too expensive for general application.

Evidently the best method would be the cleansing of the soil by irrigating water, and several schemes of canalisation and irrigation are being prepared, and experiments on a small scale are now going on.

In the description of his journey to the camp of Attila, on the banks of the Tisza, Priscus Rhetor, the Byzantine Emperor's ambassador, mentions with horror the endless swamps and morasses he had to pass through. And maps of Hungary made in the eighteenth century show a wide expansion of marshy ground in the Great Plain. At the present day most of the morasses have disappeared owing to canalisation and regulation of the rivers. Yet some still exist, and peaty soils occupy considerable areas, not only near the rivers, but also near to the great freshwater lakes, Balaton and Ferto, in Western Hungary. They are partly used for turf-cutting and partly drained and reclaimed as plough land.

This short review has shown a large amount of fertile land at the disposal of the Hungarian nation. Farming is the occupation of the greatest part of the people, and the produce of the soil is the principal source of wealth in Hungary. But we know that the simple practice of farming inherited from our fathers is no longer sufficient to keep up the standard of agriculture required in our time.

Modern agriculture has to avail itself of the results of modern science, and among these the scientific investigation of the soil stands foremost. Pedology, as the science of soil is called, is one of the youngest branches of natural science, yet Hungary does not stand behind other nations in regard to this science.

More than fifty years ago, long before our Western neighbours thought of such work, soil investigations were carried on in Hungary.

The systematical survey of Hungarian soils, based on the geological maps, began more than twenty years ago, and is going on with satisfactory results. The sciences of chemistry, biology, and climatology contribute their share to the progress of knowledge of the soil, and the agricultural experimental stations in different parts of the land stand between the practical experience of the farmer and the result of scientific investigation.

Allusion has been made to the care of the Hungarian Government in promoting the reclamation of alkaline tracts,



Fig. 6. Hungary. Lowland Landscape.



moving sands, and peaty land, all of these works requiring the aid of scientific inquiry.

But as no science can develop well if confined within the limits of a single land contact with the scientific work of other nations has to be sought. Other branches of natural science have felt that need, and have found periodical international congresses to be the best means of creating that contact.

The first international meetings of pedologists was proposed by the Hungarian Government, and was held at Budapest in the year 1909.

The second was in Sweden, and the third will soon follow in Russia. It is to be hoped that soon all civilised nations will join in the ever-increasing work of soil investigation, which must have very valuable results, both for science and for the practice of farming.

Reviews.

"Photographic Supplement to Stanford's Geological Atlas of Great Britain and Ireland." Arranged and Edited by H. B. Woodward, F.R.S., F.G.S., with the Co-operation of Miss Hilda D. Sharpe. London: E. Stanford Ltd., 1913.

This photographic Supplement to Stanford's Geological Atlas of Great Britain and Ireland is an excellent book. The photographs are well arranged and illustrate the typical points of the atlas. Great care and discrimination have been shown in the selection of the views. A great step in advance, however, would be the use of parallel views with the actual colours reproduced. This of course is a matter of much further expense.

The book owes much to the personal work of Miss H. D. Sharpe, and the editor is to be congratulated on the production of a very useful book. J.H.B.

"Anglo-Egyptian Sudan: A Report on the Land Settlement of the Gezira (Mesellema District)." By H. St. G. Peacock, Judge of Sudan Civil Courts, Settlement Officer, Gezira Land Settlement, 1906—1910. (Sale Agents—London: Sifton Praed & Co., Ltd., 1913.)

The attention of the members is directed to this Report. It forms a very valuable compendium of information on the work already accomplished and still being carried on. The Registration and Settlement Officers have performed a great work and have an extremely busy time. The plans and illustrations add greatly to the value of the Report.

"The Change in the Climate and its Cause." By Major R. A. Marriott, D.S.O. London: E. Marlborough & Co. 1/6.

This book attempts to give the date of the last ice age. This is supposed to have ended about 7,000 years ago and to have lasted about 15,000 years,—to be precise, "the last glaciation began 23,700 B.C., and came to an end in 5,624 B.C." (p. 17). The *cause* of the Ice age is stated to be the increased obliquity of the earth's axis, which, according to Major-General Drayson, varies between the limits $35^{\circ} 25' 47''$ and $23^{\circ} 25' 47''$. When the obliquity was at the maximum in 13,544 B.C. there would be very hot summers and very cold winters. We are now (according to this theory) only 385 years from the time of minimum obliquity, when the contrasts between the seasons will be least. It follows that the Arctic circle must have varied between $54^{\circ} 34' 13''$ and $66^{\circ} 34' 13''$, so that all Scotland and Northumberland would be in the frigid zone.

This theory is worked out by Major Marriott in a very interesting way, and he thoroughly believes in his master, Drayson. One remembers the like enthusiasm for the theories of Croll a generation ago, and these seem to have been abandoned. (By the way, is the author quite fair to the astronomers when he assumes them to support Croll's theory? The astronomers can, no doubt, take care of themselves.) Then there came the very plausible modification of the late Sir Robt. Ball with its tempting 63 and 37 per cent. of the sun's available heat, distributed over 199 days and 166 days respectively. When the *greater* amount of heat was distributed over the *shorter* time, and the *lesser* amount of heat over the *longer* time, then were the conditions of maximum glaciation in one hemisphere, and, at the same time, the minimum glaciation in the other. And this very plausible and tempting theory seems to have gone too. Will Major-General Drayson's theory have any better luck? We must follow the advice of the politicians and "wait and see." The book is, as far as the present writer can judge, a fair statement of the case, and should be read by all interested in glacial geology and in the study of prehistoric man.

One might ask the writer two or three pertinent questions. If glaciations came every 31,000 years what becomes of the apparently long warm period of the Eocene, and the apparent gradual cooling through the later Tertiary? We refer, of course, to the teachings of British deposits.

Again, what is the meaning of the almost complete unanimity of the later school of British glacialists in accepting only one Pleistocene ice age, and not a series with a large number of inter-glacial periods? (See the work of Mr. Lamplugh, Prof. Kendall, Dr. Jowett, Dr. Wilmore, Mr. Stather, Mr. Shephard—chiefly in the North of England—and others.)

Thirdly, is it really necessary to have an astronomical theory at all? Kamschatka is in the same latitude as the British Isles, and it has at least an approximation to a glacial period. The same is true of Tierra del Fuego in the southern hemisphere. Lastly, is it *quite certain* that the winters are becoming warmer and the summers cooler? Do not both Greenwich and Stonyhurst refuse to commit themselves to such a change? It is not long since we had the warmest summer day for about a hundred years, and we have had very severe winters within the lifetime of the present generation, just as there were mild winters in the British Isles a hundred years ago. A.W.

Proceedings of the Society.*

July 1st to December 31st, 1913.

The 937th Meeting of the Society was held on Thursday, October 2nd, 1913.

The Library and Museum were open for inspection from 6-30 p.m. special objects of interest in the latter being the shields, spears, and other curios brought by Mr. Ainsworth from East Africa, mostly presented by him to the Society, some being specially lent by him for the evening's exhibition.

At 7-30 the President, Mr. Harry Nuttall, M.P., F.R.G.S., took the Chair in the Lecture Hall.

The Minutes of the Meetings held on March 18th, 28th and 29th were taken as read.

The Chairman announced that the following members had been elected since the last meeting :—Life : Mr. Arthur Holt. Ordinary : Miss S. A. Burstall, M.A., Mrs. C. Garnett, Miss G. E. Mort, Mrs. N. Tatham, Messrs. F. S. Abbott, F.C.A., John Dugdill, C. V. Groves, E. H. Langdon (President, Chamber of Commerce), W. A. McGrath, A. McPherson, W. J. Medlyn, T. H. Nightingale, G. R. Swaine, C. Taylor, W. J. Tyné and S. W. Williams. Associate : Miss M. Groves.

Mr. Nuttall, by special request of the Executive Committee, announced that the following six ordinary members had become Life Members in order to enable the Society to acquire Shares in the Building Company :—Messrs. A. Burgon, T. E. Edwards, F.R.G.S., Alderman T. Hassall, J.P., W. Morton Johnson, F.R.G.S., L. Emerson Mather, F.R.G.S., and the President himself.

The Chairman also mentioned that since the last Meeting the Society had lost the following Members by death :—Messrs. S. Oppenheim, J.P., J. C. Waterhouse, Joseph Dönnell, J.P., J. Lanyon, J.P., J. Tetlow Lewis, J.P., and R. H. Reynolds.

The first two were Original Members and the first, Mr. S. Oppenheim, had been Vice-President for many years. Previously he had served as Hon. Treasurer, and of late he had helped as a Member of the Executive Committee. He had in many ways supported the Society, and his loss would be keenly felt. His last and splendid gift to the Society was the bequest of his holding of Shares in the Building Company, and he thus provides a worthy example for the other Shareholders of the Building Company, who have the interests of the Society at heart.

* The Meetings are held in the Geographical Hall, unless otherwise stated.

The President then welcomed Mr. John Ainsworth, C.M.G., F.R.G.S., in his third visit to the Society during his over twenty years' administrative work in East Africa, first at Machakos, then at Nairobi, and finally at Kisumu.

Mr. Ainsworth gave an address on "East Africa," illustrating his remarks with about 70 splendid slides prepared from his own photographs. (See p. 10.)

Mr. T. E. Edwards, F.R.G.S., moved a vote of thanks to the Lecturer for his interesting account of East Africa and its Government, and for the fine illustrations shown. The Chairman seconded the resolution, which was carried unanimously.

The 938th Meeting of the Society was held on Tuesday, October 7th, 1913, at 7-30 p.m.

In the Chair, Mr. T. W. Sowerbutts, F.S.A.A.

The Minutes of the Meeting held on October 7th were taken as read.

The Election of the following members was announced:—
Ordinary: Mrs. Heighway, Mrs. A. T. Johnson, Miss Woolf, Messrs. A. Grime, Dr. Larmuth, A. C. Morris, E. Keith-Roach, and Norman H. Zimmern. Associate: Miss J. Hamilton and Miss Harden.

Dr. Mercier Gamble gave a lecture on "Life in San Salvador do Congo," illustrating his remarks with original lantern views.

The Lecturer described the journey up the Congo and overland to San Salvador, then gave his experiences as a Medical Missionary in charge of the Hospital, concluding with an interesting account of "Sleeping Sickness," and their method of treating it, which had been attended with success in many cases.

The Chairman, on behalf of the Meeting, tendered hearty thanks to Dr. Gamble for his intensely interesting address.

The 939th Meeting of the Society was held on Tuesday, October 14th, 1913, at 7-30 p.m.

In the Chair, Mr. F. Zimmern, F.R.G.S.

The Minutes of the Meeting held on October 7th were taken as read.

The Chairman mentioned the death of Mr. W. Haworth, J.P., who had been a member for many years. It was resolved that the sympathy of those present be conveyed to Mr. Haworth's relatives in their sad bereavement.

Mrs. H. L. Lees, F.R.G.S., A.R.C.I., described a "Visit to New Zealand," illustrating her remarks with slides kindly lent by the High Commissioner for New Zealand.

The Chairman, on behalf of the meeting offered hearty thanks to Mrs. Lees for the intensely interesting account which she had given of her journey.

A short report of the Lecture is here given :—

Mrs. Lees gave an account of Sydney Harbour and its favourable geographical position from a commercial point of view. A dramatic reception was accorded the lecturer on the evening of her arrival at the Hot Lake District, Rotorua, a severe earthquake occurring. The Thermal district, or "Nature's Dispensary," with its wonderful curative baths reputed to cure almost every ailment known to man, including cold feet, was next described. The Hamurana spring across Lake Rotorua is the only place on earth where one cannot "sink money," owing to the immense volume of water given out, which prevents anything sinking to the bottom, and it was recommended by the lecturer to investors as being absolutely safe. A description of the "conception and birth" of minerals was explained in several areas, including sulphur, oxide of iron, silica, alum, pumice, fuller's earth, and slate. In places remote from the tourists' track are rivers where iodine and quicksilver are found. The Tarawera eruption of 1886 was described, also the eruption of Wairunga geyser. A photograph was shown of a group of tourists, four of whom, through being too venturesome, were enveloped in the boiling water and steam and literally boiled to death.

The Maoris believe that the mountain at the foot of which the Waidaupo Hotel stands will soon be in eruption, "as no animal will graze on it, no bird ever alights on it, and it is hot to the touch." The lecturer spent a night alone at this hotel, and whilst in conversation with some Maori women remarked that a storm was approaching because of the distant thunder that was heard, and was told "that the thunder was under her feet, not over her head." The "Rainbow Mountain," so called because of the beautiful shades of colour of which it consists (a specimen of which the lecturer produced), was explained to be volcanic dust, the various colours being produced by the presence of minerals. A beautiful specimen of jade, or New Zealand greenstone, so intensely valuable to the Maoris, and from which they made their battle-axes, their only means of defence, was also exhibited.

Mrs. Lees next gave a description of a journey down the Wanganui River, navigable for 140 miles. At Fairlie the lecturer met Miss du Faur, of Sydney, the only lady at that time who had made the ascent of Mount Cook, 12,349 feet. A drive was taken of a hundred miles by motor-car through the Mackenzie country to the hermitage at the base of Mount Cook. From there a sixteen-mile journey on horseback led across the Hooker River and along the Hooker Valley, the road being only a bridle path, two or three hundred feet high, winding in and out of the mountain side, with many "devil's elbows" to negotiate. The "Ball Hut," on the Tasman glacier, was reached, and a night spent there. Next day a walk of five miles was taken across the glacier with the guide, who often had to cut steps in the ice and make many detours to

avoid crevasses. On the return journey to Ball Hut Mrs. Lindon, of Geelong, with two guides, came into the hut. This party of three had started the day before to make the ascent of Mount Cook, and for several hours had had to cut themselves steps on the face of the mountain. The adventure without mishap was warmly applauded, and the whole party returned together on horseback to the Hermitage. Thus the lecturer had been fortunate in meeting the only two ladies who had made the ascent of Mount Cook.

(*Manchester City News.*)

The 940th Meeting of the Society was held on Tuesday, October 21st, 1913, at 7-30 p.m.

In the Chair, Mr. F. Zimmern, F.R.G.S.

The Minutes of the Meeting held on October 14th were taken as read.

The Chairman announced the election of the following members :— Ordinary : Miss E. N. Openshaw, Messrs. J. C. Aldred, Edwin Barlow, Henry Briggs, B. Jordan, and H. L. Littler. Associate : Miss E. Pearson.

Dr. W. S. Bruce, F.R.S.E., Director of the Scottish Oceanographical Laboratory, gave a lecture on "Spitsbergen: Past and Present." (See page 115.)

The Lecturer gave an account of the discovery, exploration, and recent important commercial and political development of the Archipelago, and illustrated his remarks with many original lantern views.

A hearty vote of thanks was passed to Dr. Bruce for his interesting and instructive address so well illustrated.

The 941st Meeting of the Society was held in the Free Trade Hall on Friday, October 31st, 1913, at 7-30 p.m.

The President of the Society, Mr. Harry Nuttall, M.P., F.R.G.S., presided and was accompanied on the platform by the lecturer, Commander E. R. G. R. Evans, C.B., R.N. (See p. 122.) They were supported by the following Officers and Members of the Council :—Mr. F. Zimmern, F.R.G.S., Rt. Rev. Bishop Welldon, D.D., Colonel H. T. Crook, V.D., J.P., Messrs. J. McFarlane, M.A., M.Com., F.R.G.S., D. A. Little, Egbert Steinthal, W. S. Ascoli, F.R.G.S., J. E. Balmer, F.R.G.S., C. A. Clarke, G. Ginger, J. Howard Hall, T. C. Middleton, J.P., F.C.A., F. S. Oppenheim, M.A., T. W. F. Parkinson, M.Sc., F.G.S., A. Rée, Ph.D., T. W. Sowerbutts, F.S.A.A., T. Gregory, J.P., F.C.A., and Harry Sowerbutts, Assoc.R.C.Sc.

Mr. Nuttall, in introducing the Lecturer, offered him, the Second in Command of the Expedition, on behalf of the Geographical Society, the heartiest possible welcome to Manchester. Remembering as they did that Commander Evans accompanied Captain Scott to

within 150 miles of the Pole, they were delighted to see him looking so strong and well. Commander Evans, in accordance with Captain Scott's arrangements, returned in charge of the last supporting party, and travelled 750 miles in conditions which nearly cost him his life. The Scott Expedition had given the world a most striking example of nobility of character and extensive and important scientific results.

Commander Evans pointed out that the story of this last British expedition to the Antarctic was indissolubly bound up with the life-story of its leader, Robert Falcon Scott, who after having achieved his object and penetrated to the Pole itself, perished with his brave companions within a few miles of the food depôt at One Ton Camp about March 27, 1912. On his previous expedition Captain Scott got to within 463 miles of the Pole. The work in the South was continued by Sir Ernest Shackleton, who on January 9, 1909, planted the Union Jack 100 miles from the Pole. Captain Scott left England on July 16, 1910, on his final quest. On October 30, 1911, just before the last advance was made, he reported that officers and men were all in splendid health and anxious to go forward. When within 150 miles of the Pole, and the last supporting party was returning, all was still well, although the snow-storms and blizzards had been unusually severe. On January 3, 1912, he went forward into the darkness with four others—Dr. Wilson, Captain Oates, Lieutenant Bowers, and Petty Officer Evans. The Union Jack was planted at the South Pole within easy reach of the flag which Amundsen had left there a few weeks earlier. The rest of the story was soon told. Evans died from concussion on February 17. On March 17 Oates heroically walked out to his death, and as near as could be told the others, Scott last of all, joined the immortal band of heroes about March 27. Captain Scott's "Message to the public," one of the most tragic diaries ever penned, described the end. (*Manchester City News*.)

Commander Evans told the story of the return of the "last supporting party," which consisted of himself and two seamen, Crean and Lashley. On the way Commander Evans developed scurvy, and was for a time paralysed. He was brought back to safety by these two men, to whose courage and almost super-human endurance he paid a high tribute. He showed pictures of the two men. "It will interest some of you to know," he said, "that Lashley had been a teetotaller and a non-smoker all his life.—(Cheers.) It will interest others to know that Crean had been neither." At this sudden turn of thought the audience laughed a great deal. The passage was characteristic of the whole lecture, which was a most boyish and winning performance. The narrative was naturally saddened by the shadow of death, but Commander Evans wisely avoided the process of making things worse, and he warmed and illuminated the evening with many touches of humour and humanity.

At one point "Pickwick" appeared as the only literary work the party possessed. The reader came to the passage in which Mr. Weller is invited by a select company of the Bath footmen "to a friendly swarry." This passage had a very powerful and moving effect upon the audience of explorers, but it was not exactly the effect contemplated by the author, the humour of the affair being quite overlooked in the painful and concentrated interest excited by the "boiled leg of mutton with the usual trimmings." At another point the familiar penguin appeared, this time as the most stupid bird on earth, so stupid that it not infrequently cherishes a round piece of ice, thinking it to be an egg. The lecture was full of little character sketches and appreciations—Commander Evans had a good word for everybody except himself. There was the sweet strong influence of Dr. Wilson, a man of learning and a man of affairs; there was Lieutenant Bowers, evidently Commander Evans's hero; Captain Oates, the doer of the bravest act on record, who died as he had lived, magnificently. There were testimonials for the common seamen for their "sportsmanship" and for their all-round splendid behaviour. Many very vivid and beautiful photographs illustrated the lecture, and at the end there were kinematographic views of Antarctic life. It was a large audience, and probably no lecture on Polar expeditions of the many which have been given in this hall has been more enjoyed.

(Manchester Guardian.)

Mr. F. Zimmern, F.R.G.S., moved, and the Rt. Rev. Bishop Well-don, Dean of Manchester, seconded, a vote of thanks to Commander Evans, which was carried with acclamation.

Commander Evans said in reply: I think you have already heard me talking at some length, but before I go I should like to thank you very much for the way in which you have received my story. I am only a simple sailor, and it is not given to sailors to soar into flights of eloquence. We simply have to say what we have got to say. I should be very ungrateful if I left this hall without expressing the gratitude of every member of our Expedition for the help which Manchester gave to it. Manchester put up the money at the beginning, when it was wanted. England has put up the money, when her heart was touched, to provide for those who are left, but Manchester was most generous in making the Expedition possible. The Chairman of this meeting was very conspicuous in helping Captain Scott. In conclusion Commissioner Evans thanked the Vice-Chairman of the Council of the Society (Mr. E. W. Mellor, J.P., F.R.G.S.) for his services with the lantern which illustrated the lecture.

The 942nd Meeting of the Society was held in the Houldsworth Hall, Deansgate, on Tuesday, November 4th, 1913, at 7-30 p.m.

In the Chair, Mr. F. Zimmern, F.R.G.S.

The Rev. T. F. Nicholas, M.A., gave a lecture on "The Gambia River and Protectorate." The Lecturer dealt with the results of his

explorations during a nine years' residence, after some reference to its history, general features and expanding trade.

The lecture was illustrated with original lantern views, shown by the electric lantern of the Vice-Chairman.

The Chairman moved, and it was unanimously resolved, that the hearty thanks of the meeting be given to the lecturer for the interesting account of his experiences, and to Mr. Mellor for his services with the lantern.

The 943rd Meeting of the Society was held on Tuesday, November 11th, 1913, at 7-30 p.m.

In the Chair, Mr. J. Stephenson Reid.

The Minutes of the Meetings held on October 21st, 31st, and November 4th were taken as read.

The election of the following members was announced:—
Ordinary: Messrs. E. Bowen and T. Coop. Associate: Mrs. Charnock and Miss J. Kewley.

The Chairman mentioned that letters of condolence had been sent by direction of the Council to the relatives of Mrs. Oram and Alderman Wm. Healey, both of whom had died since the last meeting after a membership of twenty years in each case. The Society was represented at the funeral of the late Alderman Healey by the Hon. Treasurer. Mrs. Oram died on the voyage home from South Africa.

Mr. J. Hilditch, M.R.A.S., M.J.S., gave a lecture on "Japan: Its Beauties in Nature and Art." The address was illustrated with native coloured slides of photographic views and reproductions of Paintings in the "Hilditch" collection.

On the motion of the Chairman, it was unanimously resolved that the best thanks of the Meeting be given to Mr. Hilditch for his intensely interesting lecture so splendidly illustrated.

The 944th Meeting of the Society was held on Tuesday, November 18th, 1913, at 7-30 p.m.

In the Chair, Mr. E. W. Mellor, J.P., F.R.G.S.

The Minutes of the Meeting held on November 11th were taken as read.

The Chairman announced that Mr. G. H. Warren had presented a specimen of Tappa Cloth (made from the bark of a tree) from Tonga or Friendly Islands for the Museum.

Mr. W. H. Shrubsole, F.G.S., gave a lecture entitled "Among the Carpathians."

The address was illustrated with original and other lantern views, mostly artistically coloured.

The Chairman moved, and it was unanimously resolved, that the hearty thanks of the Meeting be given to Mr. Shrubsole for his extremely interesting address, so very well illustrated.

The 945th Meeting of the Society was held on Tuesday, November 25th, 1913, at 7-30 p.m.

In the Chair, Mr. George Ginger.

The Minutes of the Meeting held on November 18th were taken as read.

The election of the following members was announced:—
Ordinary: Mr. George Heighway. Associate: Mrs. Lightowler and Miss Wardle.

Mr. John A. Osborn gave a lecture on "The Rhine: From Basel to the Sea," illustrating his remarks with a large number of original and other lantern views.

The Chairman moved, and it was unanimously resolved, that hearty thanks be given to Mr. Osborn for his interesting address, and for the illustrations shown.

The 946th Meeting of the Society was held on Tuesday, December 2nd, 1913, at 7-30 p.m.

In the Chair, Mr. F. Zimmern, F.R.G.S.

The Minutes of the Meeting held on November 25th were taken as read.

Professor Harold B. Dixon, Ph.D., F.R.S., described his experiences of "Climbing in the Canadian Rocky Mountains." The lecture was illustrated with original lantern views.

The Chairman moved, and it was unanimously resolved, that the hearty thanks of those present be given to the Professor for the very interesting account which he had given of his journeys, so well illustrated.

The 947th Meeting of the Society was held on Tuesday, December 9th, 1913, at 7-30 p.m.

In the Chair, Mr. J. Howard Hall.

The Minutes of the Meeting held on December 2nd were taken as read.

The election of the following members was announced:—
Ordinary: Miss Nanson and Rev. R. M. Tuke. Associate: Miss E. Fullerton, Miss P. M. Garner, and Miss E. Cockshaw.

The Chairman mentioned the death of Mr. G. A. Harrop, and it was resolved that the sympathy of his fellow members be conveyed to his relatives.

Mr. James A. Carter, B.A., gave a lecture on "Glaciers: What they are, how they are formed, and what they look like—viewed from a distance and seen at close quarters," and illustrated his remarks with over one hundred lantern views.

The Chairman spoke in very appreciative terms of the fine lantern views shown and of the interesting and instructive account given by

Mr. Carter, and it was unanimously resolved that the best thanks of the Meeting be given to the Lecturer.

The 948th Meeting of the Society was held on Tuesday, December 16th, 1913, at 7-30 p.m.

In the Chair, Mr. F. Zimmern, F.R.G.S.

The Minutes of the Meeting held on Tuesday, December 9th, were taken as read.

Mr. Wm. Eller gave a lecture on "Lübeck," illustrating his remarks with a collection of slides kindly lent by the Municipal Authorities of that town.

The Chairman moved, and it was unanimously resolved, that hearty thanks be given to the Lecturer for his interesting remarks, and to the Lübeck Authorities for the loan of the slides.

The 949th Meeting of the Society was held on Tuesday, December 23rd, 1913, at 7-0 p.m., and took the form of a lecture to the children of Members. Miss Kate Qualtrough, F.R.G.S., presided.

Mr. G. H. Warren gave a lecture on "The Romance of the North-West Passage," and illustrated his remarks with a large number of lantern views.

At the conclusion of the lecture the Chairman thanked the Lecturer on behalf of those present, and the children showed their appreciation by hearty applause.

List of Maps, Books, Journals, etc.,

ACQUIRED BY THE SOCIETY
FROM JANUARY 1st TO DECEMBER 31st, 1913.

Maps.

THE WORLD.

- The New Graphic Map of the World. By A. Clark, A.M.I.C.E., and J. P. Strachan. Edinburgh: W. and A. K. Johnston Ltd., 1913. *The Authors.
- Map of the World on a new Projection. By B. J. S. Cahill, F.R.G.S. (See Books, General.)
- Planisphère montrant la Répartition du Globe terrestre entre les 24 fuseaux horaires. Paris: Service Géographique des Colonies. 1913. *Ministère des Colonies.

EUROPE.

- Norway. Den Norske Kyst. Sheet: 230, Fysfjorden og Ofotfjorden. Scale 1/100,000. Kristiania: Norges Geografiske Opmaaling, 1913. *Norges Geografiske Opmaaling.
- Norway. Den Norske Kyst. Sheets: 76, fra Raftsund og Stokkmarknes til Hovden og Sortlandsund; 78, fra Hovden til Langenes og Risöysund; 88, fra Hekkingen til Kvalsund. Scale 1/50,000. Kristiania: Norges Geografiske Opmaaling, 1913. *Norges Geografiske Opmaaling.
- Katalog over Norske Sjøkart. Den 1 Januar, 1913. Kristiania: Norges Sjøkartverk, 1913. *The Publishers.
- Carta Amministrativa Stradale della Provincia di Torino. Scala 1/250,000. Novara: Istituto Geografico de Agostini. (Price, Lire 1.20.) *The Publishers.
- Carta Amministrativa Stradale della Provincia di Alessandria. Scala 1/250,000. Novara: Istituto Geografico de Agostini. (Price, Lire 0.60.) *The Publishers.
- Carta Amministrativa Stradale della Provincia di Milano. Scala di 1/250,000. Novara: Istituto Geografico de Agostini. (Price, Lire 0.50.) *The Publishers.
- Carta Amministrativa Stradale della Provincia di Padova. Scala 1/250,000. Novara: Istituto Geografico de Agostini. (Price, Lire 0.50.) *The Publishers.

ASIA.

- Hong Kong and part of Leased Territory. Scale 2½ inches to 1 mile. (2 Sheets.) Geographical Section, General Staff, No. 2667a. *The Director of Military Operations.

AFRICA.

- Carte de Adrar des Ifoghas. (Mission Cortier.) By Captain Cortier and others. Scale 1/500,000. 2 Sheets. Paris : Service Géographique des Colonies, 1912. *Ministère des Colonies.
- Carte du Ouadaï, dressée sous la direction du Colonel Largeau, Commandant le Territoire Militaire du Tehad. Echelle 1/500,000. Two Sheets. Paris : Service Géographique des Colonies, 1913. *Ministère des Colonies.
- Africa. 1/250,000. Cape of Good Hope. South-H-34, D, Upington ; Q, Carnarvon ; X, Victoria West ; South-H-35, Q, Mount Fletcher ; S. Naaupoort. G.S., G.S. No. 1764. London : War Office, 1913. *The Director of Military Operations.
- Map of the German Emin Pasha Expedition according to the Itinerary of Dr. Carl Peters. Scale 1/1,750,000. London : Ward, Lock & Co. *Mr. John Ainsworth, C.M.G., F.R.G.S.
- Sketch Map of East Africa Protectorate. Scale 54 miles to 1 inch. Prepared by Public Works Department. London : E. Stanford. *Mr. John Ainsworth, C.M.G., F.R.G.S.
- Map of the Southern Portion of British East Africa. Compiled in the Intelligence Division, War Office, July, 1893. Scale 1/1,584,000. I.D., W.O. No. 991. *Mr. John Ainsworth, C.M.G., F.R.G.S.
- East Africa Protectorate. Map (Provisional) Shewing Alienated and Surveyed Lands, Native, Game, and Forest Reserves, Provincial and District Boundaries. April, 1909. Scale 25 miles to 1 inch. Southampton : Ordnance Survey Office, 1911. *Mr. John Ainsworth, C.M.G., F.R.G.S.
- Africa. 1/250,000. East Africa Protectorate. Sheets : North-A-37, T, Meru ; South-A-37, C, Mumoni. G.S., G.S. No. 1764. London : War Office, 1912. *The Director of Military Operations.
- Africa. 1/250,000. East Africa Protectorate. (Provisional) Sheets : North-A-36, Q, Elgon ; X, Uasin Gishu ; South-A-37, A, Nakuru-Nyeri. G.S., G.S. No. 1764. London : War Office, 1913. *The Director of Military Operations.

AMERICA.

- Map of the Dominion of Canada, 1912. Scale 58 miles to 1 inch. Issued by Direction of the Minister of the Interior. Ottawa, 1912. *The High Commissioner for Canada.
- Map (Railways) of the Dominion of Canada. Scale 100 miles to 1 inch. Ottawa : Department of the Interior, 1912. *The High Commissioner for Canada.
- Canada. 2 miles to 1 inch. Quebec. Lachine Sheet. G.S., G.S., No. 2336. London : War Office, 1913. *The Director of Military Operations.
- Canada. Department of Militia and Defence. Topographic Map. Scale 1/63,360, or 1 inch to 1 mile. Sheets : No. 37, St. Thomas ; 38, Strathroy ; 41, Wallaceburg ; 44, Chatham ; 46, Essex ; 48, Windsor ; 49, Amherstbury ; 50, Pelee ; 51, Perch. G.S., G.S. No. 2197. London : War Office. *The Director of Military Operations.
- Panoramic View (Coloured) of the Crater Lake, National Park, Oregon. Prepared by John H. Renshawe. Scale 1/62,500. Washington : United States Geological Survey, 1913. *The Director of the Survey.

OCEANIA.

Tasmania. Scale 12 miles=1 inch. Hobart : Surveyor General's Office. *The Agent-General for Tasmania.

POLAR REGIONS.

Map of the Arctic Regions. Projected and Drawn by A. Briesemeister. Scale 1/6,300,000. New York : American Museum of Natural History and the American Geographical Society, 1912. *American Geographical Society.

Spitsbergen. Sheet 198. Farvand og Ankerpladser paa Vest- og Nordkysten : 1. Forland Sundet—King's Bay—Cross Bay, 1/200,000. 2. Blomstrand Hamn, 1/25,000. 3. Ferrier Hamn, 1/25,000. 4. Farm Hamn, 1/25,000. 5. Vulkan Hamn i Bock Bay, 1/25,000. 6. Green Harbour, 1/100,000. 7. Heela Hamn og Finnes Hamn i Green Harbour, 1/25,000. 8. Norske Hamn paa Björn Oya, 1/25,000. (One Sheet.) Kristiania : Norges Geografiske Opmaaling, 1912. *Norges Geografiske Opmaaling.

ATLASES, PHOTOGRAPHS, Etc.

Testo-Atlante delle Ferrovie e Tramvie Italiane e di quelle estere in contatto Francia, Svizzera ed Austria-Ungheria con un indice-prontuario di tutte le linee, stazioni, fermate, Scali, ecc., delle ferrovie, tramvie e laghi italiani, di Leonida Leoni. Prefazione dell' Ing. Pietro Lanino. Novara : Istituto Geografico de Agostini, 1913. (Price, Lire 5.) *The Publishers.

Metodo di Esercizi Cartografici Scolastici in 24 Tavole con testo illustrativo. Achille Dardano. Novara : Istituto Geografico de Agostini 1913. *The Publishers.

Barograms recorded by the Right Rev. the Bishop of Salford's Barograph, at Alexander Park, Whalley Range. Vol. 1. 11th October to 18th May, 1913. (With a few unavoidable gaps.) *The Right Rev. the Bishop of Salford.

Photographic Supplement to Stanford's Geological Atlas of Great Britain and Ireland. Arranged and Edited by Horace B. Woodward, F.R.S., F.G.S., with the co-operation of Miss Hilda D. Sharpe. London : Edward Stanford Ltd., 1913. (Price 4/- net.) *The Publisher.

Model of the Panama Canal. *Mr. J. Herbert Cooke.

Portrait of Captain R. F. Scott, C.V.O.

S.S. "Terra Nova" in the Ice. A drawing by Mr. F. H. Overmann, F.M.S.A. *The Manchester Captain Scott Memorial Fund Committee.

Fifteen Lantern Slides of Venice. *Mr. J. S. Blake Reed.

Fifty-two Lantern Slides of Hong Kong and Canton. *Dr. R. Gibson.

Picture Postcards (50). Mainly Australian Scenes. *Mr. T. J. Gough.

ADDITIONS TO THE MUSEUM.

Rupee (Silver). Originally issued by the Imperial British East Africa Company, 1888. *Mr. John Ainsworth, C.M.G., F.R.G.S.

Half Rupee (Silver). East Africa and Uganda Protectorate. King George V. 1911. *Mr. John Ainsworth, C.M.G., F.R.G.S.

East Africa and Uganda. Subsidiary Coinage. 1 Cent., 5 Cents., and 10 Cents. (100 Cents.=1 Rupee). *Mr. John Ainsworth, C.M.G., F.R.G.S.

Tappa Cloth, Tonga Islards. *Mr. G. H. Warren.

Books.

GENERAL.

- Influences of Geographic Environment : on the Basis of Ratzel's-System of Anthro-Geography, by Ellen Churchill Semple. Maps. London : Constable & Co., 1913.
- A Regional Geography of America, Africa and Australasia, by T. W. F. Parkinson, M.Sc., F.G.S. Maps and Diagrams. London and Glasgow : Collins' Clear Type Press, 1913. (Price 2/-.) *The Author.
- An Account of a Land Map of the World on a New and Original Projection, invented by B. J. S. Cahill, A.I.A., F.R.G.S. Maps. Reprinted from the Journal of the Association of Engineering Societies for October, 1913. San Francisco : The Cahill World Map Co., 1913. *The Inventor.
- The Geographical Teacher. The Organ of the Geographical Association. No. 35, Vol. VII, Part I; 36, Part II; 37, Part III. *Mr. H. Sowerbutts, A.R.C.Sc.
- Cartografia. Elementare Pratica con figure nel testo e 4 tavole. Achille Dardano. Novaro : Istituto Geografico de Agostini, 1913. *The Publishers.
- The Framework of Union. A comparison of some Union Constitutions. With a Sketch of the Development of Union in Canada, Australia and Germany; and the text of the Constitutions of the United States, Canada, Germany, Switzerland, and Australia. Prepared for and issued by the Closer Union Society. Cape Town : Central News Agency, 1908. *Macmillan & Co.
- The Traveller's Gazette. Illustrated. Vol. LXIII. Nos. 1—12. London : Thos. Cook & Son, 1913. *The Publishers.
- Lloyd-Zeitung. Organ des Norddeutschen Lloyd. Jahrgang XIV, Nos. 6—24; Jahrgang, XV, No. 1-6. Bremen, 1913. *The Publishers.
- An Almanack for the Year of Our Lord 1913, by Joseph Whitaker, F.S.A. London, 1913.
- The Co-operative Wholesale Societies Limited. Annual, 1913. *Mr. G. H. Warren.
- A Series of Cotton Tables, including the prices of six of the principal kinds and the total stock of Cotton, also comparative prices of Cotton and Corn, at the end of each week, together with a supplementary annual digest thereof from 1837 to 1854 inclusive. Compiled by S. Adolphus Meyer. Manchester : Ernst & Co., 1855. *Mr. David A. Little.
- Library Cataloguing, by J. Henry Quinn. London : Truslove and Hanson, Ltd., 1913.

BRITISH ISLES.

- The Incorporated Accountants' Year Book, 1913-14. *The Council of the Society of Incorporated Accountants and Auditors.
- Guide Through and Round Bath. Plan and Illustrations. Seventh Edition. Bath : Frederick Curtis. *Mr. Isaac Chorlton.
- A Handbook for Birmingham and the Neighbourhood. Prepared for the 83rd Annual Meeting of the British Association for the Advancement of

- Science. Edited by George A. Auden, M.D., M.A., F.S.A. Maps, Plans, etc. Birmingham : Cornish Brothers, Ltd., 1913. *British Association, per Mr. J. McFarlane, M.A., M.Com.
- Excursions Guide-Book for Birmingham and Neighbourhood. British Association for the Advancement of Science Meeting, 1913. Illustrations. Birmingham : Cornish Brothers, Ltd., 1913. *British Association, per Mr. J. McFarlane, M.A., M.Com.
- The Keuper Marls around Charnwood, by T. O. Bosworth, B.A., B.Sc., F.G.S. Being the results of researches in Leicestershire, 1904—1911. Maps, Diagrams and Illustrations. Leicester : Leicester Literary and Philosophical Society. (Price, Paper 3/6, cloth 4/6.) *The Publishers.
- The Official Handbook of Manchester and Salford and Surrounding District, with information on local Institutions and Societies, 1913. Manchester : Manchester Corporation, 1913.
- The Manchester and Salford Official Red Book for 1913. Manchester : Littlebury Bros., 1913.
- Manchester Field Naturalists and Archaeologists' Society. Report and Proceedings for the year 1912. *Mr. W. H. Ward.
- History of Halton Castle and its Court Leet, by Joseph Walker. Illustrations. Runcorn : Arthur Dutton, 1910. *Mr. Isaac Chorlton.

EUROPE.

- Den Norske Lods utgit av Norges Geografiske Opmaaling, 1871. 1ste Hefte. Kyststraekningen fra Idefjorden til Langesund. Omarbeidet, 1913. *Norges Sjøkartverk, Kristiania.
- Den Norske Lods utgit av Norges Geografiske Opmaaling, 1893. 7de Hefte. Fra Aalesund til Beian og Trondhjem, samt Smölen. Omarbeidet, 1913. *Norges Sjøkartverk, Kristiania.
- Svenska Turistföreningens Arsskrift, 1913. Maps and Illustrations. Stockholm, 1913. *The Swedish Touring Club.
- Souvenirs et Croquis Madrilènes. Chroniques du Règne d'Alphonse XIII. par Gaston-Routier. Paris : Editions de "L'Epoque Moderne," 1913. *The Author.
- The Times Russian Supplement. Nos. 4, 5, 6. *Mr. Isaac Chorlton.
- The British Chamber of Commerce of Turkey and the Balkan States. Quarterly Trade Journal. Nos. 21, March; 22 June; 23 September; 24 December. 1913. Report for the year 1912. *Mr. George Thomas, J.P.

ASIA.

- Palestine Exploration Fund. Quarterly Statements, 1913. Annual Report, 1912.
- Punjab District Gazetteers. B. Vols. II, Hissar District and Loharu State; III, Rohtak District and Dujana State; IV, Gurgaon District and Patandi State; V, Delhi; VI, Karnal District; VII, Ambala District and Kalsia State; VIII, Simla District; IX, Sirmur State; X, Kangra District; XII, Mandi and Suket States; XIII, Hoshiarpur; XIV, Jullundur District; XVI, Ferozepore District; XVII, Phulkian States; XVIII, Montgomery; XIX, Lahore District; XX, Amritsar; XXI, Gurdaspur; XXIII, Sialkot

District; XXV, Gujrat District; XXVI, Shakpur District; XXVII, Jhelum; XXVIII, Rawalpindi District; XXIX, Attock District; XXXII, Jhang District; XXXIII, Multan; XXXIV, Muzaffargarh District; XXXV, D. G. Khan District; XXXVI, Bahawalpur State. Lahore: 1912-13. *H.M. Secretary of State for India.

Gazetteers of the Bombay Presidency. Vols. IV-B, Ahmedabad; X-B, Ratnagiri and Sa'vantwa'diffi XI-B, Kola'ba and Janjira; XIII-B, Tha'na and Jawha'r; XV-B, Ka'nara; XVII-B, Ahmednagar; XXII-B, Dhárwár and Savanúr. 1913. *H.M. Secretary of State for India.

Central Provinces District Gazetteers. Mandla District. Vols. A and B. *H.M. Secretary of State for India.

Bengal District Gazetteers. B. Vols. Birbhum, Bogra, Darjeeling, Dinajpur, Faridpur, Howrah, Jalpaiguri, Khulna, Midnapore, Múshidabad. 24—Parganas, Rajshahi. *H.M. Secretary of State for India.

Burma Gazetteers. A Vols. Amherst District; Pakokku District; Upper Chindwin District. Rangoon, 1913. *H.M. Secretary of State for India.

Burma Gazetteers. B. Volumes Nos. 1, Akyab; 3, Kyaukpyu; 5, City of Rangoon (Census tables only); 6, Insein; 7, Hanthawaddy (Syriam); 9, Pegu; 10, Prome; 11, Rassein; 12, Henzada; 13, Myaungmya; 14, Ma-Ubin; 15, Pyapon; 16, Toungoo; 17, Salween; 18, Thaton; 19, Amherst; 20, Tavoy; 21, Mergui; 22, Thayetmyo; 23, Pakokku; 24, Mínbu; 25, Magwe; 26, Mandalay; 27, Bhamo; 28, Myitkyina; 29, Katha; 30, Ruby Mines; 31, Shwebo; 32, Sagaing; 33, Lower Chindwin; 34, Upper Chindwin; 35, Kyaukse; 36, Meiktila; 37, Yamethin; 38, Myingyan. Rangoon, 1912-13. *H.M. Secretary of State for India.

Madrolle's Guide Book. Northern China, the Valley of the Blue River, Korea. 43 Maps and Plans. London and Paris: Hachette & Co., 1912. (Price 15/-.) *The Publishers.

AFRICA.

Sierra Leone Messenger. Illustrated. Nos. 81, 82, 83, 84. 1913. *The Rev. Canon F. C. Smith, M.A., F.R.G.S.

Essai sur L'Amélioration du Régime du Fleuve Congo par la Régularisation du débit des lacs et Anciens lacs Congolais. Capitaine Robert Thys. Maps and Illustrations. Bruxelles: Compagnie du Congo pour le Commerce et l'Industrie, 1913. *The Publishers and the Author.

The Government of South Africa. Maps and Diagrams. 2 Vols. Cape Town: Central News Agency, 1908. *Macmillan & Co.

South Africa. An Illustrated Booklet of Information for Travellers. Map and Illustrations. London: Thos. Cook & Son, 1913. *The Publishers.

Big Game Shooting in Rhodesia. Maps and Illustrations. London: The British South Africa Company, 1912. *The Publishers.

Rhodesia. A Book for Tourists. Map and Illustrations. London: The British South Africa Company, 1912. *The Publishers.

Anglo-Egyptian Sudan. A Report on the Land Settlement of the Gezira (Mesellemia District), by H. St. G. Peacock, Judge of Sudan Civil Courts, Settlement Officer, 1906—1910. Maps, Diagrams and Illustrations. London: Sifton Praed & Co., 1913. (Sale Agents.) *The Sale Agents.

AMERICA.

- The Canada Year Book, 1911. Second Series. Ottawa, 1912. *The High Commissioner for Canada.
- A Study of Maya Art, its subject matter and historical development, by Herbert J. Spinden. Map and Illustrations. Cambridge: Peabody Museum of American Archaeology and Ethnology, Harvard University, Memoirs, Vol. VI, 1913. *The Museum.
- The Times South American Supplement. Nos. 31—42, 1913. *Mr. Isaac Chorlton.
- Páginas Históricas Colombianas. Ricardo Castro. Medellin, 1912. *The Author.
- Brazil in 1912. By J. C. Oakenfull. Maps and Illustrations. London: Robert Atkinson (London) Ltd., 1913. *The Pan American Union.
- Through the Heart of the Andes. Illustrations. *Argentine Gt. Western Railway Co.

OCEANIA.

- The Handbook of Western Australia. Maps and Illustrations. Perth: The Immigration and Tourist Department, 1912. *The Agent-General for Western Australia.
- The Year Book of South Australia, 1912. Map and Illustrations. *The Agent-General for South Australia.
- The Official Year Book of New South Wales, 1911. Map. Sydney: Bureau of Statistics, 1912. *The Agent-General for New South Wales.
- The Year Book of Queensland, 1913. Map and Illustrations. *The Agent-General for Queensland.
- Glimpses of Sunny Queensland. Illustrations. Second Edition. *The Agent-General for Queensland.
- The Pocket Queensland, containing general information regarding the Great North-Eastern State of the Australian Commonwealth. Maps and Illustrations. Revised Edition. Brisbane, 1912. *The Agent-General for Queensland.
- Papua: "A Grandchild of the Empire." By Gordon Inglis. Illustrations. London: Charles Hooper & Co., 1912. *The High Commissioner for Australasia.
- The New Zealand Official Year-Book, 1912. Wellington, N.Z., 1912. *The High Commissioner for New Zealand.

POLAR REGIONS.

- The North Pole and Bradley Land, by Edwin Swift Balch. Philadelphia: Campion & Co., 1913. *The Author.
- To the South Pole: Captain Scott's Own Story. Told from His Journals. Photographs by H. G. Ponting, F.R.G.S. London: Strand Magazine, July, August, September, October, 1913. *Mr. H. Sowerbutts.

List of Corresponding Societies, etc.
(Exchanges).

BRITISH.

- Belfast. Natural History and Philosophical Society. Report and Proceedings for the Session 1912—1913.
- Birmingham. Natural History and Philosophical Society. Annual Report for the Year 1912. Proceedings, Vol. XIII, No. 1.
- Cardiff. Naturalists' Society. Report and Transactions. Vol. XLV, 1912.
- Croydon. Natural History and Scientific Society. Proceedings and Transactions, 1912—1913.
- Edinburgh. The Royal Scottish Geographical Society. The Scottish Geographical Magazine, 1913, Vol. XXIX, Nos. 1-12, and Index.
- Glasgow. Geological Society. Transactions, Vol. XIV, Part III, 1911-12.
- Glasgow. Royal Philosophical Society. Proceedings, Vol. XLIV, 1912-13.
- Hertford. Hertfordshire Natural History Society and Field Club. Transactions, Vol. XV, Part I.
- Hull. Yorkshire Naturalists' Union. (Nothing received.)
- Leeds. Geological Association. Transactions. (Nothing received.)
- Leeds. Yorkshire Geological Society. Proceedings. (Nothing received.)
- Leicester. Literary and Philosophical Society. Transactions and Annual Report, Vol. XVII, 1913.
- Liverpool. Geographical Society. Transactions and Twenty-First Annual Report for the Year 1912.
- London. The Anti-Slavery Reporter and Aborigines' Friend. Series V, Vol. II, No. 8; III, 1, 2, 3.
- London. British Association for the Advancement of Science. Report of the Eighty-Second Meeting, Dundee, 1912. Report of the Corresponding Societies' Committee and of the Conference of Delegates held in Dundee, 1912.
- London. The Colliery Guardian, 1913, Nos. 2714—2765.
- London. The Colonial Office Journal. Vol. VI, Nos. 3, 4; VII, 1, 2.
- London. The Royal Colonial Institute. Journal, "United Empire." Vol. IV, Nos. 1—12. Year Book, 1913.
- London. Emigrants' Information Office. Combined Circulars on Canada, Australasia and South Africa. 1913, Quarterly.
- London. Royal Geographical Society. The Geographical Journal, 1913, Jan. to Dec. Year Book and Record.
- London. Imperial Institute. Bulletin. Vol. XI, Nos. 1-4.
- London. India Office. (See list of Books.)
- London. Royal Botanic Gardens, Kew. Bulletin. 1913, Nos. 1—10, and Appendices I—IV.

- London. Royal Society of Literature. Transactions. Vol. XXXII, Parts I, II, III. The Academic Committee. Addresses of Reception to John Masefield by Sir Walter Raleigh, to Mrs. Margaret Louisa Woods by Maurice Hewlett, to the Dean of St. Paul's by A. C. Benson, to Max Beerbohm by Laurence Binyon. Award of the Edmond De Polignac Prize to James Stephens by W. B. Yeats, Nov. 28th, 1913.
- London. The Near East. 1913, Nos. 87—138, with Supplement "Egypt and the Sudan."
- London. War Office. Geographical Section, General Staff. (See List of Maps.)
- London. War Office. Catalogue of Maps. Accessions. 1913, Jan. to Dec.
- London. War Office Library. Accessions. 1913, January to December. Catalogue of the Library, Part III (Subject—Index). First Annual Supplement, 1912.
- London. War Office. Catalogue of Maps in Books and Periodicals contained in the War Office Library. Accessions, 1913.
- Manchester. The British Cotton Growing Association. Publications. Nos. 53, 54 (Nos. 51, 52 not received).
- Manchester. Godlee Observatory. The Municipal School of Technology. Annual Report for the Year 1912.
- Manchester. Literary and Philosophical Society. Memoirs and Proceedings. Vol. 57, Parts I, II, III.
- Manchester. Museum. The University. Museum Publication 74. Report for 1912—1913.
- Manchester. Public Libraries Committee. Sixty-First Annual Report, 1912-13.
- Manchester. The Textile Recorder. 1913, January to December.
- Newcastle-upon-Tyne. Tyneside Geographical Society. Journal. (Nothing received.)
- Newcastle-upon-Tyne. North of England Institute of Mining and Mechanical Engineers. Transactions. Vol. LXIII, Parts 1-8; LXIV, 1, 2. Annual Report, 1912—1913.
- Oxford. Clarendon Press. (Nothing received.)
- Penzance. Royal Geological Society of Cornwall. Transactions. Vol. XIII, Part IX.
- Rochdale. Literary and Scientific Society. Transactions. (Nothing received.)
- Salford. Museum, Libraries and Parks Committee. Sixty-Fifth Report, 1912-13.
- York. Yorkshire Philosophical Society. Annual Report for 1912.

MISSIONARY.

- Freiburg-im-Breisgau. Die Katholischen Missionen. 1913, January to Dec.
- London. Baptist Missionary Society. The Herald. 1913, January to Dec.
- London. British and Foreign Bible Society. 109th Annual Report, 1913. "Have ye never read?" A Popular Illustrated Report, 1912-13. "The Bible in the World." 1913, January to December. Manchester and Salford Auxiliary. 102nd Annual Report, 1912.
- London. Church Missionary Society for Africa and the East. Report of Proceedings, 114th year, 1912-13.

- London. Church Missionary Review. 1913, January to December.
- London. Colonial and Continental Church Society. Greater Britain Messenger. 1913, January to December.
- London. The London Missionary Society. 118th Report for the year ending March 1913.
- London. Illustrated Catholic Missions. 1913, January to December.
- London. The Society for the Propagation of the Gospel in Foreign Parts. Report of the year 1912.
- London. Universities Mission to Central Africa. "Central Africa." 1913, January to December.
- London. The United Methodist Church. "Missionary Echo." 1913, Jan. to December.
- Mangalore. Basel German Evangelical Mission in South Western India. Report for the year 1912.

COLONIAL.

- Adelaide. Royal Geographical Society of Australasia. South Australian Branch. Proceedings. Vol. XIV, 1912—1913.
- Brisbane. Royal Geographical Society of Australasia. Queensland Branch. Queensland Geographical Journal. Vols. XXVI—XXVII, 1910—1912.
- Brisbane. Queensland Museum. Memoirs. Vol. II, 1913.
- Brisbane. Department of Mines. Geological Survey of Queensland. Publications. (Nothing received.)
- Bulawayo. Rhodesia Scientific Association. Proceedings. Vol. XII, 1912-13.
- Cape Town. Royal Society of South Africa. Transactions. Vol. III, Parts 1, 2, 3.
- Georgetown. The Royal Agricultural and Commercial Society of British Guiana. The Journal. "Timehri." Vol. III, No. 1.
- Halifax. Nova Scotian Institute of Science. Proceedings and Transactions. Vol. XII, Part 4, 1909—1910.
- Melbourne. Royal Geographical Society of Australasia. Victorian Branch. Victorian Geographical Journal. Vol. XXIX, 1912.
- Melbourne. Department of Agriculture of Victoria (per the favour of the Agent General). Journal. Vol. XI, Parts 1-12.
- Melbourne. Victorian Statistical Department. Year Book, 1912-13.
- Perth, Western Australia. Geological Survey (per the favour of the Agent General). Bulletin. Nos. 42, 44.
- Port Moresby, Papua. Annual Report for the year ended 30th June, 1913.
- Quebec. Société de Géographie. Bulletin. Vol. VII, Nos. 1-6.
- Sydney. New South Wales. Department of Mines. Annual Report for the year 1912.
- Sydney. New South Wales. Department of Mines. Geological Survey. Mineral Resources. Nos. 7, 17.
- Toronto. Canadian Institute. Transactions. Vol. X, Part 1, November, 1913 (No. 23). Year Book and Annual Report, 1912—1913.
- Victoria. Department of Mines. Province of British Columbia. Annual Report for the year ending 31st December, 1912.
- Wellington. New Zealand. Department of Lands and Survey. (Nothing received.)

FOREIGN.

- Alger. Société de Géographie d'Alger et de L'Afrique du Nord. Bulletin. 1913, 1, 2.
- Ann Arbor. The Michigan Academy of Science. University of Michigan. 14th Report, 1912.
- Antwerp. Société Royale de Géographie. d'Anvers. Bulletin. Tome XXXVI, Fascicules 3, 4; XXXVII, 1-4.
- Baltimore. Johns Hopkins University. Studies in Historical and Political Science. Series XXXI, Nos. 1, 2. Circulars. 1913, Nos. 1-6.
- Baltimore. Maryland Geological Survey. (Nothing received.)
- Barcelona. Sociedad de Geografía Comercial. Publicaciones. 1913, No. 8.
- Belgrade. Sociéié Serbe de Géographie. Bulletin. 1912, Vol. II.
- Bergamo. Rivista Mensile Illustrata D'Arte-Letteratura-Scienze e Varietà. "Emporium." 1913, January to December.
- Berkeley. University of California. Publications in American Archaeology and Ethnology. Vol. X, No. 5. Publications in Geography. Vol. I, Nos. 1, 2.
- Berlin. Gesellschaft für Erdkunde. Zeitschrift. 1913, Nos. 1-10.
- Berlin. Deutsche Kolonialzeitung. 1913, Nos. 1-52.
- Bern. Geographische Gesellschaft. Jahresbericht. Band XXIII, 1911-1912.
- Bordeaux. Société de Géographie Commerciale. Revue de Géographie Commerciale. 1913, January to December.
- Bremen. Deutsche Geographische Gesellschaft. Blätter. Band XXXVI, Hefte 1-4.
- Brussels. Congo Belge. Bulletin Official. 1913, Nos. 1-14 et supplements.
- Brussels. Société Royale Belge de Géographie. Bulletin. 1913, Nos. 1-6.
- Brussels. Le Mouvement Géographique. 1913, Nos. 1-52.
- Brussels. Institut Colonial International. (Nothing received.)
- Brussels. Société Belge d'Etudes Coloniales. Bulletin. 1913, Nos. 1-11. (1912, No. 12, and 1913, No. 12 not received.)
- Brussels. Commission Polaire Internationale. Procès-Verbal de la Session Tenue à Rome en 1913.
- Budapest. Hungarian Geographical Society. Bulletin. Tome XLI, Fascicules 1, 2, 7, 8, 9, 10; XLII, 1. International Ed., Vol. XL, Parts 1-10.
- Buenos Aires. Instituto Geográfico Argentino. Boletín. (Nothing received.)
- Buenos Aires. Museo Nacional de Historia Natural de Buenos Aires. Anales. Tomo XXIV.
- Buenos Aires. Monthly Bulletin of Municipal Statistics. 1913, Nos. 1-12. Year Books of the City of Buenos Aires. Year XXII-1912.
- Buenos Aires. Ministerio de Agricultura. Boletín. (Nothing received.)
- Cairo. Société Khédiviale de Géographie. Bulletin. (Nothing received.)
- Cambridge. Peabody Museum of American Archaeology and Ethnology. Harvard University. Memoirs. Vol. V, No. 3; Vol. VI. Papers, Vol. III, No. 5. Contents and Index.
- Cassel. Gesellschaft für Erd-und Völkerkunde. Jahresbericht XXX und XXXI.
- Christiania. Norges Geografiske Opmaalning. (See List of Maps.)
- Copenhagen. Geografisk Tidsskrift udgivet af Bestyrelsen for det Kongelige Danske Geografiske Selskab. Bind XXII, Hefte 1-4.

- Darmstadt. Verein für Erdkunde. Notizblatt. Folge IV, Heft 33.
- Dijon. Société Bourguignonne de Géographie et d'Histoire. Memoires. Tome XXVIII, 1913.
- Douai. Union Géographique du Nord de la France. Bulletin. 1913, Nos. 1-4.
- Dresden. Verein für Erdkunde. Mitteilungen. Band II, Heft 7, 8. Mitglieder Verzeichnis, April, 1913. Satzung und Geschäfts-Ordnung, 1910.
- Dunkerque. Société de Géographie. Bulletin. No. 39.
- Firenze (Florence). Rivista Geografica Italiana e Bollettino della Societa di Studi Geografici e Coloniali. Annata XX, Fascs 1-10.
- Firenze (Florence). L'Opinione Geografica. Rassegna dell' Insegnamento di Geografia. Anno IX, Fascs. 1-2.
- Frankfurt. Verein für Geographie und Statistik. Jahresbericht. (Nothing received.)
- Geneva. "Le Globe." Organe de la Société de Géographie. Bulletin. Tome LII, Nos. 1, 2, et Mémoires. Numéro Spécial, XVIIe Congrès des Sociétés Suisses de Géographie, 1913.
- Geneva. Société des Anciens Elèves de l'Ecole Supérieure de Commerce. Bulletin. Nos. 98, 99, 100, 101.
- Giessen. Geographische Mitteilungen aus Hessen. (Nothing received.)
- Greifswald. Geographische Gesellschaft zu Greifswald. Jahresbericht. XIII, 1911-1912.
- Halle. Sächsisch-Thüringischen Vereins für Erdkunde. Mitteilungen. (Nothing received.)
- Halle. Kaiserlichen Leopoldinisch-Carolinischen Deutschen Akademie der Naturforscher. Leopoldina. Heft 49.
- Hamburg. Geographischen Gesellschaft. Mitteilungen. Band XXVII.
- Hamburg. Hauptstation für Erdbebenforschung. Professor Dr. R. Schütt. Mitteilungen. 1913, Nos. 1-43. Neuere Fortschritte auf dem Gebiete der Erdbebenforschung, vom Dr. E. Tams.
- Hannover. Geographische Gesellschaft. Neunter Nachtrag zum Kataloge der Stadt-Bibliothek zu Hannover.
- Havre. Société de Géographie Commerciale. Bulletin. 1913, Trimestres 1, 2.
- Havre. Société Géologique de Normandie. Bulletin. (Nothing received.)
- Helsingfors. Société de Géographie de Finlande. Fennia 33.
- Helsingfors. Meddelanden af Geografiska Foreningen. (Nothing received.)
- Irkutsk. Imperial Russian Geographical Society. East Siberian Section. Journal. (Nothing received.)
- Jena. Geographische Gesellschaft. Mitteilungen. (Nothing received.)
- Kazan. Naturalists' Society of the Imperial University. Journal. (Nothing received.)
- Königsberg. Physikalisch-ökonomischen Gesellschaft. Schriften. Jahrgang LIII, 1912.
- La Paz. Sociedad Geografica de La Paz. Boletin. Nos. 39, 40.
- La Paz. República de Bolivia. Dirección General de Estadística y Estudios Geográficos. Boletin. Ano IX, No. 86.
- La Plata. Dirección General de Estadística de la Provincia de Buenos Aires. Boletin Mensual. Ano XIII, Nos. 147-149.
- La Plata. Museo de La Plata. Revista. (Nothing received.)

- Leipsic. Gesellschaft für Erdkunde. Mitteilungen. 1912.
- Lille. Société de Géographie. Bulletin. 1913, Nos. 1—12.
- Lima. Sociedad Geografica. Boletin. (Nothing received.)
- Lima. Cuerpo de Ingenieros de Minas del Peru. (Nothing received.)
- Lisbon. Sociedade de Geographia. Boletin. 1913, Nos. 1-9. Rapport au sujet de l'Etude des Problèmes Coloniaux.
- Lübeck. Geographische Gesellschaft und Naturhistorische Museums. Mitteilungen. (Nothing received.)
- Lwowie (Lemberg). Towarzystwo Ludozonaweze Kwartalnik Etnograficzny. "Lud." Tom. XVIII, Zeszyt 1-4.
- Madison. Wisconsin Academy of Science, Arts and Letters. Transactions. (Nothing received.)
- Madison. Wisconsin Geological and Natural History Survey. Bulletin. No. XXVI.
- Madison. Journal of Geography. Vol. XI, Nos. 5—10; XII, 1, 2.
- Madrid. Real Sociedad Geografica. Boletin. Tomo LV, Trim. 1-4. Revista. Tomo X, Nos. 1—12.
- Madrid. Ayuntamiento de Madrid. Boletin, Nos. 836—887. Estadistica Demografica. Resumen del Año 1910.
- Magdeburg. Museum für Natur-und Heimatkunde und Dem Naturwissenschaftlichen Verein in Magdeburg. Abhandlungen und Berichte. (Nothing received.)
- Marseille. Société de Géographie. Bulletin. Tome XXXVI, No. 4.
- Metz. Verein für Erdkunde. Jahresbericht. XXVII, 1908—1911.
- Mexico. Sociedad Mexicana de Geografia y Estadistica. Boletin. Tomo VI, Nos. 1—10. "Noticias de Nutka." Manuscritos, Mandados publicar por Acuerdo de 17 de Julio de 1913.
- Mexico. Sociedad Cientifica "Antonio Alzate." Memorias y Revista. Tomo XXX, Nos. 7—12; XXXI, 1—12; XXXII, 1-8; XXXIII, 1-8.
- Milan. L'Esplorazione Commerciale. Anno XXVIII, Fasc. 1—12.
- Missoula. University of Montana. Bulletin. Nos. 75, 77, 78, 83, 84, 87, 88.
- Montevideo. Museo Nacional. Anales. (Nothing received.)
- Montpellier. Société Languedocienne de Géographie. Bulletin. Tome XXXVI, Trim 1-4.
- Moscow. Geographical Section of the Imperial Society of Natural Science of the University. Journal. 1913, Vol. XX, Nos. 1, 2, 4.
- Munich. Geographische Gesellschaft in München. Mitteilungen. Band VIII, Hefte, 1-4.
- Nancy. Société de Géographie de L'Est. Bulletin. 1913, Trim. 1.
- Nantes. Société de Géographie Commerciale. Bulletin. 1913, Trim. 1-4.
- Naples. Società Africana d'Italia. Bollettino. "L'Africa Italiana." Anno XXXII, Fasc. 1—10.
- Neuchatel. Société Neuchateloise de Géographie. Bulletin. Tome XXII, 1913.
- New Haven. Connecticut Academy of Arts and Sciences. Transactions. Vol. 18, June, October.
- New York. American Geographical Society. Bulletin. Vol. XLV, Nos. 1-12.

178 Journal of the Manchester Geographical Society

- New York. American Museum of Natural History. Forty-Fourth Annual Report for the Year 1912.
- New York. Public Library, Astor Lenox and Tilden Foundations. Bulletin. 1913, January to December.
- Novara. Istituto Geografico de Agostini. "La Geografia." Nos. 3, 4, 5.
- Nurnberg. Naturhistorische Gesellschaft. Abhandlungen. Band XX. Mitteilungen. 1909, Band III, No. 2; 1910, IV, 1, 2.
- Odessa. Club Alpin de Crimée et du Caucase. Bulletin. 1913, Nos. 1-4.
- Omsk. Imperial Russian Geographical Society. West Siberian Branch. Journal. Vol. I, Nos. 1, 2. Report of Proceedings. Vol. XXXVI, No. 2. Report, 1912.
- Oran. Société de Géographie et d'Archéologie. Bulletin. Tome XXXIII, Fascicules 134-137.
- Para (Brazil). Museu Goeldi (Museu Paraense) de Historia Natural e Ethnographia. Boletim. Vol. VII, 1910.
- Paris. Société de Géographie. "La Géographie." Bulletin. Tome XXVII, Nos. 1-6; XXVIII, Nos. 1-6.
- Paris. Société de Géographie Commerciale. Bulletin. Tome XXXV, Nos. 1-12.
- Paris. Société de Spéléologie. Bulletin et Mémoires. Spelunca. Tome IX, No. 71.
- Paris. Société de Topographie de France. Bulletin. Tome XXXVII, Nos. 1-6.
- Paris. Comité de L'Afrique Française et du Comité du Maroc. Bulletin. 1913, Nos. 1-12. Renseignements Coloniaux. 1913, Nos. 1-12.
- Paris. Service Géographique et des Missions du Ministère des Colonies. Revue Coloniale. (Nothing received.)
- Philadelphia. American Philosophical Society. Proceedings. Vol. LII, Nos. 208-212.
- Philadelphia. The Philadelphia Museums. (The Commercial Museum.) Annual Report for the Year 1912. "Commercial America." 1913, January to December.
- Philadelphia. Geographical Society of Philadelphia. Bulletin. 1913, Nos. 1-4.
- Philadelphia. University of Pennsylvania. Free Museum of Science and Art. The Museum Journal. Vol. IV, Nos. 1-4.
- Prague. Société de Géographie tchèque à Prague. Revue. (Nothing received.)
- Rochefort. Société de Géographie. Bulletin. 1913, Nos. 1-4.
- Rolla, Mo. Missouri Bureau of Geology and Mines. Publications. (Nothing received.)
- Roma. Reale Società Geografica. Bollettino. 1913, Nos. 1-12.
- Roma. Direzione Generale della Statistica e del Lavoro. Annuario Statistico Italiano. Seconda Serie. Vol. II, 1912.
- Roma. Commissariato dell' Emigrazione. Bollettino. 1913, Nos. 1-14.
- Roma. Cosmos. Del Prof. Guido Cora. Serie 11, Vol. XIII, No. V.
- Rome. International Institute of Agriculture. Monthly Bulletin of Agricultural Intelligence and of Plant Diseases. 1913, Nos. 4-12.

- Rouen. Société Normande de Géographie. Bulletin. 1912, Trims. 1-4.
- San Francisco. Geographical Society of the Pacific. (Nothing received.)
- San Francisco. Southern Pacific Railway (per the favour of Mr. Rud Falck, Liverpool.) "Sunset."—The Pacific Monthly. 1913, January to Dec.
- San José. Museo Nacional. Boletín de Fomento, órgano del Ministerio de Fomento. Año III, Nos. 1—12.
- St. Louis, Mo. Washington University Studies. Vol. I, Part I, II.
- St. Nazaire. Société de Géographie Commerciale. Bulletin. (Nothing received.)
- St. Petersburg. Imperial Russian Geographical Society. Journal. Vol. XLIX, Nos. 1-3.
- San Salvador. Dirección General de Estadística. Monografías Departamentales. Vol. X. Departamento de la Unión.
- Santiago de Chile. Deutschen Wissenschaftlichen Vereins. Verhandlungen. Band VI, Heft 3. Deutsche Arbeit in Chile. Band II.
- Shanghai. China. The Maritime Customs. Gazette. I. Statistical Series. Nos. 3 and 4. Returns of Trade and Trade Reports, 1912. Part I; II, Vols. I—V; III, Vols. 1, 2.
- Shanghai. China. Ministry of Communications. Directorate General of Posts. II. Public Series; No. 2. Report on the Working of the Chinese Post Office for the First Year of Chung-Hua Min-Kuo (1912).
- Stettin. Gesellschaft für Völker und Erdkunde. (Nothing received.)
- Stockholm. Svenska Sällskapet för Antropologi och Geografi. Ymer. 1913, Haft 1-4.
- Strassburg. Gesellschaft für Erdkunde und Kolonialwesen. Mitteilungen. (Nothing received.)
- Stuttgart. Württembergische Vereins für Handelsgeographie. (Nothing received.)
- Tokyo. Tokyo Geographical Society. Journal of Geography. 1913, Nos. 289—295.
- Toulouse. Société de Géographie. Bulletin. 1913, Nos. 1, 2.
- Tours. Société de Géographie. Revue. 1913. Nos. 1-4.
- Upsala. University of Upsala. (Nothing received.)
- Urbana. Illinois State Geological Survey. Bulletin. No. 25.
- Vienna. K. K. Geographischen Gesellschaft. Mitteilungen. Band 56, Nos. 1—12. Abhandlungen. Band X, No. 3.
- Vienna. Verein der Geographen an der K. K. Universität in Wien. (Nothing received.)
- Vienna. K. K. Naturhistorischen Hofmuseums. Annalen. Band XXVII, Nos. 1-3.
- Washington. D. C. National Geographic Society. Magazine. 1913, Vol. XXIV, January to December.
- Washington. D. C. United States Department of Commerce. Coast and Geodetic Survey. Reports for the Fiscal Years ended June 30th, 1912, and June 30th, 1913. Results of Observations made at the Magnetic Observatories at Cheltenham, Maryland, 1911 and 1912; near Honolulu, Hawaii, 1911 and 1912. Special Publications:—"Geodesy," No. 13, 16, 17. "Astronomy" No. 14.

180 Journal of the Manchester Geographical Society

- Washington. D.C. United States Geological Survey. Annual Report for the Year ended June 30th, 1913.
- Washington. D.C. United States Geological Survey. Monograph. (None received.)
- Washington. D.C. United States Geological Survey. Mineral Resources. (Not received.)
- Washington. D.C. U.S. Geological Survey. Bulletin. Nos. 522, 525—539.
- Washington. D.C. U.S. Geological Survey. Professional Papers. Nos. 76, 78, 79, 80.
- Washington. D.C. U.S. Geological Survey. Water Supply Papers. Nos. 292, 295, 302—305, 307, 308, 310, 311, 313—320.
- Washington. D.C. Smithsonian Institution. Reprints from the Report for 1912. Publications 2201, 2221, 2222, 2224.
- Washington. D.C. United States National Museum. Report for the year ending June 30, 1912.
- Washington. D.C. U.S. Department of Agriculture. Weather Bureau. Bulletins. X, Y. Nos. 42, 43. Farmers' Bulletins. Nos. 561, 562, 563, 566, 570.
- Washington. D.C. U.S. Department of Agriculture. Bureau of Statistics. Bulletin. No. 103.
- Washington. War Department. Annual Reports, 1912, Vols. I, II, III, IV.
- Washington. D.C. United States Bureau of Education. Report of the Commissioner for the year ended June 30, 1912. Vols. 1 and 2.
- Washington. D.C. Library of Congress. Report for the Fiscal Year ending June 30th, 1913.
- Washington. Pan American Union. Bulletin. 1913, January to December.
- Washington. D.C. Carnegie Institution. Department of Terrestrial Magnetism. Annual Report for 1913.
- Washington, Conn. Association of American Geographers. Annals. (Nothing received.)
- Zurich. Geographisch-Ethnographischen Gesellschaft in Zurich. Jahresbericht, 1912—1913.

List of Members.

DECEMBER, 31st, 1913.

Note.—H signifies Honorary, C—Corresponding, L—Life, A—Associate,
* Affiliated Societies. All others are Ordinary Members.

- Abbott, F. S., F.C.A.
Abbott, James H.
Adam, Sir Frank Forbes, C.I.E.
L Ainsworth, John, C.M.G., F.R.G.S. (Kisumu).
Aldred, John C., A.C.A.
A Alexander, Miss M. N.
Alexander, W. T., J.P.
Allen, John W.
H Amundsen, Captain Roald.
H Argyll, His Grace the Duke of, K.T. Armitage, G. F., J.P. (His Worship the Mayor of Altrincham).
Armstrong, F.
Arning, A. W.
Arnold, W. A.
Aron, L.
Ascoli, E.
Ascoli, W. S., F.R.G.S.
A Ashworth, Mrs. Ada
A Ashworth, Miss D.
Ashworth, Francis, J.P.
A Ashworth, Miss R.
A Ashworth, S.
Ashworth, Wm., F.C.A.
Ashworth, W. E.
Atkinson, George, F.R.G.S.
- Bacon, W. C.
Baerlein, H. A.
A Bagnall, John H.
Bailey, W. D.
L Balmer, J. E., F.R.G.S.
L Balmforth, Alfred.
Barber, G.
Bardsley, G. W.
Barlow, Edwin.
Barlow, John R., J.P.
Barningham, Mrs. James
Barningham, Thomas, J.P.
Baron, J. W., C.C.
- Baronian, Z. S. Ipicjian
Bax, Wm. Robert
A Baxandall, Miss C.
A Bayley, Mrs. C. H.
A Bebié, Alfred
A Beck, H. S.
Beer, Walter
Behrens, Councillor Sir Charles, J.P.
Behrens, Gustav, J.P.
Bell, G. H.
c Bellamy, C. H., F.R.G.S., Tourcoing
A Bellamy, Reginald C., A.C.A.
Bentley, John Howard, F.R.G.S.
Berry, G. F.
Berry, R. H.
Berry, W. H., Free Public Library, Oldham.
Beving, C.
A Bickerton, Richard
Bishop, J. K.
Blaikie, W. V.
Blake, George Ingle
A Blanchoud, Miss
Blass, A.
Bles, Marcus S., J.P.
Bles, Philip
Bock, Richard
L Boddington, Henry, J.P.
H Bodio, Senator Luigi, Rome
A Bolivar, Mrs. A. de
H Bonaparte, S. A. Prince Roland, Paris
H Bond, Rt. Hon. Sir R., K.C.M.G., Newfoundland
H Botha, Rt. Hon. Louis, Pretoria
Bourne, Thomas
Bowen, E.
A Boyes, Miss S.
Bradley, N., J.P.
Bradshaw, Wm.
Bramwell, Samuel
c Brice, A. Montefiore, F.R.G.S.

- Brier, Charles
 LBrierley, James, M.A., F.R.G.S.
 Briggs, Henry
 Briggs, Herbert
 Broadhurst, E. Tootal, D.L., J.P.
 ABrobson, Miss
 LBrooks, Mrs. S. H.
 LBrooks, S. H., J.P., F.R.G.S.
 Broome, Henry
 Brown, A. E. Buchanan
 LBrown, James, J.P.
 Brownell, Thos. W.
 Brumm, Charles, J.P.
 Bryant, James
 cBryce, J. Annan, M.P.
 Buckley, W. S.
 Burgess, Alfred, A.C.A.
 LBurgon, Anthony
 Burke, Thomas
 *Burnley Literary and Scientific Club
 Burstall, Miss S. A., M.A.
 Butterworth, Walter, J.P.
 Bythell, J. K., J.P.
 Bythell, W. J. S., B.A., M.D.
 Byrne, Miss T. G.

 Calvert, D. R.
 Campbell, Richardson
 ACardwell, J. J.
 Carr, Arthur
 Carson, Isaac Pitman
 LCarver, W. Oswald
 Chadwick, J. J.
 Champ, F.
 ACharnock, Mrs. E.
 Cheetham, Rt. Hon. J. F., J.P.
 Chorlton, Isaac
 Chorlton, James
 Clapham, Col. W. W.
 Clapham, Thomas, F.R.G.S.
 Clarke, Charles A.
 AClegg, Miss C. E.
 ACockshaw, Miss E.
 cColbeck, Rev. A.
 LColley, T. H. Davies
 ACollinge, Miss A.
 Collmann, C.
 cColquhoun, A.R., F.R.G.S., M.I.C.E.
- Colt, W. H.
 Cooke, J. Herbert
 Cookson, G. P.
 Coop, Thos.
 LCooper, Mrs. A. H.
 ACox, C. H., B.Sc., L.C.P.
 Cox, Dr. Frederic
 Crawford, A.
 Crawford, W. L.
 Crewdson, Alfred
 Crompton, Mrs.
 Crompton, Thos. A.
 Crook, Col. H. T., D.L., V.D.,
 M.Inst.C.E.
 Crosland, Leo.
 ACroshtwaite, Robert, M.A., B.Sc.
 Crowther, Miss E.

 Darbyshire, Alfred
 ADaves, Miss A.
 David, Henry E.
 ADavies, Charles J.
 Dawkins, Prof. W. Boyd, J.P., M.A.,
 F.R.S.
 Dawson, Arnold
 HDeakin, Hon. Alfred, Australia
 Deakin, G. G. D.
 Deakin, Thos. S.
 Dean, J.
 Dean, J. N.
 Dehn, Gustav
 Dennis, Cammack, J.P.
 LDerby, Rt. Hon. Earl, G.C.V.O.
 Dixon, H. C.
 Donner, Sir Edward, Bart.
 Dowson, Rev. H. E., B.A.
 LDoxey, Alex. S.
 Duckworth, Charles
 Duckworth, Alderman Sir James, J.P.,
 F.R.G.S.
 Dugdill, John
 Dunkerley, Frank B.
 Dyckhoff, C.

 Earnshaw, John A.
 Eason, Edward A.
 *Eccles Prov. Ind. Co-op. Soc., Ltd.
 Eckhard, Gustav, J.P.

- Edleston, C. V. M.
 LEdwards, T. A., F.R.G.S.
 Egerton of Tatton, Rt. Hon. Lord
 Ellinger, George
 Ellinger, Martin
 England, A.
 LErmen, Charles
 Evans, E. Roose
 Evans, E. Russell
 Evans, J. H.
 Evans, L. C.

 Fairhurst, Thomas
 cFedotoff, A., Moscow
 Ferguson, Wm.
 Fern, George
 cFisher, Rev. A. B., F.R.G.S.
 Fison, K. G.
 Fletcher, R.
 Flinn, W. Leonard
 Follows, F. W.
 Forsyth, Henry
 Franc, Henry
 Frank, Ernest
 Frankenburg, Alderman I., J.P.
 HFreshfield, Douglas. W., F.R.G.S.
 Frischmann, A.
 AFuchs, Paul
 AFullerton, Miss E.

 Gamble, J.
 AGarner, Miss P. M.
 AGarner, Charles T. I.
 Garnett, Mrs. Charles
 Garnett, Charles
 Geiler, Hermann
 Gibbons, Fred C.
 LGinger, George
 Glazebrook, Philip K., M.P.
 Gleave, Joseph James
 Glossop, J. P. B.
 Godbert, Councillor Chas. W.
 Godlee, Francis
 Goodbehere, Frederick G.
 Goodwin, J. W.
 Gordon, T. Hodgetts, C.C., B.A.
 Green, H., M.A.
 Green, Walter

 Greenhow, J. H., Vice-Consul for
 Norway
 AGreenough, Richard, Leigh
 Greg, Colonel Ernest W., J.P., C.C.,
 F.R.G.S.
 Gregory, Theodore, F.C.A., J.P.
 Grey, Dr. Edgar
 LGriffiths, Albert, D.Sc.
 Griffiths, Alderman John
 Griffiths, Horatio
 Grime, A.
 AGroves, Miss M.
 Groves, Charles V.
 LGroves, J. G., J.P., D.L.
 LGroves, W. G.
 Guest, R.
 Guggenheim, A.
 Gumbrell, Mrs.
 Güterbock, Alfred
 Güterbock, Richard
 Guthrie, Mrs. S. F.

 Hacking, Nicholas H., J.P.
 Hahlo, Charles
 Hailwood, Councillor Anthony, J.P.
 Hailwood, R. Emmett
 AHalksworth, Miss M.
 AHall, Miss Hilda
 LHall, Mrs. J. Howard
 LHall, J. Howard
 Hall, Robert, J.P.
 Hallworth, Joseph
 Halsall, Frank, F.C.A., J.P.
 AHamilton, Mrs.
 AHamilton, Miss Joyce
 Hammond, G. S.
 Hamp, E. H.
 Hancock, J.
 AHandcock, H. C.
 Hanemann, A.
 cHanlon, Rt. Rev. Henry, Bishop of
 Teos, and Vicar Apostolic of the
 Upper Nile
 Hardcastle, G. L.
 AHarden, Miss C.
 Hardy, H. Waters
 LHargreaves, George
 AHarper, William

- Harrap, Thomas
 A Harris, Miss E. M.
 Harris, Mrs. Isabella M.
 Harrop, James
 L Hassall, Alderman Thomas, J.P.
 Hawkins, William
 Haworth, Alfred, J.P.
 Haworth, G. C., J.P.
 Heap, Alderman, W. T., J.P.
 H Hedin, Sir Sven, K.C.I.E., F.R.G.S.
 Heighway, Mrs.
 Heighway, George
 Helm, John
 cHerbertson, Professor A. J., M.A.,
 Ph.D.
 Herd, Harry
 Hertz, F. M.
 Hesketh, W. R.
 A Hewit, R. P., J.P.
 Heycock, A. H.
 L Heys, John, J.P.
 Heywood, Abel, J.P.
 Hiersemann, K. W., Leipzig
 Higginbottom, Walter
 Higham, J. Sharp, M.P.
 Hilditch, John, M.R.A.S., M.J.S.
 Hindle, James, L.R.A.M.
 Hinrichsen, S.
 Hockin, C. Owen
 Hodgson, Jas. T.
 Hodgson, William
 A Holden, Henry
 A Hollingworth, Edgar W.
 L Holt, Arthur
 Hopkinson, Sir A., Q.C.
 Hopkinson, Edward, D.Sc.
 Horsfall, T. C., J.P.
 Houghton, John
 Houldsworth, Sir W. H., Bart.
 Hoyle, E.
 cHoyle, W. E., M.A.
 Hudson, James H., M.A.
 Hughes, Joseph David
 Hulme, C. J.
 Hutton, D. W.
 L Hutton, J. Arthur
 Hyde, Thomas
 Illingworth, Charles
 Irving, R. J.
 Jackson, Fred J.
 Jameson, John W.
 H Jameson, Rt. Hon. Sir L. S., C.B.
 Janovski, R.
 Janus, H.
 Jefferson, Alfred Hy.
 Jenkins, Alderman T. H., J.P.
 Johnson, Mrs. A. T.
 Johnson, E., J.P.
 Johnson, James
 Johnson, Lionel M.
 L Johnson, Wm. Morton, F.R.G.S.
 c Johnston, Sir H. H., G.C.M.G.,
 K.C.B., F.R.G.S.
 Johnstone, Charles Andrew
 Johnstone, P. T.
 Jones, Frederick A.
 Jones, R. Lomas
 Jones, Wm., J.P., Eccles
 Jones, Wm., Didsbury
 Jordan, Bernard
 Kalisch, Max
 Kalisch, Moritz
 Kalisch, Richard, F.R.G.S.
 A Kay, Miss Katie
 A Kay, Miss L.
 c Keiffer, F., Moscow
 Keith-Roach, Edward
 A Kelley, H. F.
 Kelley, J. Macpherson
 H Keltie, J. Scott, LL.D., F.R.G.S.
 Kershaw, B.
 Kessler, Philip W.
 A Kewley, Miss Jane
 Keymer, Sidney L., F.R.G.S.
 A Kiesling, A. E.
 Kinch, W. S., C.C.
 Kirkpatrick, Henry, J.P.
 Knowles, Peter
 Knudsen, A., Consul for Denmark
 Kolp, Ernest
 Kukla, Charles
 Kullmann, Herbert C.
 c Labbé, Paul, Paris
 A Lancaster, James, J.P.
 Langdon, E. H.
 Larmuth, Dr.

- hLaurier, Rt. Hon. Sir W., G.C.M.G. Mandleberg, S. L., J.P.
 ALaw, Miss Annie E., L.L.A. AMarkham, Mrs. M.
 Lawson, R. G. cMarrs, F. W., M.A., Bombay
 ALea, Miss F. lMarsden, James, J.P.
 Lea, John Martin, Horace C., F.R.G.S.
 Leah, S. P. Martin, Thomas
 Lederer, Robert, I. and R. Austro- Marx, Charles
 Hungarian Consul Massey, Harold F.
 ALedward, H. Davenport Massey, L. F.
 Leech, Miss AMassey, Samuel
 cLeech, Wm. Booth lMather, Loris Emerson, F.R.G.S.
 Leemann, E. Mather, Rt. Hon. Sir William, J.P.
 Lees, Mrs. H. L., F.R.G.S., A.R.C.I. May, Wm.
 Lees, Walter AMaybury, J. H.
 Leigh, James AMaybury, W. H.
 *Leigh Literary Society Medlyn, Wm. John
 Leite, J. Pinto, Vice Consul for Melland, Councillor Will
 Portugal lMellor, E. W., J.P., F.R.G.S.
 Lemon, Miss Ada lMellor, Geoffrey Robert
 lLemos, Professor Angel Ma Diaz Middleton, T. C., J.P.
 Levinstein, Herbert Midwood, T. C.
 Levinstein, Ivan Miller, Fred.
 ALightowler, Mrs. E. Miller, Paul C.
 Little, David Ainsworth Miller, T.
 Littler, Henry Landon Millers, R. Townley
 Lomas, J. A. Milligan, Wm., M.D., C.M.
 Longden, A. W. Mills, Albert
 Lord, Charles hMoor, Rt. Hon. F. R., Natal
 ALowe, Miss M. E. Moore, A. E.
 Lowe, Wm. AMoore, Miss Isabel
 Lunn, Joseph Morehouse, James T.
 Morreau, M.
 Macara, Sir C. W., Bart., J.P. Morris, A. C.
 cMcDermott, Rev. P. A., C.S.Sp. Mort, Miss G. E.
 hMacdonald, Major-Gen. Sir J. R. l. Moxon, Thomas Bouchier
 R.E. Murton, T. P., London
 McDougall, Charles
 McDougall, Robert hNansen, Dr. F., G.C.V.O.
 McFarlane, H. H. Nanson, Miss W.
 McFarlane, John, M.A., M.Com., Nathan, Fred P.
 F.R.G.S. lNeil, Alexander
 M'Grath, W. A. Neild, F. E., F.C.A.
 hMacGregor, H. E. Sir Wm., M.D. Neild, Jesse
 K.C.M.G. ANewbigging, Thos., D.Sc., M.Inst.C.E.
 McPherson, Alexander Newton, Geo. D.
 Makin, E., junr. Nichol, Wm.
 *Manchester Corporation, Free Libra- Nichols, Geo. Wm.
 ries Committee Nicholson, Joseph
 Mandleberg, G. C., J.P. Nightingale, Thos. H.

- A Noar, H.
 Norbury, Thos.
 L Nuttall, Harry, M.P., F.R.G.S.
 Nuttall, Mrs. Harry
 C Oederlin, F.
 Ogden, A.
 Oldham, Edwin, J.P.
 Oldham, H. Yule, M.A., F.R.G.S.,
 Cambridge
 O'Leary, J. W.
 C O'Neill, H. E., F.R.G.S.
 Openshaw, Miss E. N.
 Oppenheim, F. S., M.A.
 Ormrod, Miss B.
 Osborn, John A.
 Ost, Emil

 Parkinson, J. B.
 Parkinson, T. W. F., M.Sc., F.G.S.
 Peace, Alfred
 A Pearson, Miss E.
 Pearson, J. A.
 H Peary, Rear-Admiral R. E.
 Peters, Miss S. Kate
 A Peters, Ralph
 Philips, Miss
 Phythian, J. Ernest
 Pickstone, E.
 Pidd, Arthur J.
 A Pidd, Leslie S.
 A Pidd, Mrs. Eli
 A Pidd, Miss Maggie
 Pigott, A. W.
 Pilcher, Colonel Jesse, V.D.
 Pilkington, Charles, J.P.
 L Pilkington, Edward, J.P.
 Pilkington, Lawrence, J.P.
 C Pingstone, G. A.
 Pingstone, H. C.
 Poole, James
 A Potts, Mrs.
 A Prescott, Mrs.
 A Prescott, Miss E. M.
 Prestwich, R. H.
 Proctor, Mrs.
 A Proctor, Miss
 Provis, Frank M.
 Prusmann, Robert Henry
 Putz, F. R.

 Qualtrough, Miss Kate
 Quine, Dr. R. H., L.R.C.P., etc.

 Raby, C. R.
 A Radcliffe, F.
 Ramsay, P. J., J.P.
 A Rawlinson, Miss Maud
 Reade, Charles E.
 Rée, Alfred, Ph.D.
 Reed, J. Howard, F.R.G.S.
 Reekie, W. M.
 Reid, James Stephenson
 L Reiss, Alec
 Reiss, Gustav
 Renold, Hans
 Renshaw, James
 A Renshaw, Miss L. W.
 Reynolds, Mrs. R. H.
 Rhodes, Edward
 Richmond, Wm., J.P.
 Rigby, Wm.
 Riley, R. J.
 H Roberts, Field Marshal the Right
 Hon. Earl, V.C., K.G., etc.
 Robertshaw, James
 Robertson, W. J.
 Robinow, W.
 Robinson, W. H.
 Robson, J. Walter, J.P.
 Rogerson, James
 Rothband, H. L.
 Rotherham of Broughton, the Right
 Hon. Lord
 Rothwell, Alderman W. T., J.P.
 Royse, Councillor Sir S. W., J.P.
 Rudolph, Henry B.
 Russell, A. C.
 Russell, C. E. B.
 Ruttenau, Wm.

 Saalfeld, A.
 Salford, the Rt. Rev. the Bishop of
 *Salford Corporation Free Libraries
 Committee
 Samson, Oscar
 Schlagintweit, T., Imperial German
 Consul
 Schofield, Edwin, J.P.
 Scholfield, Councillor A. Y.

- Schütt, Professor Dr. R., Hamburg
 Scott, C. Archibald
 Scott, C. P., J.P.
 Scott, J. E. P.
 Scott, John G.
 Scott, W.
 Segalla, Emil
 Sever, John
 Shackleton, Sir E. H., C.V.O., F.R.G.S.
 Shann, Alderman Sir T. T., J.P.
 Shaw, A. E.
 Shaw, Miss A. E.
 Shaw, Matthew
 Sheppard, E. F.
 Shipman, Mrs. W. M.
 Shorrocks, Henry
 Sidebotham, J. F.
 Sidebotham, John Jas.
 Siegler, H.
 Simmons, C. L.
 Simon, Alfred
 Simon, Louis
 Simon, Salis, Swedish Consul
 Simpson, Alfred, J.P.
 Simpson, C. J.
 Simpson, Miss F.
 Sivewright, Wm.
 Smith, Rev. Canon F. C., M.A., F.R.G.S.
 Smith, Miss E.
 Smith, James
 Smith, J.
 Smith, J. H. H., J.P.
 Smith, R. Heaton
 Smith, Mrs. R. Heaton
 Smith, Mrs. Samuel
 Smith, Sidney
 Smith, T. M.
 Somerset, Henry
 Southam, T. Frank, M.D., F.R.G.S.
 Southern, John E.
 Sowerbutts, Mrs. Eli
 Sowerbutts, Harry, A.R.C.Sc.
 Sowerbutts, T. W., F.S.A.A.
 Speakman, Walter
 Spencer, Miss M. R.
 Spencer, S.
 Spencer, Wm.
 Sprott, W. J., M.D., M.R.C.S.
 Staniforth, R. A.
 Steinthal, Egbert
 Stephens, Alderman Sir W., J.P.
 Sternberg, S.
 Stevenson, Frederick
 Stevenson, John
 Stevenson, Miss W.
 Stewart, Robert
 Stoker, R. B., F.R.G.S.
 Stonehewer, Walter
 Stordy, Mrs.
 Storey, Henry E.
 Stott, Miss
 Stott, Miss Gladys
 Stott, Miss G. A.
 Stowell, Hugh
 Stubbs, Wm. T.
 Susmann, Councillor E. F. M., J.P.
 Sussum, Geo. H.
 Sutton, Charles
 Swaine, Geo. Raymond
 Swallow, Miss Eunice
 Swallow, Rev. R., M.D.
 Swallow, R. W., B.Sc.
 Sykes, Arthur H., D.L., J.P.
 Symonds, The Rev. Canon
 Tatham, Mrs. N.
 Tatton, Lees W.
 Taylor, Albert
 Taylor, Miss A. I.
 Taylor, B. A.
 Taylor, C.
 Taylor, Frederick
 Taylor, John Tyson
 Taylor, Miss M.
 Taylor, Miss Ruth
 Taylor, Walter
 Taylor, William
 Tejeria, Antonio Maria, Spanish Consul
 Terry, Henry
 Thewlis, Councillor J. Herbert, J.P.
 Thomas, George, J.P.
 Thomson, A. E.
 Thomson, J.P., F.R.S.G.S., Brisbane
 Thomson, R.
 Thomson, Wm., F.R.S. (Ed.)

- Thorpe, Walter
 Tout, Prof. T. F., M.A.
 LTrafford, Sir Humphrey F. de, Bart.
 Take, Rev. R. M.
 LTulloch, Angus A. G.
 Turner, Mrs. S. A.
 ATydeman, B. R.
 ATyldesley Higher Education Committee
 Tyne, W. J.
 Vallance, A. C.
 Vaudrey, Alderman Sir W. H., J.P.
 Viehoff, Miss F.
 HWainwright, Joel, J.P.
 Wainwright, Thomas Foster, J.P.
 Walkden, Arthur
 Walker, George
 Walker, G. H.
 Walker, J. Alan
 Walker, John
 Walker, Sam
 AWallace, Miss M. W.
 LWallace, Reginald W.
 Wallwork, Herbert
 Walmsley, R.
 Walter, Miss L. Edna, B.Sc., H.M.I.
 Warburton, Miss L. M.
 HWard, Sir A. W., M.A., Litt.D.
 HWard, Rt. Hon. Sir J. G., K.C.M.G.,
 New Zealand
 LWard, Wm. H.
 Ward, Ziba Armitage
 AWardle, Miss
 cWardrop, Capt. A. Tucker, F.R.G.S.
 AWarren, Geo. H.
 AWarrington, Miss M.
 Waterhouse, Gilbert, F.R.G.S.
 AWatson, Col. Sir C. M., K.C.M.G.,
 R.E.
 AWebster, John
 Welldon, Rt. Rev. Bishop, Dean of
 Manchester
 Welsh, W.
 Welter, H. (Bibliothèque Nationale
 Section des Cartes, Paris.)
 Whalley, Joseph, F.R.G.S.
 Whitby, W. H.
 Whitehouse, E. C.
 Whitfield, A. R.
 LWhittaker, Mrs. A. H.
 AWhittaker, Miss F.
 Whitworth, Herbert
 Wihl, G.
 Wilde, Miss
 Wilde, J. J.
 Wilkinson, T. F.
 Wilkinson, Wm.
 Willcock, Thomas
 HWillcocks, Major-General Sir James,
 K.C.M.G., D.S.O.
 Williams, James
 Williams, S. W.
 Williamson, R. T., M.D., F.R.G.S.
 Williamson, William Henry
 Wilmore, Albert, D.Sc., F.G.S.
 AWinstanley, T. G.
 Wood, A. W.
 Wood, George Hervey
 LWood, George W. Rayner, J.P.
 Wood, Henry
 Woodhouse, J. H., F.R.I.B.A.
 Woodruff, Herbert
 Woods, W. D.
 Woolf, Miss M. A.
 Woolfenden, Miss Alice H.
 Woolfenden, Joseph
 Woolfenden, R. S. H.
 Woolley, George Stephen
 LWoolley, Hermann, F.R.G.S.
 Worthington, S. Barton
 LWrathmell, T.
 Wright, Reginald
 Young, Harold
 Young, Leonard
 Young, Robert

Rules.

I. OBJECT AND WORK.

The object of the Manchester Geographical Society is to promote the study of all branches of Geographical Science, especially in its relations to commerce and civilisation.

The work of the Society shall be :—

1. To further in every way the pursuit of the science ; as, by the study of official and scientific documents, by communications with learned, industrial and commercial societies, by correspondence with consuls, men of science, explorers, missionaries, and travellers, and by the encouragement of the teaching of geography in schools and colleges.

2. To hold meetings at which papers shall be read, or lectures delivered by members or others.

3. To examine the possibility of opening new markets to commerce and to collect information as to the number, character, needs, natural products and resources of such populations as have not yet been brought into relation with British commerce and industry.

4. To promote and encourage, in such way as may be found expedient, either alone or in conjunction with other Societies, the exploration of the less known regions of the earth.

5. To inquire into all questions relating to British and Foreign colonisation and emigration.

6. To publish a Journal of the proceedings of the Society, with a summary of geographical information.

7. To form a collection of maps, charts, geographical works of reference, and specimens of raw materials and commercial products.

8. The Society shall not enter into any financial transactions beyond those necessarily attached to its declared object, and shall not make any dividend, gift, division, or bonus in money unto or between any of its members.

II. ORGANISATION.

9. The Society shall consist of ordinary, associate, corresponding, and honorary members.

10. A Council shall be chosen annually from the ordinary members to conduct the affairs of the Society. It shall consist of a President, four or more Vice-Presidents, a Treasurer, two or more Honorary Secretaries (including a Secretary for Foreign Correspondence), and twenty-one Councillors.

11. There shall be three Trustees elected by the Society, who shall hold office until death, disability, insolvency or resignation. They shall be members of the Council by virtue of their office.

12. Any vacancy occurring in the Council during the current year may be filled up by the Council.

III. ELECTION OF MEMBERS.

13. Every candidate for admission into the Society as an ordinary or an associate member must be proposed by a member. The proposal shall be read out at the next Ordinary Meeting of the members, and any objection shall be forwarded in writing to the Secretary within seven days.

14. The election of members is entrusted to the Council. The names of those elected shall be announced from the chair at the next Ordinary Meeting after the election.

15. The Secretary shall within three days forward to every newly-elected member notice of his election, a copy of the Rules of the Society, and a card announcing the days on which the Ordinary Meetings will be held during the session. But the election of an ordinary or associate member shall not be complete, nor shall he be permitted to enjoy the privileges of a member, until he shall have paid his first year's subscription. Unless such a payment be made within three calendar months from the date of election the election shall be void.

16. The Council shall have power to elect honorary and corresponding members.

17. Women shall be eligible as members and officers of the Society.

IV. PAYMENTS.

18. An ordinary member shall pay an annual subscription of £1. 1s., or he may compound by one payment of £10. 10s. An associate member shall pay an annual subscription of 10s. 6d. The Society's year shall begin on the first day of January.

19. Members shall not be entitled to vote or to enjoy any other privilege of the Society so long as their payment shall continue in arrear, but associate members shall not vote nor shall they take any part in the government of the Society.

20. The first annual payment of a member elected in November or December shall cover his subscription to the 31st of December in the year following.

21. On the first day of January in each year there shall be put up in the rooms of the Society a complete list of the members with the amount of their subscription due, and as the amounts are paid the fact shall be marked on the list.

22. Notice shall be sent to every member whose subscription shall not have been paid by the first of February, and if the arrears are not discharged by the first of July the Council may remove the member from the list of members. Any member, whose subscription is in arrear for two years shall not be entitled to receive the Journal of the Society.

V. MEETINGS.

23. The meetings of the Society shall be of three kinds—Ordinary, Annual, and Special.

24. In all meetings a majority of those present shall decide on all questions, the President or Chairman having a casting vote in addition to his own.

Ordinary Meetings.

25. The Ordinary Meetings of the Society shall be held once a month, from the month of October to the month of May, or oftener, if judged expedient by the Council.

26. All members whose subscriptions are not in arrear shall have a right to be present. All ordinary members shall have the privilege of introducing one visitor.

27. The order of the proceedings shall be as follows :—

- (a) The minutes of the last meeting to be read and if correctly recorded they shall be signed by the Chairman.
- (b) Presents, whether of money, books, maps, charts, instruments or specimens, made to the Society to be announced.
- (c) The election of new members to be declared and the names of candidates to be read.
- (d) Papers and communications to be read and discussed.

28. At these meetings nothing relating to the rules or management shall be brought forward, but the minute book of the Council shall be on the table at each meeting for the inspection of any member, and extracts therefrom may, with the consent of the chairman, be read to the meeting on the requisition of any member.

29. On occasions of exceptional interest the Council may make provision for a larger admission of visitors.

Annual Meetings.

30. The Annual Meeting of the members shall be held at such time and place as the Council may determine.

31. Fourteen days' Notice of such meeting shall be sent to every member within the United Kingdom who has given his address to the Secretary, and notice of the meeting shall be advertised in such newspapers as the Council may direct.

32. The object of this meeting shall be to receive the Annual Report of the Council and the Treasurer's Balance Sheet, to hear the President's address, to elect the Council and officers for the ensuing year, and to transact any other business.

33. Any two ordinary members may nominate candidates for the Council or for office not later than one week prior to the day of election, and the names of candidates so nominated shall be at once put up in the rooms of the Society. The election of the Council and officers shall be by ballot.

Special General Meetings.

34. The Council may call a Special General Meeting of the Society whenever they shall consider it necessary, and they shall do so if required by 20 ordinary members.

35. A week's notice of the time and object of every Special Meeting shall be sent to all members. No other business shall be entertained than that of which notice has been thus given.

36. Twenty ordinary members shall form a quorum.

VI. COUNCIL AND OFFICERS.

The Council.

37. The government of the Society shall be entrusted to the Council, subject to the rules of the Society.

38. The Council shall annually elect a Chairman and Vice-Chairman.

39. The President or the Chairman, or any three members of the Council, may at any time call a meeting thereof, to which every member of the Council shall be summoned.

40. Seven shall form a quorum.

41. In order to secure the most efficient study and treatment of the various subjects which constitute the chief work of the Society, the Council may appoint Committees for special purposes. These Committees, with the approbation of the Council, may associate with themselves any persons—whether members of the Society or not—from whom they may desire to obtain special assistance or information. The Committees shall report to the Council the results of their proceedings.

42. The President, Chairman, Vice-Chairman of the Council, and the Honorary Secretaries, shall, by virtue of their offices, be members of all Committees appointed by the Council.

President and Vice-Presidents.

43. The President, is, by virtue of his office, the chairman of all the

meetings of the Society. In the absence of the President, one of the Vice Presidents may preside.

Chairman of the Council .

44. It is the duty of the Chairman of the Council to see that the rules are properly observed, to call for reports and accounts from Committees and Officers, and to summon, when necessary, special meetings of the Council and of Committees.

Treasurer.

45. The Treasurer has the charge of all accounts ; he shall pay all accounts due by the Society after they have been examined and approved by the Council.

46. He shall see that all moneys due to the Society are collected, and shall have power, with the approval of the Council, to appoint a Collector. All moneys received shall be immediately paid to the bankers of the Society.

47. The bank passbook and the book of accounts shall be laid upon the table at every ordinary meeting of the Council.

48. The accounts shall be audited annually by two members, who shall be elected at an ordinary meeting at least one month before the Annual Meeting.

Secretaries.

49. The duty of the Honorary Secretaries shall be :—

- (a) To conduct the correspondence of the Society and of the Council.
- (b) To attend the meetings of the members and of the Council, and minute their proceedings.
- (c) At the ordinary meetings, to announce gifts presented to the Society since their last meeting ; to read the names of all new members and of candidates for admission, and the papers communicated to the Society, which have been directed by the Council to be read.
- (d) To have immediate superintendence of all persons employed, to make arrangements for the meetings of the Society, and to take charge of all maps, books, furniture and other effects.

50. It shall be the more especial duty of one of the Honorary Secretaries to conduct, as may be directed by the Council, correspondence with Foreign Societies, and with persons resident abroad.

51. In addition to the Honorary Secretaries, there shall be a paid Secretary appointed by the Council, whose duties shall be to assist the Honorary Secretaries, to issue the notices of the Council and of the Society, and to act under the instructions of the Council.

The foregoing Rules, as now amended, were approved and adopted at a meeting of the members of the Society, of which due notice had been given to the members, held in the Town Hall, Manchester, Wednesday, October 3rd, 1894.

(Signed) GEORGE, President.

S. ALFRED STEINTHAL, Chairman.

F. ZIMMERN, Honorary Secretary.

JAS. D. WILDE, M.A., Honorary Secretary.

ELI SOWERBUTTS, Secretary.

[Copy.]

It is hereby certified that this Society is entitled to the benefit of the Act 6 and 7 Vict., Cap. 36, intituled "An Act to exempt from County, Borough, Parochial, and other Local Rates, Lands and Buildings, occupied by Scientific or Literary Societies."

Seal of Registry of
Friendly Societies.

This 15th day of January, 1895.

E. W. B.



E. W. M. I.

Chhatris at Udaipur.

THE
JOURNAL
OF THE
MANCHESTER GEOGRAPHICAL
SOCIETY



VOL. XXX.

PUBLISHED FOR THE
MANCHESTER GEOGRAPHICAL SOCIETY
BY
SHERRATT & HUGHES
LONDON AND MANCHESTER
1914

THE
COUNCIL AND OFFICERS
OF THE
MANCHESTER GEOGRAPHICAL SOCIETY
FOR 1914.

Patron.

HIS MAJESTY THE KING.

President.

MR. HARRY NUTTALL, M.P., F.R.G.S.

Vice-Presidents.

<p>The Right Hon. the EARL OF DERBY, G.C.V.O.</p> <p>The Right Hon. EARL EGERTON OF TATTON.</p> <p>The Right Hon. LORD ROTHERHAM OF BROUGHTON.</p> <p>The Right Rev. the BISHOP OF SALFORD.</p> <p>The Right Rev. BISHOP WELLDON, D.D., Dean of Manchester.</p> <p>The Right Hon. the LORD MAYOR OF MANCHESTER.</p> <p>His Worship the MAYOR OF SALFORD.</p> <p>The Right Hon. Sir WILLIAM MATHER.</p> <p>The Rt. Hon. J. F. CHEETHAM.</p> <p>Sir W. H. HOULDSWORTH, Bart.</p> <p>Sir C. W. MACARA, Bart.</p> <p>Sir HUMPHREY F. DE TRAFFORD, Bart.</p> <p>Sir FRANK FORBES ADAM, C.I.E.</p> <p>Alderman Sir J. DUCKWORTH, J.P., F.R.G.S.</p>	<p>Colonel H. T. CROOK, J.P., V.D.</p> <p>Professor W. BOYD DAWKINS, J.P., F.R.S.</p> <p>Major P. K. GLAZEBROOK, M.P.</p> <p>Colonel E. W. GREG, J.P., C.C., F.R.G.S.</p> <p>Mr. J. G. GROVES, D.L., J.P.</p> <p>Mr. J. S. HIGHAM, M.P.</p> <p>Mr. JOHN McFARLANE, M.A., M.Com., F.R.G.S.</p> <p>Mr. E. W. MELLOR, J.P., F.R.G.S., <i>Vice-Chairman of the Council.</i></p> <p>Mr. J. HOWARD REED, F.R.G.S.</p> <p>Mr. C. P. SCOTT, J.P.</p> <p>Mr. GEORGE THOMAS, J.P.</p> <p>Mr. HERMANN WOOLLEY, F.R.G.S.</p> <p>Mr. F. ZIMMERN, F.R.G.S., <i>Chairman of the Council.</i></p>
---	---

Trustees.

MR. H. NUTTALL, M.P., F.R.G.S. MR. SIDNEY L. KEYMER, F.R.G.S.
MR. E. W. MELLOR, J.P., F.R.G.S.

Honorary Treasurer.

MR. DAVID A. LITTLE.

Honorary Secretary.

MR. EGBERT STEINTHAL.

Honorary Secretary (Victorians).

MR. C. A. CLARKE.

Council.

<p>Mr. W. S. ASCOLI, F.R.G.S.</p> <p>Mr. J. E. BALMER, F.R.G.S.</p> <p>Miss S. A. BURSTALL, M.A.</p> <p>Mr. C. A. CLARKE.</p> <p>Mr. C. COLLMANN.</p> <p>Mr. GEORGE GINGER.</p> <p>Mr. J. HOWARD HALL.</p> <p>Mr. Alderman T. HASSALL, J.P.</p> <p>Mr. RICHARD KALISCH, F.R.G.S.</p> <p>Mr. H. C. MARTIN, F.R.G.S.</p> <p>Mr. L. EMERSON MATHER, F.R.G.S.</p>	<p>Mr. T. C. MIDDLETON, J.P.</p> <p>Mr. F. S. OPPENHEIM, M.A.</p> <p>Mr. J. A. OSBORN.</p> <p>Mr. T. W. F. PARKINSON, M.Sc., F.G.S.</p> <p>Mr. ALFRED REE, Ph.D.</p> <p>Mr. WM. ROBINOW.</p> <p>Mr. J. WALTER ROBSON, J.P.</p> <p>Mr. J. STEPHENSON REID.</p> <p>Mr. T. W. SOWERBUTTS, F.S.A.A.</p> <p>Miss L. EDNA WALTER, B.Sc., H.M.I.</p>
---	---

Honorary Auditor.

MR. THEODORE GREGORY, J.P., F.C.A.

Secretary.

HARRY SOWERBUTTS, Assoc.R.C.Sc.

MAPS AND ILLUSTRATIONS

	PAGE
ASIA—	
China, Bamboo Suspension Bridge at Kuanhsien	12
China, Lamasery at Tsakulao	16
China, Tachienlu from the South	20
China, The River Yalung	12
China, The State of Kanpo	24
China, View to the South from Tachienlu	20
China, Water-driven Prayer Wheel at Tachienlu	24
China, Young Prince of Wassu and his Chinese Tutor	16
India, Ajmir, the Arhai-din-ka-jhompra	122
India, Dilwarra, Interior of Dome, Temple of Vimala Sah	120
India, Dilwarra, Interior of Temple of Tejapala and Vastupala	120
India, Kathiawar, Apes and Pilgrims before a Jain Temple on the Girnar Mountain	122
India, Udaipur, Chhatris	<i>Frontispiece</i>
India, Udaipur, Entrance to Juggernath Temple	110
India, Udaipur, Steps to Juggernath Temple	110
EUROPE—	
Belgium, Bruges	140
Belgium, Simplified Regional Geological Map.....	126
Holland, Sluis	140
Map, 14 A.D.	132
Map, 814 A.D.	132
Map, 1204 A.D.	136
Map, 1648 A.D.	136
OCEANIA—	
New Zealand, Bush	42
New Zealand, Canoe Hurdle Race, Ngaruawahia	36
New Zealand, Clinton Canyon and McKinnon's Pass	42
New Zealand, Cooking Pond, Whakarewarewa	28
New Zealand, Kiwi	38
New Zealand, Lake Te Anau, South Island	36
New Zealand, Milford Sound, South Island	38
New Zealand, Tattooed Head of Maori Chief	28
New Zealand, The White Terraces, Rotomahana.....	32
New Zealand, Waimangu Geyser and Frying Pan Flat	32

* * THE WRITERS OF THE PAPERS ARE ALONE RESPONSIBLE FOR THEIR
OPINIONS. ALL RIGHTS RESERVED.

CONTENTS.

A			
Abu Mount, and its temples	117	Belgium and Feudalism	134
Accessions, list of	164	Belgium and the Romans	132
Accounts, 1913	92	Belgium as a Buffer State	129
Achilgar Group of Temples	118	Belgium, geology	125
Address by President—Geographical Progress	94	Belgium, history of	130
Africa, South, and Geography	145	Belgium, industrial prosperity	127
Africa, South, Development	149	Belgium in the time of Cæsar	132
Agricultural Geography	149	Belgium, invasion by the Germans	131
Ainscough, Thos. M., M.Com., F.R.G.S.—The Marches of Chinese Tibet	1, 102	Belgium, revolution of 1830	142
Ajmir City	112	Belgium: the Battleground of Europe—Dr. A. Wilmore, F.G.S.	125
Ajmir-Merwara	112	Belgium, the land of Art—Arnold Williams	130
Albert Hall, Jaipur	114	Belgium under the Habsburgs	139
Alligator Tank, Jaipur	115	Belgium under the House of Burgundy	137
Amber, the Ancient Capital of Jaipur	115	Belloc, Hilaire—The Strategy of the War in the West	160
Anniversary, 30th	157	Bonpa, or black sect of Lamaism	12
Annual Meeting, 1914	88	Books added to the Library	167
Anthropology and Geography	149	British Corresponding Societies	173
Ararat, Mount, from the South	55	Bruges, commercial prosperity of	136
Aravalli Range of Mountains	107	Burgundy, House of, and Belgium	137
Architecture, Indian	110	C	
Ardenne, The	125	Cæsar and Belgium	132
Armenia, population	52	Caravanserais of Shah Abbas	64
Armenia, Turkish	45	Carboniferous Basin, Belgium	127
Arthur River, South Island	43	Cartography, future of	151
Asia, Chinese Tibet, the Marches of	1	Caste system of India	106
Asia, Geographical Conditions	45	Cenotaph, or Chhatri, of the Rajputs	111
Asia, India, Rajputana	105	Chaldeans and the inscriptions	70
Asia Minor North Coast	47	Chambal River	107
Asia, Persian Khurdistan	45	Changlam, or Great North Road of Tibet	8
Asia, Turkish Armenia	45	Charlemagne and Belgium	133
Atlases added to the Library	166	Chiamdo Valley, Tibet	3
B			
Babylonians or Chaldeans and their inscriptions	70	Chiarung States, Chinese Tibet	10
Bailey, Captain: discovery of the Brahmaputra-Tsangpo junction	9	Chinese Expedition to Tibet in 1792	5
Balance Sheet, 1913	93	Chinese Tibet, the Marches of	1
Battleground of Europe in Central Belgium	128	Cities of Belgium, Rise of	134
Bayazid	56	Cold Lakes district, South Island	36
Belgian Cities, origin of	134	Colonial Corresponding Societies	175
Belgian independence, 1830	142	Coracles of Skin, construction of	17
Belgian Refugees' Fund, Collection for	158	Corresponding Societies, List of	173
Belgium and Charlemagne	133	Cotelingham, E. G. P.—British Burma	101
		Council, Report of	89
		Crook, Colonel H. T., V.D., J.P.— Recent Changes in our National Maps	100

	PAGE		PAGE
D			
Damme	136	Green, T. E., F.R.G.S.—In the Zuider Zee	100
Darchendo, or Tachienlu.....	20	Gregory, T., J.P., F.C.A., election as Hon. Auditor	98
Deaths of members announced 100, 101, 102, 157, 158, 159, 160	160	Gurkhas, defeat by Chinese, 1792...	6
Deaths of members in 1913	91	H	
Derge Valley, Tibet	3	Habsburgs and Belgium	139
Development of South Africa	149	Hancock, John—Holiday in the Indian Empire	104
Dilwarra Temples on Mount Abu	119	“ <i>Hannibal Once More</i> ”	155
E		History and Geography	149
Earthquakes, Recent Great.....	102	History of Belgium	130
Egypt, Inscription of Ancient.....	68	History of Geography as a Science	145
Ekkas, at Jaipur	113	History of Mankind.....	71
Election of Members...99, 101, 102, 103, 157, 158, 159, 160,	163	History of New Zealand.....	27
“ <i>Elementary Studies in Geography and History</i> ”	154	Hot Lakes District, New Zealand...	29
Environment as affecting Man	150	Hutcheon, J., M.A.—Geography, with special reference to South Africa	145
Eruption of Mount Tarawera	31	Hydrographical Surveys	151
Erzerum, fortress and town	50	I	
Euphrates and its source	50	Independence of Belgium	142
Europe, Belgium, the land of Art... 130		Indian Architecture	110
Europe, Belgium the Battleground of	125	Indian Population	105
Exchanges, list of	173	India, Rajputana	105
Exchanges suspended	173	“ <i>Industrial and Commercial Geo- graphy</i> ”	155
F		Industrial Prosperity of Belgium... 127	
Financial position of the Society... 91		Invasion of Belgium by the Germans	131
Flanders and its municipalities ... 135		Iron Works of Liège	127
Flanders and Van Artevelde	136	Irrigation of Chengtu Plain	15
Flemish Cities in the Middle Ages 135		J	
Foreign Corresponding Societies ... 176		Jagniwas Palace, Udaipur	108
Future of Geography	151	Jain Temples on Mount Abu	119
G		Jain Temples on the Girnar Mountain	121
Garrison, W. H. F.R.G.S.— Newfoundland	99	Jaipur, State and City	113
Gelupa, or yellow-capped sect of, Lamaism	12	Jaipur State Prison, work done at	114
Genesis of Geography	68	Jantra, or Ancient Astronomical Observatory of Jaipur	115
Geographical Conditions of Persia 62		Jodhpur Fort	107
Geographical Progress—Address by President	94	Jodhpur, State and City	107
Geography and Anthropology	149	Jogi, or Hindu devotee	119
Geography and Geology	148	Joseland, H. L., M.A.—Southern Sweden.....	104
Geography and History	149	Journey through Turkish Armenia and Persian Khurdistan—M. P. Price	45
Geography at the Universities	146	Juggernath Temple, Udaipur	110
Geography, future of	151	Junagadh City, Kathiawar	121
Geography, its field, its fascination and its future.—J. Hutcheon, M.A.	145	Junglam, or official highway, from Lhasa to China	3
Geography of Asia	45	K	
Geography, the Genesis of	68	Kathiawar, Girnar Mountain	121
Geography, with special reference to South Africa.....	145	Khoi, Oasis and Town of	61
Geology and Geography	148	Khurdistan, Persian	45
Geology of Belgium	125	Kiwi, or Wingless Bird	39
German treatment of Belgium	131		
Ghent	136		
Ginger, George—Sunny Sicily	160		
Girnar Mountain in Kathiawar..... 121			

CONTENTS

vii

	PAGE	N	PAGE
Kizil Bashis, nomad tribe in Armenia	53	New Zealand, Cold Lakes District	36
Kuanhsien Irrigation Works	15	New Zealand, History	27
L			
Lamaism in Tibet	12	New Zealand, Hot Lakes District	29
Lamas and Trapas in Tibet	24	New Zealand, Local Option	35
Lamaseries and their power in Tibet	24	New Zealand, Maoris in	27
Lantern Views added to the Library	166	New Zealand, Personal Experiences	27
Lees, Mrs. H. L., F.R.G.S.—Journey round the World	158	Nomad Khurds in Persia.....	58
Lehmann-Haupt, Prof. C. F.—Armenia	101	Norgate, Rev. T. T., F.R.G.S.—The Theatre of the War	157
Leopold, I, King of Belgium	143	Nuttall, Harry, M.P., F.R.G.S.—Geographical Progress in 1913	94
Leopold II, King of Belgium	143	Nyingpa, or Red Lamas	12
Library additions	164	O	
Liège and its iron works	127	Oceania, New Zealand, Personal Experiences	27
List of Accessions, 1914	164	Ourthe Valley, Belgium	125
List of Members	181	P	
Little, D.A., remarks on the Financial Position	88	Palace of the Maharana of Udaipur	108
Local Option in New Zealand	35	Pass from Lake Te Anau to Milford Sound	41
Lowland of Flanders	129	Persia, Geographical Conditions... ..	62
Luni River	107	Persian Khurdistan	45
M			
McKinnon's Pass to Milford Sound	41	Persian Village in Azerbaijan, Typical	63
Mahabat Circle, Junagadh	122	Personal Experiences among Maoris and Mountains in New Zealand—Mrs. E. Melland	27
Maharajah of Jaipur	114	"Physical Geography"	153
Maharajah of Jodhpur	108	Pichola Lake, Udaipur.....	108
Maharana of Udaipur	109	Pigs, Wild, in Udaipur	111
Mahasati, or Royal Palace of Cremation	111	Place-names in Geography	150
Maku, the Khan of	59	Polyandry in Tibet	8
Mankind, History of	71	Polygamy in Tibet	8
Mantzu Women, Life of	14	Population of Armenia	52
Maori Regatta	33	Population of Marches of Chinese Tibet	7
Maoris in New Zealand	27	Poyul Valley, Tibet.....	3
Maoris, Tattooing	28	President's Address	94
Maps added to the Library	164	Price, M. Philips, F.R.G.S.—Turkish Armenia and Persian Khurdistan	45
Mayo College, Ajmir	112	Proceedings of the Society.....	99, 157
Meeting, Annual, 1914	88	Productions of Chinese Tibet	3
Meetings, Reports of, See Proceedings.		Q	
Melland, Mrs. E.—Personal Experiences among Maoris and Mountains in New Zealand... ..	27, 101	Qualtrough, Miss Kate, F.R.G.S.—The Genesis of Geography... ..	68, 157
Mellor, E. W., J.P., F.R.G.S.—In the Home of the Rajput... ..	100, 105	R	
Members, Deaths of, in 1913.....	91	Race by Maoris	33
Members, New, Elected, see Election of Members.		Rajah's Palace at Amber, Jaipur ..	115
Members of the Society, List of... ..	181	Rajputs, the Home of the	105
Mesozoic Terrains, Belgium	128	Reed, J. Howard, F.R.G.S.; Remarks at Annual Meeting	98
Meuse Valley, Belgium.....	127	Reed, J. Howard, F.R.G.S.; Resignation of Honorary Secretaryship	94
Milford Sound to Lake Te Anau... ..	41	Relation of Geography to other Sciences	147
Min River in dry and wet weather ..	16	Relief Funds, Lectures in Aid of... ..	158
Missionary Corresponding Societies ..	174	Religion of Chinese Tibet	7
Monkeys on the Girnar Mountain... ..	124		
Mount Abu Hill Station	117		
Museum, additions to	166		

PAGE	PAGE
Report of the Council for 1913	89
Revenue Account	92
Reviews	144, 153
Revolution of 1830 in Belgium	142
Romans in Belgium	132
Rope Bridges in Chinese Tibet	16
Rotomahana Lake, and Mount Tarawera Eruption	31
Rules of the Society	189
Russian Political Expansion	45
S	
Sambre-Meuse Trough	127
Sambur, Udaipur	111
Scope of Geography	146
Shrubsole, W. H., F.G.S.—The Yellowstone Park	159
Skin Coracles on the Tung and Min Rivers	17
Societies, Corresponding	173
Society, Financial Position of	91
Society, List of Members of the ...	181
Society, Meetings of, see Proceed- ings.	
Society, Rules of the	189
So, King, of Wassu	18
South Africa and Geography	145
Steveni, W. Barnes—River Volga and its Towns	99
Strategy of the War—Hilaire Belloc	161
Sultanieh and its Ruined Mosque Surajpol, Udaipur	64
Sutton, Charles—Manchester to the Highlands of Scotland by Road	110
Sutton, Charles—The Rhine and the Black Forest	163
Sutton, Charles—The Rhine and the Black Forest	159
Swaine, G. R.—Influences of Geo- graphical Environment	104
T	
Tabriz	61
Tachienlu, Capital of Chala	20
Tattooing of Maoris	28
Te Anau Lake, New Zealand	36
Tea Trade of Tachienlu	21
Teheran	66
Tejapala and Vastupala Temple ...	120
Temples, Jain, on Mount Abu	119
Temples, Jain, on the Girnar Mountain	122
Temples on Mount Abu	117
The Genesis of Geography—Miss Kate Qualtrough, F.R.G.S. ...	68
The Home of the Rajputs—E. W. Mellor, J.P., F.R.G.S.	105
The Marches of Chinese Tibet— Thos. M. Ainscough, M.Com., F.R.G.S.	1
"The Surface of the Earth"	144
"The Teaching of Geography"	156
Thomas, George—Gift of Shares ...	89
Tibet, Boundaries of	2
Tibet, Chinese Expedition to, in 1792	5
Tibet, Productions of	3
Tibet, the Marches of Chinese	1
Tillemont-Thomason, F.E., C.E.— Recent Great Earthquakes.....	102
Trade between Western China and Tibet	4
Trade of Tachienlu	21
Trebizond and its Trade	47
Tung Ling Shan, capital of Wassu	14, 18
Turco-Persian Frontier	55
Turkish Armenia	45
U	
Udaipur, State and City	108
Ula, or transport service in Tibet	4
Uparkot, an Ancient Fort at Junagadh	121
Universities and Geography	146
V	
Van Artevelde in Flanders	136
Variscan-Armoric System, Bel- gium	125
Varzahan and its Ruins	50
Verviers, Woollen Mills of	127
Village, Typical Persian	63
Vimala Sah Temple	120
W	
Waimangu Geyser and its Short Life	32
Wainwright, Joel, J.P., Remarks at Annual Meeting	98
Ward, Wm. H.—To and Over the Simplon	163
War in the West, Strategy of ...	161
Wassu State and People	18
Waterhouse, Gilbert, M.A., F.R.G.S. —Tramps in Tyrol	159
Welldon, Rt. Rev. Bishop, Remarks at Annual Meeting	97
Wells, Samuel, F.R.G.S.—Poland ...	160
Williams, Arnold, A.C.A.—Belgium, the Land of Art	130, 163
Wilmore, Dr. A., F.G.S.—Belgium	125, 158
Wilmore, Dr. A., F.G.S.—Rhine and the Rhineland	103
Wingless Birds of New Zealand ...	39
Work of the Geographer	145
Women of Chinese Tibet	14
Woollen Mills of Verviers	127
Y	
Yezides, Nomads found in Armenia	53
Ypres	136
Z	
Zayul Valley, Tibet	3
Zimmern, F., F.R.G.S., Remarks at Annual Meeting	97

The Journal

OF THE

Manchester Geographical Society.

* * *

THE MARCHES OF CHINESE TIBET.

By THOS. M. AINSCOUGH, M.Com., F.R.G.S.

(Addressed to the Society in the Geographical Hall, on
Tuesday, February 24th, 1914.)

THE study of frontiers and borderlands forms one of the most attractive and enlightening subjects in the whole field of geographical research. Lord Curzon in his celebrated Romanes lecture at Oxford said: "Frontiers are the razor's edge on which hang suspended the modern issues of peace or war, of life or death to nations." I propose to-night to deal with one of the most complex and involved frontier questions in the whole of Asia—with a land interesting, not only on account of its wonderful physical configuration, but mainly on account of the manners and customs of its many and varied tribes, and the vital political issues which are being fought out at the present moment on its bleak, treeless plateaux.

A good deal of misconception prevails with regard to Tibet. Tibet may be said to be little more than a geographical expression. With the exception of the rich and fertile valley of the Tsangpo, and the regions in the immediate vicinity of Lhasa, which form Tibet proper, the country may be described as a vast agglomeration of semi-independent and nomadic tribes, united only in acknowledging the spiritual supremacy of the Dalai Lama at Lhasa, and recognising in a general way the vague and shadowy suzerainty of China.

It is practically impossible to define the political boundary between Tibet and China on the east. The whole question is being threshed out at a conference which has been sitting at Simla during the last few months between the Longchen Shatra, or Prime Minister of Tibet, and an Envoy of the

Vol. XXX. Parts I. and II., 1914.

Chinese Government, the negotiations being held under the auspices of the government of India. The Chinese claim absolute sovereignty as far as Chiamdo and the line of the Mékong. The true frontier of Tibet, however, lies some 500 miles to the eastward, and extends almost due north and south from Sungpau along the banks of the Min to Kuanhsien, and then through Yachow and the Chien Ch'ang valley to the Yangtse. Along this line the rounded hills of the red basin of Szechuen province are left behind, and the traveller sees before him a mighty buttress of snow peaks, which seem to keep watch and ward over the plateaux beyond.

To the west of this boundary the inhabitants of the bleak inhospitable uplands are tribes of Tibetan origin steeped in Lamaism and in that esoteric Bon cult which is the survival of the ancient nature worship of Tibet, the Chinese being confined to the high roads and a few trading centres and military depots such as Tachienlu, Mengkung and Li Fan Ting.

It is this vast stretch of country extending from the true frontier of Tibet at Tachienlu westwards for some 500 miles to the upper reaches of the Mékong at Chiamdo, which is known as the Marches of Chinese Tibet, the Marches of the Mantze, or more frequently as the tribes country. (See Fig. 1.)

In the east the country consists of wind-swept treeless plateaux from 12,000 to 14,000 feet above sea level, surrounded by high ranges with an elevation of from 17,000 to 20,000 feet, but as one proceeds westwards one encounters a series of stupendous mountain ranges, separated by narrow valleys, well forested in the lower parts with all the higher peaks extending above the snowline, while on the confines of Tibet proper we find one of the most remarkable features in Asiatic orography.

To the east of where the Brahmaputra, after pursuing its placid eastward course through the heart of Tibet, plunges southward through the mountain barrier in a series of rapids before it reaches the plains of Assam at Sadiya—to the eastward of this bend we find a containing mountain chain, distinct and apart from the Himalayan system, rounding off the heads of shelving valleys which slope westwards to the Brahmaputra, and dominating a series of enormous parallel mountain folds, which enclose between their successive crests

the deep troughs of some of the greatest rivers in Asia. So close set are the successive ridges and ranges which part the Salwin from the Mékong and the Mékong from the Yangtse, that, at a point level with the head of the Assam valley, one hundred miles would bridge them all and would also include the Nmai Kha—the source of the Irawadi. It is this region of eastern Tibet which contains the greatest present wealth and the greatest promise for the future. Travellers leaving the cold altitudes of the Chang Tang behind them and descending gradually through the long narrow valleys to the Chinese frontier, are never weary of recounting the delightful change of climate and scenery which they encounter. There are magnificent forest-covered slopes beneath the snow-clad crests of the main ridges; there are numbers of well-watered, well-cultivated and well-populated valleys hidden away amongst the folds of the main chains. The larger and better known valleys such as Derge on the Dre Chu or Upper Yangtse or Chiamdo on the Nam Chu or Upper Mékong, are populous, prosperous and priest-ridden, while the lesser known valleys such as Poyul and Zayul are great centres of Tibetan art and industry. The whole region is full of unexploited mineral wealth. Gold is washed in the bed of the Upper Yangtse, while silver, mercury, iron, copper and lead are found throughout the region. There is one great drawback, however, to the development of this country, and that is the lack of good communications. The piling up of a succession of mountain chains and river valleys bearing north and south entails for all routes running east and west the constant crossing of one divide after another. The road through the Marches is only once—and that in the valley of the Yalung—below 12,500 feet, while twelve passes, not one of which is under 14,500 feet, must be crossed. Despite these great physical obstacles the country is traversed by one of the most celebrated roads in all Asia, and certainly the most elevated trade route in the world. This is the great "Junglam," or official highway, from Lhasa to China. It is the most important of all the routes connecting Lhasa with the outside world, and is that by which Tibet has been conquered by China on successive occasions. It must be remembered that while the gates of Tibet have always been jealously guarded against European advance from the west and south, and the wild, bleak steppes of the Chang Tang have effectually hindered trade development from the north,

there has always been a steady intercourse carried on with the western provinces of China, and practically the whole of this trade flows through the marches to the frontier town of Tachienlu. The distance between Tachienlu and Lhasa is roughly 1,000 miles, and the journey occupies two months. Leaving Tachienlu the road strikes westward over the Jédo Pass and across the Kaji La to the Yalung at Ho K'ou. Here a new steel suspension bridge has recently been constructed by French engineers to the orders of the Chinese Government and replaces the old method of crossing the river by raft. Three more passes of over 14,000 feet bring us to Litang with its Lamasery and Palace, and after a further five days of strenuous climbing the traveller arrives at Batang on the Upper Yangtse. From Batang the road strikes through the country of the Draya nomads to Chiamdo, and thence over a series of tremendous passes, reaching 18,000 feet in altitude, and not one of them falling below the height of Mont Blanc, finally descends to Shobando, from whence the remainder of the journey to Lhasa is comparatively easy. Along this road every three years the two Ambans, or Chinese High Commissioners, proceed to Lhasa with an enormous train of officials, soldiers and couriers, themselves returning three years later with all the spoils collected during their term of office. To travel along the Junglam is to realise what a prodigious task the administration of Tibet really is. The changing of officials and the upkeep of the garrison in Lhasa means a constant stream of ingoing and outgoing Yamen runners, soldiers, couriers, and tribute-bearers connected with the Tibetan administration, and the problem of their sustenance and transport is one of the greatest grievances among the peoples of the Marches. The method employed by the Chinese is known as "Ula." Ula is a species of socage service rendered to princes, government officials, and priests. By this system, in return for a grant of lands adjacent to the highways, the native tenants are obliged to provide means of transport from one stage to another. The control of the system is in the hands of the native chiefs, who form settlements at convenient places along the main roads, where a fixed number of animals are kept for the transport service. The nature of the Ula varies in different districts, but the transport is usually effected by mules, horses, cattle or yak. The system has been greatly abused by both Chinese and Tibetan officials,

and it has afforded an opportunity for squeezes which the avaricious Lama has not failed to turn to his own profit. The result is that in the region between Tachienlu and Batang, families are constantly migrating to less public districts away from the main roads in order to escape the exactions of Ula. In order to accommodate travellers, solid stone rest houses have now been erected at the end of each day's march, and a regular service of postal couriers has been inaugurated between Chengtu and Lhasa, while the telegraph line has been extended as far as Batang.

One of the main points of interest, however, connected with the Junglam is that it is over this most remarkable mountain road that the Chinese armies have constantly passed to the conquest of Tibet. There is certainly no military route in the world to compare with it for altitude. The retreat of the Greeks under Xenophon from Persia, the advance of Alexander to India over the northern passes, and his subsequent retreat from India through the Makran defiles are all marvellous records surpassing those of modern times, but they will not bear examination when compared with the crossing of these awful passes and gorges of Eastern Tibet by successive Chinese armies. There is, however, one of these expeditions which must rank for all time as one of the greatest of military achievements, and as it is of special interest as illustrating the military possibilities of the eastern and most direct route between Lhasa and Peking, a brief reference will not be out of place here.

In 1792, during the reign of the great Manchu Emperor Ch'ien Lung, the Gurkhas of Nepal inspired by the lust of loot invaded Tibet. An expedition numbering 18,000 men crossed the Kuti pass and advanced with great rapidity on Shigatse. They captured the city and looted the palace. The cowardly Tibetans fled in a panic. The infant Tashi Lama was carried off to Lhasa, and Chinese assistance was at once invoked to repel the invasion. Then followed one of the most remarkable retributions that the world has ever seen. Over the gigantic mountains and snowbound passes of Eastern Tibet a force of no less than 70,000 Chinese was led in two columns by General Sand Fo into the elevated regions of the plateau. The Gurkhas rapidly retreated to a position near their frontier called Tengri Maidan. Here the first battle was fought and they were completely defeated. The Kuti post

was captured after a second fight, and the Chinese advanced by way of Kirong to Khatmandu, the capital of Nepal. The Chinese artillery consisted of light field guns made of leather, which fired a few rounds and then burst. The Gurkhas had no guns, and they made their last stand on the river banks at Tadi, about twenty miles from Khatmandu.

To appreciate the position it must be remembered that this unwieldy force of 70,000 Chinese had marched across one of the most difficult mountain districts in the world for 800 miles from their own frontier before reaching Lhasa. They had then advanced at least another 400 miles over uplands at elevations which were never less than 10,000 feet, involving the passage of many passes higher than Mont Blanc before meeting the enemy. Practically they were without artillery and they had in front of them the most tenacious and most valiant foe that ever stood up to fight in Asia—a foe, too, that was flushed with recent success. It is true that the strength of the Chinese at starting may be reckoned to be vastly greater than that of the Gurkhas in the field against them, and it is improbable that they dispersed that strength by holding positions on the line of advance. But they must have lost numbers in the passes of the mountains which barred their progress through that 1,200 miles of route from their frontier (2,000 miles at least from the populated district of China), and it could have been little more than an advance guard that faced the Gurkhas on the river at Tadi. The Gurkhas on the other hand in falling back on their base, were consolidating their strength from day to day, and as they turned with their backs to the river (like terriers against a wall), they were fighting for their women and their homes behind them, and they knew well what defeat would mean. The Chinese wavered. They were massed in front of the Gurkhas, who were between them and Khatmandu, and they were terribly spent with the length and the trials of that long march in the thin atmosphere of the Tibetan highlands. There seemed a chance that the attack would fail at the critical moment. It is under such circumstances as these that great generals prove their right and title to the confidence which their country has bestowed upon them. Sand Fo was a great general and he rose to the occasion. He turned his leather guns on to the rear of his own wavering troops and drove them and the Gurkhas in front of them in one comprehensive sweep into the river. The

Chinese trampled over friend and foe alike, and they speedily sacked Khatmandu. Oriental methods of treating the vanquished are usually distinguished by deeds of the most ingenious and repulsive barbarity. Even the Gurkha of to-day is not gentle with a foe. But ingenious as he is in his methods of savage reprisal he is probably more than equalled by the Chinaman. Khatmandu has never forgotten the lesson that was learnt at that blood-stained time. Every five years a deputation proceeds from Nepal through Lhasa to Peking, and there offers tribute at the foot of the Chinese throne.

Such at least is the story as culled from the lips of an ancient Gurkha official by Mr. Brian Hodgson, and retold by Sir Clements Markham in his "Tibet." As Sir Thomas Holdich aptly states: "There may be other ways of accounting for the defeat of the valiant Gurkha than those narrated by this ancient Gurkha warrior, but the fact remains as a marvellous record of Chinese persistency that Nepal was utterly subjugated by the Chinese at a distance of some 2,000 miles (stretching across a solid barrier of mountains) from their base. It is a useful commentary, first on the usual statements of Tibetan accessibility, and secondly on the usual criticisms applied to the Chinese soldier.

The Marches of Chinese Tibet are peopled by a number of independent and semi-independent tribes, whose origin and early history is still to a large extent veiled in obscurity, presenting problems of the greatest ethnological interest. They may be divided into two distinct groups:—The independent Tibetan states to the west, and the tributary Mantze and Chiarung tribes inhabiting the uplands on the eastern border.

The western states include the kingdoms of Dergé, Chantui and Sanai, and the territory inhabited by the Draya nomads. The states are virtually independent and even hostile towards China, and are directly controlled by the Dalai Lama and his Council. The people are indistinguishable from those inhabiting anterior Tibet generally. In the north, along the upper waters of the Dre Chu or Yangtse, are numerous pastoral tribes, which in 1732 were organised by the Chinese Government into thirty-nine hundreds each under a Deba or chieftain. These tribes comprise the Khampa, but the name is generally applied by western Tibetans to all the people of Kham or anterior Tibet. The Khampa, the most

dreaded warriors of the Tibetan army, are fine horsemen, tall and athletic but quarrelsome and untrustworthy. They usually belong to the Gélupa or orthodox sect of Lamaism, but in Dergé the Nyingpa, or red cap Lamas, are more numerous and influential. In the pastoral regions to the north polyandry prevails, while in the agricultural districts to the south of Jyekundo monogamy is the rule, and polygamy is met with among the richer classes. In Tibetan countries the distinction between lowlands and highlands, ploughland and pasture, is most marked, and it is a general rule that polygamy obtains in the valley while polyandry prevails in the uplands. In the valley farms the work is lighter and more suitable for women, but the rough life and hard fare of a shepherd on pastures 13,000 feet or more above sea level is too severe for the sex. The two systems, working side by side, seem to mutually compensate the evils of each, but it is a somewhat singular fact that the conduct of courtship and matrimony should be regulated by the barometrical pressure. Temporary marriages are, however, recognised throughout the tribes country, and are not considered immoral—in fact the matrimonial relations existing throughout all Eastern Tibet are little removed from promiscuity. Family names are unknown, and children are spoken of as of such and such a woman. The father's name is hardly ever mentioned. This country is almost a *terra incognita* to Europeans beyond the limits of the "Changlam," or Great North Road, which passes through it. This trade highway strikes to the north-west at Tachienlu and follows up a succession of valleys through Romei Chango, Dawo, and Kanzé until it finally drops into the Dre Chu valley at Dergé, where the best saddlery, guns, and swords in all Tibet are made. From here it passes northward to Jyekundo, and then strikes almost due west across the Chang Tang highlands for three hundred miles till it reaches the great pilgrim route connecting the Kuku Lor with Lhasa. On account of the easy gradients, most of the brick tea and other articles of trade with China pass along this highway. The Changlam is essentially the trade route to Lhasa, just as the Junglam is the official or Mandarin road. Very few European explorers have penetrated this north-western portion of the Marches. Both Rockhill and Bower, after being turned away from Lhasa, were forced to return to China by this route. It was near

Jyekundo that the ill-fated French traveller Dutreuil de Rhins was murdered in 1894, and of late years these valleys have received considerable attention from Captain Kozlor and other Russian explorers, who have proved that there is no great difficulty in reaching them from the Kuku Lor and Mongolia. With a firm *pied à terre* at Urga, Russia now practically controls Mongolia, and dominates the Kuku Lor region of northern Tibet. It is but a step southward down the long curving valleys of the Yangtse or Mékong to the rich and populous Tibetan centres of Poyul and Zayul, while beyond these lie the Brahmaputra basin, Assam, and the plains of India. The tireless activity of Russia in Mongolia and N.E. Tibet, together with recent Chinese pressure upon the frontiers of Assam and Upper Burma has necessitated a complete revision of Indian frontier policy. The storm centre has, in fact, shifted from the north-west to the north-east. That the Indian Government has been fully aware of this fact for some time was shown by the change in status of Assam by decree at the last Durbar, a change which foreshadowed the early formation of a North-East Frontier Province on the lines of that province, which has been so ably administered for many years on the north-west border. In 1911 we saw the Abor expedition with the Miri and Mishmi political missions extending our knowledge of the country beyond the Assam border. This last spring has witnessed the advance of exploring columns from Myitkyina in Upper Burma up the headwaters of the Irawadi almost to its source, and the creation of a new Deputy-Commissionership to administer the wild region to the north of Myitkyina and lying between that station and Assam. In this way the Hukong valley and the scattered Shan villages about the head-streams of the Irawadi have been taken under British administration, and the whole region placed in charge of one of the ablest frontier officers that the government of Burma has in its service.

Before leaving this corner of Asia I should like to mention the great achievement of Captain Bailey of the Indian Army; who, accompanied by Captain Morshead, set out some months ago from Sadiya in Assam to discover whether the Tsangpo of Tibet is in fact the Brahmaputra of Assam. After a most arduous journey through terribly involved Abor country, Captain Bailey established beyond all question the fact that the Tsangpo, the Dihang, and the Brahmaputra are one and

the same stream. He also satisfied himself that the reports of the Indian pundit Kinthup, and the information given to Colonel Waddell with regard to a series of great Falls are very much exaggerated. To quote Captain Bailey's own words:—"The river nearly the whole way from Gyala is a foaming rapid. At Kinthup's Falls the rapid develops into a Fall of about thirty feet; here rainbows were seen." Again, referring to the river lower down, he writes:—"We met a great many people who had seen this part of the river, all of whom agreed that there was nothing in the way of Falls on it, though at the confluence of the rivers at Gompo Ne there are remarkable rapids and whirlpools." I quote these words in extenso because they refer to the solution of a problem which has engaged the minds of geographers for the past century. It was a problem which I had hoped to solve myself in the course of my journey last year, but I was obliged to alter all my plans and route, and finally reached the headwaters of the Irawadi instead of the basin of the Brahmaputra as originally planned.

We will now consider the agglomeration of semi-independent and tributary tribes lying to the east of the Sino-Tibetan borderland, who are collectively spoken of by the Chinese as the Chiarung States, the tribesmen being known as Mantzu, Sifan, or occasionally as Kon Sifan—adulterous Sifan, on account of their low standard of morality. It is among these tribes that I was privileged to make two journeys in the spring of last year, but before giving you an account of my travels, I will first describe a few of the points of interest connected with these peoples.

The Chiarung States are eighteen in number, and cover the mountainous stretch of country from the line of the Min river westwards to the valley of the Tachin or Great Gold river. This territory seems to have puzzled geographers; and, as a rule, the states are either not marked on the map or else their relative positions are incorrectly given. As a matter of fact all these states are independent, their rulers being thorough-going despots, who seldom, if ever, pay any attention to China's claims of suzerainty. They wage inter-tribal wars without either asking China's permission or invoking her aid. They are not—as is the case with feudal states—bound to render China military service, and as a rule there are no Chinese permanently settled in the territory. The origin of

the Mantzu is veiled in obscurity, but from scraps of history I have been able to pick up from the people themselves, there seems little doubt that they are descended from emigrants from Ngari near Khamba Zong in Western Tibet, who came over either with Genghis Khan or his son Ogotai at the commencement of the thirteenth century to help the Chinese to subdue the warlike tribes of the upper Min river. As a reward for these military services they were given the land they occupy to-day. Hereditary titles were conferred on the Chiefs or "T'ussu," who were left in control of these mountainous regions if only they would check the raids of the aborigines, and render tribute to the Chinese Government as an acknowledgment of China's sovereign right over the country. The Chinese character Mantzu means "One who cannot be overcome," but this has now been altered to the character signifying "barbarous, unruly," which is contemptuously used by the Chinese and is much resented by the tribesmen.

The Chiarung are essentially agriculturists cultivating with skill crops of wheat, barley, buckwheat, maize, and miscellaneous vegetables. Sheep, cattle, ponies and goats are kept by the more wealthy, the ponies being sold to Chinese traders, but the wool is woven into cloth for their own use. Like the western Tibetans, they live largely on milk, butter, and meat. They are skilled gunsmiths and swordsmiths, and in the state of Somo are manufactured most of the gunbarrels in use throughout Eastern Tibet. Among the Chinese they have a great reputation for building embankments, and other irrigation works, and all the wells on the Chengtu plain are sunk and kept in repair by Chiarung tribesmen.

The Mantzu live in settlements of from fifty to a hundred families, invariably perched like an eagle's aerie, crowning some eminence on the steep mountain side. Each settlement is dominated by one or more tall, chimney-like towers, some sixty to eighty feet high, which resemble from a distance the smokestack of some Lancashire factory. These towers serve a double purpose—firstly as beacons in case of a sudden raid, when a fire is kindled on the top and friendly villagers rush to the aid of the inmates, and secondly as storehouses for valuables and grain. The cattle are driven into the lower storey and shut in by great heavy doors. In case of being hard-pressed, the inhabitants take their stand around the tower

and finally retreat to the upper storeys, from whence stones are flung on the enemy. They resemble in many respects the Peel towers of Great Britain. It is also extremely likely that these towers have some obscure connection with religious matters, and in this respect they may have some remote affinity with the pagodas of China and Burma.

The T'ussu or Chiefs always inter-marry within their own circle. The son of a chief always marries the daughter of another chief so that the hereditary rights may be passed on from one generation to another. The chiefs are absolute despots within their own boundaries, possessing the power of life and death over their subjects. Although theoretically the Chiarung States are tributary to China and under the nominal jurisdiction of the Viceroy of Szechuen, practically they acknowledge no obedience save that of fear, and their position is to a certain extent analogous to that of the independent and semi-independent states in India. In spiritual matters they acknowledge the supremacy and direction of the Lama hierarchy at Lhasa. Lamaism is all-powerful in the Chiarung States, and appears in all three forms—the Gélupa, the Nyingpa, and the Bonpa—the yellow, the red, and the black systems.

The Gélupa, or yellow-capped sect, is the state religion of Tibet founded by the great reformer Tsongkapa in the fourteenth century. It owns as its head the pontiffs of Lhasa and Tashilunpo, usually known as the Dalai Lama and the Tashi Lama, and is first in importance and numbers throughout all Tibet. The inhabitants of the Marches are bound by the strongest ties of race, instincts, education, and religion to Lhasa. It is their holy city, and to it all Lamas who wish to exert any influence at all must go for study, as all appointments to official posts in the Church are made by Lhasa.

The Nyingpa, or Red Lamas, are regarded as unorthodox, but except that their ritual is not so elaborate as that of the Gélupa, their temples and religious symbols differ little from those of the Established Church. The priests are allowed to marry and are therefore objects of scorn to their orthodox brethren. The temples of red Lamaism are few and far between in the tribes country, but in the state of Dergé they are the most numerous.

Lastly we come to the mysterious Bonpa, or black sect of Lamaism, which exerts an enormous influence throughout



T. M. A.

Fig. 1. The River Yalung (an unmapped portion).



T. M. A.

Fig. 2. Bamboo Suspension Bridge at Kuanhsien.

the Marches, and whose phallic tendencies are largely accountable for the low state of morality in certain regions. The Bon creed is really a branch of Shamanism, and is the survival of the old nature worship of Tibet, which probably underlies most of the religious systems of the East. The greatest prominence is given to the procreative force in nature, the idols usually representing giants and demons with their female energies. This is most interesting in view of the Tibetan conception of the origin of the race. The Tibetans claim as their first parent a monkey, which crossed the Himalayas and there married a she-devil of the mountains. The young progeny of apes ate some magical grain given to them by the Compassionate Spirit of the Mountains (now incarnate in the Dalai Lama), and wonderful were the results which happened. Their tails and hair grew shorter and shorter and finally disappeared. They began to speak—they were men! and noticing the change they clothed themselves with leaves. Thus they account for their chief traits of character and disposition—from their father's side they say they have derived their love of piety, whilst from their mother (as can only be expected) they have inherited their roughness, cruelty, ferocity and deceit.

The Bon religion without doubt survives from pre-Buddhist times, and is to be found in Lhasa itself in the form of the oracles, wizards, and the black-hatted devil dancers who are attached to the principal state Lamasery of Dêpung. In the ritual, however, the Bonpa deliberately defy the orthodox Lamas, and this strange and perverse feature must be due to persecution in post-Buddhistic times. Prayer wheels and cylinders are wilfully turned from left to right, sacred objects and Chortens are passed with the left instead of the right side turned towards the image. The Bonpa refuse to repeat the mystic formula "Om mani padme hung," which is continually on the lips of every orthodox Lamaist throughout Asia, and have substituted a mantra of their own. Sacred books are read in the temples, which are the exact counterpart of the chief Buddhist Sûtras with each direction wilfully reversed. The Bon temples differ entirely from those of the Gêlupa and Nyingpa. They are usually strikingly picturesque, and are frequently built in places difficult of access, an atmosphere of secrecy and mystery thus surrounds them which is probably due to centuries of persecution at the hands of orthodox

Lamaists, yet notwithstanding this, Bonism retains a firmer hold on the people of the Chiarung States than any other religion. The principal symbol in use is the well-known swastika, fylfot, or flying cross, which is known as Yung-drung. A mystical bird—the Chiung or Garuda (resembling a Chinese phoenix), is also regarded with great favour as an emblem of fruitfulness. I was awarded the privilege of going through the Bon temple attached to the chief's palace at Tung Ling Shan, the capital of the state of Wassu, and here obtained indisputable proofs of the phallic tendencies of the worship. Aphrodisia is the one topic of all the representations in the temple at Tung Ling Shan. The most persistent prominence is given to obscene Vidam groups which are not only represented in the usual idol form, but also in frescoes which literally cover the walls.

The effects of this esoteric cult of Bonism on the lives and manners of the Chiarung tribesmen are most marked. Wherever Bonism is most strongly entrenched, there the morality of the people is at the lowest ebb. It seems extremely likely that in mediæval times the Chiarung States formed part of a confederation known as the Nü Kuo, or matriarchal kingdoms. The rulers appear to have been women, and inheritance of power and property passed down in the female line. Relics of this system are still to be found. The state of Damba is still ruled by a woman, and females occasionally act as Chiefs of Somo. In Badi-Bawang the matriarchal system is in full force, and the present occupant of the throne is the descendant of a long line of queens going back for some thirty generations. It is in Badi-Bawang that Bonism is the recognised state religion, and the ancient Bon form of marriage is still in vogue.

The Mantzu women lead a strenuous life. They cultivate the fields, tend the flocks, take the farm produce to market, hew wood and carry water. The domestic duties of cooking, mending clothes, washing, and housekeeping generally devolve upon the men, yet the women are not unkindly treated, and are far from being downtrodden. They are usually short in stature (averaging about five feet), are sturdy and buxom with dark olive complexions. When young they are often good-looking, but once past the early twenties they age rapidly, and the old women verge on the hideous. The ordinary garb is a gown of grey homespun serge reaching to

just below the knee and bound around the waist with a scarf. The legs and feet are usually bare. Their long black hair is commonly parted down the middle, and hangs down the back in a large plait. Bangles, earrings, and amulets, made of silver inlaid with turquoise or coral, are invariably worn, while the more wealthy women decorate themselves lavishly with silver ornaments, and cover their heads with a piece of cloth held down by the plait of hair, which is wound round and decorated with silver and beads of coral and turquoise, the lower part of the cloth hanging free over the back of the neck and shoulders.

The men average about five feet seven inches in height. The face is usually oval with pointed chin and straight nose, sometimes almost aquiline. Their dress is the usual attire of Eastern Tibet. A pelisse of undyed "pulu" cloth of local make or else of sheepskin gathered round the waist by a girdle from which are suspended flint and steel, tobacco pouch, and dirk. Round the neck is usually a leather cord from which is hung over the chest a silver charm-box containing relics. The legs are swathed in felt putties or else in leather boots with cloth uppers extending to the knee. The headgear is usually either a blue cloth turban, or else a pudding basin shaped black felt hat.

Towards the end of March last year I found myself for the first time on the borderland of Chinese Tibet, and it may interest you to trace for a short time the course of my wanderings in the frontier regions. After a long journey across the whole breadth of China, I had decided to come over to Kuanhsien and attend the official opening of the barrage which controls the irrigation for the rich Chengtu plain. We had formed a party of three, the other members being the British Consul-General at Chengtu, and Mr. W. N. Fergusson of the British and Foreign Bible Society, one of the greatest authorities on the Chiarung States and a born traveller and observer. The irrigation works at Kuanhsien are among the most wonderful of Chinese engineering feats. A barrage is built across the river Min at the spot where it gushes forth from the mountains of the borderland, and a canal was cut a thousand years ago which sub-divides into thousands of channels and dykes, forming a network which efficiently irrigates the whole of the Chengtu plain with its four millions of people. (See Fig. 2.)

We were sitting in the Taoist temple at Kuanhsien one evening after a hard day's climbing. We had just heard the news from native sources that a rising was imminent among the Chiarung States, and that a coalition of all the tribes from the Min to the Mékong had been formed, and a great upheaval against Chinese suzerainty was on the eve of breaking out. I at once decided to leave the following morning on a rapid tour through the feudal states and Wassu in order to ascertain whether this rumour was correct before proceeding on the main journey westward to India. Mr. Fergusson very kindly provided me with letters of introduction to King So of Wassu and Colonel Kao, the Chinese Superintendent of the feudal states, and the following morning I was away at daybreak with one servant, a headman, and ten coolies.

Our immediate objective was the castle of Tung Ling Shan, the seat of the Chiefs of Wassu and the capital of that state, situated across the river Min two days' hard journey to the north. The road follows the banks of the Min the whole way, now along a rock cornice one thousand feet above the stream, now crossing a small affluent on an improvised wooden bridge.

The gorge of the Min as seen in the early spring is perfectly glorious. High on either side the gaunt bare cliffs rise almost sheer to a height of three thousand feet and then gradually recede to the snow-clad summits. In March the Min was a clear pure stream breaking over a succession of boulders in foaming cataracts, but upon our return three weeks later, the melting of the snows in the Tibetan hinterland had begun, and the waters were already turbid and muddy. A most striking feature is the number of logs which float down with the stream. Hundreds of square logs about fifteen feet long are marked and dropped into the river at Mao Chon, and then float down on the current as far as Kuanhsien and even Chiating, some two hundred miles away. The fall of the river is twenty feet to the mile. Bands of men come down and set the logs free from places where they pile up on the banks, but each village usually attends to the logs piling up on its shores. This practice is a very ancient one and the logs are never stolen.

I entered the state of Wassu by the undignified expedient of sliding down a rope, or rather I should say across a rope bridge. These single rope bridges are found throughout the



T. M. A.

Fig. 3. The young Prince of Wassu and his Chinese Tutor.



T. M. A.

Fig. 4. The Lamasery at Tsakulao.

Chiarung States. They differ entirely from any bridges found in China proper, but are of similar designs to those in constant use in Sikhim, Nepal, and Bhutan, and thus furnish additional evidence of the affinity of these peoples. A hawser made of three strands of bamboo and usually from eight inches to a foot thick is stretched across a stream from cliff to cliff, usually from a higher to a lower point. The ends of the hawser are stretched over a wooden frame on each bank and usually made fast to boulders. To cross the bridge one is supplied with a length of strong hempen rope hanging free from a circular runner of oak or some other tough wood. The runner clips the cable, and the rope is fastened under and around the legs and waist to form a cradle. When all is properly secured, one grips the runner with both hands, gives a slight spring or push-off with the feet, and then shoots away down the rope at increasing speed. The momentum obtained in the downward rush carries the passenger as far as the bottom of the sag in the cable, which is usually three-quarters of the way across, and the remainder of the distance has to be covered by laboriously hauling-up, hand over hand. Crossing these bridges is somewhat fearsome work to the novice, and for a heavy man the hauling-up is exceedingly laborious. The essentials are to keep a cool head and to see that one's hands are clear of the cable, otherwise they would be cut open by the terrific friction. The tribespeople, both male and female, hardly ever use ropes. They simply throw one arm over the runner and suspend from that. It is a common sight to see men with loads and women with children on their backs cross these bridges. Heavy loads and animals are slung from the runners and hauled across by a rope.

The rivers of the tribal territory are not navigable in the ordinary sense of the word, but on certain stretches of the Tung river, and also on the Min, skin coracles are used, which vie with the rope bridges for sheer, crude sensation and excitement. I never was called upon to travel by coracle during the course of my wanderings, but saw them in use on the Min. The construction is exceedingly simple. A willow framework in the form of a huge basket is covered with a coat of bullock hide, the seams of which are carefully sewn together and coated with pine pitch. The structure when complete is quite watertight and looks like a huge oyster shell some four feet in diameter and three feet deep. The problem on these

waterways is to have a craft which can stand the strain of the fierce rapids and be steered with almost no sweep. It must also be light enough to be carried to the starting point. The coracle, weighing about 70 lbs., answers these purposes, but by no means inspires the novice with confidence as to its construction and mode of progress. Fergusson, who has used the coracles on many occasions, describes one river crossing as follows:—

“All hands huddle down in the bottom with their legs curled up in a most uncomfortable position, and it is fatal to move after the craft is shoved off. As for ourselves, we shot upstream in the backwater until we struck the current, when the coracle was sent swirling round and round in the vortex, and bobbing like a cork on the waves. One moment we were down in the trough with the feeling that we would surely be engulfed; the next, we were riding the crest of the waves, but all the time being carried down stream at the rate of fifteen to twenty miles an hour. Just below the landing stage the river foamed over some boulders, and cut the shape of the letter S. To a stranger it looked as though we must surely be carried on to the boulders. But the ferryman, by means of his paddle, steered and propelled the coracle forward in a wonderful way and safely landed us.”

As a novelty productive of excitement not unmixed with danger these coracles and single rope bridges may, with confidence, be recommended to “World’s Fair” promoters and showmen generally.

But—to continue our journey. After reaching Wenchuan and sending a special messenger up to the castle with my card and letter of introduction, the Chief sent down word that, although he was unwell and would not be able to look after me himself, he would be glad if I would stay a few days with him. The castle of Tung Ling Shan is some 2,000 feet above the river Min and occupies a perfect strategic position. The fastness itself is a settlement of some sixty families in the centre of which is the palace of the king—the whole being dominated by a tall watch tower. The houses are built of stone and present a well-cared for appearance, but the streets and alleys are indescribably dirty and evil-smelling. We were hospitably received by the Chief’s private secretary, a Chinese, who also acts as tutor to King So’s only son—a bright youth of fourteen, who is also the heir to the neigh-

bouring Kingdom of Druckagi. Both King So and his son speak fluent Chinese, and so we were able to converse freely. The king himself was brought in to see me, being carried on the back of a serving man, and looking very much pulled down by fever and the effects of excessive opium smoking and drinking. He is a man of 52 years of age and is the twenty-eighth Chief of Wassu in a direct line of succession extending back over 800 years. He is a great sportsman, and as the mountains, forests, and ravines of his kingdom teem with wild animals (among which may be counted such rare specimens as the takin, seron, and goral) he has been occasionally visited by European sportsmen on shooting expeditions. (See Fig 3.)

The state of Wassu is one of the wildest and most beautiful of the Chiarung States, but is most sparsely peopled, and the total population would not exceed 20,000. The state is divided into twenty-eight "Chai" or districts, each under a headman, and they take it in turn to supply the personal servants at the castle and also the men who till the king's private lands. The religion of the people is Bonism, but the presence of Chortens, mani mounds, and prayer flags indicate the influence of orthodox Lamaism. The chief denied the existence of an anti-Chinese league, but was open in his contempt for the new republican authorities, describing the new officials as children, having—as he put it in the vernacular—"neither reason nor a knowledge of custom." Under the Manchu régime tribute was paid to Peking every twelve years, and to the Viceroy at Chengtu every five years, but since the revolution, these customs have been allowed to lapse. The opium question, however, proved to be the main grievance. Poppy cultivation has always been extensively carried on in the tribes country, and the Chinese have, of late years, made an effort to stop this without success. Since Wassu is the nearest of the Chiarung states to Chengtu, the chief has been pestered with Chinese spies and emissaries seeking information with regard to opium. This is the more annoying inasmuch as the poppy has never been extensively grown in Wassu, the tribesmen not being sufficiently skilled in slitting the pods and extracting the opium.

We spent the remainder of the day in feasting and tea drinking, and the chief placed the contents of his cellar at my disposal. It was amusing to see the various bottles of cheap

liqueurs, which had either been left by previous travellers or else purchased in Chengtu, but as the labels betrayed names which seemed strangely uncouth, I deemed it wiser to confine myself to the usual native spirit, distilled from maize, and to the tea which is grown on the Kuanhsien foothills. After a comfortable night spent in the official guest-room, I expressed a wish to see the chief's private temple, and was taken round by the young prince, who explained the significance of the various phallic emblems with the greatest sang froid. The head Lama is a cousin of the chief. This relationship between Lamas and rulers is quite common. In the Tsakulao Lamasery the principal Lamas are all relatives of native chiefs, and the present king of Chala belongs to a family of Lamas. (See Fig. 4.)

After a further long chat with the chief, a meal was served at noon and he begged me to stay a few days longer, but it was necessary that I should continue my journey in order to reach Tachienlu in May, so we were obliged to leave. As the bearers set down my chair and all was ready for departure, the old chief was carried out to say good-bye. He asked me which way I intended to travel on my long journey to India. I said, "Through Tachienlu and Batang." He put his hand on my shoulder and said: "What is the use of running into danger unless it be in battle. Go by the main road, and do not be like my old friend Po Lu Ke." (This refers to Mr. J. W. Brooke, the daring explorer, who was murdered in the independent Lolo country in 1908). I told him that it was the custom of Englishmen to find out new roads. He replied, "I fear it will be with you as it was with Po Lu Ke, and I don't want to lose my friends." He gave my men a lot of food and presented me with a large pod of musk and a leopard skin, and we retraced our steps down the hillside to the foaming Min. I hope I may see him again. Despite his many failings he is every inch a man.

About two months after the journey which has just been described we found ourselves in the wonderful frontier town of Tachienlu, the capital of the state of Chala, and the starting point of the great trade routes to Lhasa and ulterior Tibet. Constituting, as it does, the gate into a corner of Tibet which is by far the richest in cultivation, the best in climate, and the most productive in mineral wealth, the importance of Tachienlu cannot be overestimated. The town of Darchendo



Fig. 5. Tachienlu from the South.

T. M. A.



Fig. 6. The View to the South from Tachienlu.

T. M. A.

or Tachienlu lies at an elevation of 8,500 feet and is built, as its name implies, at the confluence of the Dar and the Chen, at the western end of a narrow valley, so narrow that for miles together it has no floor but the path and the torrent, which—after fifteen miles of cataracts—plunges into the Tung at Wassu Kon. The town itself is hemmed in on all sides by steep treeless mountains, whose grassy slopes lead up to peaks clothed in eternal snow. Formerly Tachienlu occupied a site about half a mile above the present town, but about one hundred years ago it was totally destroyed by a landslip due to a moving glacier, and earthquake shocks are frequently felt. (See Figs. 5 and 6.)

Notwithstanding its great political and commercial importance, Tachienlu is a meanly built and filthy city. The houses are usually of one storey and are built of wood resting on foundations of shale rocks. Disastrous fires are of constant occurrence, when the whole town is gutted with the exception of the few fine old stone Tibetan "Gochuang," or Honggs. The population consists of about 700 Tibetan families and 400 Chinese families, and with its floating members may be reckoned at a total of 9,000 souls. Tachienlu may be said to be impregnated with a nomadic atmosphere. It is one of those wonderful frontier towns where one meets all the types and hears all the dialects of Central Asia. Yak caravans from the Horba states and even from Lhasa and the remote regions of Western Tibet swing in daily over the Jédo pass and the great north road bringing musk, wool, skins, deerhorns, gold dust, and medicines for Chinese use, and taking back brick tea and Chinese fancy articles. The annual trade through the town reaches the total of Tls. 2,800,000 (nearly £400,000), of which brick tea alone accounts for £120,000 in value, and amounts to the prodigious total of 11,400,000 pounds in weight. Inasmuch as tea is perhaps the most important item in the diet of the Tibetan, a few remarks concerning this enormous trade may not be out of place.

The tea, which is exported in such tremendous quantities from China to Tibet, consists almost entirely of the merest refuse, which is grown in the district of Yachou in Western Szechuen. I have seen it myself being taken into Yachou to be packed, and at first thought it was fuel. It looks like brushwood, and is, in fact, merely branches broken off the trees and dried in the sun without any pretence at picking.

In Yachou it is taken to the Chinese factories and made up into bricks for the ignorant Tibetan—as the Chinese call him. It is no exaggeration to say that the tea of the Tibetan market is ten times worse than the worst tea in China. The leaves and twigs, already sun-dried, are steamed in a cloth suspended over a boiler. The mould consists of four stout boards, inside which is a neatly-woven mat basket, and the steamed and softened leaves and twigs are dropped into it. A little rice water is added to agglutinate the mass, which is then consolidated, layer after layer, by blows from a heavy iron-shod rammer. The mould is afterwards taken to pieces, the cake with its mat envelope is brought back to the fire, and when it is thoroughly dried the ends are closed up and the long narrow package is ready for transport to Tachienlu on the backs of porters.

The coolie's burden is arranged on a light wooden framework disposed along the whole of his back and rising in a curve over his shoulders and high above his head, the structure being supported by a couple of coir strings, through which his arms are passed. The great weights which can be carried in this manner are incredible. On one occasion I passed a man with as many as eighteen packages, each of eighteen catties in weight—a total of over 400 pounds on his back. The greatest burdens are carried not by the most muscular men but by those of the straightest conformation. Every few hundred yards or so a rest is taken, and as it would be impossible for the carrier to raise his burden if it were deposited on the ground, he carries a kind of short crutch, which is slipped beneath as a support. Travelling six or seven miles a day, and resting in wretched hovels of inns at night, these porters toil with their prodigious loads over two mountain passes, 7,000 feet above their starting place, along an execrable road where every step of the way must be picked, making the 120 miles from Yachou to Tachienlu in 20 days or less, and receiving 250 to 300 Cash a day (approximately 5d.), only half the sum received by a good chair coolie.

Before leaving the question of the tea trade with Tibet, I would like to refer to the ingenious attempts which have been made to estimate the population by the amount of tea entering the country. Fergusson, who is an authority on the subject, has estimated the total quantity of tea annually consumed in Tibet to be roughly 28½ million pounds. Allowing four

pounds of tea per person per annum, he arrives at a population of 7,100,000 souls. This is obviously excessive. I would incline to the opinion that an allowance of six pounds per head should be made, although I am aware that the Tibetans use a family pot and stew the tea until every ounce of tannin is extracted. This is a very poor method of computing the population of a country, but as there are no statistics available, and the estimates of experts vary from one and a half millions to eight millions, one is reduced to crude methods. The only general census we have to guide us was one taken by the Chinese in 1737 for the two provinces of U and Tsang only, which gave a total of 316,000 Lamas and 636,000 laity. Making a liberal allowance of over 500,000 people for the province of Kham this only gives one and a half millions as the total population of the country. There seems to be no doubt whatever that the population is dwindling. The cause of this decrease is chiefly the enormous tax of celibate Lamas, which the present priestly government extracts from the people—about one out of every two males; and to a lesser degree the practice of polyandry and promiscuity, decimating epidemics of smallpox, and excessive infantile mortality. The high death-rate among the infants is largely due to the rough, exposed life led by the Tibetans, though excessive altitudes have their effect, which has been proved by the distressing experience of the Moravian missionaries in Ladak, where the cemetery is filled with infant graves, few or no children having survived their second year.

Tachienlu is a great religious centre, both the yellow and red sects of Lamaism being represented. In and near the town are as many as eight monasteries, while the symbols of the Faith are everywhere apparent in the form of prayer-wheels, prayer-flags flying from the roofs and the summits of the hills, mani stones and cairns. Everywhere is kept revolving the mystic spell of "Om mani padme hung." According to the Lamaist creed the Dalai Lama at Lhasa is the reincarnation of the most powerful of the early kings of Tibet—the great Srongtsan Gampo, who in his turn was an earthly incarnation of that compassionate spirit of the mountains, who had given the early Tibetans the magical food which transformed them from monkeys to men. This compassionate spirit is identified with the most popular of the Bodhisattvas—namely Aralokita, the "Lord of Mercy," who relinquished

his prospect of becoming a Buddha and passing into the Nirvana of extinction, in order to remain in heaven and be available to assist all men on earth who may call upon him to deliver them from earthly danger, to help them to reach paradise, and escape hell. All of these three great objects are secured by the mere utterance of the spell of this Lord of Mercy, namely "Om mani padme hung," which means "Hail! oh thou Jewel in the Lotus." It is not even necessary to utter this spell to secure its efficacy. The mere looking at it in its written form is of equal benefit. Hence the spell is everywhere made to revolve before the eyes. It is twirled in myriads of prayer-wheels, incised on stones in cairns or mani mounds, carved on buildings, as well as uttered by every lip throughout Tibet, Mongolia, Ladak, and the Himalayan Buddhist states down to Bhutan, and from Baikal to Western China. (See Fig. 7.)

Strictly speaking only the abbot of a monastery has the right to be called a Lama, which means "Superior One." All the other inmates of monasteries are called Trapa or students. The monastic life is open to all men or women who are pure Tibetans or Mongols, with the exception of butchers, who are regarded as outcastes. Meat is a staple diet with the monks of Tibet excepting the few who have taken the higher vows. The Lamas evade the Buddhist prohibition to take life for this purpose by employing butchers to do it for them, whilst they assign to the butchers for doing this the position of outcastes. When no butchers are available it is usual for the Lamaist to drive the cattle over a precipice or make the beast strangle himself. Roughly speaking, one half the population of Tibet are Lamas. In the villages and towns most families contribute one member to the fraternity, and this is often exceeded by two or three. Most orphans and nearly all illegitimate offspring are sent to the Lamasery, while superfluous girls (due to polyandry) enter the nunneries. Under these circumstances one can realise the force of the Tibetan proverb: "Without a Lama in front, one cannot approach God."

In Tibet proper the Lamaseries control the wholesale commerce of the country, and the enormous tea trade with China is also in priestly hands, although in buying an article from a Chinese merchant the Lama has to deal with very different mettle to what he would encounter in a bargain with



T. M. A.

Fig. 7. A Water-driven Prayer Cylinder at Tachienlu.



T. M. A.

Fig. 8. The State of Kanpo.

one of his own unsophisticated countrymen. I would shrewdly suspect that the honours in the tea trade rest with the Chinese.

During my stay in Tachienlu I called on the king of Chala at his castle of Sê To, and obtained an interesting insight into New China's methods of dealing with subject chiefs. The Ming Cheng T'u Ssu, or "Clear bright Ruler" as he is known in the vernacular, is a pleasant-mannered gentleman of forty-five years of age, and is the twenty-fifth of his line to sit upon the throne of Chala. He does not seem to possess the ability, and certainly has not the regal bearing which characterised King So of Wassu. I am told that the principal hobbies of the Chala chief are mending clocks and extracting teeth. His prowess with the forceps is well known throughout his kingdom. He received me very kindly and offered us tsamba and buttered tea. The tea is really quite a warming and refreshing beverage if one only entirely rejects the idea of tea from one's mind, and imagines that one is drinking soup. The tea was offered in a silver-lined bowl, and a plate of tsamba or parched barley meal was placed before us. The correct procedure is to drink the tea until there is just a little left at the bottom of the bowl, then add a lump of butter and several spoonful of tsamba, and work the whole into a paste with four fingers of the right hand, keeping the thumb clear; then break a piece off, roll it into a ball in the palm of the hand, and eat it, finally washing all down with a draught of tea. Tsamba is quite good as a rule, it is the sourness of the yak butter, which spoils the flavour of everything it touches.

The Chief had a horse brought round and we rode out together to his summer palace at Yü Lin Kung, twelve miles to the south of Tachienlu, where we spent the day inspecting his flocks, bathing in a hot natural sulphur spring, and discussing the past, present and future of Chinese Tibet. The Chief has been shamefully treated by the Chinese officials. Much of his temporal power had been appropriated by the Chinese during H.E. Chao Erh-Feng's régime, but now all the state revenues have been taken over, his brother has been executed on a trumped-up charge of treason, and even some of his private lands and cattle have been confiscated. As a sop to his injured feelings the Chinese Governor of the Marches has presented him with medals, uniform, a sword,

and a pension of 200 Taels a month. Although most of the other Chiefs in the Marches have been placed on the pension list, this is the only case where their personal property has not been respected, and it is the more unjust inasmuch as the help and co-operation of the Chala T'ussu have been essential to the Chinese advance. Since I returned to England I have received news that the king disappeared the very night last August on which the Chinese Governor of the Marches entered Tachienlu. His whereabouts are unknown, but he is believed to have fled westward to join the revolted tribes.

If the true history of this first Chinese republican expedition is ever published, it will provide an amazing record of inefficiency and incompetence. Although the men are better armed and equipped than the frontier guards of the last expedition, as a fighting force they cannot be compared with the old troops, whose discipline was excellent, and who are still feared throughout all Tibet. Although glowing accounts have been written of Chinese successes in the field, there is no doubt whatever that, had there been the merest semblance of cohesion among the revolted Tibetans, the expeditionary force would have been driven out of the country beyond Tachienlu. The fighting has never been other than guerilla warfare. There is not the slightest doubt that a division of northern troops could have crushed the rebellion a year ago. Should, however, the present peace conference prove abortive, it is doubtful whether even the whole Chinese army could hold the borderland in face of the open hostility of Lhasa.

The future lies in the hands of the peace delegates now sitting in conference at Simla, upon whom the task has devolved of demarcating for all time the political frontier between China and Tibet. We can only hope—and after all the consideration and kindness I have received at the hands of the Tibetans I sincerely do hope—that the results of their deliberations will be to the benefit and the amelioration of the conditions of life of the tribesmen of Chinese Tibet.

“PERSONAL EXPERIENCES AMONG MAORIS
AND MOUNTAINS IN NEW ZEALAND.”

By Mrs. EDWARD MELLAND.

*(Addressed to the Society in the Geographical Hall on
Tuesday, February 17th, 1914.)*

THE Maoris of New Zealand are acknowledged to be the finest and most intelligent of what we call savages yet discovered in the world. It is true they were cannibals about eighty years ago, eating their enemies, more as a matter of custom than as food, in order to acquire the courage and skill of the deceased. But very quickly they adapted themselves to circumstances after the white people came to settle in the land. They took to European clothes, afterwards some became members of Parliament, and now we have Maori lawyers, doctors, schoolmasters, editors of newspapers, and so on. They take a real interest in the welfare of their own people, who they at last realise are in danger of dying out from disease, ignorance, neglect, and the insanitary state of some of their villages. They are, as a rule, of a cheerful, happy disposition, with a keen sense of humour, intensely fond of sport of all kinds, and distinctly interesting and attractive as a race.

The Maoris came to New Zealand somewhere about six hundred years ago, for they were really the first colonists. They used to arrive in large numbers from Raratonga, and some other Polynesian islands, in their old double canoes (two lashed together), travelling about 2,000 miles of lonely ocean, steering by the stars, until they arrived at New Zealand nearly starved to death. When they first sighted the country they took it to be a cloud, so ever afterwards called it “Ao-tea-Roa,” meaning “The Long White Cloud.” The coming of the white man to New Zealand in any considerable numbers did not take place until a very much more recent date, and it is just about 73 years since England took the country for her own. During the pioneer days which followed, the voyage from the old to the new country was still a very serious business—being undertaken entirely by small sailing vessels, in one of which, years afterwards, I was

taken out as a tiny child. Our family party consisted of the parents, ten brothers and sisters, some servants, and—a cow! The cow must not be forgotten, because the food and drink part of the business was a difficult matter in those early days, especially where so many young children were concerned, and considering the voyage might occupy anything from three to six months. There was no such thing as condensed milk or tinned meats or fish, or food of that sort, neither had it been discovered that it was possible to make fresh water out of sea water. So, besides live sheep, pigs, and fowls, many of which succumbed to bad weather, the captain had to calculate how many tanks full of water he would have to take on board at the London docks for all his passengers and crew. Although first-class passengers, we were obliged to completely furnish all our cabins, including candles, soap, etc., etc.

Previous to the annexation, when the white people began to come and live in the country, the chief occupation of the Maoris was fighting against neighbouring tribes. At the close of a battle any chiefs taken prisoners would have their heads cut off, and after they had been dried they would be stuck up on poles round the fortification, while their bodies would be eaten. The accompanying illustration (Fig. 1) gives a good idea of the tattoo marks on one of these heads. It is from a fine drawing in my possession, done by Major-General Robley, who was out in New Zealand in the early days, and is the first authority on tattooing. He has written a book on the subject, beautifully illustrated by himself, and also at one time possessed the largest collection of these dried tattooed heads.

Only the very upper class Maoris, the aristocrats, were permitted to have themselves beautifully decorated like this: it was a sign of high birth. Tattooing was a very painful operation as performed in those early days, and occupied weeks, and months when the body was done as well as the face. The instruments used were sharp chisels made of bone or stone (they had no metal), and into the little bleeding trenches thus made in the flesh they rubbed a vegetable pigment to give the blue colour. These chiefs' heads were left sticking round the fortifications as trophies of victory. When the old whalers and stray white traders began to visit the shores of New Zealand they took a fancy to the dried heads and exchanged tomahawks, nails, rifles, or scrap iron for

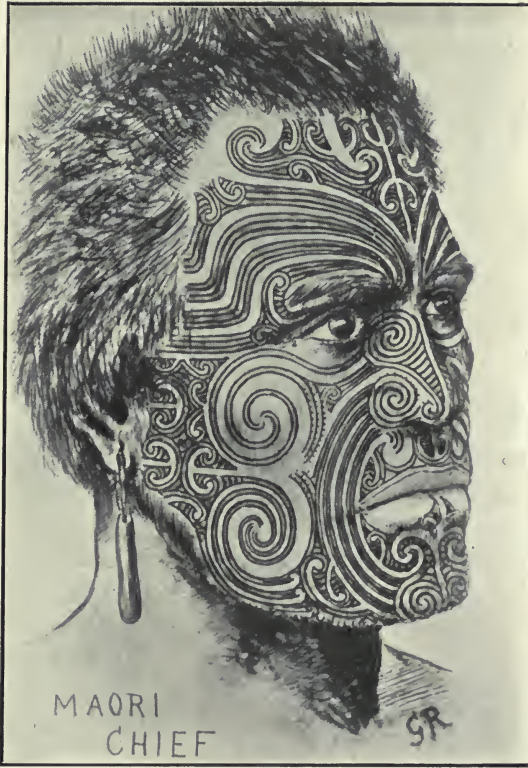


Fig. 1. Tattooed Head of Maori Chief.



Fig. 2. Cooking Pond, Whakarewarewa, Hot Lakes District.

them. The white men knew very well collectors in England would give as much as £18 apiece for them, so a brisk trade in these heads set in, and chiefs began to tattoo their slaves in order to sell their heads. But the missionaries called in the help of a Governor of Australia, and the whole thing was put down.

About the middle of the North Island, the Hot Lakes district, the crust of the earth is so thin that what is down inside breaks through in all kinds of wonderful ways. There are boiling lakes and boiling pools, and ponds and pools of every degree of temperature one could wish. Thick boiling sulphurous mud ponds, bubbling up like porridge, some fearsome and terrible, with loathsome smells, while some springs are exquisitely beautiful, with hot, clear, sparkling water flowing over white or primrose-coloured alabaster-looking material.

Most of the natives live in the North Island and many in the Hot Lakes district. It is all so deliciously warm and convenient—never any need of fires in their houses: Nature does all that for them. Several years ago two of my daughters and I were in these parts at the native village of Whakarewarewa—our home being in the South Island. As we wandered about alone we came upon a little Maori child cautiously placing some Indian corn cobs to cook in the shallow edge of the boiling cooking pool; the rest of the dinner was cooking in a tin, and the little kettle boiling for a cup of tea, as shown in the accompanying illustration (see Fig. 2). The story of how the first chimney came to be built in this village is always told as follows: A white man had a tiny hut here, where he lived and sold groceries, bad peaches, and oranges (the natives used to prefer their food decayed). One day steam began to pour up out of the middle of his floor. But he was not going to move; he just built a chimney round that steam and let it carry itself through the roof and went on living happily on that uncertain ground!

Washing day has no terrors for the Maori wife in those parts. She finds convenient ponds of various temperatures all close together. And, as we would gather round the fire on a coldish day, they get into a hot pond instead, up to their necks, they and their families and their friends' families, enjoying a smoke and a chat. The women invariably carry

their babies on their backs, secured by a shawl. I remember hearing years ago of a fine young married woman who was placing her dinner at the edge of a boiling pond. Somehow the baby shot over her head into the centre of it. Without stopping to think she dived in after the baby, and both were instantly scalded to death. But it is wonderful how seldom there are accidents of that kind. At Rotorua we had opportunities of sampling the many kinds of delicious baths established by the Government utilising the natural hot springs.

While strolling about in the neighbourhood of the Hot Lakes village of Ohinemutu, we quite unexpectedly came upon a memorial the Maoris erected to "Our beloved White Queen," as they called Queen Victoria in later days. They are very proud of it, and there is some good work about it. A picturesque group of natives, in bright coloured clothing, were sitting round it, busily engaged in making flax bags and mats. Some natives have a strong objection to cameras; they think that by taking a photograph of one of their precious buildings or of themselves it gives the photographer some claim over the thing taken, and also that the "evil eye" may pursue them for life. These men and women did not seem to notice us at first, till the click of the camera made one woman look up. Then the fat was in the fire! They all rose up angrily, shouting and gesticulating. I said, "Throw the camera in amongst them and let's run!" But an old Maori spread out his arms crying, "Ka pai, ka pai!" meaning "Very good—it's all right," and things were quietening down as we hurried off as fast as the boiling pools and steaming holes would allow us.

By far the best part of this bit of Wonderland was destroyed in a fearful eruption about 29 years ago. It comprised the Pink and the White Terraces, with their charming pools and ponds of any temperature, from boiling hot to nearly cold (see Fig. 3). The basins were all of pure silica, and those of the Pink as beautiful as alabaster, but not quite so hard, slightly yielding. One theory is that Lake Rotomahana in the immediate neighbourhood did the damage. Although a fairly cold lake, it had always had boiling springs in parts of it. The crust of the earth under the waters was very thin and could no longer hold up the increasing weight of

waters. So part of the bottom of the lake, so to speak, fell out one night, and water poured down into the earth where everything is so hot. You can imagine the steam and commotion that would set up. It blew out the side of Mount Tarawera, which poured forth hot ashes, cinders, boiling liquid mud, and all kinds of horrible material on many miles round. It ruined lovely country, beautiful bush land, and destroyed the world-famous Pink and White Terraces, besides burying several native villages with all the people in them. As we rowed in a small open boat across Lake Rotomahana, with some half-caste Maori guides and three Englishmen tourists, it was a very hot day. I was trailing my hand in the cold water when suddenly the Maoris shouted to me to take it in or it would be scalded in a minute. We then passed over the boiling part of the lake. I put my hand to the flooring of the boat; it was piping hot. You usually feel the thud and throbbing of the boiling water under the keel if the men stop rowing for a minute.

I honestly did not trust that lake, and was glad when we were landed. Some tourists shirk it altogether, for you never know what the wonder parts are going to do next. After negotiating that wicked lake Rotomahana, we walked for some distance to Lake Tarawera, and boated to the usual landing beach. Between the two lakes we walked over two lovely little Maori villages, houses and natives all smothered up and buried, beneath a deposit of 40 feet at the time of the eruption.

On the night of the trouble, when the terraces were destroyed, Mr. Morgan, Government surveyor, was camped in a hut with his Maori workmen, and although some distance from the scene of action things were growing very serious indeed. During the night he heard one of his native men praying fervently in the Maori language for things to stop and his life be spared. Things were going from bad to worse—the surrounding bush country had caught fire in places from the red hot cinders and deposit; the earth was heaving up and down continually. Mr. Morgan had given up all hopes of any of them seeing the light of another day when, above all the din, he heard the Maori praying in English this time: “Oh, Lord, if you will only stop all this and spare my life I will give you £2, and Morgan can stop it out of my wages!” Some time after this Mr. Morgan called in at one of our

sheep runs in the South Island, and while discussing the subject told our manager that this story, which had appeared in all the newspapers at the time, was absolutely correct.

One day, about fourteen years ago, great excitement was caused in the Hot Lakes district by the birth of what tourists called "The greatest geyser on earth." For those who flocked out to see it, all the accommodation at first was a couple of canvas tents, so if these were full visitors had either to lie down in the fern for the night or drive away unsatisfied if "she" did not happen to be going off at the time. Then the Government built a long wooden one-storey hotel, with a large verandah commanding a splendid view at a safe distance. The Maoris christened the geyser Waimangu, which means "Black Water," while the half-caste guides and some of the people at the hotel spoke of it, with bated breath, as "She." We engaged beds in the hotel not by the day, but until we had seen a shot, as it was called. The geyser went off pretty regularly, about once in 36 hours, occasionally at shorter or longer intervals. We had to stay two days and nights before we saw one, and did not sleep during that time for fear of missing something. We were, however, rewarded by an extra high shot of 1,000 feet in the air! At the hotel they had some means of gauging the height—these, and descriptions of each shot, were preserved. Waimangu in action was a marvellous sight. When she was quiet there was just a large sunken pond, about six times the size of the Manchester Geographical Hall, of steaming grey water, then with an awful rush and roar what looked like hundreds of tons of black boiling water, rock and stones and steam, shot up out of the earth by the pond 1,000 feet into the air—sometimes higher, sometimes lower. Eighteen months before we arrived here two girl friends of my nieces were killed by the geyser. They, along with a guide and two other men, were taking snapshots of the steaming sunken pond when all of a sudden the geyser went off. When the mass of black water, rocks, stones, etc., sank back into the pond again it could not get away into the earth quick enough so it overflowed, and a boiling water river was formed for the time, which dashed over huge volcanic rocks. A mile down this temporary boiling water river the girls' bodies were found, also those of the guide and tourists—all swept away and killed together. (See Fig. 4.)



Fig. 3. The White Terraces, Rotomahana, Hot Lakes District.



Fig. 4. Waimangu Geyser and Frying Pan Flat.

While we were waiting for the geyser to go off, one day we engaged a guide and asked him to take us as near as we dare go to the sunken steaming pond. This involved crossing “Frying Pan Flat,” so called because it was composed of fairly firm dark grey sand, with boiling water bubbling up through it, exactly like a little fat boiling in a frying pan. Several tourists joined us, until we were fourteen of a party. Our feet soon felt burned through our boots, the steam became denser and denser, one by one the people dropped out and turned back—it was so fearsome—till only two of us were left, and we were not exactly happy. At last I lost sight of the guide altogether, and could not see two yards in front of me for masses of steam rising up from the sand rolling past and giving a suffocating sensation. I shouted out into space where I had last seen the guide disappear that I had had enough, and groped my way back more than satisfied. Our feet had a scorched feeling till next day.

Four and a half months after this we were all in England, where I read in the English newspapers that “three acres of Frying Pan Flat, in New Zealand, have collapsed, and a boiling lake appeared instead.” That was exactly where we had been walking four and a half months before! Next mail brought me a letter from one of my sisters in New Zealand to say, “Waimangu has gone to sleep,” and she has been asleep ever since, that is to say for the last ten years. So “she,” Waimangu, “the greatest geyser on earth,” had a short but a merry life of about three and a half years, and I am very glad I was fortunate enough to see her. No photographs or descriptions can really give any idea of what a shot was like.

At Ngaruawahia, in the North Island, where two immense rivers join (cold rivers), we went to see a quaint and very interesting Maori regatta. One of the many events was called, “A Race for a Bride.” In the first act, two pretty young Maori girls competed, each in her own canoe, as to which should take the important part of the bride. That having been decided, the race proper began. The bride started at a point up the river to paddle her little canoe at a great rate down stream; she was quickly followed by large canoes full of native men. When one of them overtook her she hurriedly but gracefully stepped from her own into that

of the men. Those who had captured her now had a start, and the other canoes came in hot pursuit. When one overhauled the canoe in which she sat, she quickly left it, stepped in amongst the successful crew, and so it went on till the crew who had her sitting amongst them when they reached the finishing post had won. Unfortunately, half way through there was a sad dispute over the bride, and the event had to be postponed.

But quaintest of all were the canoe hurdle races. Several things like goalposts, with the crossbar a couple of feet or so above the surface of the water, had been erected, at fairly long distances, not very far from shore. Competitors started up the river and paddled their hardest down the course. They had to get such impetus on that the canoe bows would slide up on top of the hurdles, the occupants scramble forward; their weight making the canoe splash down by the bows safely over the hurdle. With this operation the Maoris were usually thrown into the river, and the canoe nearly filled with water, but they hurriedly baled out and started off for the next hurdle. (See Fig. 5.)

The illustration shows a snapshot we secured during the wahines's (women's) race, taken just at the second the canoe was balanced on top of the round hurdle. There was an amusing incident in connection with this event. Only three canoes entered—two wahines in each; the first and second finished successfully, but the third capsized on the wrong side, at the last hurdle, close to the winning post. They went up stream to the starting point and had another try, but with no better luck. As there was half-a-crown for third prize—*to be divided*—these two wahines were not going to give it up for anyone! So, during the remainder of that long summer's day, whenever there was a slight pause in the proceedings, down they would come, paddling their hardest, but always happy and contented looking. Just as they would come opposite us they would capsize on the wrong side of the hurdle, sink under the water, but come up smiling, bale out, and start again for another try.

The sun was beginning to set, and we to think of tearing ourselves away from this fascinating spot, when shouts and cheers made us look round, just in time to see the two wahines safely over the last hurdle—the half-crown won!

In large parts of New Zealand no alcoholic drinks are to be had. They have had local option out there since 1893. The same year the Women's Suffrage Bill was passed, so all women as well as men can vote as to whether there shall be any sale of strong drink in the constituency. As we women went to the polling booth to cast our votes for members of Parliament, at the same time we voted on the drink question. At the first vote prohibition was carried in one constituency only. After some years the constituencies on either side, seeing it had not been ruined by its experiment, boldly followed its example, and now there are twelve “no licence” constituencies.

To carry prohibition a bare majority is not enough—60 per cent. of the votes polled have to be in favour. This is a rather wise provision, to prevent too many changes. At the last general election for the first time a vote could be given for what they call national prohibition—that is to say, for preventing the sale of drink in the whole dominion, and its importation, too. The result was an actual majority for national prohibition, but as the majority was 56 instead of 60 per cent. the proposal was not carried. Both sides, however, expect it to be carried in the near future. If such were the case, I dare say the chemists would be allowed to sell some for medical purposes, but if so it would have to come into the country under the Poisons Act, and be sold with the same precautions.

At one time large numbers of Chinese used to come over to New Zealand, attracted by the discovery of gold. Many of them took to market gardening, and for years grew almost all the vegetables for the colony—bringing them to our doors for sale. We always found those who came were most peaceful, honest, quiet men, though they had a curious idea of English law sometimes. I remember one day a batch of about 100 landed at the jetty in our town, straight from China. Some boys started to tease them beyond endurance, and in the scuffle a policeman was wounded, a Chinaman arrested and sentenced to fourteen days' hard labour. Next morning very early there was a loud knocking at the prison door. When opened, thirteen Chinamen presented themselves. They said they did not want to leave their friend behind; they had made plans to travel all together to the goldfields.

So thirteen of them had come to do one day's hard labour each for the Government.

We have left the North Island, with its Hot Lakes district, whose chief interest is its strangeness. There is nothing quite like it in the world, and we shall go for a little to the Cold Lakes district of the South Island, where the scenery is a little more like what may be seen in other countries, with the additional charm of wildness, for much of it has yet to be explored by man.

For very many years we have been closely connected with this part of New Zealand, a beauty spot of a beautiful country. Large lakes stretch long arms back into the huge range of mountains, while the Pacific Ocean on the other side has worked its way in amongst the mountains too, and sends huge arms running inland, as if trying to meet the lakes. These are the world-famous sounds, and much of the high wooded mountains lying between them and some of the lakes is still unexplored (see Fig. 6). One of these lakes is Te Anau, our lake, as we called it, where we rented a sheep run from the Government of 80,000 acres, not counting forest country, which we could have for miles and miles for no rent at all, if we could make any use of it. Lake Te Anau is about 40 miles long by about six miles at its broadest, and, in addition, it has huge fiords running into the mountains. On the shores of Station Bay, half way up, our homestead buildings stood. We had the lake for years all to ourselves; there were no other human habitations near, and it has been most interesting to watch it and Lake Manipouri being gradually opened up for tourists. At one end of our Te Anau sheep run our boundary was a whole degree of latitude—you may say—no need of fences; there was nothing to fence out, but the unexplored, evergreen, bush-clad mountains.

Opposite our homestead buildings, across the lake, which was here six miles broad, one of our men was exploring one year in the slack season when he discovered a lovely little lake. It was about three and a half miles long, shut in by high wooded mountains, and the surface of its waters was crowded with wild duck and teal of different kinds, grebe, and other wild fowl. Neither they nor their ancestors had ever seen a human being, dog, or gun, so they knew no fear, and allowed our man to come as close as he liked and never



Fig. 5. Canoe Hurdle Race, Ngaruawahia.



Fig. 6. Lake Te Anau, Cold Lakes District, South Island.

offered to fly. This is Lake Katharine, called after myself. Our Te Anau sheep station was at the uttermost ends of the earth, so to speak, the very back blocks, and no place for women and children. So we lived near a town, in civilisation, and went up to the lake in summer, or at busy seasons of the year—a three days’ journey from home. Formerly, the last day’s travelling to get to Te Anau homestead took me between eleven and twelve hours in the saddle, no roads at all, and fording innumerable streams and large rivers. One, the Upukerora, we had to cross twelve times as we wandered up its narrow valley. This may sound commonplace, but, remember, those snowfed mountain rivers have very strong currents and are very often in high flood when they are discoloured, and there is no telling how deep they are. And the “ get out ” is no joke when your horse, finding the shingle banks undermined, and too steep, begins to fall back upon you, and you throw yourself off his back into the flooded river for safety, as happened to me one day. Then you think of the New Zealand death, as it is called. The newspapers, in giving an obituary notice of some one, will say, “ He fell a victim to the New Zealand death.” They do not stop to explain. We all know what that means—drowning.

All the same, life in these wild parts is very fascinating. The charm of the unexplored is strong, with its feeling of expectancy, of wondering what you may discover next, while the danger which enters into it all makes it all the more enthralling. Adam Lindsay Gordon, the Australian poet, said :—

“ No game was ever worth a rap
 For a sensible man to play,
 Into which no accident—no mishap
 Could possibly find its way.”

The New Zealand Government had offered to reward anyone who would discover a pass over the mountains from Lake Te Anau to Milford Sound, or to any of the sounds, so that a good walking track might be made for hardy tourists. (See Fig. 7.)

As I mentioned before, although Lake Te Anau was fully 40 miles long, ours were the only buildings anywhere near it. Some years after we had taken over the sheep run, stray men began to come about the lake and pitch their tents about

18 miles from us. They were men who had had an unhappy past and who wanted to get as far away from civilisation as possible; they would come and offer to work for us at the busy seasons, and we were thankful to have them. One of these waifs and strays was "Dick"; he built the first mansion on the lake (that is to say not counting our own), a one-roomed hut thatched with scrub. It was through no fault of his that he had fled from his fellow creatures, but through the fault of another. An honest, clever, sober, entirely self-educated man, a boat builder by trade, he developed into a great naturalist, and became an authority on the strange wingless birds, and flightless ones too, which have their home in these wild wooded mountains, across the lake from our homestead. During nine years he worked for us whenever we needed him. Life in these wilds makes people self-reliant and resourceful: Dick took us to see his hut one day, and on entering I was met by an overpowering smell of decayed animal matter and quickly backed out. "Oh, it's only my mousetrap, which has been catching mice while I've been away from home the last three months. You see, they would destroy all these valuable wingless bird skins up in the rafters, so I had to think of something that would go on killing the mice while I was away." It was such an ingenious trap. I must describe it. He had a large, square, empty oil tin, with the top cut off, which he had filled three parts full of water. He had made a tiny wooden wheel, like a treadmill, and fixed it across the top of the tin and baited it. The oil tin was sunk beneath the floor of the hut—which was on piles, only a hole cut in the boards to show the wheel. The mouse ran across the floor to the bait, stepped on the small wooden platform, the wheel revolved with the weight of the mouse, round it went depositing the mouse in the water, and was so nicely balanced that it set itself again, ready for the next victim.

Here, when at home, Dick would sit in the evenings studying natural history. He had a fishing line from the hut to the lake baited for eels, and after dark, as the eel took the bait, it rang a bell at the other end of the line in the hut. Dick would quietly lay aside his volume, go down to the lake, and haul in to-morrow's dinner for himself and his dogs.

We call New Zealand a new country; it is only new so far



Fig. 7. Milford Sound, West Coast, South Island.



Fig. 8. Kiwi. (*Apteryx Australis*).

as white people are concerned. Running up through the two large islands is a high range of mountains, the whole of which are older and have been longer above the sea than almost any other part of the world. If the New Zealand Islands were not so old we would not have that curious bird life out there, the birds without wings, such as the kiwi, and those like the kakapo, that have large wings but cannot fly (see Fig. 8). It takes countless ages for a bird to change as the kiwi has done and for its wings to become atrophied from want of use.

Another of the stray men who began to come about the shores of Lake Te Anau was Brodrick, known as “ Old Broad ” (suggested by his name and immense width). He must be mentioned, because he was the first to put a steamer on the lake. He drifted up our way, coming originally from the lumber camps of Canada, where, according to his own story, he had fled to avoid having to fight in the American Civil War. He was a hardy, rough, old pioneer, with a keen sense of humour, and full of anecdote, capable, and full of resource, but not fond of work for work’s sake. He soon fell under the spell of Lake Te Anau and took a deep personal interest in it. His main occupation was pressing wool at our station and sailing our wool boat up and down the lake. For many years it was the only vessel on Lake Te Anau, and often he had used it to take a stray tourist up to the head and down again, on which occasions he was delighted to act captain and crew of the little 15 ton boat, also as cook, general provider, guide, philosopher, and friend. At last the county authorities began to talk of making a road to the foot of the lake, and old Brodrick then felt moved to prepare for the reception of the expected tourists. He took, indeed, such a deep personal interest in the lake, as if it were his own property, that he could not have the place disgraced, as it would have been, if tourists had not been able to see the beautiful fiords and head of the lake. I think it was more from this reason, than with any expectations of making his fortune, that Brodrick went down country to the little town of Invercargill and bought a poor little old steamer, had her cut in half, and conveyed to the lake with great difficulty, almost all the way without any made roads, a huge bullock team to each half, and the journey lasting weeks.

In course of time the two halves were joined together,

with a bit added in the middle, and the weird little craft was safely launched on Lake Te Anau (a bottle of whiskey being broken over the bows, but not a drop of the contents being wasted!). The boiler and engine were very poor, and the only fuel was firewood, so, at the very best, six to seven miles an hour was the maximum speed. But as "Old Broad," who was captain, engineer, and crew, was quite unused to machinery, and was by nature both dirty and lazy, the top speed soon became four to five miles an hour, and breakdowns were frequent. He had painted the name, "Te Uira"—after an old Maori chief—on the bows, but as someone pointed out that was Maori for the lightning, he got unmercifully chaffed and could not stand it any longer, so painted out the old name, putting "The Ripple" in its place. He was rather proud of this choice until one moonlight night—after three breakdowns on three successive trips—someone found the paint pot and neatly inserted a large "C" in front of Ripple. Then there was trouble, though it is said he had been up the lake and down again before he noticed the addition.

Many good and true stories are probably still being told by English tourists who chanced to risk their lives on that little boat. Too lazy to cut good supplies of firewood in advance, his fuel was always green and had to be stacked on top of the boiler to dry. The boiler was soon very hot, the wood began to smoulder and even blaze. The few passengers were often much alarmed until they noticed with what accustomed calmness Brodrick at the wheel dipped a bucket in the lake and put out the fire. Again, it was a very common occurrence for an announcement to be made, "I must run her ashore—firewood's done!" And passengers found themselves (axes and tomahawks handed round) expected to go ashore into the bush and cut down a good load of firewood. As for breakdowns—people benighted without food or blankets, sometimes in gales of wind and torrents of rain—these were too common to be much noticed.

Just one more of these waifs and strays, and that was McKinnon. He, poor fellow, was fleeing from drink, and was quite safe at Lake Te Anau for years, till later drink followed him, and someone erected a small four-roomed wooden cottage, at the foot of the lake, as accommodation house and secured a licence. McKinnon also worked for us

at busy seasons of the year. A clergyman's son, he had ruined himself with intemperance, deserted his wife and two little children in another country, and come to this lonely and beautiful lake to forget and be forgotten. Soon the fascination of the unexplored took a hold of him, as it did of most people brought in contact with it, and McKinnon was the first to discover a pass over the mountains from Lake Te Anau to Milford Sound. So he gained the Government reward, and everyone was singing his praises—he had opened up what one of the London papers, *The Spectator*, called, when giving an account of it a few years ago, “The finest walk in the world.” At first it took a week to walk or scramble across; one had to carry tent, blankets, provisions, etc. Now the double journey can be done in little more than half that time by any ordinary tourist, while huts at easy intervals have been erected by the Government. Shortly after the discovery of the pass, when I walked across with my husband, Mr. C—, and our man Dick, we took six days to reach the ocean, partly owing to floods by the way. We had to carry blankets, provisions, change of clothing, etc., for four people for that time. Oatmeal porridge and sugar was our chief food on those excursions; oatmeal is light to carry, and porridge with sugar on the top is very satisfying.

After negotiating Lake Te Anau and sleeping the night in a rough empty slab hut in the bush, our first day's walk from 8 a.m. to 7 p.m. was in glorious weather and unspeakably beautiful scenery. The valley of the Clinton, up which we went, is more of a canyon than a valley, and filled with bush for the first eight miles. Its length is about twelve miles, and its width half a mile or less, while precipitous mountains rise on either side to the height of 3,000 or 4,000 feet. A turbulent glacier-fed river rushes alongside, though well below, the track. This track is sometimes on the bare mountain-side and sometimes cut through “bush”—“mixed bush,” from great beach and pine trees, down to the ribbon wood, with its beautiful white flowers, not unlike syringa, and the innumerable ferns of all sorts and sizes, often connected with trees, with long festoons of bright green moss. Once over McKinnon's Pass, down the valley of the Arthur River, this “bush” becomes much more luxuriant—the trees are bigger and more varied, and great tree ferns and cabbage trees give the forest almost a semi-tropical appearance. (See Fig. 9.)

That first day, though so enjoyable, had an unpleasant ending. At the lake, the day before, we spoke to three English tourists and their guide; they promised to push on to a hut over the pass and not get in our way, as we intended camping for the night in a rough fern shelter we knew about. One of the Englishmen, an elderly man, I had met before, and warned him not to try the walk. He was rather offended, and wrote back to say where a woman could go he could. When we reached Dismal Camp, or Inferno, as we christened it, because it was made of ferns, and we had such a wretched time there—we were horrified to find the English party and guide in possession, Mr. B——, the elderly man, utterly broken down, really ill, and unable to go a step further. Dismal Camp was situated in a very narrow part of the Clinton Valley in a thick patch of "bush," rather dark and gloomy, where the sunshine could not penetrate, and where high ferns and dripping mosses, even in fine weather, kept it damp and wet and depressing. It was only twelve feet long by six feet broad. Into this seven men and myself had to crawl and spend the night. Soon tropical rain set in and poured down on us through the fern all night. Rats ran over us as we lay on the damp mud floor. Avalanches of snow, loosened by the warm rain, thundered down into the narrow valley where we lay, sounding unpleasantly near, while the curious night birds, the kiwis and kakapos, boomed and whistled, making night weird and uncanny. Of course, we could not sleep, so as soon as the first streak of daylight came we rose and made some porridge and started to climb over McKinnon's Pass, voting it was much pleasanter—(see Fig. 10)—to walk all day, though drenched to the skin, than to sit and have the rain pouring on us through the fern. Poor old Mr. B—— could not walk, so his fellow travellers left him some food, and promised to call back for him.

The New Zealand Government had sent a batch of convicts round by sea to form the track on the ocean side of the pass, thinking that owing to the wildness of the bush country, and to being shut off from civilisation by huge mountains, lakes, and fiords, that the men would be quite safe with the ordinary numbers of warders. But these convicts kept escaping in couples and coming down on our homestead nearly starved to death for their first chance of food. Of



Fig. 9. New Zealand Bush.



Fig. 10. The Clinton Canyon and McKinnon's Pass,
Te Anau-Milford Track.

course, they took the precaution first to steal clothes, sometimes those belonging to our shepherds camping out, in order to discard their prison ones. They then told a long story, how they were explorers, and had lost their way. We knew better, and on one occasion our manager was able to pass word on to civilisation, and that couple were eventually caught. The convict settlement at Milford Sound was soon voted a failure, the men were taken back to prison, we had peace, and McKinnon's track was finished by decent bush hands!

The chief features on the Pacific Ocean side of the pass are the Sutherland Falls—very beautiful, 1,904 feet high—Lake Ada, and the Arthur River. Lake Ada was called after an old friend of my young days, she being the first woman to see it, approaching it from the ocean side years before McKinnon's Pass was discovered. It is a most uncommon lake, because it has a forest growing up from the bottom—at least, I suppose the trees are long since dead, but the black jagged tops of huge pine trees still appear in places above the surface of the waters. It had evidently been a fine wooded valley at one time, blocked by avalanches, and turned into a lake. The scenery here is very beautiful (as it is along the whole of the route), but as it was my business to bale out the water from a crazy little boat of McKinnon's, while the men rowed, I had not time to look about me. Down the Arthur River, with its rapids, we went in the same little old boat, and nice and exciting work it was!

Of course, all this has been changed—I am speaking of the track 23 years ago; things have been made easy by the Government, who have had good tracks cut out of the face of the cliffs, so doing away with the necessity of boating on the rather treacherous Lake Ada and down the upper reaches of the Arthur River. Comfortable little huts have been erected at fairly short intervals, where provisions, blankets, and porters can be obtained during the summer months, and where, I am told, they have even added mattresses to sleep on! To my thinking much of the charm has been taken away by these so-called improvements, but one must remember by their means far more tourists are enabled to undertake this extremely beautiful and enjoyable walk.

Mr. Melland and some friends interested in the beauties of the track and of Lake Te Anau subscribed and lent money to a Mr. and Mrs. Garvey, who erected an accommodation house at the head of the lake so that tourists could have a

comfortable bed after their long day on Te Anau and before the walk proper began. Before that tourists were rather a nuisance to us, coming sometimes in parties—always men, of course—sometimes with horses too, and calmly asking our manager, or ourselves if we were there, to take them in. Of course, we had to; there was nowhere else for them to go, and it was always the busy season. Then they would take a fancy to the very rough life amidst beautiful natural surroundings; it was an experience for them, and it was often very difficult to get rid of them. They would stay for days, men we had never seen or heard of before, and never would again. Occasionally there were amongst them interesting celebrities and some members of the English nobility.

Just before we went across "The finest walk in the world" McKinnon disappeared. The New Zealand Government had engaged him to put in three months at clearing the track a little of saplings and jungle. So he laid in a supply of provisions and called in, in his whale boat, at our sheep station for some mutton, then set off up the lake with a fair wind.

Nothing was heard of him for months, so when we were up at our Te Anau run, ready to walk across his track to Milford Sound, a search party of police constabulary sent by the Government arrived at our homestead to hunt for McKinnon. As one of our shepherds had picked up his cap on the shore of the lake one day, that part was searched first. We all joined, either boating or on foot, and Dick and Mr. C—soon found McKinnon's whale boat sunk in a bay of the lake, the tip of the mast just showing above water. His tucker box and sou'wester were picked up on the shore opposite, but his body has never been found.

On the beach of this bay, where his sunken whale boat was discovered—just three miles from the homestead—there lies a huge block of granite, the only one lying on the shore for many miles round. It was thought this would make a good tombstone, so his name, "Q. (Quinton) McKinnon, Dec., 1892," was carved upon it.

A JOURNEY THROUGH TURKISH ARMENIA AND
PERSIAN KHURDISTAN.

By M. PHILIPS PRICE, F.R.G.S.

(Addressed to the Society in the Geographical Hall, on Tuesday, March 10th, 1914.).

In my journey through the provinces of Asiatic Russia in 1910 from Siberia to the Caucasus, I made it my object to study the effects of the political expansion of Russia and the consolidation of her Eastern Empire.

I visited the fertile wheat belts of Siberia, the barren plateau of Mongolia, the sandy wastes of Turkistan and the highlands of the Caucasus. Throughout this country I came into contact with Russian civilisation in process of absorbing the relics of the former Tartar Empires of Central Asia.

This stimulated me to visit those countries beyond the Russian frontier, where I could see the relics of the ancient Mohammedan kingdoms still untouched and judge for myself what the future is likely to bring forth.

It is abundantly true that geography is the basis, not only of political history, but of the scientific study of mankind, and therefore I first refer to some of the geographical conditions of the continent of Asia.

Across a large part of this continent, from the Pacific to the Mediterranean, runs a zone of elevated tableland, rising from the North Siberian Steppes in the North and from the plain of Hindustan in the South. This tableland is known by different names in different parts: there is the Gobi Desert of Central China, the Plateau of Tibet, the Highlands of Afghanistan, the Iranian and Armenian plateaux of the near and middle East.

If we look closely then, we shall see that this tableland is traversed by ranges of mountains which trend across the continent in, roughly, easterly and westerly directions. When I crossed Siberia on my way to Mongolia, I felt as if I was gradually ascending a staircase: From the lowlands of Yenesei I rose up across ridges of mountains, first 1,000 then 2,000 then 3,000 feet and so on, until at last I found myself in the plateaux of Mongolia where the bottoms of the valleys were 8,000 feet above the level of the sea.

But the most important feature of this plateau is the fact

that in its centre it narrows into a neck, and the earth's surface is much crumpled by inaccessible mountain ranges. Eastwards to China and west to Persia, the plateau opens out, broadens, and the mountain ranges become less complex. North-east Asia Minor and North-west Persia form an integral part of the series of tablelands which connect the Mediterranean with the Pacific Ocean. The geographical condition of this plateau throughout its whole length therefore makes access across it from north to south difficult and in places impossible, on account of the transverse ranges running east and west across it. On the other hand, no natural obstacle obstructs the passage along the tablelands from east to west, and once access is obtained to the plateau, easterly and westerly movements are easy. We thus see how important are the geographical features of Central Asia as being the main factors governing the movements of the human race in that continent. It is a significant fact that all the race movements of mankind, which, originating in Asia, have ultimately affected Europe, have roughly followed the lines set forth by the physical conditions of this plateau.

The Mongol invasion of the 13th century which had its birth on the Mongolian steppes swept southwards till it reached the edge of the plateau in its most impenetrable part in Afghanistan and then followed westwards over the Caspian Sea to Russia. Other great political movements such as that started by Timur of Samarkand in the 14th century and later still by the Ottoman Turks culminated in military invasions which have an easterly and westerly movement, chiefly westerly.

Europe has awakened since the days of those invasions from Asia.

The Russian Empire has covered in its political net the lower steps of the plateau on the north, creeping slowly southwards. The British Empire in India has covered the lower steps of the plateau on the south, and like a sentinel is standing on guard behind the natural frontiers of Afghanistan and Tibet. Between these Empires lie the independent States of Tibet, Afghanistan, Persia and Turkey. The Ottoman Empire acts as the bulwark between the Caucasus and the frontiers of Egypt, while Persia and Afghanistan bar the way from Turkistan to the Indian frontier.

These facts have considerable political significance. If these independent Mohammedan States fall into decay, the

Russian and British Empires stand facing one another in Asia. It is useless to disguise the fact that the civilisations of these two empires are wholly diverse, and their methods of government, particularly in Asia, totally dissimilar. If once either of these two powers is established on the plateau, their influence must permeate its whole system and destroy the buffer civilisations existing there.

Moreover the preservation of these civilisations cannot be without effect upon the culture of the world, for though they have fallen into decay in recent years, they have in the past deeply affected the religion, philosophy, art and literature of Europe, and indeed have been the main inspiration of all the higher European culture.

How far is it possible to regenerate these native civilisations, these buffer states on the Central Asian plateau? What is their relation to the two great empires to the north and south? To study these problems in relation to the physical condition of the country, was in part the object of my journey.

I started from Constantinople in September, 1912, and sailed to Trebizond on a Turkish cargo ship, which coasted along the north coast of Asia Minor. There was a mixed cargo of Mecca pilgrims, Turkish soldiers, Khurdish shepherds and various animals. The rocky coast is forested with oak scrub and spruce, and is intersected by deep valleys running northwards to the Black Sea. These valleys contain at their mouths small deltas, where little Turkish towns have been built. The north coast of Asia Minor is not rich, but the climate is good and its valleys are important as the sole means of access to the plateaux behind. At last I reached Trebizond, where I left the ship.

Trebizond is the gateway to north-east Asia Minor and North-west Persia, it is the most easterly town on the Black Sea and the only free port open to the commerce of Europe which gives access to the plateaux of Armenia and Northern Persia. Since the Russian annexation of the Caucasus, all Caucasian ports are closed to European commerce, and now it is only from Trebizond that caravans of European goods can reach the territories behind. This is important to Manchester.

British participation in the trade of the territories behind has been of long standing. On behalf of our commercial interest there were secured alterations of the San Stefano

treaty at Berlin in 1878 in order to prevent Russia from blocking the route from Trebizond into Persia by annexing Bayazid. Although the trade has declined of recent years owing to various causes, it is still a highly important route for British, German and Austrian goods, chiefly cotton, iron ware, and sugar to the markets of eastern Turkey and northern Persia.

The town of Trebizond is an old centre of Roman civilisation. For centuries under the Christian Byzantine Empire it became partially independent, but finally succumbed to the Ottoman Turks in the 15th century. The town is built on a rock in the shape of a trapeze, hence its name in Roman times. I found the Turks broad-minded and free from fanaticism and I was able to wander in any of the mosques without trouble and photograph the military barracks and the garrison.

After a few days in Trebizond, I hired a cart, set forth with a Circassian servant who had come from the Caucasus to meet me, and made my way up country.

Travelling in the interior of Asiatic Turkey though not difficult, is not without discomfort. There are no railways and few good roads, the latter being worn in holes and ruts by caravans, bridges across rivers are non-existent, or else broken. Along the best roads one can travel by phaeton, but the safer if slower method everywhere else is pack horse.

One proceeds from stage to stage along the road, sleeping the night in caravanserais or public wayside inns. Travelling is generally safe, occasional robberies take place near the Turco-Persian frontier, but with introductions to Government officials, prestige with the natives may be obtained by a couple of Turkish mounted police with whom it is best to travel in any disturbed district.

I thus left the Black Sea coast, plunging into the interior of north-east Asia Minor following the Turkish military road leading across rugged mountain passes towards the plateau of Turkish Armenia. The scenery on leaving the Black Sea coast is one of surpassing beauty. The road wound along valley bottoms and zigzagged up dizzy heights, looking down on vast expanses of rocky forest land, while mountain torrents careered wildly northwards to the sea. Here indeed was Switzerland in the heart of Asia Minor. Even the little Turkish houses in the valley bottoms were built of wood in the same shapes as those of the Swiss peasants.

The Turks were busy on their harvest of maize, which forms the staple food of the population. Usually the Turks were in the valley bottoms, and Greeks on the higher ground. The former are descendants of military colonists, and the latter descendants of Byzantine citizens. At night I rested in little caravanserais, when many caravans of camels passed northwards from the Armenian plateau bound for the Black Sea; one night 500 camels passed, bearing cotton, rice, and dried fruit from Persia, gliding past the caravanserai in which I was staying, filling the air with the music of deep-toned bells while the occasional cry of a weary camel and the shout of a Turkish caravan bashi rent the air.

Next morning I reached the summit of Zegana, and looking north I beheld a wonderful sight of rolling rocky country and the edge or lip of the Armenian plateau before it plunges to the level of the Black Sea. The rain-bearing winds from the sea had by this time spent their force, and the country, which a day's journey to the north was densely forested, was now covered by a few scrub pines and shrubs. Bushes of the rhododendrons with flowers faded in the autumn sun freckled the mountain sides, while far away in the valley below I could see the road along which I had come winding like a serpent, and here and there upon its track little specks where the caravans, which I had passed hours before, were slowly crawling northwards.

It was on this wonderful spot that Xenophon, marching with his 10,000 Greeks across Asia Minor after many hardships at last saw the sea, and exclaimed in words that have become famous: "Thalassa! Thalassa!"

Leaving the summit of this beautiful pass, I sank down into the valleys on the southern side but my fall here was gradual, and I reached at the bottom of the Gumesh-Khaneshat a higher level than the valley which I had left. I had, in fact, ascended the first step of the Asiatic plateau, and was now on the tableland of Turkish Armenia with its broad valleys, the bottoms of which were 2,000 or 3,000 feet above the level of the sea, and shut in from the north by rolling downs, and a few rocky ridges running mostly east and west.

I quickly observed the difference in the atmosphere from that of the sea coast. The temperature was extreme, and I suffered much in the day time from scorching sun, while at night the temperature dropped to freezing, although it was only September. The features of the country were severe and

hard, almost terrible in their barrenness, but when the evening came, and the slanting rays of the sun shot across the plateau, the plains glowed like fire, and the desert hills showed forth their outline in details of delicate light and shade. To see sunset on a desert plateau is worth all the miseries and discomforts of a day's trek in the hot sun.

One evening I came to the ruins of a beautiful Armenian city. I had now reached the land partly inhabited by Armenians, an ancient race of Iranian stock who have inhabited this plateau since the dim dawn of history. Nowhere do they number the majority of the population, but everywhere along this plateau of North-east Turkey their colonies are scattered about, along with those of their Mohammedan neighbours the Turks, in all places where cultivation is possible. At Varzahan, which was the name of the place which I had reached there was only a collection of peasant huts, but all around were the ruins of curious Armenian churches built in octagonal shape, with cylindrical towers composed of hard grey stone, almost terrible in its severity. They date back to the 10th century A.D. and are typical of Armenian architecture. Inside all was ruin and decay, but on the walls of one I just discerned the fresco paintings of Christian saints in crude medieval style.

After leaving Varzahan, I ascended and crossed the Kopdag Pass, which traverses one of the great mountain systems of Armenia, and is at the head waters of the Euphrates. From its summit I could see the whole trend of the mountains of Turkish Armenia running east and west like giant caterpillars lying parallel across a table, while the Euphrates, here a little stream, trickled in and out of their great flanks.

After another day's journey to the east I reached the famous Turkish city of Erzerum. Here I found a veritable fortress. I was closely scrutinised by the bemedalled Turkish officers as I passed through the great fortifications and reached the teeming human rabbit warren which calls itself a city that lay inside the great military cordon. The city, at one time the most easterly outpost of the Roman Empire, has been in the hands of the Ottoman Turks since the 15th century. It lies close to the head waters of the Euphrates just below a crescent of hills which divide the water-sheds of that river from the Araxes. It is surrounded by heights on the north, south, and east which have been fortified by the Turks. There are earthworks on the west. The importance of Erzerum

cannot be exaggerated from the international standpoint, because in the words of Moltke, "The power which holds Erzerum can control the lower reaches of the Euphrates and ultimately dominate Mesopotamia." The maintenance of Erzerum in Turkish hands is therefore of paramount importance to the political stability of eastern Asia Minor.

The tide of war has more than once surged round the fortress of this city on the Armenian plateau, and twice it has fallen into the hands of the Russians; in the Crimean war, and again in the war of 1877, but each time European diplomacy caused the Russians to withdraw and plant themselves behind the frontiers of the Caucasus.

In Erzerum itself everything has a very military aspect. Turkish soldiers clad in khaki, putties and red fezes slouch lazily about their duties, while officers with fur caps and long grey cloaks sit dreamily in cafés sipping coffee and chatting with one another about war and rumours of war.

Near the outskirts of the city I visited a beautiful building, said to be the mausoleum of one of the early Turkish sultans.

The streets of the town were indescribably filthy. On a little hill above the end of the town was a Turkish cemetery, where the bodies of faithful Mohammedans were laid to rest, often not very deep in the ground. The pariah dogs had been at work, and had brought sundry human relics to the surface. Lower down the hill I found a large number of Turkish and Armenian houses half buried in the hill-side, and all the washings from the cemetery must have poured into their drains. There is no sanitary inspector in Erzerum.

Of course I paid a visit to the Turkish Vali, or governor-general of the province, who resided in Erzerum. It happened that shortly after I arrived it was the morning of the Sultan's birthday, and in company with the British Consul I went to call upon His Excellency in Government House. This consisted of a great barn-like place with plaster tumbling off the walls and a few tattered flags of the Star and Crescent flying from the roof. We ascended a rickety staircase, at the top of which a Turkish brass band with blatant cornets and trombones blared forth something, which I was told was supposed to be "God Save the King," in honour of our British Nationality. In a room hung with Turkish carpets and furnished with French chairs and tables sat the governor-general, a sedate old Turk with heavy eyelids and a nose like a potato. My interview with him was interesting, as it was

here that I first learned of the outbreak of the Balkan War. The governor informed me that he had received instructions from Constantinople that morning to mobilise 5,000 troops and send them to the front at once, and that he was proposing to dispatch all the peasants in his province between the ages of 18 and 25 on foot to trek the roads to the Black Sea coast. It is small wonder that the Turkish Army took a month and a half to mobilise by such methods, but in the absence of railways nothing else was possible.

After I left the Vali, I witnessed a review of the Hamadian cavalry. The nomad Khurds, who live in the mountains of this part of Asia Minor, some years ago were formed into an irregular cavalry by Abdul Hammed, ostensibly for the purpose of strengthening the cavalry, but really for the purpose of massacring Armenians. They still exist, chiefly as an organisation for licensed ruffianism to levy blackmail on their peaceful peasant neighbours. The Turks have allowed them to remain armed, but the reforms in Armenia will probably disarm most of these free-booters. They are supposed to be officered by Turks, but I met one of them in Erzerum who told me that, as he was unable to control them, he sent them to their homes with all their arms while he himself sat down in the café of the town and enjoyed himself. I witnessed a review of this so-called cavalry on the plains of Erzerum, and afterwards a Khurdish dance, in which the soldiers formed themselves into a ring and danced slow measures to the tune of a little Khurdish bagpipe and drum beaten with the palms of the hands.

After some days at Erzerum, I hired four horses and with my servant and an escort of Turkish soldiers lent to me by the governor-general, I rode out of the city eastwards towards the Turco-Persian frontier. The country I traversed was high tableland in the head waters of the Araxes. Low ridges of desert hills lay scattered over the plateau, while little rivers and streams wandered aimlessly. The country was very barren, and cultivation only possible by irrigation near the streams.

I found that the population consisted of two types, the Nomad and the settled. The settled population lived in villages and consisted of Christian Armenians and Mohammedan Turks who lived side by side, often in the same villages, and were indistinguishable except by their religious customs and language. The relations between these Christians and

Mohammedan peasants were amicable in every way. In one village I found the tomb of a saint used as a praying ground both for Armenian and Turk, and one evening I witnessed Christians and Mohammedans praying at the same shrine side by side.

But there are also the Nomads who inhabit the stoney hills above the valley bottoms and who live in tents with their flocks of sheep and horses. These people are called Khurds, people of Iranian stock who speak a language akin to Persian, and are hostile to the settled population, whether they be Turk or Armenian. In the country through which I passed after leaving Erzerum I saw a few Khurdish nomads, the majority living in a semi-settled, semi-nomad state, indicating clearly that they were in an intermediate state preparatory to settling. All through this country the relations, not only between Mohammedan and Christian, but even between nomad and settled, were amicable. It was not till I reached the Persian frontier that the truculent attitude of the nomads became apparent.

In addition to the people which I have mentioned, I came across some colonies of people called Kizil Bashis, another nomad tribe in partial process of adopting settled habits. The Turks informed me that they had peculiar religious ceremonies, which they described to me as Orgiastic, and altogether they regarded them as heretics.

I also came across some remarkable people called Yezides, who are mainly nomads but seem in every respect like the Khurds. But I was told by my Turkish soldiers that they were Devil-worshippers and they had great contempt for them. So much so, that as we passed an encampment of them one morning my Turkish soldiers spat violently on the ground and cried. "May the graves of these pigs be defiled!" A Turk is devoted to his religion of Islam, and he is in every way tolerant of orthodox Christianity, which he regards as a sister religion to his own, but he cannot stand fancy religions like Devil-worship; and when he sees a people like the Yezides observing certain Christian saint's days once a week, certain Mohammedan fast-days another, and for the rest of their time worshipping the Devil, he becomes like a bull who sees a red flag.

During this part of my journey I spent the nights in the villages that I reached at sundown, and as there were no inns I was the guest of the head man of the village. The inhabi-

tants of this part of Asia Minor are Troglodite. The houses are literally tunnelled into the sides of the hills. The entrances are surrounded with stone and turf, and on entering you pass through a long tunnel some 30 or 40 feet into the hill-side above. The access to each house is obtained from the roof of the house below it, and looking at these villages from a distance one can see nothing but a few platforms on the hill-side and holes in the hill which are the entrances to the houses. In the central room lighted by this one shaft, is a raised platform where the men sleep, but the rest of the room is overrun by sheep, goats, cattle and buffaloes, which latter are used as beasts of burden. I spent two nights in such a place as this, but needless to say my repose was not satisfactory. The odour of the larger animals coupled with attacks of the smaller and invisible ones made sleep an impossibility. Matters became desperate when about 2 a.m. I discovered a bullock saying good morning to me by putting his nose in my face. But I endured that night and the following night in this manner, and after that I decided that it was more pleasant to sleep out of doors in the dust outside the Peasant's house and to allow the pariah dogs to sing me to sleep by the pale glimpses of the moon.

It is interesting to note that Xenophon, when he crossed through this country with his 10,000, notes that the inhabitants, who were probably the ancestors of the Khurds and Armenians of to-day, lived in exactly the same manner in underground houses. But he also mentioned that they burned wood, and that timber was prevalent. To-day there is not a single tree to be seen over this desert plateau, and the sole article of fuel used by the inhabitants is dried horse and camel droppings. It would appear, therefore that man has been responsible for the denudation of the forests, or that the climate has undergone a process of dessication.

In the manner described above I wandered from village to village eastwards across the rugged plateau of Turkish Armenia towards the Persian frontier.

One morning a wonderful sight greeted my eyes. Crossing a little neck of hills dividing one plateau valley from another, I saw away to the north-east a gigantic mountain mass, rising up out of the plateau in a perfect cone, and towering like a monster with a snowy cap. It was Mount Ararat. I had seen it before from the northern or Russian side when I was in the

Caucasus in 1911, but I now saw it from the southern side. It rises up over 16,000 feet out of a plateau 2,000 to 3,000 feet, and is the remnant of an ancient but gigantic volcano now extinct and covered with a cap of eternal snow. Mount Ararat appears to be the most northerly limit of an ancient volcanic chain which stretched roughly along the present line of the Turco-Persian frontier. There are other volcanic mountains like Ararat further to the south, but not so magnificent. It appears that the earth's crust has undergone complex fractures about here. The north and south pressure which has created the east and west trend of the mountains is traversed by other earth movements, which have created at this point a northerly and southern trend. The cross fractures thus caused appear to have facilitated volcanic action and hence we have the relics of ancient volcanoes all along this line where these two earth movements meet.

Other extinct volcanic mountains are to be seen in the offshoots of the Anti-Taurus and in Lesser Armenia, and without doubt in some of the peaks of the Lebanon and in the Jebel Druse on the edge of the Arabian Desert. None however are so perfect as Mount Ararat, and small wonder that all the tradition and romance of history is centred round this great mountain.

On the day when I first saw it, as the sun rose in the heavens the blue-grey mist, which usually rises with it over the plateau, enveloped the mountain, and through the mist I could see its glistening snows. It was as if I was looking at the face of some very beautiful and supernatural being, which had clothed itself in a veil of mauve.

That night I reached a little Turkish Block-house, where some Turkish soldiers were stationed as frontier guards. The Russian frontier lies just to the north and the Persian frontier to the east. Here three empires meet on the summit of a little spur at the side of Mount Ararat. I spent the night with four Turkish soldiers in this little block-house, ate rice with the fingers, drank curdled milk, talked about brigands and listened to the fears of a coming Russian invasion.

Next day I arrived at the last Turkish frontier town of Bayazid. The town is chiefly inhabited by Turks, and there is a military garrison with a Turkish governor or mutssarif, whose acquaintance I speedily made, visiting him in a low mud building whence the Star and Crescent floated in the breeze, and announced myself as a British traveller on his

way to Persia. He gave me every assistance for the continuance of my journey, and meanwhile sent some soldiers to show me round the town. It is situated in an amphitheatre surrounded by rugged cliffs, which in one place is a knife-edged schist, inaccessible from either side. The strata of the schist have been tilted in a vertical position, and denudation of all but a certain hard layer in the schist has created this remarkably thin wall of rock, rising to a height of several hundred feet. A medieval castle with underground passages clings to the rocky slopes below this cliff. The natives say that it is a Genoese castle used by the Genoese merchants in the middle ages, but the natives of Asia Minor say that of every medieval castle, and my investigation of it went to show that it was Armenian, for I found some Armenian inscriptions on some of the stones. It had probably been taken by either the Arabs or the Seljuk Turks at one time, for I found a Cufic inscription over one of the entrances.

In the town itself was a citadel on which a beautiful building rested. It was made by one of the governors and built after the Persian style in pure red sandstone. It is now the military barracks and the arsenal, and to my surprise the governor gave me permission to go right over it. The Turkish soldiers were much interested in me, and I found them very pleasant companions while they showed me round. They were simple Turkish peasants and true Oriental fatalists. About a week before, a portion of the roof had fallen in and killed six soldiers. No attempt had been made either to clear up the mess or to prevent a catastrophe of a similar nature occurring in the rest of the roof, reasoning that if the barrack roof fell in, it was unfortunate but they could not help it.

I actually saw right inside the arsenal, which was part of the ruined palace. The ammunition was very old, and I expressed some doubt as to whether it would be of any use in action if they came to use it on the Russians, but the only answer was, "If not, it will be the will of Allah, and what am I to do?" How thin was the veneer of western life upon this all-pervading oriental ground work.

A portion of the palace was used for civilian purposes. In the absence of either a prison or a lunatic asylum in Bayazid, both prisoners and lunatics shared the same quarter adjoining the arsenal. A Khurdish brigand appeared to be getting on very happily with an old Turk who had softening of the brain. What would otherwise have been a tragedy in the west, thus

becomes a natural phenomenon in eastern life. The prisoner strolled about anywhere, indeed he followed me to the place where I was staying, and begged to be allowed to accompany me as a servant into Persia. I afterwards wished that I could have taken him.

After a few days rest at Bayazid I left it to cross the Persian frontier riding with a caravan of pack horses, and with an escort of Turkish soldiers sent with me by the governor of Bayazid. As I proceeded westwards I could see the hills which mark the Turco-Persian frontier to the south-east. The frontier runs directly north and south, and for a long distance follows a distinct geographical line which marks the watershed between rivers flowing westwards to the Euphrates and to Lake Van, and those flowing eastwards to the Araxes River and Lake Urmia.

Half a day's journey south of Mount Ararat, the ridge of hills marking the watershed stops short, and plunges down into the plains of the southern arm of the Araxes. These plains separate the ridge from Mount Ararat, which stands out in a lofty cone surrounded by plains to the north, south and east, and connected with the high ground of the Armenian plateau only on the west. After leaving Bayazid, I crossed the Turco-Persian frontier at the point where this natural ridge breaks off and descends into the valley of the Araxes.

Reaching a little col on the plain at the foot of this ridge, I was informed that on this spot the Turkish Empire ended and the Persian began. My Turkish soldiers now left me, and I was alone on the frontier with my Circassian servant and four horses. There was no Persian guard-post, no customs official to be seen as I left the land of the Star and Crescent and entered the land of the Lion and the Rising Sun. I proceeded to try and find a village to sleep in for the night, otherwise I should have to sleep out under a rock. Skirting the end of the ridge which marked the frontier about nightfall, I observed an encampment of felt tents, which I knew were those of some Tartar nomads. They were the encampments of Khurds, the gentlemen who are notorious for brigandage especially in this district. As I had very little worth stealing I decided to go straight to them. At the edge of the encampment I met two Khurds who came out to see who I was. They had large black turbans, hooked noses, hanging cheeks, and an expres-

sion which suggested that they would cut anyone's throat for very little.

I explained that I was an Englishman going to Persia and that I had heard of the wonderful people called Khurds so I had come all the way to see them. This little oriental blarney worked like a charm, I was invited into the camp, and in a few minutes I was squatting cross-legged on the floor of the tent, while a few black-eyed ruffians squatted round me eyeing me like a prize bull. When once their suspicion was allayed, two of them went off to fetch a sheep to kill for me, and I settled down in comfortable quarters in the corner of this felt tent. The women, who live in a separate quarter of each tent but are unveiled and have quite handsome features, brought me some of their embroidery work. Nomad shepherds of this type are chiefly monogamous. It is only the chieftains or the more wealthy flock owners who go in for polygamy. The price of a wife ranges from ten to twenty horses apiece, and appears to vary according to the price of horses. Women are not by any means oppressed however, and within the precincts of the tent their word is law. Anything to do with external policy such as the migration of the tribe, the position of the tent, the safety of the flocks is unreservedly in the men's hands. I found that the native language of these people was Khurdish, but most of them spoke Turkish which is the dialect running all through this part of the country, whether on the Turkish or the Persian side of the frontier. There was a tendency however to introduce a number of words which were not purely Ottoman, and which are confined to the dialect of Turkish, spoken by the inhabitants of the Middle East and allied to the language of the Sarts of Turkistan, the Tartars of the Caucasus, and the Persians of Azerbaijan.

During supper, I discovered that these Khurds were nothing else than professional robbers, who supplemented the produce of their flocks by occasional sheep raiding in Turkish territory, and looting caravans which entered Persia from the Black Sea. They belonged to a tribe ruled by a famous Khurdish chieftain called Sinko, a notorious brigand about whom I had heard great complaints from the Turkish governors in Armenia. On his behalf they were scouring this country on the watch for any wealthy caravan that might pass through this territory and which might be regarded as

fair game. Under the circumstances I felt happy to think that my worldly possessions were so small at that time.

It seems that the Khurds are divided into two social castes, and this primitive state of society is largely responsible for the state of disorder existing along the frontier. There is first of all a military caste represented by a few chiefs with their servants, who are supposed to keep a rough and ready law and order of their own interpretation. These Khurds protect a second caste, which is engaged in stock-raising, and which pays an annual contribution in return for protection. The Khurdish chiefs on the Turco-Persian frontier claim the right to protect many of the Khurds now settled in the villages on the Turkish side, and also some Armenian villagers too. The consolidation of Turkish authority in the districts west of the frontier have caused these Khurdish chieftains to lose many of their retainers, and their chieftains now find amusement in distracting the Turkish authorities by periodically reviving their old claims and putting them into force by systematic raids and caravan looting. A war between nomad and settled population goes on all over the country. It is not a religious war, because the Khurds are nominally Mussulmen and are more bitter against the Turkish authorities and the settled Moslem natives in Armenia than they are against the Armenians themselves. This kind of social warfare is prevalent all over the Middle East, and is the clash of two civilisations, nomad and sedentary. It is economic rather than religious.

Next day I left my Khurdish robber hosts, and they sent one of their number to accompany me to the residence of the Khan of Maku, a Persian prince who lived a day's journey from here, and whom it was necessary for me to visit. I arrived at Maku at sundown, and found a magnificent mansion where the Khan lived in true regal pomp, surrounded by groves of poplars and willows, running streams and gardens laid out with lily ponds and formal beds of flowers. After days of travelling in the desert, it was like an entry into Paradise, and I thought of the passages in the Koran where Paradise is pictured as one of these fertile oases. The Khan, whose family had for centuries ruled this part of north-west Persia, was now hereditary lieutenant-governor of the frontier district between Mount Ararat and Lake Urmia, under suzerainty of Persia. I spent six days with the Khan as the guest of a true Oriental despot, a portion of his mansion was set apart for myself and my servant, and every evening I

dined with the Khan, squatting on the floor of a large hall and eating with our fingers, fatty rice, sheep's ribs, and delicate Persian vegetables. During dinner a musician sat in the corner of the hall and sang songs and ballads from the Persian classics. I noticed at once how different from the wild abandon of the Khurdish pipe was the delicate music of the cultured Persians. It is in its way very highly developed. The tones are divided into minute fractions and the harmony is highly complex. Persian music is indicative of an ancient and highly cultured people. I found that the khan of Maku was also a great scholar, and had many illuminated copies of the Rubiyat of Hafiz. Every evening one of his servants read passages aloud to us from these books. The Persians think nothing of Omar Kayam on account of his heterodox religious views, but Hafiz is regarded with deep reverence. Even in the wild parts of Khurdistan, surrounded by savage nomad tribes, the Persian aristocrat is a man of letters who loves his country and her literature.

But my ideal of the Persian aristocrat received a shock when I observed the unmistakable signs of semi-European corruption creeping in. One of the Khan's reception rooms was crammed with cheap Russian furniture, the walls covered with crudely painted plaster, an empty vodka bottle or two and a portrait of the Czar lying about, told the tale of Russian influence. Moreover, I was not long before I came into direct contact with it. A man in a blue uniform and round peak cap, who purposed to be a friend of the Khan, introduced himself to me one day, and whilst vouchsafing no information about himself plied me with numerous questions as to what I was doing. I at once stood on my guard, realising that he was a Russian spy sent in from the Caucasus. I subsequently discovered that the Khan dare not transact any business without his permission, and indeed this man had the insolence to try and act on behalf of the Khan in all official interviews that I had with him. With the assistance of my servant, and with a knowledge of Russian and a little Turkish, however, I was able to defeat his intrigues. The following is a typical example of Russian methods in this country. The Khan of Maku has an eldest son who he hoped would succeed as lieutenant governor of the Persian province bordering the Russian frontier. Russian agents induced the Khan to let his son be educated at Tiflis, the capital of the Caucasus. Here he had been taught first of all the gentle art of how to drink, and then

he had been studiously put into the company of the most undesirable moral element in the place, and had returned to Persia a hopeless dissolute. This man the Russians hoped to put in the place of his father some day, and use him as a tool for Russian intrigue. The Khan, however, told me quietly one evening that he wished to make his second son the heir, for he had not thus been corrupted by so-called education in Russia. This bright young man took me out one day hawking, and I spent a pleasant day riding over the desert hills chasing partridges with peregrine falcons. The bag was somewhat restricted on account of the crazy behaviour of our Khurdish servants, who whenever they saw a partridge, screamed wildly and waved their arms.

After resting six days with the Khan, I took my leave, and with an escort of two of his Khurdish soldiers or ruffians I made my way southwards. I passed the wonderful town of Maku, which is surrounded by an amphitheatre of overhanging cliffs, in which are old caves where Christians used to worship for fear of the Mohammedans.

The first night I spent near a hot sulphur spring where we all bathed, and after two more days' journey to the west across the desert plateau and past a few ridges of barren hills, I reached the plain of Khoi, a fertile alluvial spot at about 1,500 feet above sea level. It lies about a day's journey north of Lake Urmia, from which it is separated by a low ridge of hills. In the centre of the plain stands the Oasis of Khoi. I found that the town was surrounded by a fine old mud fortress with four gates on each side.

At last I reached Tabriz, where I found one of the few British Consuls in the north of Persia, where there is a guard of British-Indian soldiers. Here I rested about a week and went about the town, wandering in the bazaars and visiting the Persian officials.

Tabriz is the principal town in the north-west of Persia, and the second largest in the whole of Persia. It is the great distributing centre for Azerbaijan and the centre of Persian culture and political progress. But the action of Russia in recent years has stamped out all enthusiasm for reform, and I found the population singularly submissive, and ready to acquiesce in annexation to the Caucasus through fear of assassination by Russian agents.

Leaving Tabriz I proceeded on my way to visit Teheran,

the capital of Persia, crossing some 100 miles of the Iranian plateau along the trade route connecting the two towns. The country through which my road lay was somewhat different from that which I had traversed in Armenia and on the Turco-Persian borderland. Rugged plateau valleys and desert hills running in every direction, gave place to vast expanses of desert plains endless as the sea. As one approaches Central Persia, the rugged mountains of the Turco-Persian borderland sink to the level of the desert which is here a vast plateau plain at about 2,000 feet in elevation.

The desert of central Persia itself is not a sandy one, but is composed largely of dry mud and pebbles, the relics of an ancient shallow sea, which at one time covered the Central Asian plateau. Little Persian villages are clustered beneath the chains of desert hills, where perhaps a little spring oozes from the rocks and alone makes human life possible in this vast and dreary waste. Perhaps only once a day a traveller sees a collection of mud huts surrounded by groves of poplars, the only indication that human life exists at all. Every now and then a beautiful oasis is reached, where by some gushing stream a leafy forest of elms and poplars has risen, surrounded by vineyards and rice fields. The fertility and beauty of these oases present the most striking contrast to the wilderness outside, and form one of the most characteristic features of Central Persia. The inhabitant of such an oasis is naturally a lazy person, for he would be more than human if he desired to leave such a home for the desert outside. These are just the sort of conditions which have produced the natural characteristics of the Persian, laziness and indolence, not unmixed with cowardice but highly intelligent, a lover of art and letters, and indeed the cultured man of the east. He has developed the æsthetic side of his nature at the expense of his physique and manly qualities. He is a striking contrast to the Turks, Khurds and Armenians, who live in the plateaux of Khurdistan and who have in their native surroundings all the characteristics of a highland race with its virile physique.

As I wended my way from Tabriz across the endless sea of waste where not a living thing but a prickly desert shrub could hold out in its war against the elements, a peculiar sensation used to come over me, I will not say a depression, but a sense of weakness, of impotence against the vast forces of

nature which were manifested around me. This is the attitude of mind indicative of Oriental fatalism as we know it all through the east. Is not this the type of mind which will flourish under such circumstances and environment as this?

The road between Tabriz and Teheran is really no road at all, but only a track which has been followed for centuries by caravans of mules and camels. No cart could travel along it and reach its destination in safety; there are no bridges across the streams, and yet this is one of the principal highways of Persia. Persia, in fact, possesses no roads as we know them in Europe. My caravan consisted of five horses and two servants, and each day we averaged about 22 miles, changing horses in the villages as we went along.

The following is a typical view of a Persian village in Azerbaijan; a broad street of mud houses, surrounded by high walls. The walls alone are visible from the street, and it is impossible to see what population lies behind these walls. On entering the door through these walls, one comes into a courtyard, where collections of flat-roofed houses built of mud and straw meet the eye, and in these the Persian peasant lives. He stores his grain upon the roof of his house, and keeps his cattle in the out-houses of his court-yard. One part of his house is set apart for his wife and family, and the other part for strangers, to whom he never refuses hospitality. In this respect he is just like any other Mohammedan in Central Asia. Outside the village lie the vineyards, surrounded by old mud walls decayed in many places. Here the vines, planted in their trenches, creep above the ground, and an old watch tower situated above them is used by the villagers to watch for patrols of robbers.

A Persian never ill-treats his animals by beating them, but he frequently starves and overworks them, and often I have seen horses and mules that had broken down on the roadside through overwork, left to die, or their skeletons bleaching in the hot dry sun.

Four days from Tabriz I reached the town of Mianeh and then crossed a range of desert hills which leads into the valley of the upper Kizil Uzun. This range is the boundary between the province of Azerbaijan and the provinces of Central Persia. Looking back northwards, I could see the great plateau of north-west Persia stretching away to the Caucasus.

Emerging into the open plains again, I passed caravans of camels bound northwards and resting on their journey. Often did I pass small caravans of two or three camels gliding like ships over the desert. Tawny-skinned Persians with round felt hats sat dreamily upon a heap of beautiful carpets and saddle trappings, swaying to and fro and singing old caravan songs which had been handed down for generations.

Sometimes I arrived at a little place in the desert where stood a huge caravanserai or wayside inn. Not a soul was to be seen and the place was tumbling to ruins. It was one of caravanserais of Shah Abbas, the great Shah of Persia, who lived in the 16th century and built great caravanserais all over the trade routes to accommodate the traders and to perpetuate his name. Giant Arabic arches, inlaid with blue enamel tiles and covered with inscriptions from the Koran, towered up above. I entered the imposing gateway and found a great court-yard inside, where a battalion of soldiers might drill, and where accommodation for countless camels, horses and men could be found in the battered buildings that surrounded it. But the roofs had mostly fallen in, and not a soul was to be seen. I found a little tower at one corner of the great wall which had evidently served as a watch tower for soldiers, I tethered my horses to their food in the court-yard and ascended the winding staircase which led to the tower. Here I found an old room, probably a guard house, where safe and secure I could sleep for the night, and here I and my two servants squatted down, cooked our food on a fire of camel droppings, and laid to rest. The wind howled round us, and the bats and owls flitted over our heads, and I thought of all the many scenes which this old tower had witnessed in the dim past ages; of the great and powerful Shahs of Persia and their generals who may have slept within its walls, and of the lines of Omar Kyam, "Look on this battered caravanserai, etc."

And then I came to a wonderful place, a little oasis in the desert of the Kizil Uzun. Wonderful buildings and giant mosques half in ruins, whose brilliant domes glittered in the autumn sun, rose from the desert, and the little mud hovels of a few Persian peasants clustered underneath their shade. This was Sultanieh, the former capital of the Persian Empire where ruled the powerful sultans of the Mongol dynasty, who came from the plateaux of Mongolia and ruled Persia in the 13th

century. The great mosque of the Sultan Hudda Bendeh rose imposingly out of the desert. It was a great dome covered with beautiful enamelled tiles of azure blue, and eight ruined minaretttes stood at the eight corners of its walls. I went inside and found a vast great hall littered with the ruins of bricks and tiles, and here I found several beautiful relics of encaustic tile work. There I saw the tombs of the former Sultans, now covered with dust and decay, there I saw the spot where the Sultans themselves used to pray to Allah, morning, noon and night. The walls which towered over my head were inlaid with the most exquisite tile work and mosaic, setting forth passages in the Koran, but gaping cracks now rent the sides and the rock dove now built her nest in them and flitted about beneath the giant dome.

After passing Zinjan, a large Persian town, I heard wild rumours of civil war. Everyone whom I met on the road told me that Salar-ed-Dowleh, the brother of the ex-Shah and a famous reactionary leader, was on his way from Kerman-shah in the south of Persia, with a large army, to attack Teheran the capital, and was now only a few days' march ahead of where I was. It was somewhat startling news to hear that the capital of the country in which I was travelling and to which I was bound, was just about to be besieged by a rebel army and I somewhat doubted the news until a day later I reached the main road to Hamadan, and there sure enough saw signs of what had taken place. Salar-ed-Dowleh's army was only a few days' march ahead of me and had been in all the villages on the way robbing and looting from the inhabitants. Several of the villages were deserted, the inhabitants having fled, and every article of food had been taken. As I was to some extent dependent upon the food I could pick up on the way, I was reduced to some straits.

I pushed on with considerable haste, hoping that I might see a battle between Salar-ed-Dowleh's army and any force which the Persian government might think fit to send out against him, but a day's journey from Teheran I heard the news that Salar-ed-Dowleh had feared to attack the capital and had subsequently disappeared into the mountains bordering the Caspian Sea to the north.

At length my journey ended, and the great city of Teheran came in sight on the eastern horizon. I entered the west gate-

way where, in the congested traffic, I had to push my way through caravans of camels and donkeys. Here I found a hearty welcome from the British Legation, and spent a week basking in the beautiful sunshine of a Persian autumn. Although it was November the weather was like a fine English July, and the heat during midday was such that one could only remain in doors.

About two days' journey south of Teheran are the ruins of Rae, a very ancient and remarkable place contemporary with Babylon and mentioned in the Bible as one of the places to which the children of Israel were exiled. Countless tumuli and remains of ancient mud walls and bits of pottery lay strewn all over the place, showing that the place would well repay systematic excavation. At present nothing has been done there, and the Persian Government has given no concession for excavation as yet.

On a hill above the ruins of this city are to be seen one of the Towers of Silence, used by the Zoroastrians, the last remains of the old Fire worshippers whose religion was once so prevalent all over Persia. Perched away up on a desert hill rose this weird mysterious tower of cup-like shape. Inside, the Zoroastrians put their dead to be eaten by vultures, and all around I found human bones and bits of skull bleaching in the sun.

The worship of fire and the sun-god, which was accompanied by this method of treating the dead was part of the religion founded by Zoroaster about 2,500 years ago, and was the religion of Persia for over 1,000 years until the great wave of Islam swept across Asia. Persia then became Mohammedan, and Zoroastrianism decayed, but a few fire worshippers still remain in Persia, of whom a few hundred families are to be seen in Teheran, and the rest are mainly in the south of Persia. The majority of these people migrated into India and form the Parsees of to-day; their original home however is in Persia.

I left Teheran in the second week of November and travelled northwards to the Caspian Sea, reaching the mountains which fringe the lip of the Persian plateau, and made my way over a road built by the Russians through rocky gorges, passing endless caravans of camels bound southwards from the Caucasus,

Suddenly I sank down to the plains of the Caspian Sea. For over two months I had been on this Central Asian tableland never below 2,500 feet and now I suddenly sank down over the edge of the plateau to the level of the Caspian Sea 85 feet below sea level.

The difference in this country and the climate was most extraordinary. From barren wilderness I came to dense forest and jungle, rice fields, and swamps where flamingoes and pelicans stood solemnly on the brink. The Persians who up to now I had seen living in their desert homes, in little mud houses, had here erected for themselves straw thatched houses of wood and wattle. Although they still wore Persian dress, their features were quite different from those of their kinsmen on the plateau; they were tall, thin and emaciated, and evidently their frames were saturated with fever. I passed quickly through this country, for I knew it was feverish and dangerous to remain in after so long on the high plateau. I reached Resht on the Caspian Sea, boarded a ship bound for Baku in the Caucasus, and, sailing away from the swamps on the southern shores of the Caspian Sea, I said good-bye to the land of Iran.

I have endeavoured to show that this part of the Central Asian plateau is inhabited by people, who if they are studied and understood with a broad sympathy and tolerance, may still revive under European influence many of their former good qualities, and it must be hoped that it will be possible to infuse into these people just that element of material civilisation which will enable them to strengthen their position again, once more to fulfil their role in a modified form as a buffer state of the Central Asian plateau and once more to be a light to lighten the art and literature of Europe.

THE GENESIS OF GEOGRAPHY.

By Miss KATE QUALTROUGH, F.R.G.S.

*(Addressed to the Society in the Geographical Hall on
Tuesday, October 13th, 1914.)*

To the indifferent geography is an elaborate gazetteer, but to the learned student of nature it is the natural description of the earth, there being no subject concerning the welfare of the human race in which the geographical element does not predominate. In times of peace it is paramount in commerce, in industry, in colonisation, and in trade; and in times of war an adequate geographical knowledge of roads, terrain difficulties and climate has more than once saved empires, just as ignorance of these subjects has been visited with ignominious defeats or barren victories, because geography is, in its highest sense, that science of localisation which has determined the major portion of history.

From man's first entry into the world he has been a wanderer and an explorer—in fact, an unconscious geographer. It is evident from the ethnological map of the world that the world was not peopled by accident—by a mere chance scattering of nations—for the five great races are spread out over vast regions as if they grew there, and the peculiar type of each race being more or less connected with the climate in which it lives, viz., the Black Race to the Equatorial regions in Africa and the East Archipelago, the Yellow Race to Central and Southern Asia, and the White Race to temperate Europe and Asia. But all races must have a common ancestry, because of the general likeness in the structure of their bodies and the working of their minds, and the fact that all the human race, notwithstanding differences of form and colour, are capable of intermarrying.

Ancient inscriptions and figures in Egypt give some idea of the races of men as they were at the dawn of history more than 4,000 years ago. The Egyptians themselves were in stature and features much the same as they were in later times. The celebrated inscription of Prince Una, of the Sixth Dynasty beyond 3000 B.C., mentions the Naksi, or negroes, who were levied and drilled by tens of thousands for the

Egyptian Army, and under the Twelfth Dynasty a procession of Amu, or tribute-bearers, is represented on a wall painting in the tomb of Knumhetp. These can be seen by their features to be of the race to which the Hebrews and Egyptians belong.

The wall paintings of the tomb of Rekh-ma-ra at Thebes of the Eighteenth Dynasty have coloured portraits of the four great races distinguished by the Egyptians: (1) The red-brown Egyptians themselves; (2) the people of Palestine, with their aquiline profile and brownish complexion; (3) the flat-nosed thick-lipped African negroes; (4) the fair-skinned Libyans. Mankind even then being divided into well-marked races, distinguished by colour and features, it is surprising how even now these old world types can still be recognised, so that ancient monuments, geography and history alike prove that the great race divisions of mankind are of no recent growth but fixed before the beginning of the historical period which is the modern period of man's life on earth, preceding it being the pre-historic period when the chief work of forming the races of mankind and spreading them over the earth was done.

But these ancient monuments also show that 5,000 years ago the ancient nations of the East had already come to an advanced state of culture while no doubt the greater part of the world was then peopled by barbarians and savages as in later times. But in the regions of the Nile, Euphrates and Indus there was civilisation, the Ancient Egyptians having the greatest mark of a civilised nation—the art of writing—the hieroglyphical characters of their inscriptions being the origin of our alphabet. They were skilled in agriculture, raising from their fields (fertilised by the yearly inundation) the grain on which their dense population subsisted. How numerous and how skilled in constructive art the Ancient Egyptians were is seen by viewing the pyramids, the great Pyramid of Gizeh being still one of the wonders of the world. The perfection of its huge blocks and the beautiful masonry of the inner chambers and passages show the skill not only of the stone-cutter but of the practical geometer. The setting of the sides to the cardinal points is so exact as to prove they were excellent observers of the elementary facts of astronomy, the day of the equinox can be taken by observing the sunset across the face of the pyramid, and the neighbouring Arabs still adjust their astronomical dates by its shadow. Almost as far back

as anything is known of the Egyptians they appear to have worked in copper and iron as well as gold and silver, so that their arts and habits, their sculpture and carpentry, their reckoning and measuring, their system of official life with its governors and scribes, their religion with its orders of priesthood and its continual ceremonies all appear the result of long and gradual growth.

Of the early Babylonians or Chaldeans less is known, yet their monuments and inscriptions show how ancient and how high was their civilisation. Their writing was in cuneiform or wedge-shaped characters, of which they seem to have been the inventors and which their successors, the Assyrians, learnt from them. They were great builders of cities, and the bricks inscribed with the names of their kings remain as records of their great temples. Written copies of their law exist so advanced as to deal with the property of married women and providing for the daily fine of a half measure of corn levied on the master who killed or ill-treated his slaves. Their astrology, which has made the names of Chaldea and Babylon famous ever since, led them to make those regular observations of the heavenly bodies which gave rise to the science of astronomy. It is to this race that we owe not only our division of time, but the invention of the sun-dial and the week of seven days dedicated in succession to the sun, the moon, and the five planets, an arrangement which is still maintained, the names of our days being merely translations of the Chaldean ones.

The cultivation of the land was an imperative duty not only to man himself or to his master but to the State and religion, for it produced the revenue of the State and the wealth of the temples and provided their offerings. Thus there grew up in Babylon at a very early period—certainly before 2800 B.C.—a most elaborate and perfect fiscal or revenue control by which the wealth of the country could be estimated to the most minute extent. These returns were supplied by the temples, the temple being the treasury and revenue office of the district. But as a means to these returns an accurate survey and census of the country was necessary, and, astonishing as it may seem, this was perfected at a very early period, for by 2500 B.C. it was in a most finished condition. Not only were the estates carefully measured but the

boundaries were marked and recorded, so that it is not surprising that the land surveyor was an important official. The name he bore was Gan-gid-da, the field measurer, literally the man who measures with a cord. The interesting evidence of this inscription is confirmed by the discovery of a most interesting series of plans of estates, certainly the oldest examples in the world (3800 B.C.). Unfortunately, these tablets were much broken when discovered at Tello.

But the monuments still remaining of Indian architecture considered with a view towards obtaining a knowledge of the people are not less important than those on the banks of the River Nile are for a similar purpose connected with the Egyptians. The natives of the Peninsula of India were not only more early civilised but had made greater progress in civilisation than any other people; indeed, they were reckoned by the ancient heathen writers to be among those races of men called Autochthones, or aborigines, whom they considered natives of the soil whose origin could not be traced, and that the wisdom of the East mentioned by inspired writers is to be understood as descriptive of their extraordinary progress in science and arts.

But wherever there are found elaborate arts, abstract knowledge, complex institutions, these are the results of gradual development from an earlier, simpler and ruder state of life, for no stage of civilisation comes into existence spontaneously, but is developed out of the stage before it. Human life may be divided into three stages: The lowest or savage state, when man subsists on wild plants and animals, neither tilling the soil nor domesticating creatures for his food, his implements being of wood, stone, and bone. Rising into the second or barbaric stage mankind takes to agriculture, settled village and town life is established with immense results in the improvement of arts, knowledge, manners, and customs. Emerging into the third stage, that of civilised life, the art of writing begins, which by recording history, law, knowledge and religion for the service of ages to come, binds together the past and the future in an unbroken chain of intellectual and moral progress.

It is generally admitted by geologists that mankind appeared on the earth in the Tertiary period, when the distribution of land and sea and the climates of the earth were not

as now, the peninsula of India not being connected with the mainland of continental Asia, all Central and Southern India being separated from the great walls and foothills of the Himalayan Mountains by a shallow sea represented at the present day by the basins of the Indus and Ganges, the Plains of India, and the Sunderbunds. All Central and Southern India was probably then joined to Ceylon and spread eastwards across the Bay of Bengal to Burmah and the Malay Peninsula. Westwards Central and Southern India stretched across the Indian Ocean to Madagascar and East Africa, while Western Africa was united with Brazil, then perhaps separated by a narrow sea from the Andes of South America.

It has been surmised that mankind came into existence somewhere in Southern Asia, either in India or Malaysia, or possibly in the land now submerged beneath the surface of the Bay of Bengal which united these regions. Later the Tablelands of Central Asia and the great range of the Himalayas underwent considerable elevation, and with them rose the land now represented by the Plains of India. In these regions the warmth and luxuriant vegetation favoured man's life with least need of civilised arts, and successive waves of population may have spread over cooler climates, the white race of the temperate zone being formed the last because it was least able to bear extreme heat or live without the appliances of culture although gifted with those powers of knowing and ruling which gave it the sway over the world.

The primitive village must have been the parent of the oldest form of the later city, and was invariably built round a centre, the site of the original market place and temple, such as the Acropolis of Athens and the Capitol of Rome. In seeking for the centre round which the village was built unmistakable evidence is found as to the country whence it originated, for it is in India that the village of the aboriginal tribes is invariably arranged, so that the Sarna, or sacred grove (in which the trees of the primæval forests are still left standing as the home of the local gods) is the central point of the village. Thus is explained the reverence for the tree, the parent tree of life of all the early races of India, the palm tree of the Babylonians, the sycamore or fig mulberry tree of Egypt, the fig tree of the Hebrews, the olive tree of Greece, the pine of the northern Finns (which has become the Christ-

mas tree of Germany), and the oak tree of Britain. It is the Sarna which also explains the sanctity of the groves attached to the temples and dedicated to the local gods of all countries of Southern Asia and Europe.

Remains of villages of the Neolithic Age are found everywhere throughout Europe west of Greece, proving conclusively that the people living in them had reached a fairly advanced stage of civilisation, growing cereals, millets, and flax, owning sheep, cattle, and goats, besides cultivating fruit trees. There being no evidence whatever in the history of European village communities of any sudden break denoting a change in organisation, it is more than probable that these villages were all founded on the same system of communistic property in land, which is still the distinguishing land tenure in all countries of Asia and in Europe east of the Lippe and of Westphalia. Therefore it is certain that the dwellers in the pile villages in Switzerland and in North Italy held their lands on tenure similar to those found in the pile villages of the Naga and river races of Assam and Burmah. But wherever these are found so also is found the village religion based on tree worship, so that the first villages must have been founded and organised by a forest people—the Mongoloid dolichocephalic Australoid tribes of South-East Asia and South India. It could not possibly have originated in the treeless lands of Northern and Central Asia, the seats of the best known ancient empires, so that the rule of these must necessarily mark a later stage in human progress, for they owed their prosperity to maritime trade. They acknowledged this and the foreign origin of their gods by carrying them in ships called arks in all religious processions. Besides, it is perfectly impossible that the Indian forest aborigines could have learned how to organise their villages from the forest and hunting races of Europe, for until the capacities of India as a wealth-producing country had been developed by its own agriculturists there was nothing to tempt the northern races to leave their own lands and cross the mountains and deserts which intervened. Considering the fact that the Semitic races form a wedge between the white and yellow races, it is clear that the Indian village system was brought into Europe before the Semitic languages were formed and the people speaking them had become a dominant confederacy.

It is also impossible that the exact identity between the village communities of India and Europe could ever have existed unless they had a common origin, so that the logical sequence is: Agriculture was first systematically practised in South Asia by a people which made the village, not the family, its national unit, it being a rule that the parents should never belong to the same village and the children should be brought up, without the intervention of the father, by their mothers and maternal uncles, being regarded solely as the children of the village in which they were born, ruled over by the mothers and maternal uncles. It was this system of government which they took with them into Europe, where they became the Amazonian races of Asia Minor and Greece, and thus the ancestors on the maternal side of the dolichocephalic Basques and the dark-skinned races who were the agriculturists of the later Stone (Neolithic) Age.

But the cranial capacity of these Basques corresponds with that of the yellow race—the great gardening and farming race of Asia who migrated from the Xanthus or Yellow River, settling on the banks of the River Jumna, and thus becoming the first river valley colonisers, who introduced into agriculture the fruit trees found in the Neolithic villages, besides being the first growers of barley and the rearers of sheep. The intermarriage of the matriarchal races with these yellow-skinned agriculturists produced a maritime and agricultural people who must have developed in India the early system of navigation which they had probably first learned in the Equatorial Islands, for the distinction in nautical efficiency was attained in the great island world of the Pacific Ocean and in the neighbouring lands of India long before the spread of Mediterranean civilisation. Sailing vessels and out-rigger boats of native design and construction characterise the whole sea-washed area of Indo-Malaysian civilisation from Malacca to the outermost isles of the Pacific.

And so it was these people who, like the Stone men of Europe, made use of the timber growing in the inland forests on the river banks and on the hills of the Malabar coast to build boats and vessels in which they could navigate the river reaches and make their way along the coast discovering the great commercial advantages possessed by the valleys of the Tapto and Nerbudda, making at the mouths of these rivers the

settlements which grew into the great exporting harbours of Surparaka (Surat) and Baragyza (Broach), and it was from the extreme western point of the Indian Peninsula that they started on the coasting voyages which led them along the shore of the bay which has since that time become the delta of the Indus, and it was from Patala, the modern Hyderabad, the port which they founded on the Indus, that they made a fresh starting point for their voyages, which ultimately led them to the Persian Gulf and the Euphratean countries, where they founded the worship of the earth tree goddess. But as Patala (Hyderabad) is now 115 miles from the sea the days when it stood on the shore must be many thousand years ago (for allowing the rate of alluvial increase at 66 feet yearly these 115 miles must have taken more than 9,000 years to accumulate).

Thus the union of this eastern round-headed yellow race with the long-headed agriculturists of the Indian forest tribes formed the great trading race, the Sumerians, the primitive rulers of the Euphratean Delta. It does not follow, however, that a people once settled never stirred from its adopted country; emigrants there always were and always will be, and navigable rivers are nature-made paths into wholly new countries, so that it can obviously be assumed that it was by way of the Euphrates Valley that the Indian village system found its way into Europe, and the custom arose of property descending in the female line among the Cretans, Ionians, Athenians, Etruscans, Egyptians, and many other Asiatic peoples.

The route by which these brachycephalic races entered Europe is shown by the prevalence of the brachycephalic type of skull among the Slavs and the Rumanians, and their wide diffusion is proved by the predominance of the brachycephalic type of round graves throughout the Bronze Age in Europe and by the legends universally prevalent which connect the knowledge of metals with a race of dwarfs who became the elves of the popular fairy tales. But it was in Asia Minor that they intermarried with the fire worshippers of Phrygia, the discoverers of mining, metallurgy, handicrafts, the pioneers of scientific research, and the first organisers of a ritual of religious festivals held at fixed periods of the year. They were the great builders of the Stone Age, and descending

into the Euphratean Valleys built the cities of Eridu and also the dykes and dams necessary for irrigation.

It was this union which broke up the national organisation of the matriarchal tribes, especially the rule of the mothers and maternal uncles, instituting personal marriages with the father the head of the household, the family the unit of the race, and the mountain its centre, their offspring being the Iberian race, the founder of the Hebrew race. They built the huts with the pole in the centre, and their remains found in places so widely separated from each other as the caves of Wales and Yorkshire and the Neolithic villages of Switzerland and Italy prove that they kept horses, short-horned oxen, horned sheep, goats, and pigs, and grew wheat, barley, millets, peas, flax, fruit trees and vines from stocks which must first have been grown in Southern Europe. They were the first spinners, weavers and makers of pottery, introducing corn into Europe, and represented in British ethnology by the Silurian tribes, the Silures of South Wales; the proof in support of this evidence being the traces found of the old terraced civilisation that marked the husbandry of the early Iberian races. It is at this period of the world's history that the earliest writing is found.

Some slight idea of the mode of life in that primitive age may be gained from the earliest writing on granite, for as man is alone a tool-making animal and thereby elevates himself above the brute creation, so also he possesses another faculty which distinguishes him from even the highest forms of animal life, for whatever arguments may be advanced for the descent of man from the ape family there is one great barrier as yet unbroken, the fact that man is the only animal that can draw or be taught to draw, the genesis of the literary and pictorial arts.

Migrating further north the Iberians allied with the shepherd races of the Caucasus, whose home was on the Central Plain of Cappadocia, the north part of the Euphrates Valley and the valleys of the rivers that flow from it, the nursery of civilised man, where the southern matriarchal races amalgamated and formed the first confederacy. But the evidence proving the order in which this series of primæval historical changes succeeded one another proves also that they were produced by the alliance of originally alien tribes. This

conclusion is confirmed by the cerebral differences and marks of fusion shown by the skulls and skeletons found in the tombs of the Neolithic and Bronze Ages and also by the evidence of linguistic changes. The mythology of the Fish God throws a remarkable light on the enterprise and migrations of this first great race, for just as in geological strata the fossils and the order of superposition tell of the ancient climates and order of succession of the living races inhabiting the globe, so in language and myths is found proof of the formation of successive strata of human thought.

This myth is not confined to Asia and Europe, to the Scandinavians and Finns, but is also found in North America and Mexico. The North American Indians say that they were brought from North Asia by a man fish, and it is impossible to doubt that people migrated from there, some of them passing through China and Japan and some perhaps by direct voyages, because of the coincidences between Hindu, Chinese, Japanese and American mythology. The practical contact of East and West at the northern extremity of the two continents would render the crossing, if there were one in ancient times, a comparatively easy matter for even primitive navigation. To this day there is a constant intercommunication between the natives of North-East Siberia and the Indians on the Northern Pacific coast of America. Moreover, the distinctly Mongolian character of the American Indians is noticeable, the Asiatic type becoming perceptibly more marked in a northerly direction; the natives of Peru even wear the discarded pigtail. More curious still is the strange sympathy which appears to exist between these natives and the Chinese and Japanese immigrants, so unwelcome elsewhere, which suggests some latent racial affinity. As regards the ancient Mexican and Peruvian civilisations, strong resemblances exist in their customs and relics with those of China, striking similarities being found in the patterns used for decoration, and in Tharapace, between Peru and Chili, there are even huge vertical lines of hieroglyphics like Chinese writing. The agricultural basis of society in early Peru had its counterpart in China. Most important is the presence of the cotton plant in America, for it is indigenous to India and was first used for weaving purposes in India and China, whence it was brought to America by the immi-

grating race and after the establishment of maritime commerce in the Indian and Pacific Oceans.

This fish myth could only have emanated from maritime people accustomed to long voyages, which led them to believe that the whole earth was bounded by the sea, and in an age when the traders were the ruling class, the dominant interest maritime commerce between India, China, and the islands of the Malay Archipelago on one side, and Syria, Egypt, and North Africa on the other, with its centre in the Persian Gulf. It could only have been in an age of universal peace, and the ancient inscriptions at Lugash, written in the oldest Akkadian form of cuneiform script, give lists of the imports into the Euphratean Delta, timber and stones forming the most important part of the ships' cargoes. The countries where goods were received were Magana, the Sinaitic Peninsula, Southern Arabia, Dilmun, the modern Bahrein Islands. Those from the west, which must have come by sea from the Red Sea, the Gulf of Suez, the Sinaitic Peninsula, were cedar trees and stone used for the building of temples. Imports from the north were copper and tin, showing that they belong to the Bronze Age, and they must have come down the Euphrates from the slopes of the Caucasus in Georgia, for it is only there and on the northern slopes of the Himalayas that tin had yet been worked. It was these people passing through Asia Minor and Greece who founded the Druid Religion in Britain. They were known as the Cymri, who succeeded the Gaelic Celts, and were the builders of Stonehenge. The whole series of the incidents of the life and rule of Arthur, who was, according to one myth, cast up as a baby by the sea waves, and who is thus identified with the fish-god, are shown by the retirement of his Queen Guinevere to Almesbury on the death of Arthur to belong to the sacred series of stories of the Stonehenge temple, as Almesbury is only a mile and a half from Stonehenge.

With the advent of the Semitics a great expansion took place, for they were born traders and certainly brought an industry with them, for the triumph of the weaver's art originated among pastoral people who, having copied it from the building of a bird's nest, developed it in working up the wool and hair of their sheep, goats, and camels. They spread the culture and civilisation of their adopted country as well as

the cuneiform writing until by the Fifteenth Century before Christ it had become the script of trade and diplomacy of Western Asia—indeed, the preservation and expansion of Babylonian learning was entirely the work of the Semitic race.

For commerce is in itself an historical movement underlying colonisation, causing and stimulating great movements of peoples, traversing the land to reach its destination, but taking account of physical features only as they affect transportation, dealing with systems of routes, surmounting natural barriers which block the advance of other forms of historical movement; every staple place and trading station becoming a centre of geographical information and giving an impulse to expansion by widening the geographical horizon.

It is especially interesting to the student of civilisation to notice that the travelling merchant had in early times another business hardly less important than conveying ivory and incense and fine linen from where they were plentiful to where they were scarce. He was the bringer of foreign knowledge and the explorer of distant regions in days when nations were more enclosed within their own borders or went across them only as enemies to ravage and destroy. The traders were doing much to turn the everlasting jealousy and strife into peaceful and profitable intercourse. From being emigrants and traders, the Semitics, by taking under their protection the whole maritime and land traffic of South-West Asia, became rulers of the countries of the Indian Ocean and Mediterranean Sea, the original immigrants receding into the background, while the cities, which were all stages along the trade routes and rivers which traversed the country and were the motive powers which formed these kingdoms, became the centres from which the country was governed. In India the trading cities of Multan or Mallitana, ruling the commerce of the Indus and the five rivers of the Punjab, Kashi or Benares on the Jumna, Barragzya, Broach, Surat, and Dwaraka (Hyderabad), were all situated on the trade routes of the west, but none of them, excepting Benares, ever attained the commanding position held by Babylon and Nineveh in Babylonia and Assyria. The greatness of both these last two cities was built on trade, their position making them successively the emporium of the East and the West,

and their common fate was to be conquered. The commerce of these early kingdoms was chiefly carried on overland by caravans, the only means adapted to the wide open plains, the insecure state of society, and the various difficulties and dangers which attended the lengthened journeys across the Continent. The merchants engaged in the trade of these parts met at certain points for the interchange of their wares, and thus the goods changed hands several times before reaching their destination.

It could not be by accident that commerce was born on the great river systems, for they are systems of communication and forerunners of roads, always tending to be centres of population. Offering advantages, they have always attracted settlement, fertile alluvial soil, an adjacent water supply, command of a natural highway for intercourse with neighbours, and access to markets. Babylon, founded by the Nimrod of Scripture, covered a great space on both sides of the Euphrates, and it owed its prosperity to its excellent position as a caravanserai, being placed in the highway of the primitive land trade east and west. Food produce in abundance at scarcely any cost of labour was ready for traders in exchange for Chinese silks, Indian gems, and spices, Bactrian gold and gold dust, and Western silver and wine.

At home textile manufactures of wool, linen and cotton were carried to great perfection. Sidonese, as some remarkably fine and beautifully dyed cotton fabrics were called, were so costly as to be restricted to royal use. Brilliant tapestries, upon which the zoology of India was embroidered, were coveted by princes for the choicest hangings of their palaces and harems, and it was from them that the West received its first notions of Indian natural history. Carpets with a pile and coverlets from Babylonian looms were treasures more precious than gold. Borsippa is mentioned as famous for the finest linen and cotton fabrics, but manufactures generally were carried on inside the capital. The production of valuable articles of luxury also employed the Babylonians, as their parching climate rendered the use of cooling perfumed waters universal. They were expert in the art of engraving stones for seals, and they cut the gems of India for signet rings and jewellery, the curious fashion prevailing of carrying a walking stick of fine wood elaborately carved with devices of fruit or

flowers, serving instead of costly jewels to indicate rank and fashion. At Tylos, one of the Bahrein Islands, superior cotton was cultivated; teak oak was felled, and handsome sticks streaked and spotted like the skins of the tiger and leopard were cut; the banks produced pearls superior in hardness and beauty to those of Ceylon. Muscat and Ormuz shared in this commerce. Between these cities and India an active commerce sprang up. The Golden City itself stood on both banks of the Euphrates near the modern Hillah. Its site was enormous, and it had two walls, and at the lowest computation had an area of 100 square miles. The height of the walls was no less remarkable, being $337\frac{1}{2}$ feet, nearly the height of the dome of St. Paul's, and their thickness was 85 feet. The city was entered by a hundred gates of brass and protected by 250 towers, and it has been computed that more bricks were used in the walls and towers of Babylon than in the Great Wall of China, 1,200 miles long. Bricks, burnt and unburnt, and cemented with bitumen, of which springs are still in activity, formed the building material.

The laws of Babylon, especially the code of Khammurabi, are the oldest in the world, being at least a thousand years before the Mosaic, and became the law of Western Asia generally. In the commercial laws the greatest exactitude was required with regard to transactions, accounts must be carefully kept and vouchers or sealed receipts taken for everything. The dangerous state of the highways which the traders had to traverse is shown by the clauses relating to loss by robbery, while the regulations for shipping are such as would be expected from a people who had a large carrying trade over the rivers and canals of the Tigris-Euphrates Valley.

The Hebrews found these laws in force when they entered Canaan as well as the civilisation, and doubtless they adopted them, as their earliest codes are those of a settled people. The connection between the Israelites and Babylonians became still greater through Phœnician influence in the reign of Solomon, the merchant prince, whose passion for building, and the scale on which he indulged it, remind one of the Babylonian monarchs. The nation, however, reached the climax of its greatness in his reign, for nothing is more remarkable in the history of this people than the immense and sudden development of a widely extended commerce which

kindled the imagination of the people, but which brought them so few real advantages and vanished almost as soon as it had been established.

Yet though this special traffic vanished, being almost exclusively connected with luxuries and the court, it gave the earliest strong impulse to those commercial tendencies which totally altered the national characteristics and changed the people from an agricultural into a mercantile race. The Phœnicians and Babylonians became their models, and Jerusalem being situated centrally with regard to these kingdoms it speedily became a noted emporium of trade. But it is certain that had it not been for their noted habitual industry, perseverance, adroitness and knowledge of business which the nation possessed they would never have been carried into captivity, for neither Assyria nor Babylon required husbandmen, although they evidently required merchants, men of science, of letters, and artisans, because they employed some of the captives in such positions of trust and command. But last, and most important of all, they required the Royal Road—the most important caravan route in the ancient world and the most important geographically and historically in the modern world; the possessor of it had the key to the East and West, a not unimportant matter. What cycles of civilisation has it not survived—the Israelites treading the weary path to captivity, the Assyrians and Babylonians contending for supremacy, until the whole of the Semitic race is overcome by the Aryans, better known as the Medes and Persians.

What a fascination the Royal Road had for the Greeks, who invented the science of geography; the earliest description of the world in classical literature is in the poems of Homer. In fact, the expeditions to the East were as important to them as the exploration of Central Africa to the British in the Nineteenth Century.

In the light of Babylonian learning the views of their philosophers concerning the earth were revised. It was not a planet but a fixed central body, around which the celestial bodies revolved. Heaven was a large sphere, being compared to the shell of an egg, while the yolk represented the earth enclosed in it. Thales supposed the earth to float as a cork in water. Anaximander believed it to be of cylindrical form

suspended in mid-air, and surrounded by water, air, and fire, while Xenophanes supposed it to be firmly rooted in space. Whether there were more worlds than one, and how and when they would be destroyed, were questions discussed quite as frequently in ancient as in modern times. The true view of the spherical form of the earth originated with Pythagoras, although its exact form was not known.

It is a well-known fact that war is one of the chief means of promoting geographical knowledge, and the Persian wars gave a prodigious stimulus to the knowledge of the Greeks. For one thing, they were impressed by the excellence of the Persian roads, and as a consequence they adopted the boundary marks of the Babylonians—the originals of our present mile-stones.

The conquests of Alexander the Great, who trod the Royal Road to Mesopotamia, were purely geographical, his victories depending solely on the overcoming of climatic differences and geographical distance. It is related of him that on his death-bed he caused his admiral, Nearchus, to sit by his side and console him by narrating his adventures when sailing from the Indus to the Persian Gulf. The Conqueror had viewed with astonishment the ebbing and flowing of the tides; ships had been built for the exploration of the Caspian Sea, for it was thought that like the Black Sea it might be part of a great ocean such as Nearchus had discovered the Persian Gulf and Red Sea to be.

His greatest work was accomplishing the union of the East and the West, and originating the most important era in geography by the introduction of maps, the first actual record of a map occurring at this time when Aristagoras, tyrant of Miletus, asked aid of Cleomenes, King of Sparta, against Persia, communicating his ideas by means of a map engraven on a tablet of brass or copper, upon which was inscribed every known part of the habitable world, the seas, and the rivers, and to this he pointed as he spoke of the several countries between the Ionian Sea and Susa. Practically it was a map of the Royal Road.

But the most remarkable result of the Persian wars was that it accustomed men's minds to travelling, hitherto regarded as material for lies. The Platonic laws forbade it until the age of 40 or 50 years, that men's travels might be more useful

and instructive to them at so mature an age. Yet there were exceptions. Herodotus was widely travelled and understood the importance of a knowledge of the geography of a country and its bearings on the history of its people. He considered the whole of the earth then known as one single continent, regarding Europe, Asia and Africa as nothing more than divisions of it. He could not believe that the earth was of globular form, thinking it ridiculous to hear men talk of the circumference of the earth, pretending without the smallest reason or probability that the ocean encompasses the earth, that it is round as if mechanically formed, and that Asia is equal to Europe. Diogenes, Zeno and Aristotle were also great travellers, but the majority of people hardly looked beyond their own country, unlike an educated Roman, who loved travel, and thus there was a greater knowledge of the world in the Roman period than in the mediæval. Looking for Great Britain on the early Ptolemy maps on the extremity of the Roman Empire, but for the fact that the cartographer lost his sense of direction somehow when he crossed the Scottish border, not realising he was going straight on, but thinking he had turned to the right, the map is extremely accurate, unlike the mediæval maps that were perfectly useless for people finding their way about the world; and yet it was not that people were not travelling. A great many more travelled over Europe in the Middle Ages than in the period of the Roman Empire, knowing more about Central Europe than Ptolemy did. Yet they produced maps that have no relation to facts. The only explanation is that in those ages the traveller merely thought about his next night's lodging, passing from one monastery to another and not troubling himself about the relations of one part of the country to another, whereas the Roman geographer thought of the world as a whole, he thought of it imperially, knowing Britain or Spain as a country and one with which his Empire had to deal, thus troubling himself to get acquainted with the general shape of it, so that from him we get maps which have some relation to facts.

Cosmas was a native of Alexandria and a traveller in the Red Sea and the ocean beyond, who, thus fortified in geographical study, became a monk and wrote his "Christian Topography" about the middle of the Sixth Century in

opposition to the pre-Christian theories. Under his pen the inhabited earth became a flat rectangular oblong, surrounded by oceans. At the north is a conical mountain round which the sun—which is 40 miles in diameter—revolves, passing about the summit in summer, so that it is hidden from the earth for a shorter time daily than in the winter, when it passes about the base.

Under the Roman Empire the excellent roads, the fair inns, and the organised system of posting for officials made travelling quite as safe and almost as rapid as it was at any time till within the last 50 years. All the cities of the Empire were thus connected with each other and the capital.

History is said to be a solution of problems. Humanity wonders at the decay of the ancient empires and questions whether our own will last. The answer is that the history of mankind is subject to laws, the same causes produce the same results, tyranny produces revolution, and revolution anarchy, and anarchy tyranny all the world over. The rise of one class is followed by the fall of another; the privileges of the people extend as the necessities of the monarch multiply. The seeds sown by one generation are reaped by future ones. Civilisation dependent upon the bounty of the earth cannot be as lasting as that depending upon the energy of man. The ancient empires of Babylon, Assyria, Egypt, Mexico and Peru were founded on the fertility of the soil; in European civilisation climate has been the most powerful influence and has caused the more successful labour.

Hence it is in the march of progress that priority is unquestionably due to the most fertile parts of Asia and Africa. But although their civilisation is the earliest it was very far indeed from being the best or most permanent, because the only progress which is really effective depends not upon the bounty of the earth but upon the energy of man. Thus it is that the civilisation of Europe has shown a capacity of development unknown to those originated by soil. For the powers of nature are limited and stationary; the powers of mankind, as far as experience and analogy are a guide, are unlimited.

All the ancient empires were situated in hot climates where food was cheap and consequently wages were low, therefore the condition of the labouring classes was depressed—the upper classes being very rich and the labouring classes very

poor, nay, miserably so, those by whose labour the wealth was created receiving the smallest possible share of it, pinched by the most galling poverty; remaining in a state of stupid debasement, broken by incessant misfortunes, crouching before their superiors in abject submission, and only fit to be slaves themselves or to be led to battle to make slaves of others. There is no instance on record of the common people having escaped this fate in any tropical country in which wealth has been extensively accumulated. Among nations subjected to these conditions the people have counted for nothing, having no voice in the management of the State, no control over the wealth their own industry created; their only business has been to labour, their only duty to obey; and thus has been generated among them those habits of tame and servile submission by which, as history tells us, they have always been characterised. Their annals furnish no instance of their having rebelled against their rulers, no war of classes, no popular insurrections, not even one popular conspiracy. There certainly have been many changes, but all from above and not from below.

The Egyptians had an ancient proverb. "Man has a back and only obeys when it is beaten." It certainly was the application of it that built the pyramids, dug out canals, and erected temples. The mere appearance of those huge and costly structures, so stupendous and yet so useless, is a proof of the state of the nation that built them, for to raise them there must have been tyranny on the part of the rulers and slavery on the part of the people. No wealth, however great, no expenditure, however lavish, could possibly have met the expense which would have been incurred if the workers had received for their labour a fair and honest reward. But social conditions were disregarded. If a member of the industrial classes changed his employment or was known to pay attention to political matters he was severely punished, and under no conditions was the possession of land allowed to an agricultural labourer, to a mechanic, or indeed to anyone except the king, the clergy, and the army. The reckless prodigality with which the upper classes squandered away the lives and the labour of the people is appalling.

Whatever happens to nations their names survive the catastrophes which overwhelmed them, for names are like the

heather on the hills and the wild flowers of the wilderness ; wars may trample them down but they cannot be extirpated. The rivers, too, still murmur the names of the people who dwelt on their banks, and foremost among them are those of the ancient empires, teaching us out of the wisdom of ages that though there be no royal road to learning there is one to national prosperity, for they founded their greatness on the geographical instinct of the East.

TWENTY-NINTH ANNUAL MEETING OF THE
SOCIETY, 1914.

The 29th Annual Meeting of the Society was held, by kind permission, in the Lord Mayor's Parlour, Town Hall, Manchester, on Friday, May 8th, 1914, at 3.30 p.m.

Mr. Harry Nuttall, M.P., F.R.G.S., President of the Society, presided.

The following members and friends attended:—Mr. F. Zimmern, F.R.G.S., the Rt. Rev. Bishop Welldon, D.D., Miss Law, Mrs. Potts, Colonel H. T. Crook, D.L., V.D., Messrs. A. Chapman (Eccles Co-operative Society), B. Elliott, J. J. Gleave, J. W. Goodwin, Theodore Gregory, J.P., F.C.A., Wm. Harper, W. B. Leech, D. A. Little, J. W. O'Leary, T. W. F. Parkinson, M.Sc., F.G.S., J. Howard Reed, F.R.G.S., Harry Sowerbutts, A.R.C.Sc., T. W. Sowerbutts, F.S.A.A., W. J. Tyne, Joel Wainwright, J.P., A. Walker, S. W. Williams, L. Young, and others.

Apologies were read from:—Professor W. Boyd Dawkins, J.P., F.R.S., Messrs. E. W. Mellor, J.P., F.R.G.S., and Hans Renold.

The Minutes of the Twenty-eighth Annual Meeting, held on May 6th, 1913, were taken as read, a full Report appearing in the Journal, Vol. xxix, page 57.

The following Annual Report was submitted by the Secretary, who made explanatory references to the principal matters dealt with in the Report.

Mr. D. A. Little, Honorary Treasurer, in submitting the financial statement, which follows the Report, mentioned that the amount of arrears was only thirteen guineas, whereas ten years ago it was £54 19s., and going still further back to 1894, £173 5s. Thus it would be seen that the financial interests of the Society were receiving close attention. The arrears were now less than $2\frac{1}{2}$ per cent. of the income from subscriptions and were, he believed, the lowest on record.

Mr. Little concluded by reading the following letter which had just been received:—

6 May, 1914.

Dear Mr. Sowerbutts.

I am sorry that, after all these years, we have not more support from a large city like ours (more or less in

touch with the whole world). We must continue to live in hopes.

Herewith I have the pleasure to hand over to the Manchester Geographical Society the ten shares (par value £100) which I hold in the Building Company. Every little helps.

I am,
Yours sincerely,
(Signed) GEORGE THOMAS.

REPORT OF THE COUNCIL

FOR THE YEAR ENDING DECEMBER 31ST, 1913.

THE Council have the pleasure to report that the work of the Society has been carried on successfully during the year.

The weekly meetings held during the winter months have been more largely attended than in any previous year, and the Council desire to express their thanks to all those who have given valuable help.

The interesting and instructive character of the lectures delivered will be seen from the following list:—

- “ Old Castles of England and Wales.” Mr J. E. Phythian.
- “ Studies in the Commercial Geography of Lancashire.” Dr. A. Wilmore, F.G.S.
- “ Geography of East Yorkshire.” Mr. T. Sheppard, F.G.S.
- “ Lübeck.” Mr. W. Eller.
- “ The Rhine, from Basel to the Sea.” Mr. J. A. Osborn.
- “ The Swiss Rhine, a scientific study of Scenery.” Mr. J. A. Osborn.
- “ Budapest and the Great Hungarian Plain.” Mr. W. H. Shrubsole, F.G.S.
- “ Among the Carpathians.” Mr. W. H. Shrubsole, F.G.S.
- “ Highways and Byways in Dalmatia, Hercegovina, Bosnia, and Servia.” Mr. G. Waterhouse, F.R.G.S.
- “ Journey in the Balkans and Turkey.” Mr. C. H. Bellamy, F.R.G.S.
- “ Japan, its beauties in Nature and Art.” Mr. J. Hilditch, M.R.A.S.
- “ Visit to the Holy Land and Northern Egypt.” Mr. T. W. Brownell.
- “ The Gambia River and Protectorate.” Rev. T. F. Nicholas, M.A.
- “ Life in San Salvador do Congo.” Dr. M. Gamble.
- “ Dr. Livingstone’s Explorations.” Sir Harry H. Johnston, G.C.M.G., K.C.B., F.R.G.S.

- “Rhodesia.” Mr. G. de H. Larpent.
 “East Africa.” Mr. John Ainsworth, C.M.G., F.R.G.S.
 “Climbing in the Canadian Rockies.” Prof. H. B. Dixon, F.R.S.
 “Visit to New Zealand.” Mrs. Lees, F.R.G.S.
 “Native Life and Customs in Southern Seas.” Mr. Oliver Bainbridge.
 “Spitsbergen: Past and Present.” Dr. W. S. Bruce.
 “Lost in the Polar Regions.” Captain E. Mikkelsen.
 “Romance of the North-West Passage.” Mr. G. H. Warren.
 “Captain Scott’s Antarctic Expedition.” Commander E. R. G. Evans, R.N., C.B.
 “Glaciers.” Mr. J. A. Carter, B.A.
 “Education.” Sir Harry H. Johnston, G.C.M.G., K.C.B., F.R.G.S.

These addresses, with the exception of four, were delivered in our own Hall; two being given in the Houldsworth Hall, one in the Albert Hall, and one in the Free Trade Hall.

The lecture given in the Free Trade Hall on October 31st by Commander Evans was very successful, and the Council are pleased that this representative of the British Antarctic Expedition had such a magnificent reception when he described the work done, with special reference to the journey of Captain Scott and his companions to the South Pole and their sad fate on the return journey.

The Council thank the Vice-Chairman, Mr. E. W. Mellor, J.P., F.R.G.S., for the use of his powerful electric lantern for the lectures in the Houldsworth Hall and the Free Trade Hall. His valuable help is highly appreciated.

The Centenary of the birth of Dr. David Livingstone has been celebrated during the year by two gatherings, at both of which Sir Harry H. Johnston took a prominent part. At the first, held in the Albert Hall, he delivered a lecture on “Dr. David Livingstone’s Explorations and their Results”; at the second, a Banquet held in the Midland Hotel, Sir Harry Johnston was the principal guest, and gave an address on “Education.” The Banquet was a largely attended and successful gathering.

The Journal for the whole of 1912 has been issued during the year in half-yearly parts.

Valuable additions to the Library and Map Collection have been made during the year, full particulars of which are given in the Journal.

The services so freely given by the Victorians in lecturing and in acting as Stewards at the Free Trade Hall and other meetings are greatly esteemed.

The loss by death of the members, whose names follow, is greatly deplored:—

Mrs. Laycock.

Mrs. Oram.

Mr. F. Burton, J.P.

Mr. J. Donnell, J.P.

Mr. G. A. Harrop.

Mr. W. Haworth, J.P.

Mr. Alderman W. Healey, J.P.

Mr. J. Lanyon, J.P.

Mr. J. Tetlow Lewis, J.P.

Mr. S. Oppenheim, J.P.

Mr. R. H. Reynolds.

Mr. C. H. Scott, J.P.

Mr. Ph. Segner.

Mr. I. C. Waterhouse.

Mr. R. H. Watt.

Mr. S. Oppenheim was a Vice-president, member of the Executive Committee, and had previously for many years acted as Honorary Treasurer. Messrs. F. Burton, Wm. Healey, S. Oppenheim, and I. C. Waterhouse were Original members of the Society.

The balance Sheet for the year with the Report of the Honorary Auditor is appended.

It will be seen that there is a small deficiency on the Revenue Account for the year.

The financial position of the Society has been improved partly by the generosity of the late Mr. S. Oppenheim in bequeathing ten shares (£10 each) in the Building Company to the Society, and also by the kind help of the seven members who paid Life Compositions and thus enabled the Society to acquire the 25 shares of the late Mr. C. H. Scott.

In consequence of part of the Building being unlet the Society has received no dividend from these shares during the year.

The number of members on December 31, 1913, was 708, being a net increase of 20 during the year.

Further additions to the membership are urgently needed to advance the work of the Society, and especially to enable the library and map collection to be improved. Card Index Cases, Map drawers and cupboards, and Glass Exhibition Cases for the Museum are especially required. Donations for these objects will be cordially welcomed.

BALANCE SHEET, DECEMBER 31ST, 1913.

	£	s.	d.
LIABILITIES.			
To Sundry Creditors	95	4	7
Subscriptions paid in Advance.....	55	2	6
Life Membership Reserve Account.....	189	0	0
Kirkpatrick Endowment Fund.....	50	0	0
Balance at December 31, 1912.....	81	5	6
Less deficiency for 1913.....	0	8	10
	80	16	8
„ Add the late Mr. S. Oppenheim's Bequest of ten shares.....	100	0	0
	180	16	8
	£570	3	9
ASSETS.			
By 91 Shares of £10 each fully paid in the M.G.S. Bldg. Co. Ltd., as under:			
56 shares purchased	191	5	0
35 shares presented	350	0	0
	541	5	0
„ Subscriptions in arrear.....		13	13
„ Cash in Bank.....		7	4
„ Cash in Hand.....		8	0
	15	5	9
	£570	3	9

NOTE.—The Furniture, Fittings, Books, Maps, Lantern Slides, Stock of Journals, etc., which are insured for £1,000, are not included as Assets in the above Statement. There are 50 Life Members (of whom one is Honorary), and the subscriptions of 31 of this number have been taken as revenue in years prior to 1908.

I have audited the above Balance Sheet and certify the same to be correct. I have inspected the Certificates for the Shares in the Building Company.

THEODORE GREGORY, F.C.A.,
-Honorary Auditor.

April 6th, 1914.

The President, in moving that the Annual Report and Balance Sheet be adopted, referred first to the increase of 20 in the number of members, making the total 708. He said that their aim was to reach a membership of 1,000, and he appealed to the representative members of the Society to help in achieving that object. If they had more members they would have more money and could carry out to a still greater extent the work they had undertaken. Another matter he referred to was the resignation, which they had received with great regret, of Mr. J. Howard Reed, F.R.G.S., as one of the Honorary Secretaries. Mr. Reed had felt himself obliged to take this step because his business engagements now took him out of Manchester so much that he could not attend to the work of the position which he had held with such distinction for almost twenty years. The services of Mr. Reed had been very great, and they all knew how active he had been in the Victorian section especially. He had also represented the Society at the Annual Meetings of the British Association. For all his labours the Society was very much indebted to him, and although they regretted his resignation as one of the Honorary Secretaries, they were glad to know that he would continue to render the Society as much assistance as he could.

Speaking on the subject of "Geographical Progress," the President observed that during the past year there had been considerable evidence that the scientific exploration of the world and the commercial development of its resources had proceeded with greatly increased activity and energy. We had also seen great changes in the South of Europe. Turkey had lost nearly all her territory on this side of the Bosphorous, and this was preceded by great political changes in Morocco and Tripoli. Happily the danger of other powers of Europe being drawn into these difficulties and troubles had passed away, and we were left to the peaceful occupation of making new maps of that part of the world. Railways were being constructed in parts of the world where they were very much needed, notably on the East Coast of Africa, and grants in their aid had recently been made by both England and Germany. Further, previously to that, the British Government gave assistance towards the development of cotton-growing in the Sudan. Mr. Nuttall said that he referred specially to these commercial developments because the Manchester Geographical Society was primarily founded for the

study of Geography in its connection with trade. At the same time scientific geography was naturally studied concurrently. It was the scientific man and the courageous explorer who preceded the trader.

The exploitation of the world was going on very rapidly. Industry was increasing and new communications between various parts of the world were continually being made. The result of all these developments would, he believed, given fair crops upon which prosperity depended more largely than upon anything else, be a great protection against the long depressions of trade we had experienced in past times. After referring briefly to the greater interest now given to geographical studies, as compared with twenty-nine years ago, when the Society was founded, Mr. Nuttall reverted to the rapidity with which exploration was being carried on. The record of the year 1913, he said, was very long and varied, and one could only touch upon a few examples for the purpose of giving an idea of the never-ceasing activity and energy of man.

The region of the mighty Himalayas, a vast and ever-attractive territory stretching 1,300 or 1,400 miles across India, north-west to south-east, and which appealed to the imagination more forcibly, he thought, than any other part of the globe, had been the object of various important expeditions. The more important, perhaps, was that of Captain F. C. Bailey, who was exploring unknown parts of the Brahmaputra and its passage through the Himalayas. Another expedition was in preparation by Dr. Fillipi, a well-known Italian mountaineer, on the north-west borders of India, and it had the support of the Indian Government. The programme of research included geology, meteorology, atmospheric physics, geodesy and topography. There was a further expedition in the same region, also under the auspices of the Indian Government, by Sir Aurel Stein, who was now engaged in a region of Central Asia for the purpose of geographical and archæological research. He started from Kashmere last Autumn by new and difficult routes and he would pursue his investigations over a period of three years.

Northern Arabia had been largely explored by Captain Leachman, Mesopotamia by the Austrian, Professor Musil. This region was one of very great possibilities. There had been various schemes for using the Euphrates to make the land productive of grain and other crops, thus not only adding to the wealth of the world but also to its beauty.

West Africa was still being explored. The interior of Mozambique had been explored by a British Syndicate for the study of its mineral resources. Northern Canada and South America (more particularly Brazil, where ex-President Roosevelt had been on an adventurous journey) were other regions of energies and enterprise of explorers. Further, three expeditions were engaged in crossing Greenland in 1912—1913.

Although every point, from the North Pole to the South Pole, had been reached, there were still vast regions remaining to be explored and developed. For instance, there was Siberia, of which we knew really little, with its five million square miles and only six millions of a population, extending from the boundaries of Europe right across Asia for 3,000 miles. In this vast land there were, he believed, great mineral resources and great wheat-growing possibilities undeveloped. Again it had been estimated that if all the wheat-growing lands of Canada could be brought into cultivation immediately (which, of course, was not possible) Canada could supply the whole world with wheat. Thus, when we thought of Siberia and of Canada we could see that there were yet a great many resources in the world for our use.

Then we had the sad record of Captain Scott, of the scientific investigations of whose expedition we had yet to see a large account. Moreover, Dr. Mawson, who had just returned from the Antarctic, had done a very important work. Already we had one concrete result of his expedition, we knew that he had explored and definitely mapped, for the first time, no fewer than a thousand miles of the coast of Antarctica. There was a prospect of still another expedition, perhaps as remarkable as any, by Sir Ernest Shackleton. He was a man of experience, courage, strength and extraordinary versatility, and we looked forward with every confidence to his successful accomplishment of the task he had set himself. Another prominent explorer was Captain Amundsen who, with his usual resolution and energy, was preparing for an expedition next year to cross the North Pole in a similar manner to that attempted by Dr. Nansen. At the same time Captain Amundsen would engage very largely in scientific investigations.

Concluding, Mr. Nuttall said that he had always held that a knowledge of geography was the foundation of all knowledge and the right starting point. It was the first thing a

child began to learn, finding out first the geography of the room in which it was born and then of the house, afterwards of the outside world. In times gone by people regarded geography as merely something to do with maps. Now it was recognised that geography embraced everything relating to man and the products and natural resources of this wonderful world. In short, it embraced science, romance and utility.

Mr. F. Zimmern, F.R.G.S., in seconding the resolution spoke of the report as highly satisfactory. So large had the attendances been at the weekly meetings that they might soon have to consider whether to restrict admission to members only or to enlarge the Hall again. The Victorians had continued their good work. The membership of the Society had reached a very satisfactory figure, but they had not yet attained their ambition. Therefore he appealed for more support. With their Journal, weekly lectures, use of the Library and Map collection, membership for one guinea a year offered the best value in Manchester. For public utility's sake and for the sake of science itself many more people might become members of the Society.

The Rt. Rev. Bishop Welldon, D.D., in supporting the resolution, said that it was a great pleasure to him once more to show his interest in the Geographical Society. He hoped he might claim that while he was an educationist, he was not altogether dead to the importance of geographical study. With the vain gloriousness of an old headmaster he liked to reflect that Sir Ernest Shackleton was an old scholar of Dulwich College, of which he (Bishop Welldon) was once a master.

The Dean, continuing, remarked that he was afraid the days of geographical renown were passing away, that few lands remained to be conquered. He observed that it had been stated that ex-President Roosevelt had discovered a new river a thousand miles in length. There was no city which could surpass Manchester in its necessary attachment to the progress of geography. When the Bishop of Uganda preached in the Cathedral not long ago, a member of his own congregation in Uganda was waiting for him in the vestry after the service. He hoped the Society would do still better work in the future than even it had done in the past, and he believed that it was not impossible for it to get a thousand members.

In putting the resolution, which was carried unanimously,

Mr. Nuttall said that Sir Ernest Shackleton would highly appreciate any help towards the expenses of his expedition from those able and willing to give, though he was not making any public appeal for the balance still required.

The secretary announced that the retiring Officers and Council had been nominated, with the addition of Messrs. P. K. Glazebrook, M.P., and George Thomas, J.P., to the Vice-Presidents, of Mr. J. A. Osborn to the Council, and the withdrawal of Mr. J. Howard Reed, F.R.G.S., as an Honorary Secretary.

Mr. William Harper, in moving the resolution that "the Officers and Council, as nominated, be elected," expressed on behalf of the members thanks to the retiring Officers and Council for their services during the year, making special reference to the Executive Committee. Mr. A. Chapman seconded the resolution and specially mentioned the services of the Victorians in their lecturing work. The resolution was passed unanimously. (See List with Title-page.)

Colonel H. T. Crook, D.L., V.D., gave expression to the indebtedness of the Society to Mr. Gregory for his valuable services as Honorary Auditor to the Society for the twenty-nine years of its existence, and moved the following resolution:—"That the best thanks of the Society be given to Mr. Theodore Gregory, J.P., F.C.A., for his services as Honorary Auditor, and that he be re-elected." Mr. T. W. Sowerbutts, F.S.A.A., seconded the resolution, which was carried unanimously.

Mr. Joel Wainwright, J.P., who was within three weeks of his 83rd birthday, gave expression to the regret of those present that the Lord Mayor (Alderman McCabe, J.P.) was unable to be present, and moved:—"That the best thanks of this Meeting be tendered the Lord Mayor for the use of his Parlour, and to the President for presiding over the Meeting and for the Address which he has delivered."

Mr. J. Howard Reed, F.R.G.S., seconded the resolution, which was passed unanimously, in the name of all present thanked the President for his very interesting address, and then personally thanked Mr. Nuttall for his kind reference to the twenty years of service which he (Mr. Reed) had willingly given, and would have continued had circumstances permitted. Mr. Reed intimated his intention to continue his support as Vice-President, and to be willing to do all in his power to forward the interests of the Society.

Proceedings of the Society.*

January 1st to June 30th, 1914.

The 950th Meeting of the Society was held on Tuesday, January 6th, 1914, at 7.30 p.m.

In the Chair, Mr. F. Zimmern, F.R.G.S.

The Minutes of the Meetings held on December 16th and 23rd were taken as read.

The Chairman announced the election of the following members : Ordinary : Messrs. S. P. Liebman, G. P. Cookson, Herbert Levinstein and Harry Herd ; Associate : Mrs. Hamilton, Miss Evelyn Harris and Miss M. B. Nash.

Mr. W. Herbert Garrison, F.R.G.S., gave a Lecture on "Newfoundland, our Oldest Colony." The paper was illustrated with a fine collection of lantern views of the Island, mostly hand-painted.

The Chairman moved and it was unanimously resolved that the hearty thanks of the Meeting be given to the lecturer for his very interesting and informing address and for the fine illustrations shown.

The 951st Meeting of the Society was held on Tuesday, January 13th, 1914, at 7.30 p.m. In the Chair, Mr. F. S. Oppenheim, M.A.

The Minutes of the Meeting held on January 6th were taken as read.

Mr. W. Barnes Stevni gave a lecture on "The Romance and Tragedy of the Volga and its Towns." The address was illustrated with 100 Lantern views.

At the conclusion of the lecture Mr. Stevni sang a Russian song, Mr. J. Hindle, L.R.A.M., having kindly volunteered to play the accompaniment, and afterwards half a dozen Russian songs were given on the Pathèphone, which was kindly lent by Mr. D. Fraser Watson, Manchester Agent of Messrs. Pathè Frères.

Mr. George Ginger moved, Mr. R. A. Staniforth seconded and it was unanimously resolved that the thanks of the Meeting be given to the Lecturer for his interesting account of the Volga and for the lantern and pathèphone illustrations.

The 952nd Meeting of the Society was held in the Houldsworth Hall on Tuesday, January 20th, 1914, at 7.30 p.m. In the Chair, Mr. F. Zimmern, F.R.G.S.

The Chairman announced the election of the following members : Ordinary : Miss Ada Abson, Messrs. F. A. Lauder, J. Wm. Lewis, H. F. Parkinson and Mark Winder ; Associate : Mrs. Gumbrell, Miss M. A. Brown and Rev. J. G. Maude.

* The Meetings are held in the Geographical Hall, unless otherwise stated.

Mr. E. W. Mellor, J.P., F.R.G.S., delivered a Lecture entitled : " In the Home of the Rajput." He first gave a short account of the Geography and History of Rajputana and then dealt with his personal impressions of the country and its people, illustrating his remarks with lantern views which included some of the most beautiful pictures of Indian architecture and scenery that have been made public, especially those taken by colour photography, also with cinematograph views, which were extremely interesting records of everyday Indian native life. All the films and slides were taken by the Lecturer, with the exception of a few slides taken by Mr. G. R. Mellor, and were shown by means of the Lecturer's powerful lantern.

Colonel H. T. Crook, J.P., V.D., in moving a resolution of thanks to Mr. Mellor for the very interesting lecture so superbly illustrated which he had delivered, said that Mr. Mellor had surpassed all his previous lectures both in the interest of the lecture and in the beauty of the illustrations, and the cinematograph films shown gave an example of the proper use of the cinematograph.

The Chairman, in seconding the Resolution, which was passed with acclamation, referred to the valuable services of the Vice-Chairman in giving this Lecture and in arranging for the Houldsworth Hall for this and the following lecture.

The 953rd Meeting of the Society was held in the Houldsworth Hall on Tuesday, January 27th, 1914, at 7.30 p.m. In the Chair, the President, Mr. Harry Nuttall, M.P., F.R.G.S.

The Chairman mentioned the loss by death of a member, Mr. Salis Simon, Swedish Consul, and a resolution of sympathy with Mrs. Simon and family was passed unanimously.

Owing to the sudden illness of Mr. P. K. Glazebrook, M.P., his lecture on " Somaliland " had to be postponed, and Mr. T. E. Green, F.R.G.S., gave a lecture on " In the Zuider Zee." The address was illustrated with a large number of beautiful coloured slides splendidly shown by the powerful lantern of the Vice-Chairman.

Mr. Mellor moved and it was unanimously resolved that the thanks of the Meeting be given to Mr. Green for the beautiful slides and interesting account which he gave of his journey. Mr. Green, after acknowledging the vote of thanks, moved that Mr. Mellor be thanked for his valuable services with his splendid lantern, which was the best that the lecturer had ever seen, and for inviting the members and friends to the Hall; the motion was carried with acclamation.

The 954th Meeting of the Society took the form of a Social Gathering, and was held on Saturday, January 31st, 1914.

From 6.30 p.m. to 7 p.m. the members and friends were received by the President (Mr. Harry Nuttall, M.P., F.R.G.S.) and Mrs. Nuttall. On the conclusion of the Reception, Colonel H. T. Crook, J.P., V.D., gave a short address on " Recent Changes in our National

Maps," illustrating his remarks with maps and diagrams shown both from lantern slides and from the original maps by the Aphengescope.

A Concert arranged by the Victorians occupied the remainder of the evening, and the following artistes assisted : Madame Alice Lamb, Madame Marsh, Mr. G. R. Swaine and Mr. J. Hindle. There was an interval at 8.15 p.m. for conversation, refreshments (kindly provided by the Ladies' Committee) and smoking.

At the conclusion, Mr. Harper moved, Mr. J. Stephenson Reid seconded, and it was unanimously resolved that a hearty vote of thanks be accorded to Mr. and Mrs. Nuttall, Colonel Crook, Madame Alice Lamb, Madame Marsh, Messrs. G. R. Swaine and J. Hindle, and to the Ladies' Committee.

The 955th Meeting of the Society was held on Tuesday, February 3rd, 1914, at 7.30 p.m. In the Chair, Mr. F. Zimmern, F.R.G.S.

The Minutes of the Meetings held on January 13th, 20th, 27th, and 31st were taken as read.

The election of the following members was announced : Ordinary : Messrs. C. Dean, W. T. Draper, W. Elliot, J. Watson and D. Fraser Watson ; Associate : Miss Atkin, Miss A. Fosbrooke and Miss Paine.

The Chairman mentioned the loss by death of Mr. James Leigh, a member of the Society for fourteen years. It was resolved that an expression of regret and sympathy be conveyed to his family.

Professor C. F. Lehmann—Haupt, Ph.D., LL.D., gave a lecture entitled : "Armenia, in olden times and nowadays."

The address was illustrated with lantern views, mostly from photographs taken by the lecturer during his explorations.

On the motion of the Chairman it was unanimously resolved that hearty thanks be given to the lecturer for his interesting and instructive address and for the illustrations shown.

The 956th Meeting of the Society was held on Tuesday, February 10th, 1914, at 7.30 p.m. In the Chair, Mr. John Hancock.

Mr. E. G. Prasatham Cotelingam gave a lecture on "British Burma : the golden land of boundless possibilities." The address was illustrated with over one hundred lantern views.

On the motion of the Chairman a hearty vote of thanks was passed to Mr. Cotelingam for his intensely interesting lecture.

The 957th Meeting of the Society was held on Tuesday, February 17th, 1914, at 7.30 p.m. In the Chair, Mr. F. Zimmern, F.R.G.S.

The Minutes of the Meeting held on February 10th were taken as read.

The election of Mr. W. F. Holmes as an ordinary member was announced.

Mrs. Edward Melland gave an interesting account of her "Experiences among Maoris and mountains of New Zealand." Mrs. Melland has spent most of her life in New Zealand, and the story of her travels

in various parts of the country, with the incidents of life and mountaineering, was both interesting and instructive. The illustrations shown added to the charm of the lecture. (see p. 27).

The Chairman moved and it was unanimously resolved that the thanks of the meeting be tendered to Mrs. Melland for the interesting and graphic account of her experiences so splendidly illustrated.

The 958th Meeting of the Society was held on Tuesday, February 24th, 1914, at 7.30 p.m. In the Chair, Mr. F. Zimmern, F.R.G.S.

The Chairman mentioned the death of Mr. Hy. Kirkpatrick, J.P., a member for 27 years and donor of five shares (£50) in the Building Company. It was resolved that the sympathy of his fellow-members with his relatives be conveyed to them.

Mr. Thomas M. Ainscough, M.Com., F.R.G.S., who has lived in China for six years, gave a lecture on "The Marches of Chinese Tibet," through which country he passed on his way from China to India, and illustrated his address with a number of original lantern slides (see p. 1).

On the motion of Mr. Herbert Whitworth it was unanimously resolved that the hearty thanks of the Meeting be given to Mr. Ainscough for his very interesting and instructive address and for the fine views shown

The 959th Meeting of the Society was held on Tuesday, March 3rd, 1914, at 7.30 p.m. In the Chair Mr. F. S. Oppenheim, M.A.

The Minutes of the Meetings held on February 17th and 24th were taken as read.

The election of Mr. Edward Melland as an ordinary member was announced.

The death of Mr. J. H. Abbott was mentioned, and it was resolved that the sympathy of his fellow-members be conveyed to his relatives.

Mr. F. E. Tillemont-Thomason, C.E., F.Ph.S., F.R.S.G.S., gave a lecture on "Recent Great Earthquakes." After briefly describing the Messina shock, the lecturer referred in most touching terms to the hazardous nature of the work undertaken by those engaged in rescuing the wounded and the persons buried beneath the debris. After the chief shock, thousands of buildings are left in a dangerous condition, and any of the hundreds of minor succeeding shocks which occur for from two to six weeks after, at frequent intervals daily, may at any moment send a mass of damaged masonry without warning down upon the heads of the rescuers. Every man engaged in this work did it with the knowledge that at any moment he might be added to the roll of victims. These men worked without reward, without hope of glory, not out of a sense of duty since they were all volunteers, but were actuated solely by a sense of the huge necessity of their fellows, their only motive an intense pity.

The descriptions of the Kingston quake and the destruction of Valparaiso were exceptionally interesting, while the many beautiful

slides fully depicted the extent and horror of each calamity. The chief interest, however, centred about the San Francisco earthquake, since the lecturer was an eye-witness of that terrible holocaust. The views of San Francisco in ruins were the finest earthquake slides ever shown, indeed the lecturer's collection is said to be unique. The whole presented a panorama of ruin such as can hardly be imagined, and his descriptions of actual happenings thrilled while they horrified the audience.

During the course of the lecture several points of scientific interest were introduced, notably the lecturer's theory of the cause and nature of "the twist" during a major shock, it being at the moment of the twist that the buildings come tumbling down as if they were built of packs of cards. The lecturer, being an expert civil engineer, was able to give a graphic account of the method of building those steel and concrete constructions known as sky-scrapers, a type of building which in both San Francisco and Valparaiso withstood the effects of the quake and of the fire.

A hearty vote of thanks was proposed to the lecturer by Mr. R. A. Staniforth, who was present in San Francisco exactly three weeks after the shock and who corroborated as far as he could all that the lecturer had said. The motion was seconded by Mr. T. W. Sowerbutts, F.S.A.A., and passed unanimously.

The 960th Meeting of the Society was held on Tuesday, March 10th, 1914, at 7.30 p.m. In the Chair, Colonel H. T. Crook, J.P., V.D.

The Minutes of the Meeting held on March 3rd were taken as read.

The Chairman announced that Mr. Wm. B. Leech had presented a further 18 volumes on "West Africa," in continuation of the magnificent gift in 1912 of 136 volumes on North and West Africa.

Mr. M. Philips Price, F.R.G.S., gave a lecture on a "Journey through Turkish Armenia and Persian Khurdistan." He first gave a short account of the geography and history of the country and then described his own experiences on his journey in 1912, illustrating his address with many good slides (see p. 45).

On the motion of the Chairman it was resolved that a hearty vote of thanks be passed to Mr. Price for his very interesting address, and for the fine lantern views shown.

The 961st Meeting of the Society was held on Tuesday, March 17th, 1914, at 7.30 p.m. In the Chair, Mr. J. L. Paton, M.A.

The Minutes of the Meeting held on March 10th were taken as read.

The election of the Misses E. M. and D. E. Fletcher as Ordinary Members was announced.

Dr. A. Wilmore, F.G.S., gave a lecture on "A Geographer's Holiday Study of the Rhine and the Rhineland." The lecture was illustrated with many fine slides.

The Chairman moved and it was unanimously resolved that the hearty thanks of the Meeting be given to Dr. Wilmore for his very interesting and informing lecture, so well illustrated.

The 962nd Meeting of the Society was held on Tuesday, March 24th, 1914, at 7.30 p.m. In the Chair, Mr. J. A. Osborn.

The Minutes of the Meeting held on March 17th were taken as read.

Mr. H. L. Joseland, M.A., gave a description of a "Few Places in Southern Sweden." He first gave a brief account of the history and geography of the country and then, with the aid of a large number of lantern slides, described the places which he himself had visited.

On the motion of the Chairman a hearty vote of thanks was given to Mr. Joseland for his interesting address.

The 963rd Meeting of the Society was held on Tuesday, March 31st, 1914, at 7.30 p.m. In the Chair, Mr. J. Stephenson Reid.

The Minutes of the Meeting held on March 24th were taken as read.

Mr. John Hancock gave a lecture on "A Holiday in the Indian Empire," illustrated with lantern views from photographs taken by his son during the journey.

On the motion of the Chairman a hearty vote of thanks was passed to the lecturer for his interesting description of the places visited and for the fine illustrations shown.

The 964th Meeting of the Society was held on Tuesday, April 7th, 1914, at 7.30 p.m. In the Chair, Mr. T. W. F. Parkinson, M.Sc., F.G.S.

The Minutes of the Meeting held on March 31st were taken as read.

Mr. G. R. Swaine, F.R.Met.Soc., gave a lecture on "The Influences of Geographical Environment," and illustrated his remarks with a large number of special lantern views.

On the motion of the Chairman a hearty vote of thanks was passed to the lecturer for his instructive address.

10

The Journal

OF THE

Manchester Geographical Society.

* * *

THE HOME OF THE RAJPUTS.

By E. W. MELLOR, J.P., F.R.G.S.

*(Addressed to the Society in the Houldsworth Hall on
Tuesday, January 20th, 1914.)*

“WHO, and what, are the Rajputs?” It may be answered that in the vast peninsula stretching from the Himalayas to Ceylon there are many different tribes and races—mountain tribes and races of the plains—peoples of different languages and of different religions, peoples of widely differing characteristics. That peninsula and those peoples are known to us by the all-embracing names of India and Indians.

The great bulk of the Indian population, about two-thirds of the whole, are Hindus; and the Hindus again may be subdivided into innumerable clans. One of the oldest, if not the oldest, of these clans, or races, are the Rajputs.

The origin of this race is lost in the dark mists of remote antiquity.

The great god of the Hindus, the impersonal being which pervades everything, is Brahma, the creator. He has two other manifestations, viz., “Vishnu” the preserver, and “Shiva” the destroyer and reproducer. In addition, there are numerous other subsidiary deities.

Now Brahma, as the creator, is generally represented with four heads and four arms. The priests, or Brahmans, assert that they, the Brahmans, issued from the heads of Brahma, that the Rajputs came from his arms, the Vaisiyas from his thighs, and the Sudras from his feet.

And here you have the origin of the Indian caste system. Caste was originally a distinction between priest, soldier, artisan and menial; and the priests insisted on the rules of caste as a means of securing their own special supremacy.

Vol. XXX. Parts III. and IV., 1914.

In the code of Manu, which is believed to date from several centuries before the Christian era, the Hindus are divided into four castes, viz., first, the Brahmans, or priests; second, the Rajputs, or warriors; third, the Vaisyas, or agriculturalists and traders; and fourth, the Sudras, or the conquered tribes, which were become serfs.

That ancient code also prescribes conduct and ceremonial rules for these four castes, represented, as we have seen, by the heads, the arms, the thighs and the feet of Brahma the creator. Recent research supports the ancient tradition in that the language of the Rajputs is proved to be derived from the most ancient Indian roots.

The Rajput, although he was swallowed up in the wave of conquest by the Mogul emperors in the 16th century, maintained his individuality, and early in the 18th century regained his independence. "Rajput" is a name which signifies literally "of the royal stock." A Rajput, therefore has the bluest of blue Hindu blood flowing in his veins. The Rajputs form the fighting, land-owning and ruling caste. They are fine, brave men, and retain the feudal instinct strongly developed. Pride of blood is their chief characteristic, and they are most punctilious on all points of etiquette.

No race in India can boast of finer feats of arms or brighter deeds of chivalry, and they form one of the main recruiting fields for the Indian army of to-day. They consider any occupation, other than that of arms, derogatory to their dignity. As cultivators they are lazy and indifferent, and they prefer the care of cattle and herds to the business of agriculture. As they look upon all manual labour as humiliating, none but the poorest class of Rajput will handle the plough.

These characteristics may naturally have been a dominant factor in causing the Rajputs to settle down in the sandy and desert-like plains of the province called Rajputana, where they have ample scope for hunting and for polo and the minimum possible of land cultivation.

Be that as it may, the province is called Rajputana because it is politically possessed by the Rajputs, who are here the dominant race. Here in Rajputana are to be found the oldest Hindu Ruling Houses of India, each governing its own native state, with a British political agent in residence. There are some eighteen native states in Rajputana. Three

of the most important, which we visited, are named after their capital cities, and are : Udaipur, governed by a Maharana ; Jaipur, governed by a Maharajah ; and Jodhpur, also governed by a Maharajah.

The total area of Rajputana is about 127,541 square miles, and in the centre is the small British province of Ajmir-Merwara.

Perhaps the most striking physical feature of Rajputana is the Aravalli range of mountains, which intersects the province from end to end in a line from south-west to north-east. At the south-west end of the range is Mount Abu, where is situated the residence of the Governor General's agent, and on which stand some remarkable temples. The north-eastern end of the Aravalli range may be said to terminate in the district of Jaipur, although a series of broken ridges continue in the direction of Delhi. About three-fifths of Rajputana lie north-west of the range, leaving two-fifths on the east and south.

The two chief rivers of Rajputana are the Luni and the Chambal. The Luni flows from near Ajmir in a westerly direction for 200 miles to the Rann of Cutch. The Chambal is the largest river in Rajputana and flows a course of some 500 miles in a north-easterly direction until it joins the Jumna, which flows into the Ganges. The great rivers, the Sutlej and the Indus, are outside the boundaries of Rajputana.

There are no natural fresh water lakes in Rajputana, but there are several important artificial lakes, all of which have been constructed with the object of storing water.

The largest of the Rajput States is Jodhpur. Its capital, also called Jodhpur, was built by the Maharajah Jodha in 1459, and it has been the seat of government of this State ever since.

The fort of Jodhpur stands prominently on a rocky eminence some 400 feet above the city, which it dominates. Access to the fort is gained by well made, modern, zig-zag roads. The rock is scarped on every side, and the fort on its summit may be described as one-third palace and two-thirds citadel. The area of the citadel is roughly 500 yards by 200, and here are soldiers, arms and artillery.

The palace is very solidly built. It dates from stormy fighting times, as it was a Maharajah of Jodhpur who commanded the armies of the Mogul emperor Shah Jehan,

the builder of the world-famous Taj Mahal, against the forces of that emperor's rebellious son, Aurangzeb, in the 17th century.

From the high elevation of the fort there is a fine bird's eye view of Jodhpur. It is a large city of about 60,000 inhabitants, and is a typical oriental city in that the houses are all flat-roofed with no chimneys. On the left of the view is seen a large pool of water. This is the work of recent Maharajahs. Formerly there was great scarcity of water here, and the women had to walk to Mandor, five miles away, to get their supplies. On the right is a large modern market with a handsome clock tower in the centre. It is called the Sardar Market.

The main streets of Jodhpur, in addition to the bazaars, contain numerous fine houses, the residences of the nobles and thakurs, many of whom are very wealthy. The streets are narrow and are crowded with the townspeople passing to and fro. All water for domestic purposes has to be carried from wells. Such a thing as water laid on to the houses, and to be had by the turning on of a tap, is unknown here. Carrying the brass water-jars, or chattis, on the head, and often for long distances, gives the woman a very erect and graceful carriage. The old grain market is very much older than the Sardar market, and is rather cramped for space. The tram rails in some of the streets are used for the conveyance of town's refuse away from the city.

A journey of some 235 miles brings us to Udaipur, the capital of the native State of that name. Nestling, as it does, between mountains of the Aravalli range, and situated, as it is, on the shore of the beautiful Pichola lake, Udaipur may justly be called an Indian Venice; and the comparison is enhanced by the lovely water palaces erected on islands in the lake.

The most northerly of these water palaces is known as the Jagniwas Palace, erected in 1740. Inside the walls are charming gardens in which tall trees are growing. It is quite a long row on the lake from the starting point to the Jagniwas Palace, but it enables one to appreciate the length of water front which Udaipur possesses. On the way the Palace of the Maharana comes into view. It is quadrangular in shape and rises about 100 feet above the water level. It is built of granite and marble and is altogether an imposing pile, but

it rather suggests a fortress than a palace. The Zenana, or ladies' quarter, is splendid inside, but externally looks more like a prison than the residence of royal ladies, the intention evidently being to keep them quite safe.

Rowing away from the Jagniwas Palace we pass up the lake until we come to the main water entrance of the city, a large triple water gate through which much traffic passes. The white stone, of which the gate is built, becomes rather dazzling in the brilliant afternoon sunshine.

This water gate is always a busy scene. There is not only the regular traffic, but there is also a constant stream of women coming with their empty chattis, or water-jars, and returning with them full of water for domestic use, as in Jodhpur. These chattis are of brass, and the women frequently carry two full chattis on their heads.

We landed, and entering the city made our way straight on to the roof of the Maharana's Palace, from which exalted position a splendid view is obtained. There is a fine view over the lake in a westerly direction. How beautifully situated this old Rajput city is! In the foreground is one of the Maharana's barges, indeed, the only boats permitted on the lake are those belonging to the Maharana, but if proper application is made he graciously allows visitors the use of a boat. Opposite is the mansion and garden of a Rajput noble. On the right a long flight of steps leads up to a Hindu temple with its white pyramidal tower. Beyond these, other houses and gardens, all overshadowed by the spur of the Aravalli mountains, which rise up in the background. The mountains and valleys afford cover for much game, wild pigs abound, and pig-sticking is a favourite sport.

Turning from the west to the north we get a bird's eye view of Udaipur. This city was founded in 1568 by the Maharana Udai Singh, and was named after him. An attempt was made to murder Udai Singh when he was a baby, but he was saved by the devotion of his nurse, who substituted her own child, and that baby Udai Singh lived to be Maharana and to found Udaipur, a large city with a population of upwards of 33,000. In the middle distance is the large and famous Juggerath temple, with its heavy looking pyramidal tower. Descending to visit that temple, we left the palace precincts by a fine, triple gateway known as the Tripulia, and built in 1725.

Entrance to the temple from the street is gained by a broad handsome flight of stone steps, up and down which worshippers are passing during the whole of the day. At the head of the steps there is placed on each side a huge carved stone elephant. Passing through the gateway at the top of the steps we stand before the porch of the temple.

"Juggernath," or Jagannatha, signifies "Lord of the World," and is one of the names of Vishnu, the preserver, who is one of the manifestations of Brahma, the creator, who pervades everything. In this temple, then, the Hindus worship the creator in his attribute of sovereign of the world. The pillars of this temple show well the ancient Indian bracket capital, the round arch was unknown, and the capitals are so many brackets on which are placed the broad flat beams and architraves.

I, an unbeliever, was not, of course, allowed to ascend a higher flight of steps and enter the dark interior where the Juggernath idol sits enshrined. Only those who are recognised by Hindu religious standards may do that. To us it is a heathen temple, but nevertheless it is an imposing edifice. The noble flight of steps leading into the splendid portico, the sitting elephants at each corner, the profusion of mural carving with its endless figures, compel astonishment and admiration.

Fergusson's "History of Indian Architecture" tells us that this Juggernath temple dates from the 11th century, *i.e.*, from our Norman times. It is a good example of the Indo-Aryan style of architecture, "as every part is carved with great precision and delicacy, and as the whole is quite perfect at the present day there are few temples of its class which give a better idea of the style than this one." At the far end, the west end, is the tower, the whole of which, from the ground up to the top, is one mass of remarkable and elaborate carving in bold relief, quite as astonishing as the rest of the temple.

Udaipur is surrounded by a lofty bastioned wall, left from the days of its older fortification. Some half-dozen gates provide entrance to and egress from the city. The water gate is on the west side of the city; on the opposite, the east and landward side, is the Surajpol, a name which means "gate of the sun," so named because it faces the rising sun.

Just through the Surajpol a drinking fountain and water trough has been erected to the memory of the late Sir Curzon Wylie, who was a very active and very humane



E. W. M. 2.

Udaipur—Flight of Steps, forming the approach to the
Juggernath Temple.



E. W. M. 3.

Udaipur—Entrance to the Juggernath Temple.

Government officer in this part of India, and who was cruelly assassinated a few years ago.

The present Maharana carries the virtue of kindness to animals almost to an absurd extent in one particular. He gives food to the wild pigs of the mountains and jungles ostensibly to divert those animals from devastating the crops of the people. At the Odi Khas, a sort of hunting lodge at the southern end of the Pichola lake, every evening food is put out, and the wild creatures come from all directions to take it. We went to see this remarkable sight. The wild pigs with their long legs and long snouts are strange looking beasts. The men threw down small Indian corn, and sometimes two pigs would fight for a coveted handful. The corn attracts not only the pigs but also wild pigeons and wild peacocks from the distant trees and mountains.

A short row in our boats takes us from the pigs to the Jagniwas Palace again, this time approached from the south; before it was from the north. Inside the walls is the delightful garden. This water palace is one of Udaipur's most beautiful gems, covering the whole of the island on which it is placed and rising sheer from the water. Very calm and peaceful it looks, appearing to float on the surface of the lake, and surrounded by mountains.

The mountains are the home of the Sambur, which is an Asiatic variety of deer, of large size. He is a larger animal than our own more familiar red deer. Very beautiful these animals looked, and quite in keeping with their surroundings in Udaipur. These Sambur are as a rule to be found in low lying pastures and they can swim well. They are somewhat bold in character and can be rather vicious.

Every native Rajput capital has its Mahasati, or royal place of cremation, where the bodies of the Rajahs and their nearest relatives, with their wives, are burned, for until comparatively recently suttee was performed, *i.e.*, the living wife was burned with her dead husband. Of all the Rajput Mahasatis, the one at Udaipur is the most magnificent and the most picturesque. The royal cenotaphs stand under the shade of lofty trees, on the boughs of which monkeys disport themselves. Each cenotaph is crowned with a dome of some degree of architectural beauty. After cremation the royal ashes are cast into the Ganges, that river so sacred to the devout Hindu, and a cenotaph erected over the spot where stood the funeral pyre.

Cenotaph literally means "an empty tomb." I am inclined to think that the native name, "Chhatri," has a more beautiful significance. "Chhatri" literally means "an umbrella." An umbrella, a cover, a canopy, a pavilion, erected with great reverence over the spot made sacred by the funeral pyre. A cenotaph thus means much more than "an empty tomb," and the "Chhatris" in Udaipur, which date from the year 1580, were regarded as sacred and were made as beautiful as possible.

It must be remembered that not only is the reigning house of Udaipur the oldest and purest in point of blood and family tree of all the great Indian houses, but also claims descent from the god "Rama," one of the incarnations of Vishnu, "the Preserver," and thus from the sun itself. The Maharana of Udaipur, therefore, is accounted as one sacred, and is generally represented with an aureole round his head.

A journey of 84 miles brings us to Ajmir, the administrative headquarters of the important British province of Ajmir-Merwara, an isolated province of 27,000 square miles, surrounded on all sides by independent Rajput States.

Ajmir is a large busy city of 86,000 inhabitants, an important railway junction, and is considered by many people to be the key of Rajputana. Arriving from the south, as we do in coming from Udaipur, we pass the Mayo College, which stands in a park of some 2,000 acres. The principal entrance is at the west front. This college is for the education of the young Rajput princes and thakurs. It is built of white marble and was commenced when Lord Mayo was Viceroy. Lord Mayo was assassinated in 1872 when visiting the convict settlement in the Andaman Islands. This college was named after him, and a statue of Lord Mayo stands prominently before the main entrance. About 200 boys, between the ages of 8 and 21, receive education at this college.

A favourite promenade at Ajmir is on the Bund, which is the broad embankment retaining an artificial lake, the Ana Sagar, constructed by the Rajah Ana in the 11th century.

A number of pavilions were erected here on the Bund by the Emperor Shah Jehan, the builder of the famous Taj Mahal at Agra. For a long time these pavilions on the Bund were the only public buildings in Ajmir. They were restored and put in good order by Lord Curzon when he was Viceroy.

One of the finest specimens of early Indian Mohammedan architecture is to be found here—the Arhai-din-ka Jhompra

Mosque, which means literally "The house of two and a half days." Seven hundred years ago, in the year 1236, the Mohammedan King Altamsh conquered Ajmir and slew its Rajah. He then converted the fine Jain temple of Ajmir into a mussulman mosque, and thanks, so they say, to supernatural aid he accomplished the work in $2\frac{1}{2}$ days, hence the name. Tall, slender columns covered with exquisite carving are a feature of Jain architecture. (See E.W.M. 6.)

Fergusson, in his architectural work, expresses the opinion that nothing can excel the taste with which the Khufic and Tughra inscriptions are interwoven with the more purely architectural decorations and the constructive lines of the design.

Another journey of 84 miles brings us to the largest and busiest capital city of all the Rajput States, viz., Jaipur, the capital of the State of Jaipur. The cities we have visited range in point of population thus: Udaipur, with 33,000; Jodhpur, with 59,000; Ajmir, with 86,000; and now we arrive at Jaipur, with a population of 137,000.

The railway station is about $1\frac{1}{2}$ miles from the town. Outside the station a number of "ekkas," the cabs of the country, are always waiting to take passengers into the town. An ekka is a sort of box on two wheels, on which the passenger sits cross-legged; when a native lady is the passenger the curtains are, of course, drawn tight, as she must not be seen, but even then toes or a slipped foot are sometimes seen sticking out beneath the curtain.

The whole of the city of Jaipur is enclosed by a crenellated masonry wall, 20 feet high by 9 feet thick, with seven gateways. We enter by the Sauganer gate on the south side of the city. This gate, like all other buildings in Jaipur, is painted or washed a pink rose colour, on which are painted a variety of designs, giving it a quaint and remarkable effect. The city was founded in 1728 by the Maharajah Jai Singh II, hence the name Jaipur. It is a bustling busy town.

Jaipur, being a centre of native manufactures, is important commercially, and has large banks and trading establishments. The town is remarkable for the width of its streets, the main thoroughfares are 111 feet wide, and the sides are veritably continuous bazaars.

The hills surrounding Jaipur were at some remote period broken up, revealing deposits of alum, cobalt, copper, and

nickel ore, which are used in making the famous enamels of this district; garnets are also found, and eventually used to make brooches, bracelets, necklaces, and so forth.

I had the privilege of visiting the Jaipur State Prison and saw some of the prisoners at work. The principal industries carried on are: Paper making by men: the paper is used for the State account books, etc.; winding hanks for weaving by women; carpet-making by men. They prepare the warp, weave in hand-loom, and make a very broad carpet. We saw prisoners making a carpet 29 feet wide for the Rajah's new guest house; kneading and making Chupatties (cakes or bread). The chupatties are properly weighed so that each prisoner shall receive his just allowance.

In the public garden at Jaipur there stands the "Albert Hall," one of the finest modern buildings in India. The late King Edward VII laid the foundation stone of this building in 1876 when he was Prince of Wales. To Sir S. S. Jacob, K.C.I.E., is due the credit of designing and building this magnificent hall. From one of the beautiful open courts a door leads into a splendid museum, containing a very complete collection of modern works of art and industry, and also of antiquities, from every part of India. It is a collection so excellent that it has been called an Oriental South Kensington. The large Durbar Hall, the audience or levee hall of the building, had been used for an examination the day before we were there, and we saw the tables and chairs as arranged for the students.

The walls are decorated with mural paintings, while up above, so as to form a frieze, are a series of panel portraits of succeeding Maharajahs in chronological order. Two very interesting panels are portraits of the present Maharajah and of his father, the late Maharajah.

Major-General His Highness Maharajah Dhiraj Sawai Sir Madho Singh, G.C.S.I., G.C.I.E., is head of the Kachhwaha clan of Rajputs. Both he and his father have been public-spirited princes, preferring that the revenues should be expended for the benefit of their people at large, rather than upon the extreme extravagance of splendour of their predecessors. The Albert Hall, a college, a library and a school of art are all witnesses of the enterprise and enlightenment of these princes, thanks to which Jaipur is one of the most civilized and prosperous of all the cities of India.

The only portion of the Maharajah's Palace visible from the street is called Hawal Mahal, or Hall of Winds. Here reside in strict purdah the ladies of the Zenana. The façade has been described by Sir Edwin Arnold as "a vision of daring and dainty loveliness, storey after storey of rosy masonry and delicate overhanging balconies, soaring tier after tier of fanciful architecture in pyramidal form, a very mountain of airy beauty." Sir Edwin's description is, perhaps, rather high-flown, especially as much of it is stucco and not solid masonry, but at all events it well illustrates the rosy pink colour of all the houses and buildings here and from which Jaipur has sometimes been called "the pink city." One writer, I think Rudyard Kipling, has compared it to the ornamentation on a bride cake.

Adjoining the palace is an open courtyard, in which is the famous Jantra, or astronomical observatory. It was constructed during the years 1718—1734 by the princely astronomer Jai Singh. It contains enormous dials, azimuth masonry, altitude pillars, astrolabe and other huge instruments, built of massive masonry smoothed with plaster. There is a gigantic gnomon, 90 feet high, placed between two graduated quadrants, which is simply an exaggerated sun dial. The gnomon's shadow touches the west quadrant at six a.m., gradually descends this at the rate of 13 feet per hour until noon, and finally ascends the east quadrant. This remarkable observatory was the scientific hobby of that Rajput prince of 200 years ago.

The gardens behind the palace slope down to a shallow lake, locally known as the "Alligator Tank." Some unpleasant looking pieces of raw bullock are tied to a rope and dragged through the water. Presently an alligator's snout emerges from the water, the big mouth gapes, and the cruel jaws snap upon the flesh with a grip so firm that the alligator may be pulled along by the rope. If the alligators are lethargic or asleep numerous tortoises swim up and bite pieces off the meat. Kites and crows swoop down and peck at the loathsome looking flesh as it is dragged to the surface.

Five miles out of the modern city of Jaipur is the ancient capital of this State, Amber, now a ruined and deserted city. But the Rajah's palace at Amber, although not inhabited, is far from being in ruin. On the contrary, it is a fine pile of buildings of the later period of Indo-Mahomedan art. Its

situation is picturesque, being built along the slopes of a lofty hill, a powerful fortress crowning the summit.

A lake lies below the palace, and the latter can only be approached by steep narrow pathways, which pass round the head of the lake, making it a hot and laborious walk up. But if permission is asked in the proper way the Maharajah graciously places one of his elephants at your disposal. It is astonishing how docile these huge powerful beasts are in the hands of the mahout sitting at the back of the elephant's head; beast and man seem to know and understand each other.

We approached one of the gateways leading into Amber and noticed the great carved stone elephants flanking the doorway at the top of the flight of steps. It seemed strange that such a beautiful piece of ornamental architecture should be part of a ruined and deserted city. Having mounted the steps we turned sharp round and looked back through the gate by which we had just entered. From this higher elevation we realized that Amber is shut in a rocky gorge, being in a hollow surrounded by mountains, and was therefore at the mercy of whatever force held those mountains. This, after the fighting times of the Mogul Emperors, may have been one of the factors which led to Amber being deserted for the modern Jaipur.

By the principal entrance to the palace is a temple to the terrible goddess, Kali, the destroyer. In order to propitiate that goddess a goat is sacrificed each morning before her altar. The goat replaces the human victim whose life, it is said, was taken each morning, before the days of British rule, at the altar of this goddess.

All traces of the morning sacrifice were removed when we passed the spot in order to reach the smaller audience hall of the Amber Palace. This hall occupies the south side of the great courtyard or quadrangle. Double rows of columns support a massive entablature, and it is good Rajput work.

At right angles, and at the eastern side of the great courtyard, is the larger audience hall of the palace at Amber. Here bygone Maharajahs had audience in Durbar with their nobles and leaders, decked out in the splendour of Oriental magnificence, and anxious deliberations must have been held here when the Mogul emperors were over-running India. At such times this courtyard was filled with fighting men and retainers.

Across on the west side of the courtyard is the entrance to the more private part of the palace. Immediately over the door is a wonderfully wrought stone grille, through which the ladies of the Rajah's Zenana could look down upon the gay scene of princes, nobles and soldiers meeting in Durbar below, without being seen themselves. The larger hexagonal openings are filled with stone tracery so fine and so delicate as to be almost invisible against the blue sky beyond. This doorway has been pronounced one of the finest portals in the world, and Sir Edwin Arnold describes it as "a matchless portico such as might provide the door to Paradise." The door itself is of brass, magnificently ribbed and moulded. It is called the "Hathi," or "elephant" door, because of the figure of "Ganesh," the "elephant god," over the doorway.

In this part of the palace is the "Jai Mandir," or "Hall of Victory." The walls contain panels of alabaster, some of which are inlaid with flowers, and arabesques in various colours, other panels are adorned with flowers in alto-relievo. The ceiling is described, as glittering with the mirrored and spangled work for which Jaipur art is renowned. It does seem surprising that so splendid a palace should have fallen into desuetude.

From the north-east corner of the palace we get a view of the deserted city of Amber. Here are clustered together the ruined temples and houses of what was once a large and prosperous city. I have already alluded to one of the possible causes which may have led to the ancient Amber being deserted for the modern Jaipur. Suffice it to say that no human being dwells in Amber now, except it be some fakir or Hindu ascetic and a handful of villagers. A writer has said that "there is nothing stranger in all India's past than the desertion by some monarch, for reasons now lost in obscurity or only guessed at, of his splendid palace and well-built capital, taking not only his court, but the entire population with him."

A journey of some 290 miles brings us to Mount Abu, a sacred mountain of Rajputana because of the old temples placed upon it. The last part of the journey is an uphill climb of 18 miles from the railway station in the plain country down below. There is a little town at Mount Abu making a hill station to which Europeans from the plains below are

glad to come in the hot season. Luggage and all supplies have to be carried up in bullock wagons.

A writer describes Mount Abu as standing out of the great plain of Rajputana like a huge island of granite, finely wooded to the summit, the topmost point being 5,650 feet above the sea. It is at the south-west end of and part of the Aravalli range already referred to.

A bridle path which we traversed in Jinrickshas led to the further group of temples, the Achilgar group, distant from the little town of Mount Abu about five miles. At the foot of the Achilgar Hill, almost concealed by the foliage, is an ancient Hindu temple. It is a steep and rugged climb up the hill, and the higher we go the more steep the path becomes. About half-way up we pass a gateway with its ancient fort. No doubt it was placed here at some period to protect the temple above and the surrounding buildings from marauders. At one time it must have been strong, and it seems strange to find this fort on the hillside. A further steep climb from the fort brings us into the temple enclosure, but there is still a flight of steps to ascend before the door of the sanctuary is reached.

On either side were the Dwarpals, or guardians, carved and painted, and looking like a pair of toy soldiers. At the top of the steps on each side of the entrance to the sanctuary is a huge bas-relief carving of an elephant. An elephant typifies sovereignty and power, and these elephants are allegorical, having a number of subsidiary trunks branching from their main trunks.

The door of the sanctuary was closed against us, but though not permitted to enter there we were allowed to enter the large court of the temple. This court is surrounded by what looked like cloisters, but really they are a series of cells each containing an image. Over each image is erected a sikhara, or pyramidal tower, and each cell becomes a temple in miniature.

The Jain religion is somewhat akin to the Buddhist. Mahavira, the founder of Jainism, was born about 600 B.C. He adopted a spiritual career. Eventually he was recognised as divine and was acknowledged to be a "Jina," *i.e.*, a "spiritual conqueror," from which the Jain sect was derived. It seems to be one of the strong beliefs of the Jains that the "Jinas," or saints, are honoured and worshipped by multi-

plying the number of their images, and that each image should be provided with a separate abode, hence the series of shrines, or miniature temples.

We descend the Achilgar hill more rapidly than we climbed up, and soon find ourselves at the entrance to the old Hindu temple which we saw nestling under the trees before we breasted the hill. The delicate stone carving on the pillar and round the door is very beautiful, but an unbeliever like myself could not pass through this door, for there the image of the god sits enshrined, all in darkness, except for such light as passes through the doorway. At the back of the temple, and within the temple enclosure, is a large open space. In that open space are a number of large shrines, from many of which the images, if they ever existed at all, have been removed. But the images do remain in the smaller cells or shrines. They represent Hindu divinities in various manifestations, or in various incidents of Hindu mythological history. This temple, being some 21 miles from the railway station, is too remote and too difficult of access to be visited by many tourists, but to the Hindu it is a holy and an ancient place to which the devout make a pilgrimage.

We saw a Jogi, sitting on his heels, at the outer entrance to this temple, singing away to his heart's content, and accompanying himself on his "saringee," or Indian one-stringed violin. A Jogi is a Hindu devotee, or holy man, just as a Fakir is a Mahommedan. The Jogi is a pilgrim travelling on foot, and the faithful give him alms in return for his sacred songs.

At the side of this Hindu Temple at Achilgar is a sacred tank or pond, on one bank of which is a marble image of Pramara, a mythological king or hero, bow and arrow in hand. Before him are three buffaloes rather larger than life-size. This group commemorates the legend that Pramara shot with one arrow three buffaloes at once. If you go up to the buffaloes you will find a hole drilled through the middle of each in such a manner that a straight rod would skewer all three.

Situated on a small plateau, high up on Mount Abu, is another group of Jain temples, the famous Dilwarra temples, of great antiquity and in excellent preservation. They date from the eleventh century, the period of our Norman kings. How romantically placed are these Dilwarra temples! High

on this mountain, surrounded by shady trees, one of them a fig tree 900 years old, as old as the temple which it adjoins.

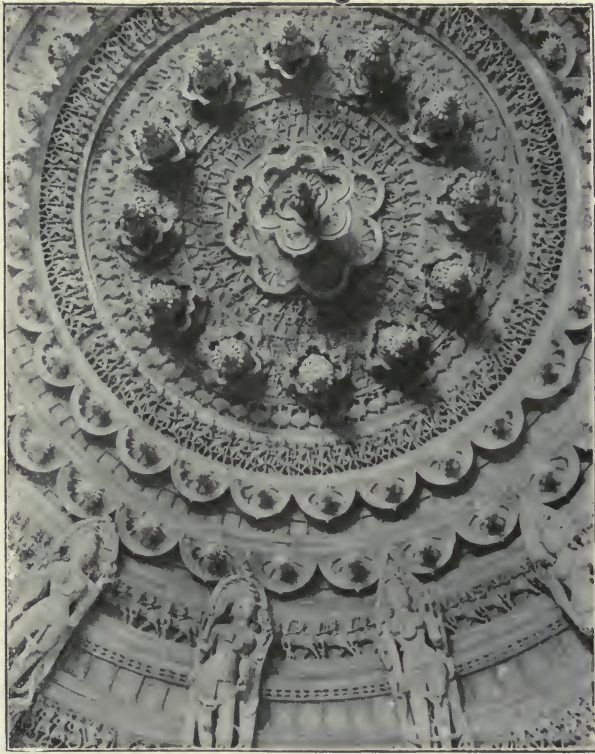
The Vimala Sah Temple is the oldest of the Dilwarra temples, and is entirely of white marble mellowed by the hand of time. The eye is bewildered by the wealthy profusion of wonderful and delicate carving. Vimala, who built this temple, was minister or governor in the year 1031. Though so old, it is one of the most complete examples of a Jain temple to be found in India.

The most sacred object here, as in other temples, is the shrine where in the darkness sits a cross-legged image of the Jina, or Tirthankar, the apotheosized saint to whom this temple is dedicated, viz., Rishabbanath, or Adinath, the first of the 24 Tirthankars, whose sign is a bull.

Before the shrine is a portico consisting of 48 pillars which are one mass of beautiful and elaborate carving. The pillars finish with the usual bracket capital of the east. Upon this an upper dwarf column is placed, and on these columns rest the great beams, or architraves, which support the dome. As the bearing is long, the weight is relieved, at least in appearance, by the curious angular strut of white marble, which, springing from the lower capital, seems to support the middle of the beam.

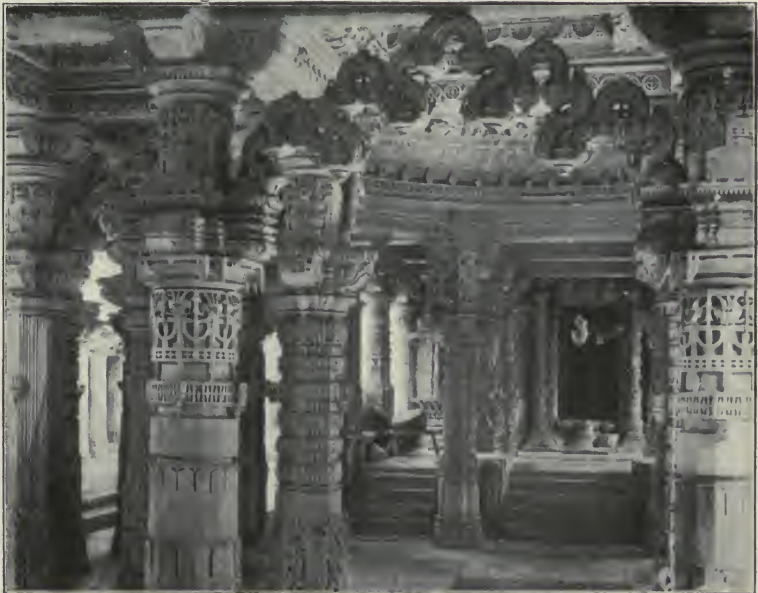
The interior of the dome consists of concentric circles of pendants, the pendants increasing in size as they approach the centre. Around the outer circle are sixteen four-armed female figures called Vidyadevis, goddesses of knowledge. Evidently time and cost were little considered when the roof was carved from the marble all those hundreds of years ago.

The second of these Dilwarra temples is dedicated to Neminath, the 22nd Tirthankar. This temple is of 200 years later date than Vimala's temple, and is usually ascribed to two brothers named Tejapala and Vastupala. The inscriptions, however, only mention Tejapala. In plan this temple resembles its older neighbour very closely. It measures some 155 feet by 92 feet, a little larger than Vimala's temple, but the dome is slightly less in diameter, though very similar in elaboration and beauty of design. The white marble pillars in Tejapala's temple are somewhat taller and have more variety of design than those of the older temple. The massiveness of the pillars is relieved by the almost bewildering amount of ornamentation and carving. The figure carving is represen-



E. W. M. 4.

Dilwarra—Interior of Dome, Temple of Vimala Sah.



E. W. M. 5.

Dilwarra—Interior of Temple of Tejapala and Vastupala,

tative of Jain mythology. Beyond the pillars are a few of the cells which surround the temple, like those we saw at Achilgar, and in which are enshrined the images of the Tirthankars, or Jinas, worshipped there.

There are no quarries of white marble in this part of Rajputana, therefore, to quote a writer, "the labour in transporting it across the plains, and dragging up to the top of this steep mountain, must have been an undertaking worthy of ancient Egypt."

In this corner of India there is another large and interesting colony of Jain temples, perched on the Girnar Mountain in Kathiawar, which we visited.

Leaving Rajputana by the south-west corner, and passing through the State of Baroda into the Kathiawar Province, we reached the Uparkot, an ancient fort above the city of Junagadh.

A steep roadway cut through the solid rock leads through three gateways, one within the other, up into the Uparkot. An inscription on the rampart is dated 1450. This threefold gateway is, then, nearly 500 years old. This Uparkot was the citadel of the Hindu princes of that period, but the rule of those old Hindu princes was swept away by the tide of Mahomedan conquest under the Mogul emperors, if not prior to that. Evidence of the conquest is given by a Mahomedan Mosque constructed from the materials of a Hindu temple which previously stood on the same spot by the Sultan Mahmud Bigara about the year 1472. The mosque itself is now much ruined, the dome being entirely gone.

Close to that mosque, so close as to be almost underneath it, a large cave has been excavated in the rock. In the inner chamber of the cave we recognized familiar work in some of the pillars. I was informed that a number of Jains took refuge in this cave from their enemies, and that this is Jain work which we saw. On the other hand, some writers assert that this is Buddhist work, and that this cave was part of a Buddhist monastery. Colour is certainly lent to the latter statement by the fact that a little time prior to the Christian era the lieutenants of the great Buddhist King Asoka were quartered in the Uparkot above this cave. But against this is the general fact that the Buddhists are mostly on the eastern side of India, Bengal, Darjeeling, Kashmir, whereas the Jains are in all parts of the Bombay Presidency on the

west side of India, particularly in trading centres like Junagadh. Fergusson, an authority on Indian architecture, says "that there is no trace of distinctively Buddhist symbolism here, and that these pillars were probably of Jain origin."

We left the Uparkot and passed through the city of Junagadh, a bustling place of 35,000 inhabitants, capital of the State, and residence of the Nawab. Facing his town house is a fine semi-circular range of shops, with a central archway and clock tower, which is called the Mahabat Circle. It was named after the Nawab Mahabat Khan. The wife of the British resident described it as the Regent Circus of Junagadh.

From Junagadh we made the ascent of the Girnar Mountain; this is not only a holy place of Jainism, but also one of the most remarkable mountains in India. It rises to 3,666 feet above sea level.

The pathway up the mountain becomes so steep that the rock is cut into steps every few yards, and in making the ascent 4,000 of these steps have to be climbed. The usual plan is to be carried in a "dholi," which is a seat, or tray, about 18 inches square, slung from two poles, and carried by four men. The path frequently passes along the edge of the precipice, and is so narrow that the dholi almost grazes the scarp, which in some places rises hundreds of feet above the path.

When we had reached the summit we saw, six hundred feet below, on a broad ledge of rock, sixteen Jain temples clustered together. I called them a colony previously, and I think with reason, because Jainism is a monastic organisation. Fergusson says that "the grouping together of these temples into what may be called 'cities of temples' is a peculiarity which the Jains practised to a greater extent than the followers of any other religion in India."

The nearest large temple, a triple one, was built by the brothers Tejapala and Vestupala, according to the inscriptions, in the year 1230. These two brothers built, you will remember, the later of the two temples which we saw at Dilwarra. Far away down in the valley, nearly 3,000 feet below, is the city of Junagadh.

As we descended we noticed that devout Jains had placed a small temple wherever they could get a foothold, and each



E. W. M. 6.

Ajmir—The Arhai-din-ka-jhompra.



E. W. M. 7.

Apes and Pilgrims before a Jain Temple on the Girnar Mountain.

temple had its sikhara, the solid looking pyramidal tower erected over the shrine. When we had come down the 600 feet we arrived at the broad ledge or shelf of rock where stand the colony of temples which we saw from above. We first noticed an old temple whose carved walls reminded us of the Juggernath temple at Udaipur. The larger temples are placed close together. One large temple which we saw was dedicated to Parasnath, the 23rd Tirthankar. We recognised in this, as in the others, the general arrangement of a Jain temple, pillared portico, dome and sikhara over the shrine.

The Jains worship 24 Tirthankars, or Jinas, who are saints who have overcome all human desires and have attained Nirvana.

The largest temple on the Girnar Mountain is dedicated to Neminath, the 22nd Tirthankar, whose sign is a conch shell. The temple stands in a large courtyard measuring 195 feet by 130 feet. 1275 is the date given by an inscription as a date of restoration, so this temple was restored more than 600 years ago!

Around the courtyard are arranged some 70 cells, with a covered and enclosed passage in front of them. Each cell contains a cross-legged sitting figure of one of the Tirthankars. The 70 cells round this temple are covered with low dome-like roofs, almost suggesting a series of mushrooms. The roof over the central dome is quadrangular, and is worked into an extended series of miniature domes, finished in a kind of screw point, which I am inclined to believe, though I have not discovered confirmation of the idea, represent a conch shell, the sign of Neminath the Jina worshipped here. At the corners, where the ridge tiles would come, are seated wild boars, apes, etc.

When a Jain temple falls into disrepair, it is believed that he who will restore it propitiates heaven. The way that such repair is generally done is that the outside is covered with a thick coating of chunam, filling up and hiding detail, and leaving only the form. They are then fond of applying several coats of whitewash. The effect in the brilliant Indian sunshine is rather dazzling to the eye.

Standing in the courtyard of the temple, the only bit of colour is the doorway into the shrine on the south side. The colouring is crude, but is a relief to the eye after the glare of the white. The doors stood open, but the moment my camera

appeared they were closed. Neminath is not to be profaned like that. Within these doors is a large black image of Neminath, the 22nd Tirthankar, decked with massive gold ornaments and jewels. But are there no people up here? Yes, there are a few priests and caretakers. But are there any worshippers? Yes, some bands of pilgrims toil up the mountain to worship at these, to them, most holy shrines. Worship over, they mingle with the denizens of the rock, among whom are many monkeys.

Like the Buddhists, the Jains believe in transmigration of souls, therefore they do not injure any dumb animal lest they should be hurting a fellow-creature, perchance a relative, descended after death into a lower form of life. Hence the monkeys are fearless of successive bands of pilgrims. They are the long tailed grey ape, which seems quite a common variety in this part of India. It is a curious sight to see them swinging themselves by their long prehensile tails from pinnacle to dome, from dome to capital, and from capital to tower of these old temples, which cost so much in time, treasure and human labour to erect here, and of which, when pilgrims and guardians are away, these apes are the only inhabitants. One is tempted to moralise on the vanity of all things human.

But their religion was no vain thing to the thousands of devoted pilgrims who, having toiled up this mountain, having prostrated themselves before and made their offerings at the numerous shrines of these temples, until so exhausted that they could scarcely stand, in a frenzy of religious fervour, threw themselves from the cliff into space, for the cliff here is precipitous for hundreds of feet, in the belief that they would thus attain to Nirvana.

The temple of Kumrapala is the last, the furthest, temple on this ledge of rock; beyond is space!

Nearly 3,000 feet below us is the plain country, with life, humanity, civilisation and the work-a-day world.

It calls us back to work, and to life's duties.

So, farewell Jains! farewell Rajputs! farewell India!

BELGIUM : THE BATTLEGROUND OF EUROPE.

By Dr. ALBERT WILMORE, F.G.S.

(Addressed to the Society in the Geographical Hall on Tuesday, October 20th, 1914. Report revised by the Lecturer on October 11th, 1915.)

BELGIUM is an epitome of North-Western Europe; its four chief structural divisions summarise, in a comparatively small area, all the European regional types north of the Alpine forelands.

To understand the structure of Belgium we must, as always, go to the underlying geology, for the different types of land relief, with all their diversity of human interest, are primarily determined by the character of the rocks and their mode of occurrence. We may therefore give to the obvious geographical divisions geological names so far as these will help us to understand surface structure with all the varied interests of man dependent thereon. Proceeding from south to north the different regions are as follows:—

(a) The Slaty Ardennes. This plateau block of moorlands is part of the Variscan-Armorican system of Middle Europe. It has the general characters, with its own special features, of the broad low mountains which stretch across the Continent from the Sudetic and Riesen Mountains overlooking the Russian platform to the rugged mountains of Brittany ending in finger-like peninsulas and sunken rias against the Atlantic. The Ardennes is built of Older Palaeozoic and Devonian strata, with east and west synclines of carboniferous, giving to it the beautiful scenery of Dinant, the famous grottoes of Hann, and the Derbyshire-like gorges of Comblan-au-Pont. This great plateau is, of course, thinly peopled, and is a land of woods, of moorlands given over to sheep-rearing, and of beautiful deep-cut valleys such as the famous gorge of the Meuse from Givet to Namur. One of the most interesting valleys in Europe is that of the Ourthe, from the limestone region of Comblan to the Cambrian Massif at Stavelot and

SIMPLIFIED REGIONAL GEOLOGICAL MAP OF BELGIUM.

(Showing the Four Chief Structural Divisions.)

Scale: 1 inch = about 50 miles.



EXPLANATORY TABLES.

Present State Boundary
 GEOLOGICAL DIVISIONS.

Recent Rocks Dotted.
 Mesozoic and Cainozoic Strata Horizontal broken lines.
 Coalfield Crossed lines.
 Palaeozoic Rocks (mainly Ardennes Plateau)..... Inclined broken lines.

TOWNS.

A	Antwerp.	Lg	Liège.
B	Brussels.	Ll	Lille.
Bg	Bruges.	M	Mons.
C	Charleroi.	N	Namur.
D	Dinant.	O	Ostend.
G	Ghent.	T	Tournai.
H	Huy.	V	Valenciennes.
L	Louvain.	Y	Ypres.

Trois Ponts. The edge of this Palaeozoic massif is rich in ores, as is the case with so many of the Armorican and Variscan fragments of Europe. The wool of the moorlands, the excellent, soft water of a region which catches a fair amount of rain, the iron and zinc ores of the plateau's rim, and the coal close at hand, have given to Belgium the industrial prosperity of the next region to be briefly mentioned.

(b) The Carboniferous Basin of the Sambre-Meuse. This comparatively narrow strip stretches continuously across from North-Eastern France to Aix-la-Chapelle, in front of the slaty Ardennes. The general structure is that of a syncline of underlying carboniferous limestone with a coal basin in the middle. The coal is missing from the middle part of the strip between Namur and Huy, but there is the compensation of the magnificent scenery of the dolomitic carboniferous limestone which makes that part of the Meuse Valley one of the beauty spots of Europe. The western part of the narrow coal belt stretches from Valenciennes and Lille in France, across by Mons and Charleroi, and here is one of the great industrial regions of Europe. It was not simply strategy in the narrow sense that made the Germans seize this part of the country; it was to obtain possession of coal and iron, and of the bye-products of coal, that mean fuel and explosives. It was a continuation of that German policy of 1871 that determined the taking of the parts of Lorraine which are rich in coal and in iron ore. To the Germans this is largely a commercial war, as has been abundantly shown by the pronouncement of their financial magnates, as well as by their method of conducting the war.

The eastern part of the carboniferous basin has its centre in Liège, and here are some of the largest iron works in the world. The great foundries of Seraing give, in normal times, employment to some 12,000 workmen. The woollen mills of Verviers are in the south-eastern corner of this region, and received their early impetus from the excellent wool of the Hohe Venn and Famenne parts of the Ardennes. The zinc industry of Huy, the iron of Liège and the woollen of Verviers are excellent examples of industrial inertia; very little of the iron ore is now obtained locally, most of the zinc ore is imported, and the wool of the Ardennes is now quite insufficient to supply the mills of that part of Belgium. The excellent canals, the river Meuse, and a State railway system act as carriers from the ports to the busy industrial region.

This Sambre-Meuse trough, on the edge of the highlands, has become one of the highways of Europe, and the great Continental expresses utilise it in normal times. This has been the route through which many an army has passed from the Teutonic plains across the Rhine to the Gallic lands beyond the edge of the Ardennes. The German army of invasion of 1914, with all its horrible record of crime, was not the first army that had fought its way along past Liège, Huy and Namur, or in the contrary direction; but it is doubtful if history can furnish anything like a parallel to the cold-blooded "triumph" of the Germans, or to the foul record associated with their occupation of the towns on that historic route.

(c) The Mesozoic terrains, north of the industrial carboniferous belt, remind one of the Mesozoic lands of the Southern Midlands of England, together with the Tertiary lands of London and Winchester. Brussels is situated somewhat like Winchester. These lands of newer rocks drain northward to the Lys-Scheldt system; and the Scheldt, Dender, Senne and Dyle may be regarded as a parallel series draining towards the east and west stretch of the Lys. Ghent and Antwerp are the keys of this region from the north, with Lille (in France), Tournai, Brussels and Louvain in the middle. It is along this dry land of moderate elevation that armies have more frequently marched, and it is here that so often the destinies of Europe have been thrashed out. From the time of the Roman Conquest, through the Dark Ages and the days of the Carolingian Empire, and then through the long mediæval period this land has bristled with battlefields. In modern times now for the third time have European aggressors marched their armies against those powers that have stood for the rights of lesser nations. Britain has stood against the European aggressor on each occasion, twice helping to bring him to his knees. For the result of this third modern war against aggrandisement we must wait, quietly confident in the power of right, determined that all that Britain can do shall be done in the cause of the most elementary justice.

The battlefields of 1692 to 1709 are here: Steinkerke, Ramillies, Fontenoy, Malplaquet. Here are the first and last battles of the great war of 1793—1815: Jemappes, Ligny, Quatre Bras and Waterloo. And here are Mons and Loos—places which will not detract from the history of British valour in the field.

(d) The fourth region is the low land of Flanders, stretching from the edge of the low chalk hills of Cape Gris Nez to the marsh lands of the Rhine. This is wonderfully fertile and infertile by turns; fertile where clay and river silt form the sub-soil, as in the rich lands near Ypres; infertile by comparison on the sandy lands of the Campine, where the population is comparatively scanty. In this land of recent strata are situated some of the famous cities of mediævalism; cities where problems of municipal self-government were first worked out; cities which fought for their rights against crusading counts and feudal barons. These famous cities were the world's pioneers in many of the arts of working in metal, in leather, and were the first to institute a great trade in woollen and linen goods. Bruges, Ghent and Ypres, among many others, are honoured names in all that stands for human progress.

Modern Belgium is the latest attempt at a "middle-kingdom" between the Teuton and the Celt of Gaul. The Treaty of Verdun in 843 divided up the great empire of Charlemagne into three parts. The western part has grown into France, the eastern part has become Germany. The middle part is the debated land of history. Lotharingia was essentially a mistake, because it transgressed all elementary geographical conditions of stability. In the later Middle Ages Burgundy for a time seemed likely to renew the existence of the Middle Kingdom, but the strength of French nationality on the one side and the intrigues of German barons and princes under the empire on the other, proved too much, and part of the Middle Kingdom passed to France and part in the long run to Spain and then to Austria. The diplomatists of 1814—1815 evidently believed in the efficacy of buffer States, and reconstituted a sort of Middle Kingdom of the north; but we in more modern times shall need to look more carefully at the geographical conditions (which are seldom anything like simple). The existence of a buffer State presupposes the honourable regard of treaties by the great powers on each side; take away this and the existence of such a State becomes a positive danger to the honourable and scrupulous power. This introduces questions of great importance which are not within the province of a geographical lecture like the present.

BELGIUM, THE LAND OF ART: ITS ECONOMIC
AND POLITICAL HISTORY.

By ARNOLD WILLIAMS, A.C.A.

(Addressed to the Society in the Geographical Hall on
Tuesday, December 15th, 1914.)

LORD MACAULAY in his essay on Oliver Goldsmith says: "He was a great, perhaps an unequalled, master of the arts of selection and condensation." The writer of this paper has followed in his steps, selecting and condensing from some ten or twelve volumes,¹ and especially wishes to acknowledge his indebtedness to Dr. A. S. Rappoport and Mr. Wm. Elliot Griffis, whose instructive books are mentioned below.

It is hardly possible to find another land with such a history and such a wealth of art treasures as Belgium.

The men and women of this country have told us their history in a most attractive way by pen, canvas, sculpture, metal work, and carving, in town hall, belfry, church and guild-house.

We shall glance at the story of Belgium through its varied existence—savage, Roman, Frankish, feudal, crusading, mediæval, Renaissance, and modern. It is almost correct to say that until 1830 Belgium was as a house of bondage and yet was the possessor of many liberties.

How wonderful it is that a people of two distinct stocks, Celtic and Teutonic, and in turn under the yoke of Rome, Germany, France, Spain, Austria, French Revolutionaries, Napoleon and Holland, should at last win unity, freedom and sovereignty. For activity and energy, for the propagation of

1. The following is a list of the volumes:—"Leopold the Second: King of the Belgians," Dr. A. S. Rappoport. "Belgium," William Elliot Griffis. "The Story of Belgium," Carlyle Smythe. "The Rise of the Dutch Republic" (3 vols.), J. L. Motley. "Belgium" (Encyclopædia Britannica), Rev. G. Edmundson. "Hansa Towns," Helen Zimmern. "A Short History of the Netherlands," Alexander Young. "Revolutionary Europe," Morse Stephens. "Modern Europe," Alison Phillips.

social ideas and for progress, Belgium stands foremost among nations, and now to all her good qualities we have to add one more—that of bravery.

Geographically and ethnically Belgium is interesting.

The two races, Flemings and Walloons, are wholly dissimilar, speaking different languages, and having different religious and political views.

They differ as do the rocky Ardennes, the valleys of Brabant and the plain of Flanders.

These differences have not, however, prevented the Belgian nation from displaying a unity in striking divergence from other phases of her life.

Every chord of human nature is touched by the outrage committed upon this gallant nation, and gratitude without measure is felt for those who sacrificed themselves willingly and did not count the cost.

No sadder story has ever been written in the pages of history.

No crime has ever equalled this crime, and, though peace will come, punishment must be exacted. Time will heal many wounds, but the stain of Belgium can never be wiped out from the soul of Germany.

It is hard to say which is the more indebted to the other, Great Britain or Belgium. When we think of their close connection we feel that the war will only serve to strengthen it, and while Germany will be known for her work of destruction, Great Britain will be loved for her work of reconstruction. It is Great Britain who must make that work of reconstruction possible by her moral and material support.

Belgium has laid down her life for us. Let us see that she rises again.

New cities may rise on the ashes of the old towns, and time may change many things, but nothing can ever obliterate from the minds of his people or their descendants the memory of the Hero-King who knew how "to fight the Barbarians for the liberty of Belgium."

"L'Union fait la Force." Such was the national motto of the Belgians after their separation from Holland.

Their inability to understand their own motto has been their besetting sin.

The Englishman has never had to repel a foreign invasion or endure an alien rule. Probably that is why he has always been an imperialist rather than a patriot.

Neither Fleming nor Frenchman makes a good colonist. He is always too anxious to return home.

Of half a million Belgians living out of Belgium over 460,000 are in France, and those who live in France could not be distinguished from the natives except by experts, so alike are they in habits and appearance.

CÆSAR TO CHARLEMAGNE.

Belgian history can be traced back to the time of Cæsar. The "Belgæ or Belgians" were found by him, in 57 B.C., occupying the territory between the Marne and the Seine, the North Sea and the Rhine.

Cæsar considered them the bravest of all the Gauls. Though not yet decided whether the Belgians were of a German or Gallic origin, it is admitted by the majority of authorities that some of the tribes were of a Celtic, others of a German, and that both Germans and Gauls were identical in a common Cimric origin.

Cæsar subdued Gaul in eight campaigns, Belgian territory becoming a Roman province, but it was Augustus who endeavoured to Romanise it. He was not successful; for whilst the Roman influence penetrated into Lower Germany (along the Rhine to Cologne) and the Celtic tongue made room for the Latin language, Belgium proper resisted the invasion of Roman civilisation and kept to its own language, manners, customs, and ancient traditions. These were of a rude and vigorous nature, entirely opposed to the soft and enervating ways of the Roman civilisation. Christianity gained sway in the Roman Empire in the 3rd century, penetrated into Lower Germany, and a bishopric was formed at Cologne. It did not spread to Belgium, however, till the 4th century, at about the time of the dissolution of the Roman Empire, when the Franks, availing themselves of this dissolution, invaded Belgium, establishing a new rule and fresh civilisation.

The Franks were Belgian and German warriors who refused to submit to the Roman rule, and were divided into Salian, or Salic, and Riparian Franks.

Commencing with King Clodion in 431, Belgium was



A. W. 1.

The Area South of a line drawn from the centre of the West of the Iberian Peninsula to the East Coast of the Adriatic Sea, and also the Balkan Peninsula with the Coasts of Asia Minor was shown in *Blue* (63 B.C.). The Remainder of the Shaded Part was *Red* (14 A.D.). Belgium, Black in all four Maps.



A. W. 2.

divided and re-united under various Merovingian kings, but was finally united under Clotaire.

This king is interesting because his two sons, Sigebert and Chilperic, were married to Brunhilda and Fredegonde, famous in folk-lore. The Merovingian kingdom fell as a result of misrule and discord, and the powers of government were usurped by the steward of the royal possessions known as the major domus, mayor of the palace. There were four Frankish kingdoms, each with its own mayor. Pepin, of Heristal, one of the most famous of them, succeeded in uniting these mayoralties and making them hereditary in his own family.

His descendants took the title of Dukes of Franconia, until at last one of them dethroned his imbecile master and founded a new monarchy.

It is interesting and significant to learn that Europe was saved by Pepin and his son, Charles Martel, from the invasion of the Moslems.

Pepin the Short was proclaimed king in 752, and on his death one of his sons, Charles (known in history as Charlemagne), became king.

CHARLEMAGNE.

Belgium claims that Charlemagne was born in Liège, though this is not certain. There is a statue of him in the Place d'Avroy. He is famous for his campaigns; and one of the most important events in his reign was his coronation as Roman Emperor by Pope Leo III in the year 800.

Thus the grandson of the mayor of Liège, Pepin of Heristal, became Roman Emperor, a title retained by Western Teutonic rulers until 1806, when it was abolished by Napoleon I.

Charlemagne paid especial attention to his native land, and by his remarkable organisation made Belgium the centre of Carolingian rule.

Belgium felt the influences of the civilisations of the two rising nationalities, French and German.

The Carolingian Empire, however, fell to pieces soon after Charlemagne's death.

Charlemagne lived in an age of constant warfare. The new Europe was rising on the ruins of the old Roman Empire.

It was due to Charlemagne's energy (he conducted 53 military expeditions), that Christianity and civilisation were not trampled out by the Teutons, Norsemen and Mussulmans.

Belgium prospered in his time, and Charlemagne is honoured because he took measures which ultimately led to Belgium's place in the world.

Beginning with Tournai, the great cities of Belgium, Bruges, Brussels, Ghent, Courtrai, Ypres, Liège and Mons, took their places on the map.

After Charlemagne's death the vast empire passed to Louis le Debonnaire. He was not equal to the task of keeping it together, and divided it among his three sons, Lothaire, Pepin and Louis, who concluded the treaty of Verdun in 843, by which Gaul (France) became one brother's share; Lorraine, containing the entire Belgium of to-day and extending from the North Sea to the Jura, Lothaire's portion; and Germany fell to the lot of the third brother.

For ten centuries or more Lothaire's portion has been a bone of contention between its mighty neighbours.

The Treaty of Verdun in 843 marks the beginning of the evolution of modern nations and languages as we know them to-day in the countries of Western Europe.

The close connection between Belgium and England began when the second Count of Flanders married Elstres, daughter of Alfred the Great.

It is interesting to trace the English forms of the names for the men of Southern and Northern Belgium. The "g" of Latin countries is identical with "w" in the north, and Gaul and Wales are practically the same word. The ancestors of the English and modern Germans spoke of the Gauls and Romans as "Waelas" or "strangers," and *oon* meant "one." A Walloon means then a "strange one," or a "foreign man."

Flanders is developed from the root word "to flee," and means the "Land of the Refugees." We also have a familiar instance in the word "Fleming," which was originally pronounced with the "e" long—"Flēmīng." In old English law a man who fled from justice was called a "Flēmen."

FEUDALISM.

Under Feudalism we usually understand the institutions, both public and private, that regulated mediæval Europe, and it was at this time that it developed.

Europe had, since the death of Charlemagne, suffered terribly from the invasions of Normans, Magyars, and

Saracens; and through the weakness of the kings, defence against the invaders fell upon the nobles. In this way the power of these lords was gradually developed, and feudalism strengthened. In course of time the nobles received their fiefs as hereditary estates, became very powerful, and only recognised the superior authority of the king in theory.

In Belgium they were called Dukes or Counts, and Brabant, Flanders, Hainaut, Holland and Luxembourg came under their sway. Flanders, in particular, became very powerful and was able to protect herself against her mighty neighbour, France. Baldwin of the Iron Arm, Count of Flanders, is remembered for his fight against the Normans. Eventually Flanders fell to the Ducal house of Burgundy.

The municipalities of Flanders led Europe in its struggle for self-government, and it has been well said "that at an early era in the Low Countries the loom and the shuttles were, in potency, greater than the steel blade and battle axe, for it was industry that steadily won the battle of civic freedom, and the wealth gained through diligence and skill purchased or compelled chartered privileges which in time became popular rights."

There are two names in the story of Belgian liberty which loom aloft like the belfry of Bruges—Cassel, for victory in arms, and Grammont, for the victory of civil rights. The latter is a spot to which we all, as lovers of human progress, should wend our way. Let us consider it for a moment. In the year 1068 the estate of Baron Gerard was purchased by Count Baldwin VI for the Flemings. He laid it out as a town, and granted the people a charter of civil rights.

This charter marks the commencement of protection for the workers of Belgium, and is, so far as is known, the oldest document of the kind in Europe. It is dated 137 years before the Magna Charta, written in Latin, and 185 years before the Middleburg Charta, which is in plain Dutch; and is the foundation stone of order and protection to industry in Belgic land.

FLEMISH CITIES IN THE MIDDLE AGES.

The prosperity of Ypres, Ghent and Bruges is accounted for, not solely by their manufactures, but also because of their nearness to the greatest of the European trade routes, overland and by water, converging at Champagne (France).

These lines of traffic, traversed by horses and wagons, stretched from the Bosphorus and from Russia through Germany, over the old Roman roads into France. By the water routes of the Mediterranean via Venice, Genoa and Marseilles, goods were brought to the great French fairs. So long as these fairs flourished and riches were made, cathedrals were erected of unparalleled splendour and since unmatched. Here was evidence of an economic revolution indicating that the centre of wealth and energy had been transferred from Egypt and Constantinople to the far West of Europe.

The rise of Champagne followed upon the decay of Constantinople. In both France and the Low Countries the riches gained by commerce were evidenced in the beauty and glory of Christian cathedrals or fine specimens of civic architecture.

Even religion adopted material forms. Every municipality must possess saints' relics, a fragment of the true cross, or some drops of blood of the Crucified.

As early as A.D. 1200 the old economic system based on the caravan marches across Central Asia was displaced by ocean routes—the compass having been brought by sea-going Arabs from China.

Bruges made mighty strides in commercial prosperity, and it outstripped both Venice and Genoa. Bruges, Hamburg, Lübeck and Cologne were the four chief factories of the Hanseatic League. Italian bankers had their headquarters at Bruges, which became the financial centre of North-Western Europe. Damme, the seaport of Bruges, was crowded with ships; but to-day the visitor wonders where the sea is, and the dam and dikes are memories.

So long as the tidal river Zwyn kept its vigour, and its waters flowed clear, prosperity and Bruges were synonyms. When, however, the channel of the Zwyn became choked and the bed filled up, Bruges lost direct contact with the life-giving ocean, and the splendour of the city faded.

THE VAN ARTEVELDES.

The Flemish municipalities were the wonder of Europe. When London had less than 50,000 people there were in Ghent 250,000, in Ypres 200,000, and in Bruges and Courtrai each 100,000 inhabitants. Cloth making was the leading industry and a sure and sufficient supply of raw material was indispensable. On England's moorlands browsed the flocks



A. W. 3.



A. W. 4.

which supplied the looms of Flanders; and the English were willing sellers. As early as 1040 Bruges was the wool market of Europe. The Hundred Years' War between England and France (1338—1453), influenced greatly both the economic and political history of Belgium.

When one views to-day the fine statue of Jacques van Artevelde in Ghent, knowing that it was unveiled by King Leopold in the modern days of constitutional monarchy, he recalls also the days when the people ruled and the communes were at their meridian.

Born in 1285, Van Artevelde was made ruward or president of Flanders, and led his people in their revolt against Count Louis. He saw that the municipal idea was not broad enough, for the cities emphasised local interests and created rivalry which often and easily became enmity. He desired to unite his people into one commonwealth, and made an alliance with Edward III of England—completed (after three years' discussion) at Brussels in 1339. When Edward returned to get the permission of Parliament to this Treaty, he left his queen in Ghent, and there John of Gaunt was born.

Van Artevelde, one of the greatest statesmen of the Europe of his time, perished before a mob in 1345. His ideas were broad but misunderstood : he showed the way into nationality, but the people would not take it : he loosed passions which he could not control and to which he himself fell a victim.

THE HOUSE OF BURGUNDY. THE NETHERLANDS.

In 1384 Philip, Duke of Burgundy, became Count of Flanders through marriage with the daughter of Louis le Mâle. He entered Bruges and was acknowledged Count of the land.

The Dukes of Burgundy, by marriage, inheritance, acquisition and treaties, had succeeded in uniting the Belgian provinces under their sceptre, under the name of the Low Countries or the Netherlands and had become mighty rivals of the Kings of France.

The Dukes endeavoured to found a strong kingdom able to hold its own against France and the empire, its powerful neighbours.

Common commercial interests between the provinces greatly facilitated such endeavours.

On the one hand the rulers were intent upon safeguarding the national independence, whilst on the other they struggled against the democratic spirit of the flourishing communes.

Philip of Burgundy (named the Bold) had cleverly obtained the principalities of Brabant and Limburg.

He died in 1405, and his son—by Princess Margaret le Mâle—John the Fearless, was practically master of all the Netherlands. John was murdered at Montersau, and was succeeded by his son, Philip the Good (1419—1467). The murder of John by the French Dauphin's party completed the estrangement which already existed between France and the House of Burgundy.

Philip therefore turned towards England, which was at that time waging war with France for the possession of the throne.

Philip concluded the Treaty of Troyes in 1419—depriving the French Dauphin of his rights—the French throne going to the King of England.

Philip the Good's third wife was Isabella of Portugal. The marriage was celebrated with great pomp and solemnity at Bruges; and on this occasion Philip founded the famous Order of the Golden Fleece—equal in importance to the Order of the Garter in England. Bruges, being the centre of the wool trade, doubtless suggested the name of the Golden Fleece.

Philip had asserted his authority with much vigour, and discontent was latent: several cities being angry at having lost many of their privileges. The hostility was especially strong in Liège, and towards the end of Philip's reign the city revolted.

Charles the Bold waged war against the Swiss and Lotharingia, and fell on the battlefield of Nancy in 1477. His death gravely compromised the existence of the dynasty of Burgundy.

The towns and communes of the Netherlands now began to assert the rights and privileges of which they had been deprived by the two Dukes of Burgundy.

Mary of Burgundy, daughter of Charles the Bold, convened the States to meet at Ghent, and had to face representatives who were anxious to recover their ancient privileges. She was compelled to grant a Charter (February 11th, 1477) granting all such privileges. Then she was recognised and took the oath in Ghent Cathedral. The princess was young

(19) and inexperienced, and the citizens of Flanders, Hainaut, Brabant, Holland and Liège had their way.

She married eventually the Archduke, afterwards Emperor, Maximilian; and subsequently lost her Burgundian possessions to France, whilst the Netherlands fell after her death to the House of Habsburg.

THE RULE OF THE HABSBURGS IN BELGIUM.

Maximilian was unpopular, and after the death of the Duchess of Burgundy in 1482 the civic authorities looked askance at the rule of the Habsburgs and decided to uphold their ancient rights. Gradually, however, the rule of the Austrian Dynasty in the Netherlands was firmly established.

Maximilian's grandson, the famous Emperor Charles V, increased the Burgundian lands by adding several other provinces, making 17 in all, which he was anxious to unite into one State. He obtained the decision of the Diet of Augsburg that they should constitute the Burgundian circle, and the Pragmatic Sanction decreed that they should never be separated.

Charles hoped that the 17 provinces would constitute an independent State which would be able to cope with its mighty neighbours, France, the German Empire, and England.

The Spanish domination was unable, however, to stamp out Protestantism, which had made its entry into the Netherlands. The Habsburg rulers punished heretics severely, taxed the citizens heavily, and the Spanish soldiers treated them brutally. Numerous wars had greatly reduced the population of the Netherlands, the nobility had been ruined, and commerce and industry were declining. The prosperity of the Netherlands was threatened.

Protestantism had made its entry into the Netherlands, but although the Emperor had granted certain concessions to the Protestants in Germany, he was immovable as far as those in the Low Countries were concerned, and the great struggle of the Netherlands for freedom of faith began. Numbers of martyrs, ancestors of the Belgian heroes of to-day, fell on the beautiful fields of Flanders.

Charles V. announced that the adherents of the new faith of Protestantism would be punished by fire and sword, but in spite of this the new doctrines spread rapidly.

In 1555 Charles abdicated, for reasons of health, and the

Netherlands fell to his son, Philip II. The new monarch was the most powerful ruler in Europe. In addition to Spain, he had inherited the Netherlands, Naples, Sicily, Milan, and great possessions in the New World.

Philip hated the Belgians and their country, and was ignorant of their language; he strengthened the Inquisition, and the country was covered with spies. Philip appointed Margaret, Duchess of Parma, his half sister, Governor of the Netherlands, and sent Spanish garrisons to occupy the cities. The cruel persecution of the Protestants brought about the Revolution which had been latent for some time, and heroic indeed did the ancestors of the brave defenders of Liège prove themselves in their fight against the common foe.

THE REVOLT OF THE NETHERLANDS.

The struggle now commenced which was to last for 30 years, William of Orange forming a league of 17 of the provinces to drive the Spaniards out of the country.

The Inquisition only made the people cling to Protestantism and hate the king: and even the nobility, who were mostly Catholics, rose with William and Count Egmont at their head. Riot and violence, the attacking of churches and breaking of holy images, enraged Philip II, who decided to increase the persecution. He sent the brave but cruel Duke of Alva to be Regent of the Netherlands in place of Margaret, whom he recalled.

The struggle of the 17 provinces went on until Alva's successor, Alexander of Parma, son of Margaret, succeeded in creating discord among them, and a separation took place. The ten southern provinces remained under the Spanish King, being more inclined to Catholicism, but the seven northern ones formed into a confederation known as the Utrecht Union (1579), the foundation of the Dutch Republic.

BELGIUM FROM 1579 TO 1815.

Philip now made Belgium an independent State for his daughter Isabelle and her husband, Albert of Austria, but as there was no issue it once more returned to Spain, and had to share in her misfortunes.

In her wars against France and the Dutch Republic, Spain was generally unlucky, and peace was usually concluded at the expense of Belgium. Artois and Thionville were ceded to



A. W. 5.

Bruges.



A. W. 6.

Sluis.

France, and in 1668, by the peace of Aix-la-Chapelle, Tournai, Lille, Charleroi, Courtrai and Oudenarde were also ceded, until by the treaties of Utrecht and Rastadt in 1713 and 1714, Belgium was handed over to Austria.

During the wars of the Austrian succession Belgium was taken by France, but was restored to Austria by the treaty of Aix-la-Chapelle in 1748.

Charles of Lotharingia was Regent, and he and Maria Theresa, Empress of Austria, who founded the Academy of Science, did their utmost for Belgium, and an era of peace and prosperity now began.

Joseph II succeeded his mother, Maria Theresa, in 1780, and he endeavoured to enforce certain reforms. The people, however, saw in these reforms an attack upon their privileges. The University of Louvain gave the signal, and the famous lawyer, Van der Noop, became the head of the discontented inhabitants.

With the breaking out of the French Revolution and the storming of the Bastille, the imagination of the Belgians was fired, and they rebelled, forcing the Austrian garrison at Brussels to capitulate.

The independence of the United States of Belgium was proclaimed in 1790, Luxembourg remaining under Austrian rule.

The Democratic Revolutionary Party and the aristocratic majority, however, could not agree, and it once again became part of Austria, but only for a short time.

After the battle of Jemappes in 1792 the French became masters, and in 1794 the victory of Fleurus put an end to Austrian rule in Belgium.

By the Treaties of Campo Formio (1797) and Lunéville (1801) Belgium became part of France and was governed as one of her possessions, also sharing her varied experience.

Napoleon met his Waterloo, however, and the Congress of Vienna decided that Belgium and Holland should be united under William of Orange. In September, 1815, William I, King of the Netherlands, took his oath at Brussels, and promised to be faithful to the Constitution which had been drawn up the previous month.

The union was an unhappy one; everything—language, customs, and religion—being against the fusion of the Dutch and Belgians.

THE REVOLUTION OF 1830.

The revolution of 1830 brought with it the independence of Belgium. It was impossible for Holland and Belgium to become one nation. Holland was Protestant and commercial, whilst Belgium was Catholic, agricultural and industrial.

In the Government the opposition consisted of two parties, Liberal and Ultramontane, and when they united in 1828 they nearly obtained a majority.

An insurrection followed the imprisonment of de Potter, one of the leaders of the opposition, for an article which appeared in the "Courrier des Pays Bas." This was subdued, but the July revolution of 1830 broke out in France, and numerous emissaries came to Brussels to fan once more the revolutionary spirit.

The independence of Belgium was proclaimed by a provisional government, and a congress was convened at Brussels on October 4th.

The Powers meeting in London made a proposal that hostilities between Holland and Belgium should end. This, happily, came to pass, and Belgium became an independent State. It was decided to have an hereditary monarchy. No member of the House of Orange-Nassau was ever to be elected.

The English Foreign Office looked with disfavour on the suggestion of a union of France and Belgium, and would not allow it. As a result no French prince was eligible for election as king.

Following on the proposal made by the English Government that Prince Leopold of Saxe Coburg should be king, on 4th June, 1831, the Belgian National Congress elected him King of the Belgians amid great excitement in the city of Brussels.

Prince Leopold had married in 1816 Charlotte Augusta, only daughter of the Prince of Wales. She had died, however, in 1817. On July 16th he left England, and on the 21st he entered Brussels and took the oath to observe the Constitution.

The new king's military experience in the wars of 1814 and 1815 now stood him in good stead.

He was able to meet the opening of hostilities with Holland with confidence, and was the means of saving Belgium, assisted by France, who sent an army to Namur and Mons.

Within seven days of the combined armies of Belgium and

France facing the Dutch, August 20th, 1831, not a Dutch soldier remained in Belgium.

It was not until 1838 that King William recognised the independence of Belgium.

Belgium was declared neutral by the Treaty of London, which was signed by the representatives of Great Britain, Austria, Russia, and Prussia.

In return for being allowed to retain one portion of Luxembourg she had to give up part of Limburg, and she had to pay 8,400,000 florins as her share of the debts.

KING LEOPOLD I.

As his second wife King Leopold I took Princess Marie Louise of Orleans, eldest daughter of King Louis Philippe of France.

On April 9th, 1835, the Duke of Brabant, afterwards Leopold II, was born.

It was largely due to the constitutional rule of Leopold I that Belgium passed peacefully through the Revolutionary period of 1848. He had gained the confidence of his people, and the nation became united to defend their common interests.

Leopold displayed his prudent statesmanship by entering into friendly relations with Napoleon III on his assuming the position of Emperor. He did not forget, however, the policy of Napoleon I, and took measures for the defence of his country should that all conquering policy once more reign supreme.

He asked Queen Victoria and the English Court to recognise the new Emperor, and thus gaining favour with Napoleon III prevailed on him to acknowledge the incorporation of the French provinces in the Belgian Kingdom.

Leopold I died on December 10th, 1865. In his 35 years' prosperous reign he had founded a State and made it possible for the people to be independent.

LEOPOLD II.

The work of Leopold I was continued by his son, the Duke of Brabant, who now became Leopold II.

It is to Leopold II that Belgium owes its commercial and industrial prosperity.

Belgium has one of the cheapest railway systems in the

world—thanks to Leopold's efforts and business methods; and the Congo is an outlet for the industry of the Belgian people.

All attempts on the part of Napoleon III and Bismarck to annex Belgian territory were frustrated by Leopold. He also stood faithfully by the duties imposed on his country by her pledge of neutrality when the Franco-German war broke out in 1870.

The way in which Belgium stood the trial won her the esteem and goodwill of other nations.

It was due to Leopold that the Belgian people were able to colonise in the Congo State.

It was also due to him that the country was well defended, for he believed that Belgian neutrality should be an armed one even to the point of sacrifice.

The old forts of Namur and Liège were reconstructed and fresh ones made on the Meuse, as well as at Antwerp. Leopold believed that "wars have become crushing—those whom they surprise are absolutely lost."

He also created forts at Antwerp and Zeebrugge. If his father had consolidated Belgian independence, Leopold II had furthered Belgian national prosperity.

Review.

"The Surface of the Earth; Elementary Physical and Economic Geography." By Herbert Pickles, B.A., B.Sc. Cambridge: University Press. 2/-.

This is a really well-arranged book and should serve as a valuable text-book for young students. The fact that the knowledge acquired by the pupils is so frequently used to further enquiry is in itself a good proof that the author is familiar with the type of students for whom he writes. The illustrations are well chosen and fairly well produced, and the diagrams are such as can be profitably used by any class. Perhaps a better illustration of fossiliferous limestone might have been chosen (page 25), and the value of this illustration is much less than that on page 38. The section on page 48 is not the best the author could have produced. Figs. 26 and 27 could easily have been combined and would then have been more easily compared with a map of England and Wales.

In the hands of a good teacher the book should be of real service, for such a book has long been needed. The author and the publishers are to be complimented on such a neat production. T.W.F.P.

GEOGRAPHY : ITS FIELD, ITS FASCINATION, AND
ITS FUTURE,

WITH SPECIAL REFERENCE TO SOUTH AFRICA.

By J. HUTCHEON, M.A., F.R.S.G.S.

(Taken as read at the Meeting of the Society held in the
Geographical Hall on Tuesday, October 19th, 1915.)

OF recent years, in educational circles, perhaps no subject has been more frequently discussed than geography. Some have condemned it without a hearing, probably because their ideas of the subject were based entirely on the mechanical, dry-as-dust teaching of which they were the victims some ten or twenty years ago. Certainly it is by no means easy to state the exact limitations of the science, and it may therefore be profitable to glance here at the development of the subject from early times in order to understand more clearly the modern significance of the term.

The science is almost as old as man, for, as soon as he found that his immediate environment could not supply all his needs, geography began. The inhabitants of the Nile and Euphrates basins used it in apportioning their fertile land, and at a much later period some Greek philosophers began to turn their attention to such questions as the size and shape of the earth, while others wrote descriptions of various lands and their inhabitants. In the 6th century B.C. the first map of the world was compiled, and Herodotus about a century later gave the world the first treatise on descriptive geography. As new regions came under the sway of the southern empires, descriptive geographical literature increased and it was at a much later date that the scientific treatment of the subject began, when, from being a mere collection of unrelated facts, names, and figures, geography became a systematic science tracing through phenomena distributed over the surface of the earth the gradual evolution from cause to effect.

The geographer's first task is to explore the earth, sea and air and to cartographically express the result of his investi-

gation. He has then to trace the connection between the land forms and subterranean and climatic forces. He has to explain how the distribution of vegetable life is dependent upon the soil and atmospheric conditions, and how animal life receives its substance from the vegetable world. His investigations then lead him to the conclusions that the distribution of man is directly influenced by the presence or absence of certain animals, plants, or minerals. The combination of all these (*i.e.*, land forms, climatic conditions, vegetation, etc.) brings about the development of characteristics, in races, religions and government, the rise of industries, the gravitation towards city centres, the foundation of states and the establishment of commerce.

This sketch gives an indication of the comprehensiveness of the science, and it has accordingly been well called "the gateways of the physical sciences," "the key to history," and "the basis of commerce," but the main effect of geography, is to demonstrate man's relation to his environment and his reaction on that environment.

The geographer's field of action is the surface of our globe, and by that term is meant such parts of the atmosphere, lithosphere, and hydrosphere as have been investigated. He borrows from the results obtained, by the geologist, the meteorologist, the anthropologist and others, and shows how the distributions of their phenomena are inter-related. In his science, as in all others, there are three stages, namely, the collecting, the classifying and the explanatory. The first deals with the gathering of as large a number of independent facts as possible, the second with the arranging of these, and the third with the determination of the laws regulating them.

It must therefore be apparent that few subjects can profess to train more effectively the powers of observation, comparison, explanation, and imagination. The educational value of the subject is very great, whether it be considered from the points of view of utility, culture, or discipline.

Perhaps a rapid review of the development of geographical education in other countries would be of interest to some. The truest indication of what value is placed upon a subject is the degree of recognition it receives from the universities.

At Paris, more than a hundred years ago, the first professorship of geography was established. Now France can boast of nearly fifty university teachers of the subject, and she

has produced some of the world's greatest exponents of the science. Forty years ago geography was taught at only two of the German universities; at present there are close upon three score professors and lecturers. Similar progress has been made in Austria, Switzerland, Italy, Denmark, and the Netherlands. At Oxford the first readership in geography was established in 1887, and at Cambridge the study of the science began the following year. The practical branches of the subject have attained so high a standard in England, that students are attracted from all parts of the world, for, by the sustained efforts of several pioneers, staunchly supported by the Royal Geographical Society, the school of Geography at Oxford and the department at Cambridge can compare favourably with any elsewhere.

In what relation does Geography stand to the other sciences? She has been called the mother of science, the handmaid of history, the child of geology, etc., and to attempt to account for such appellations is by no means an uninteresting task.

Although Geography builds with the bricks supplied by the geologist, the meteorologist, and the anthropologist, it does not follow that in order to be a geographer one must be an expert in all these branches of science any more than the doctor, who uses the results of geographical inquiry in order to find a suitable climate for his invalids, could be called a geographer. The trend of the teaching of the subject will depend on the particular bent of the teacher; if he be mathematical, then the astronomical and cartographical phases of the science will interest him; if geological, then the physical; if biological or anthropological, then the more human.

The basis of all geographical knowledge is exploration; and the history of this branch of the subject, with its numerous examples of heroism and self-sacrifice, is fascinating beyond measure.

With the surveyor's aid are then prepared the maps, which are the foundations of all the later work of the geographer. Unfortunately, no convenient method for representing the curved surface of the earth and retaining correctly both shape and proportion has yet been discovered. The lack of good maps and the ignorance of cartography shown on several occasions by administrators and commanders has cost much in blood and gold, and in recent wars Britain has

been led to realize the inadvisability of fighting without the guidance of reliable maps. Military Geography is at last coming into its own. Nor in peace can their importance be over-estimated, for ability to interpret maps properly is absolutely indispensable to the satisfactory settlement of boundaries. In new countries, such as this, there is ample scope and great necessity for surveyors, hence their "numerical strength" and the high standard of excellence attained. The fine workmanship must in no small degree be attributed to the impetus given to the art by the great patron of Science, the late Sir David Gill, whose achievements in Geodesy won him world-wide renown. Here a passing reference may be made to Astronomy, which also pays its quota towards the elucidation of the questions regarding the seasons, latitude and longitude. The field work necessary in the making and testing of maps has, probably owing to its practical nature, a great charm for most students of the subject.

To state the line of demarcation between geography and geology is very difficult. The same material is used by both but the point of view is different, for geology studies the earth's crust in order to find out its past history, while geography looks upon the present state of development of the various land forms, considers their future condition, treats the whole as the home of plant, animal, and man, and notes the influence of configuration, etc., on him and his reaction on nature. Another of its problems deals with the distributions of minerals and soils and their influence in the economic development of the regions concerned. Probably one of the geographer's greatest pleasures is to trace the relation between geological structure and scenery. The prevailing types in South Africa are too familiar to require more than a passing notice:—the Table Mountain Sandstone with its harsh jagged outlines, *e.g.*, the Hex River Mountains; the Malmesbury Beds and the Granite with their smooth round contours, *e.g.*, Signal Hill, "and the intrusive sheets of dolerite intersecting the less durable and slightly dipping strata of shales and sandstones forming the Karroo system, and presenting an outline alternately flat and sharp, with Krantzies on the top, and forming terraces at lower levels in the body of the mountains, *e.g.*, the Nieuwveld Range." A resumé of a most interesting lecture on the subject by Prof. A. Young will be found in the "Geographical Teacher" of autumn 1906.

In order to solve climatic problems geography appeals to the physicist and the meteorologist. With their assistance he binds the earth with isotherms, he divides the world into high and low air pressure belts, he points out the regions of heavy rainfall, and indicates the deserts.

He now passes from the inorganic to the organic world, and the botanist leads the way. He recognises that the various combinations of soil and climate lead to the different arrangements of belts of vegetation, horizontally and vertically, and he concludes that in all probability plants from one region may thrive in similar habitats elsewhere.

As the vegetable kingdom is, generally speaking, the bread and butter of the lower animal kingdom, the geographer tears a page from the Zoologist's note-book, dealing with the distribution of animal life. This leads to the great economic question of domestication of animals, an important branch of agricultural geography, by no means lacking in interest.

Geography is the stage on which the tragedies and comedies of History are enacted. This is illustrated in the case of South Africa where the great geographical factor, which has dominated its historical and commercial development, is the vast central plateau approachable with any degree of ease, only from the south. An arid desert forbids influx from the west, and from the east it is almost equally well barred by a tremendous mountain range. Besides, the fine climate of the S.W. corner of the Cape Colony offered great attractions to the early colonists, and hence most of them desired settlement there. This eventually led to trekking, and the great northern hinterland with a climate tempered by altitude became the home of thousands of pioneering farmers. This northern migration was greatly accelerated by the construction of railways, and the study of railway development in South Africa, its dependence upon configuration, and its effects upon economic history is a most fascinating occupation.

Anthropology shows that the influence of environment on man varies in inverse proportion to his mental development. The savage is practically a slave to his environment, while the modern man has all but conquered nature. The tendency in anthropo-geography is to make sweeping statements before sufficient data have been collected. For instance, although it appears to be a general rule that nigrescence is intensified on

approaching the equator, physiologists have not yet been able to explain why, nor to account for the distribution of the red race throughout America. Some direct effects on man's physique may easily be traced. In isolated regions where food is scarce, or lacks variety, animal stature is low. Such conditions prevail in Shetland, and the result may be seen in the breed of ponies peculiar to these islands. A similar type of stunted horse is being evolved in the Falkland Isles. On comparing the Bushmen of the barren Kalahari Desert with the Hottentots of the richer grass lands the same principle is found to prevail. Again, where geographic conditions necessitate the constant engagement in any particular form of exercise, *e.g.*, paddling, the people concerned develop tremendous chests and arms while their legs are abnormally skinny. This is exemplified in the Barotse of the Upper Zambesi. Of course with a change of occupation in time these peculiarities disappear.

Environment reflects itself also in architecture, for the height or basement-area of building varies according to the value of the land; houses are made to resist heat or cold according to the climate; the stone employed in most cases depends on the nature of the neighbouring rocks; and the ornamentation is regulated by the weathering agents.

Even on religious beliefs environment has left its mark, for the hell of the Eskimos is a region of darkness and intense cold, while that of the Jew is a place of eternal fire. It must therefore be evident that the combination of all the direct and indirect forces of environment must have a considerable influence in moulding character.

The study of geography through place-names has also roused considerable interest. A few examples will indicate how some local geographical peculiarities are embodied in names. Near Beaufort West there is a district known as "Ghoup." This is the Bushman-Hottentot word meaning what is absolutely no good for anything, for it was applied to the parts of an animal which could not possibly be eaten—even by Bushmen. From the point of view of production the place is very appropriately named. Then near Knysna is "Tse-tsi Kama," with its "much-much-water" and its dense forests, "Umzimvubu" (home of hippopotamus), and "Ngqeleni" (at the place of cold). "Baviaan's River" and "Zeekoe" require no comment.

The geographical work of the future can only be indicated

not only because the field is so large but also because in accordance with the prevailing principle of evolution new conditions are constantly arising, and in consequence new geographical problems are ever asserting themselves. For instance, the future of the ostrich feather industry, which has assumed such an alarming aspect in the recent months, is a question of no mean geographical significance. As "terra incognita" is now almost non-existent the work of the explorer becomes every year more limited, but there is still need for him in South America and in isolated regions elsewhere. Meanwhile, however, the eyes of the world are fixed on the vast continent of the South Antarctic. Perhaps Shackleton's next great expedition will throw light on the bewitching problems of palæo-geography, perhaps this lone land will prove a storehouse of mineral wealth, perhaps it will provide the Australian meteorologist with the key to understanding his climatic conditions.

In cartography, maps showing every possible type of geographical distribution will be available. The great international map which has been in preparation for several years will make possible the universal use of several symbols and modes of spelling. There is scope for cartographical representation of the distribution of soils and of the actual and potential productivity of the various agricultural districts. Hydrographical surveys, especially in countries such as this, where water is wealth, should be easily "available for all interested." Maps showing the present and past distribution of forests and rainfall, of drained land and malaria, certainly ought to receive the serious consideration of all patriotic citizens. Even statistics might gain a little attention if presented in map or graphic form.

The geologist may help by indicating the presence of valuable or useful minerals, by telling the probable development of land forms on account of erosion or deposition, and may lead through the avenues of palæontology to the worlds of the past.

The hydrographer will suggest improved means of distributing water, and in conjunction with the agriculturist will indicate how to receive the maximum of production from the minimum of outlay. All such considerations help to answer the geographer's queries.

Recent marine catastrophes, even in the most familiar

highways of the seas, have revealed the fact that on every hand lurk sources of danger which demand the further attention of the oceanographer.

Although the meteorologist cannot alter the courses of cyclones he may be able to suggest new means of modifying local climatic conditions in order to make possible the more complete Europeanisation of tropical lands with their almost unlimited productive potentialities. In this part of the globe, the burning question of the day seems to be "Is South Africa drying up?" The meteorologist may even find a means of killing the dreaded "dust-devil."

The preparation, distribution, and intelligent interpretation of meteorological charts are absolutely necessary for thoroughly successful farming, and safe fishing. The bearing of meteorology on aviation is evident, and before long the latter may demand serious consideration from the geographers of commerce.

Botanists, zoologists, and anthropologists, after more comprehensive observation and exhaustive investigation, in which innumerable indirect causes will not fail to receive consideration, may discover laws regarding man's distribution and racial characteristics which will stand the test of universal application.

History must continue to pursue the familiar paths laid out by Geography.

The questions regarding a topographical nomenclature for general adoption, tropical diseases with their distribution, and their relation to animal distribution, the world's decreasing coal supply, the latent power of oil, water, tides and sun, and the alteration of the great trade routes giving rise to such local questions as shipping accommodation, storage, etc., must all receive attention, from the geographer of to-morrow.

The establishment of an Imperial Geographical Information Bureau, which would collect and distribute information regarding all matters geographical, would prove a tremendous boon to the man in the street, the traveller, the colonist, the soldier, and the administrator. In a small way, much useful work of this kind can be done in schools.

With reference to the future of geographical education in South Africa, it is evident that if any profitable meteorological, field, or research work is to be accomplished at the higher centres of learning, the instruction in schools must be

sound and extensive, and hence it is meet that every endeavour should be made to raise the status of a subject of such importance to men both collectively and individually, and which, most are agreed, has not received due consideration in the past.

Reviews.

“Physical Geography.” By P. Lake, M.A. Cambridge: University Press. 7/6.

The opening sentence of Mr. Lake's preface is, indeed, only too true. Of late years we have been overloaded with a rapid succession of books on elementary physical geography, of which it may be truly said that the majority “had no proper reason for existing,” since they only repeated in slightly different terms what others had said before them. Apart from special studies of separate branches of the subject, there were, until lately, barely half a dozen manuals to which a teacher could have recourse for further information than the elementary text-books gave; and of these three were of Transatlantic origin, so that the examples given had to be paralleled by others nearer home. There was, therefore, abundant room for such a manual as Mr. Lake has given us.

It is not light reading. Readers of the author's earlier works will know that he does not multiply words without necessity; but, though the style is condensed, it is never obscure. Rather the contrary, the descriptions of the various phenomena are models of clear and concise exposition, and the illustrations are excellently chosen to suit the text. They are also admirably printed, and not blurred, as is sometimes the case, so badly as to be almost illegible.

Where so much is good, it is difficult to single out particular passages for praise or censure. But the chapters on the distribution of temperature in the atmosphere, and that on the tides—a subject which beginners appear to find peculiarly difficult to understand—will commend themselves to teachers as affording valuable help in their studies and lessons. Both subjects are often very superficially treated.

On page 312 we notice that the author gives the Laacher See as a type of a crater lake. Now it is held by some competent German geologists that it is not a crater lake at all, but one formed by a subsidence due to the activity of the surrounding volcanoes; and, after spending three weeks in the Eifel, chiefly in studying the Maark and other volcanic phenomena, the writer is inclined to agree with them. It would be better to give the Pulvermaar, near Gillenfeld, or the Ulmener Maar, west of Manderscheid, both of which are indisputably crater lakes, as examples of this interesting lake formation. It is to be feared, though, that the latter, the larger of the two, will be drained

before many years are passed by the brook that now runs from it and is cutting down its bed somewhat rapidly.

In conclusion we would cordially recommend this book to students, especially to those whose means to purchase books and shelf space to contain them are limited.

J.A.O.

“Elementary Studies in Geography and History.” By H. J. Mackinder, M.P., Reader in Geography in the University of London.

- (1) The Teaching of Geography and History, 1/-.
- (2) Our Island History, 2/-, or in parts 1/3 each.
- (3) The Modern British State, 1/9.

London: Geo. Philip and Son.

For a scholarly and singularly lucid review of these books the reader cannot do better than refer to Mr. P. M. Roxby's article in the autumn number of the *Geographical Teacher*, in which is quoted the following extract, as indicative of Mr. Mackinder's theme:—

“There are some six roads to be traversed . . . before we begin our first book on geography at the age of eight or nine years. The first and the second of our roads, starting directly out of the freest and youngest play, are the twin roads of drawing and modelling. The third and fourth roads are comprised in what is known as nature study. The third follows the flow and the ebb of animal and vegetable life throughout the year, and the fourth follows the circulation of water from sea to sky and back to sea. The fifth is the romantic road of tales from the Wonderbook, tales of distant lands and ‘once upon a time.’ The sixth road goes with the sun in his apparent path from dawn to dusk and beyond: it leads to the conclusion that the earth is a body hung in space.

“Our six roads end on the globe: they have been aimed there from the beginning. The children will exercise upon it the six faculties which they have won. They will (1) drawn their own maps from the continents shown upon it. They will (2) mould from the maps so drawn, and pour in water around to represent the ocean. With their fingers tracing little circulations on the globe, they will picture (4) the mists rising from the ocean, and descending on the continents in rain, and will see the (3) annual crops growing in the moisture and the sunshine. Where the land is rainless they will learn to recognise the Sahara of their (5) Wonderland, with its sandstorms and camels. Where the land is drenched in Central Africa they will imagine dark forests and pygmies. Finally, (6) the sunshine from a lamp will divide the day from the night, and the continents on our globe will rotate successively into the day.”

One can but regret that there should be a need for such a book as the first-named, but, in the present state of things, seeing that the teacher is as a rule imperfectly trained to deal with the subjects as they are expected to be taught in these days, and has little oppor-

tunity of further study on the necessary lines (and certainly no means as a rule of travel), we can but welcome the book as an almost essential *vade mecum* for the teacher.

In the second book named, the great aim in view is to bring the pupil to a realisation of the dependence of the present on the past, and in this aim the author is eminently successful.

In the third book, Citizenship is the theme, and the method of treatment is strikingly novel and can hardly fail of its purpose to train its young readers up to be worthy Britishers. C.H.C.

“Industrial and Commercial Geography.” By Prof. J. Russell Smith. London: Constable & Co. 902 pages. 15/- net.

THE author aims to interpret the earth in terms of its usefulness to humanity and deals with human activities as affected by the earth, rather than with parts of the earth as they affect human activities.

In the first part of the book we have a discussion of industries, in preference to the usual regional treatment, and the author justifies his method by insisting that it appeals more to reason and is more easily assimilated by the reader. We agree with him too that such a procedure will give a sound knowledge of the trade activities of each country without sacrificing the knowledge of the industries themselves.

In the second part there is a description of world-commerce, with a detailed treatment of Ports, Trade Routes, etc., and we would especially commend for careful study the excellent chapters on Trade Routes. They contain material which can only have been got together with much labour and the method of presentation is admirable.

We believe the book to be an evidence of a coming change in the outlook of geography students and we commend it with every confidence to those in search of inspiration for their work. C.H.C.

“Hannibal Once More.” By Douglas W. Freshfield, M.A., F.R.G.S. With three maps and five illustrations. London: E. Arnold. 5/-

This intensely interesting study of the most probable route taken by Hannibal's Army across the Western Alps is a continuation and culmination of Mr. Freshfield's papers in the Geographical and Alpine journals.

In proposing the route from the Durance River by the Col de Vars and the Col de l'Argentière to the Italian plain, he finds great support in a passage from the writings of Marcus Terentius Varro, a Roman general and great author, where a list of five passes is given, presumably arranged in geographical order, as the first named is the

one nearest the sea, and the fifth is the most northerly one, the Little St. Bernard. The second (called Hannibal's Pass by Varro) thus being the second from the coast, or the Vars-Argentière Route.

Mr. Freshfield first treats of the classical texts of Polybius and Livy, and discusses the views taken of these texts by various writers. He then shows how the Vars-Argentière route answers the requirements, and finally criticises other proposed routes, more especially the route over the Col du Clapier, advocated by Commandant Colin and other French military writers, and by Professor Spenser Wilkinson in this country, pointing out how far and where they fail to agree with the narratives of Polybius and Livy.

The value of the book is greatly enhanced by the good orographical maps of the two routes specially considered and of the Western Alps as a whole.

H. S.

“The Teaching of Geography.” By B. C. Wallis, B.Sc. Cambridge: University Press. 3/6.

This is an interesting book, and the author has given his ideas and the result of his experience in a very lucid way. Whether all teachers will accept his ideal is doubtful, for every teacher thinks his own method, at least, a good method. It should also be remembered that methods adopted successfully by one teacher may prove an utter failure in another and yet equally capable teacher.

The author has however grasped the difficulties and knows that conditions vary in every school and in every locality. Physical geography (land forms) is far harder to teach in the plains of East Yorkshire than among the hills of West Yorkshire, but the book will be a help to the teacher who is not so favourably placed as he might desire. In this book such a teacher will find his “ideals,” and the author is to be congratulated on a work in which every teacher of geography will find something of value.

In many schools it is impossible to have a separate room, and in many more the staff is too small to employ a specialist for the subject. Perhaps it would be well for our Universities and Training Colleges to follow the advice given in Chapter XIX. Chapter XXI should be studied both by teachers in elementary and in secondary schools. Chapter XXII is also valuable and shows that the author has not overlooked the fact that other subjects form part of the school course.

The book should be in every school and should be a real aid to teachers who frequently find difficulty in correlating and grouping the various subjects.

T.W.F.P.

Proceedings of the Society.*

July 1st to December 31st, 1914.

The 965th Meeting of the Society was held in the Houldsworth Hall on Wednesday, October 7th, 1914, at 7-30 p.m.

In the Chair Mr. Harry Nuttall, M.P., F.R.G.S., and later Colonel H. T. Crook, D.L., V.D.

The Rev. T. T. Norgate, F.R.G.S., gave a lecture on "The Theatre of the War," illustrated with many lantern views.

Colonel Crook moved, Mr. J. Stephenson Reid seconded and it was unanimously resolved that the hearty thanks of the Meeting be tendered to the Lecturer for his interesting address, and to the Vice-Chairman, Mr. E. W. Mellor, J.P., F.R.G.S., for the loan of his powerful lantern, with which the slides were so well shown.

The lecture was in aid of the Belgian Relief Fund, and the balance of £18 17s. 10d. was handed to Mr. L. A. Gallé, Belgian Consul, on behalf of the fund.

The 966th Meeting of the Society was held on Tuesday, October 13th, 1914, at 7-30 p.m.

Mr. T. W. Sowerbutts, F.S.A.A., in the Chair.

The Minutes of the Meetings held on April 7th and October 7th, 1914, were taken as read.

The election of the following members was announced :—Ordinary : Miss Ashton, Miss Ruth Bennett, Messrs. W. Appleby, E. H. L. Dickson, T. Gaythorpe, C. V. Haerem, T. Hilton, J. R. Morland, J. E. T. Richardson, T. F. Robinson, O. M. Row, H. Tattersall, and T. Wood, and the Summerville College ; Associate : Miss Kate Chorley and Miss A. Jackson.

The Chairman mentioned that, by direction of the Council, letters of condolence had been sent to the relatives of Messrs. G. I. Blake, J. G. Groves, D.L., S. Massey, and T. Newbigging, who had died during the summer.

The Chairman reminded the Members that Thursday, October 15th, would be the 30th anniversary of the formation of the Society. The Council had proposed that a banquet should be held to celebrate the event, and the President of the Royal Geographical Society had accepted an invitation, but under the altered circumstances due to the war it had been decided not to go on with this proposal.

Miss Kate Qualtrough, F.R.G.S., gave a lecture on "The Genesis of Geography," and illustrated her paper with lantern views of maps, plans and places of historic interest (see p. 68).

The Chairman on behalf of the Meeting thanked the Lecturer for her very instructive address so appropriately illustrated.

*The Meetings are held in the Geographical Hall, unless otherwise stated.

The 967th Meeting of the Society was held on Tuesday, October 20th, 1914, at 7-30 p.m.

In the Chair Colonel H. T. Crook, D.I., V.D.

The Minutes of the Meeting held on October 13th were taken as read.

The Chairman mentioned that the death of Mr. Joseph Lunn took place on October 15th, and it was resolved that the sympathy of the members present be conveyed to his relatives in their bereavement.

Mr. Albert Wilmore, D.Sc., F.G.S., gave a lecture on "Belgium, the Battleground of Europe," and illustrated his remarks with lantern slides, mainly original (see p. 125).

On the motion of the Chairman it was resolved that the hearty thanks of the Meeting be tendered to Dr. Wilmore for his very interesting and instructive address.

N.B.—As some fifty members and friends were crowded out of the above Meeting, Dr. Wilmore kindly repeated his lecture on "Belgium" on Friday, November 20th, when Mr. T. W. F. Parkinson, M.Sc., F.G.S., presided. A collection for the Belgian Refugees' Fund was taken at the close of the lecture, and £5 2s. 9d. was received and handed over to Councillor Will Melland on behalf of the fund.

The 968th Meeting of the Society was held on Tuesday, October 27th, 1914, at 7-30 p.m.

Mr. E. W. Mellor, J.P., F.R.G.S., in the Chair.

The Minutes of the Meeting held on October 20th were taken as read.

The Chairman announced the election of Mr. J. Buckley as an Ordinary Member, and Mademoiselle F. Dewez as an Associate, and mentioned the death of Mr. F. Radcliffe, one of the oldest members, to whose relatives a letter of condolence had been sent by direction of the Executive Committee.

Mrs. H. L. Lees, F.R.G.S., A.R.C.I., gave an account of her "Journey round the World, with special reference to the Far East," and illustrated her description with lantern views from her own photographs.

Mr. F. Zimmern, F.R.G.S., moved, the Chairman seconded and it was unanimously resolved that a hearty vote of thanks be given to Mrs. Lees for her very interesting lecture so well illustrated.

N.B.—As some twenty members and a large number of "City News" readers and others were unable to gain admission to Mrs. Lees' lecture on October 27th, Mrs. Lees kindly arranged to again describe her journey round the world in the Geographical Hall on Friday, November 27th, 1914. All the 300 tickets issued were applied for in two days after the announcement of the lecture in the "City News," so Mrs. Lees arranged to repeat her lecture for the third time in the Midland Hall on December 3rd from 3 to 5 p.m. A collection realising £4 2s. 7d. was made on November 27th, and this, with the balance left after paying expenses at the Midland Hall, amounted to £10, which Mrs. Lees devoted to the local Relief Fund.

The 969th Meeting of the Society was held on Tuesday, November 3rd, 1914, at 7-30 p.m.

In the Chair Mr. Harry Nuttall, M.P., F.R.G.S.

The Minutes of the Meeting held on October 27th were taken as read.

Mr. Charles Sutton gave a lecture on "A Journey to the Rhine and the Black Forest," illustrating his remarks with original lantern views made from his own photographs.

On the motion of Mr. E. W. Mellor, J.P., F.R.G.S., seconded by the Chairman, it was unanimously resolved that the hearty thanks of the Meeting be tendered to Mr. Sutton for the interesting account which he had given of his journey and for the fine lantern views with which it was illustrated.

The 970th Meeting of the Society was held on Tuesday, November 10th, 1914, at 7-30 p.m.

In the Chair Mr. D. A. Little.

The Minutes of the Meeting held on November 3rd were taken as read.

The election of the following members was announced:—
 Ordinary : Madam Adnett, Miss Greene, Rev. J. G. Maude, Messrs. A. Brown, F. Clay, R. M. Downie, J. Gregory, and W. H. Hewerdine ;
 Associate : Miss Ewbank, Miss M. J. Smith, and Mr. R. W. Nuttall.

Mr. Gilbert Waterhouse, M.A., F.R.G.S., gave a lecture on "Tramps in Tyrol," describing two journeys in unfrequented parts of the country and illustrating his remarks with original lantern views.

On the motion of Mr. J. Hancock, seconded by Mr. E. Russell Evans, a hearty vote of thanks was passed to Mr. Waterhouse for the interesting description of his journeys and for the illustrations shown.

The 971st Meeting of the Society was held on Tuesday, November 17th, 1914, at 7-30 p.m.

In the Chair Mr. J. Stephenson Reid.

The Minutes of the Meeting held on November 10th were taken as read.

The Chairman referred to the death of an honorary member of the Society, the Right Hon. Field Marshal Earl Roberts, and asked the members to pass a resolution of sympathy by standing for a moment in silence.

Mr. W. H. Shrubsole, F.G.S., gave a lecture on "America's Wonderland, the Yellowstone Park." The address was illustrated with coloured lantern views.

On the motion of Mr. F. Zimmern, F.R.G.S., seconded by the Chairman, it was unanimously resolved that the hearty thanks of those present be given to the lecturer for his interesting lecture so well illustrated.

The 972nd Meeting of the Society was held on Tuesday, November 24th, 1914, at 7-30 p.m.

In the Chair Mr. D. A. Little.

The Minutes of the Meeting held on November 17th were taken as read.

The election of Rev. W. H. Leak, Rev. Wm. Nicholls, Alderman J. R. Ragdale, J.P., and Mr. Harry Staniforth as Ordinary Members was announced.

The Chairman mentioned the loss by death of Messrs. G. H. Bell and Gustav Reiss, and the members gave expression to their sympathy with the relatives of the deceased members by rising silently.

Mr. George Ginger gave a lecture on "Sunny Sicily," illustrating his remarks with a large number of lantern views.

On the motion of the Chairman a hearty vote of thanks was passed to Mr. Ginger for his very interesting and instructive account of his visits to Sicily, so well illustrated.

The 973rd Meeting of the Society was held on Tuesday, December 1st, 1914, at 7-30 p.m.

In the Chair Mr. E. W. Mellor, J.P., F.R.G.S.

The Minutes of the Meeting held on November 24th were taken as read.

The Chairman announced the election of Mr. J. Higgins as an Ordinary Member and Mr. H. Somerset, Junr., as an Associate Member.

Mr. Samuel Wells, F.R.G.S., gave a lecture on "Where Three Empires Meet—Poland," and illustrated his address with a large number of good lantern views.

Colonel H. T. Crook, D.L., moved, the Chairman seconded and it was unanimously resolved that a hearty vote of thanks be given to Mr. Wells for his interesting address and for the lantern slides with which it was illustrated.

The 974th Meeting of the Society was held in the Free Trade Hall on Wednesday, December 2nd, 1914, at 7-30 p.m.

Mr. Harry Nuttall, M.P., F.R.G.S., presided, and was accompanied on the platform by Mr. Hilaire Belloc, the Rt. Hon. the Lord Mayor (Alderman McCabe), Mr. L. A. Gallé, Belgian Consul, and the following members of the Council of the Society: The Rt. Rev. Bishop Welldon, D.D., Colonel H. T. Crook, D.L., Professor W. Boyd Dawkins, J.P., F.R.S., Messrs. J. McFarlane, M.A., M.Com., F.R.G.S., George Thomas, J.P., D. A. Little, and Egbert Steinthal, Miss L. E. Walter, H.M.I., B.Sc., Messrs. J. E. Balmer, F.R.G.S., C. A. Clarke, J. Howard Hall, T. W. F. Parkinson, M.Sc., F.G.S., J. Stephenson Reid, T. W. Sowerbutts, F.S.A.A., and Harry Sowerbutts, A.R.C.Sc.

The President, with some introductory remarks, introduced Mr. Hilaire Belloc, who delivered a lecture on "The Strategy of the War," illustrating his remarks with diagrams and maps shown by the electric lantern of the Vice-Chairman.

The Rt. Hon. the Lord Mayor moved, Mr. L. A. Gallé seconded, and the President supported a hearty vote of thanks to Mr. Belloc for his very interesting and instructive lecture, and it was passed unanimously.

The lecture was in aid of the Belgian Relief Fund, and the gratifying amount of £50 17s. 5d. was left after paying expenses. This was handed over to Mr. L. A. Gallé, Belgian Consul, on behalf of the fund.

A report of the lecture is here given :—

SOME POINTS IN STRATEGY.

Mr. Hilaire Belloc lectured to a large audience at the Free Trade Hall, Manchester, last night, on the strategy of the war in the west of Europe. The lecture had been arranged by the Manchester Geographical Society, and Mr. Harry Nuttall, M.P., presided. Mr. Nuttall said, introducing the lecturer, that he hoped that after this cataclysm was over the nations, including the United States of America, would come together to agree to reduce armaments and to keep the peace.

Mr. Belloc discussed first the general aspects of the war and secondly the strategic elements of what has happened in France and Belgium. This war, he said, was the largest business upon which any nation had ever been engaged. Upon what happened as the result of this war "which is yet undecided remember" will turn the future of Europe, to a degree that was not generally realised. This business was more important than the Reformation, more important than the discovery of America, more important than the discovery of printing. If they did not take great care, the civilisation that men now knew would cease; however much care men took, the Europe that would emerge from the war would be a Europe very different from what they had known. War, for example, had always a democratic effect. Did they think that after this war the same industrial conditions would continue? Whoever thought that was singularly illusioned; was living in a fool's paradise, "and God knows," he said, "the Press has done everything it can to make you live in a fool's paradise. During the passage of the Belgian plain by the Germans the papers were full of German defeats; and how often has the Press told you that this or that attack upon the Allied lines was the final German attack? It is the business of a man always to expect the worst."

THE QUESTION OF NUMBERS.

Mr. Belloc laid down two principles—the first that victory consists in the disarming of the adversary by whatever method; the second that, other things being equal, victory is decided by numbers—in the decisive time and place. In respect of this matter of numbers he defined three periods of the war—the first the period of enormous Austrian-German superiority lasting to the middle of September; the second, the period of great increase in the Russian numbers and some increase in the strength of Germany; the third (which is not yet come, but will come about the end of December) when Russia will be fully mobilised, and there will be no further increments of force except young men coming in a year or two before their time. In the first stage Germany had an advantage over France of 126 to 39, and it was her task to beat France quickly by force of this superiority, then leaving a garrison to hold down France

while she turned to meet Russia. By a narrow squeak, Mr. Belloc said, that effort failed, and he proceeded to show how it failed. To do this he had to explain the Napoleonic doctrine of "the co-ordinated detached reserve" and "the open strategic square," a formula which consists of the disposition of an inferior force before a superior attacking force in the form of a square with open sides, the square being presented lozenge-wise to the enemy, with the force holding one corner—"the operative corner"—disposed directly in the path of the enemy, the business of the operative corner being to retreat, holding the enemy engaged, to a point at which the other three corners of the force are thrown at the one or other wing of the enemy to defeat it before the other wing can come up.

BRITISH AND THE RETREAT FROM MONS.

The great military question of years, Mr. Belloc said, had been whether a conscript army could be trusted to carry out the function of "the operative corner" without breaking. The Germans had argued that it could not. It was upon this doctrine that the French relied. "After this war," he said, "there will certainly be a great deal of recrimination and a great deal of boasting. It will always be worth while for the British to remember that during that famous retreat from Mons the exterior corner was composed of the British professional contingent, and on the extreme corner of that, taking all the worst work, was General Smith-Dorrien." In accordance with this doctrine, Mr. Belloc said, a second (eastern) corner force of the lozenge was disposed about the Belfort gap; a third, General Joffre, keeping his own counsel, hid in Paris; the fourth was in Normandy and Picardy. It was the discovery of the reserve force in Paris that caused Von Kluck to change his plans, and that brought about—the vain march across the French front and the effort to break through on the east—the German retreat. For the skill with which that retreat was carried out Mr. Belloc had a great deal of praise; and he pointed out also the two great miscalculations that entered into the French plan, the first, that Namur could hold, whereas it fell; the second that the Germans would bring at the most eight army corps to the attack, whereas they brought fourteen.

THE ATTEMPT ON CALAIS.

The most remarkable thing in the operations, in Mr. Belloc's opinion, was the German attempt on Calais along the sea shore. It should have been made, he thought, on purely strategic considerations, from Arras to Boulogne; and he could only explain the present nature of the attempt by supposing it to be due to political interference. "Rumour says," he concluded, "that that attack along the shore is being begun again. It would be rash to say that the task is impossible, but it is certainly immensely difficult. I was there ten days ago, and though, of course, I can no more judge of the matter than any other civilian, yet one can construct an opinion from observing how soldiers speak and judge, and judging from what soldiers then were saying and judging, that line cannot be broken through."

Mr. Belloc was thanked for his lecture in a resolution that was proposed by the Lord Mayor and seconded by the Belgian Consul. The Lord Mayor said that many people in Manchester were going on as if nothing was happening. Some people would not be disturbed if a shell fell in their neighbour's backyard, so long as it did not affect their own. There was an astonishing amount of inertia in the town. *(Manchester Guardian.)*

The 975th Meeting of the Society was held on Tuesday, December 8th, 1914, at 7-30 p.m.

In the Chair Mr. George Ginger.

The Minutes of the Meetings held on December 1st and 2nd were taken as read.

Mr. W. H. Ward gave a lecture entitled "To and Over the Simplon," descriptive of a journey from Lausanne, round the North-Eastern Shore of Lake Geneva, up the Rhone Valley, and over the Simplon Pass. The address was illustrated with a large number of lantern views.

On the motion of the Chairman a hearty vote of thanks was passed to the lecturer for his interesting and instructive account of his journey, so well illustrated.

The 976th Meeting of the Society was held on Tuesday, December 15th, 1914, at 7-30 p.m.

In the Chair Mr. E. W. Mellor, J.P., F.R.G.S.

The Minutes of the Meeting held on December 8th were taken as read.

The election of Messrs. F. W. Goodwin and I. Zellweger as Ordinary Members and Mr. E. Lightowler as an Associate Member was announced.

The Chairman drew the attention of the members present to Rule 26, which provides that each ordinary member has the privilege of introducing one friend, and intimated that it would be necessary in the future to adhere to this rule.

Mr. Arnold Williams gave a lecture on "Belgium, the Land of Art: its Economic and Political History," and illustrated his remarks with many lantern views (see p. 130).

The Chairman on behalf of the Meeting offered hearty thanks to the Lecturer for his instructive address and for the illustrations shown.

The 977th Meeting of the Society was held on Friday, December 18th, 1914, at 7-0 p.m., and took the form of a lecture to the children of the members.

Mr. Wm. H. Ward presided.

Mr. Charles Sutton gave a lecture on "Manchester to the Highlands of Scotland by Road." The address was a description of a motor-car journey to the North of Scotland and back, and was illustrated with a large number of lantern views, mostly original, concluding with some natural colour photographs.

One of the girls in the audience moved, and a boy seconded a hearty vote of thanks to Mr. Sutton for his interesting lecture and for the slides shown, and it was carried by acclamation.

List of Maps, Books, Journals, etc.,

ACQUIRED BY THE SOCIETY

FROM JANUARY 1st TO DECEMBER 31st, 1914.

Maps.

EUROPE.

- Cheshire. Sheet XVIII. N.W. (Altrincham). Scale six inches to 1 mile. Southampton : Ordnance Survey Office, 1911.
- Ordnance Survey Map, Lancashire. Manchester Sheets CIV. 6. 19, CIV. 6. 20, CIV. 6. 24, CIV. 6. 25. Scale 1/500. Southampton : Ordnance Survey Office, 1901-02-03.
- Liverpool Bay, surveyed by Lieut. Lord, R.N., 1846. London : Hydrographic Office of the Admiralty, 1850. *Manchester Chamber of Commerce.
- Carte des Voies de Communication de Londres aux pays Balkaniques et à Suez. Scale 1/5,000,000. *Manchester Chamber of Commerce.
- Map of the Seat of War in North Sea, Belgium and Eastern France. Scale 18 miles to the inch. London : G. W. Bacon and Co., 1914.
- Bartholomew's Reduced Survey Map of North-Eastern France, Belgium and the Rhine. Scale 16 miles to an inch. Edinburgh : John Bartholomew and Co., 1914. (Price 2/- net.) *The Publishers.
- Belgium and the North-East of France. Scale 6 miles to 1 inch. Geographical Section, General Staff No. 2517. London : War Office, 1912. *The Director of Military Operations.
- War Map of Central Europe, containing on one sheet, General Map showing European Frontiers (Scale 86 miles to 1 inch) and Special large Scale Map showing Frontier regions between France, Germany, Belgium and Holland. Fortified cities specially marked. Scale 31 miles to 1 inch. Edinburgh : John Bartholomew and Co., 1914. (Price 1/-.) *The Publishers.
- General Map showing European Frontiers, 1914. Fortified Cities specially coloured. Scale 31 miles to 1 inch. Edinburgh : John Bartholomew and Co., 1914. (Price 1/-.) *The Publishers.
- Norway. Landgeneralkart over Norge i 1/250,000. Blad XXVI, Vega. Kristiania : Norges Geografiske Opmaaling, 1914. *Norges Geografiske Opmaaling.
- Norway. Kart over Nordre Trondhjems Amt. Blad II. Maalestok 1/200,000. Kristiania : Norges Geografiske Opmaaling, 1913. *Norges Geografiske Opmaaling.
- Norway. Topografisk kart over kongeriget Norge. L 7, Andøya ; L 8, Kvaefjord ; M 12, Riddoalge ; W 7, Karasjok ; 31 A, Espedalen. Maalestok 1/100,000. Kristiania : Norges Geografiske Opmaaling, 1914. *Norges Geografiske Opmaaling.

- Norway. Katalog over Norske Sjøkartter den 1 Januar, 1914. Kristiania, 1914. *Norges Geografiske Opmaaling.
- Norway. Den Norske Kyst. 217, Romsdalsfjordene; 227, Fra Beiaren og Saltfjorden til Bodø og Folla. Scale 1/100,000. Kristiania: Norges Geografiske Opmaaling, 1914. *Norges Geografiske Opmaaling.
- Norway. Den Norske Kyst. Sheets 68, Fra Steigen til Tranøy; 79, Fra Harstad og Kvaefjord til Risøysund og Senjen. Scale 1/50,000. Kristiania: Norges Geografiske Opmaaling, 1914. *Norges Geografiske Opmaaling.
- Atlas öfver Finland, 1910. Sällskapet för Findlands Geografi. One Vol, Maps and Two Vols., Text. Helsingfors, 1910. *Mr. George Thomas, J.P.
- Map of the Balkan States. Showing Frontiers in accordance with the Treaties and Agreements of 1913-14. Scale 1/750,000. London: Royal Geographical Society, 1914. *The Royal Geographical Society.
- Port of Leixoes. New Harbour (Oporto, Portugal). Hydrographical Chart published by the Daily Paper "O Commercio do Porto." Scale 1/2,500. Porto: Emilio Biel and Ca., 1892. *Manchester Chamber of Commerce.

ASIA.

- Map of the Made Roads on the Continental portion (Scindh excepted) of the Bombay Presidency. Scale 35 miles to an inch. London: Charles Knight and Co., 1846. *Manchester Chamber of Commerce.
- Die Kiau-Tshau Bucht, Ost-Shantung. Scale 1/750,000. Berlin: Dietrich Reimer, 1876. *Manchester Chamber of Commerce.

AFRICA.

- Mapa del Sáhara Español y Regiones Inmediatas, por Enrique d'Almonte. Scale 1/1,000,000. (4 Sheets.) Madrid: Real Sociedad Geografica, 1914. *The Society.
- Mapa de Marruecos al sur del Rio Tensift, por D. Eduardo Alvarez Ardanuy, en escala de 1/500,000. (Inset: Fifteen Plans of chief towns, etc.) Madrid: Real Sociedad Geografica, Boletin, Tomo LVI, Trimestre 4, 1914. *The Society.
- Côte Occidentale d'Afrique de St. Louis au Cap des Palmes. Sénégal and Fouta Dialon. Scale 1/2,750,000. Marseille: A. Rougier, 1887. *Manchester Chamber of Commerce.
- Colony of Lagos. Map showing the general course and direction of the Lagos Government Railway and the position of the Stations, etc. Scale 4 miles to an inch. *Manchester Chamber of Commerce.
- Lagos Harbour, by A. Nagel, B.Sc., under the direction of Sir John Goode. Scale 1/9,675. (1892.) *Manchester Chamber of Commerce.
- Africa. 1/250,000. Cape of Good Hope and Orange Free State. Sheets: South H 34 K, Prieska; L, Douglas; M, Kamies Berg; South H 35 A, Kimberley. G.S., G.S. No. 1764. London: War Office, 1914. *The Director of Military Operations.
- Africa. 1/125,000. South Africa. Sheets: South G 35 P-1, Welverdiend; P-2, Krugersdorp; Q-3, Heidelberg; South H 35 C-4, Winburg; I-1, Bloemfontein; J-1, Ladybrand. G.S., G.S., No. 2230. London: War Office, 1914. *The Director of Military Operations.

- Africa. 1/125,000. Orange Free State—Vrede District. Two Sheets. G.S., G.S. No. 2392. London: War Office, 1914. *The Director of Military Operations.
- Africa. 1/250,000. East Africa Protectorate. Sheets: North A 36-R, Sekerr; North A 37 S, Baringo; South A 37 V and W, Mackinnon Road and Malindi; South B 37 D, Mombasa. G.S., G.S. No. 1764. London: War Office, 1914. *The Director of Military Operations.
- Ibea. Being the Territories of the Imperial British East Africa Company, by E. G. Ravenstein. Scale 1/500,000, or 8 miles to 1 inch. *Manchester Chamber of Commerce.

AMERICA.

- Canada. Department of Militia and Defence. Topographic Map. Scale 1/63,360, or 1 inch to 1 mile. Sheets 52, Parkhill; 54, Woodstock. G.S., G.S. No. 2197. London: War Office, 1914. *The Director of Military Operations.
- Panoramic View of the Yosemite National Park, California. Scale 1/187,500. Prepared by John H. Renshawe from topographic Sheet of U.S. Geological Survey. Washington: U.S. Geological Survey. *The Director of the Survey.
- Chart showing the Cotton-producing districts of Mexico and the location of Cotton Factories. *The Manchester Chamber of Commerce.
- Hypsometric Card of the Argentine Republic. Scale 1/16,000,000. *Manchester Chamber of Commerce.

ATLASES, PHOTOGRAPHS, ETC.

- A List of Geographical Atlases in the Library of Congress, with Bibliographical Notes. Compiled under the direction of Philip Lee Phillips, Chief, Division of Maps and Charts. Vol. III. Washington: Library of Congress, 1914. *The Library of Congress.
- Stanford's Geological Atlas of Great Britain and Ireland. With Plates of Characteristic Fossils. Preceded by descriptions of the Geological structure of Great Britain and Ireland and their Counties; of the Channel Islands; and of the Features observable along the principal Lines of Railway. By Horace B. Woodward, F.R.S., F.G.S. Third Edition. London: Edward Stanford, Ltd., 1914. *The Publisher.
- Calendario Atlante de Agostini, 1914. Con notiziario redatto da L. F. De Magistris. Anno XI, Serie II, Vol. I. Novaro: Istituto Geografico de Agostini, 1914. *The Publishers.
- 156 Lantern Slides illustrative of the All-Canada Tour of the Members of the Fifth Congress of the Chambers of Commerce of the Empire. *The President, Manchester Chamber of Commerce.

ADDITIONS TO THE MUSEUM.

- Russian Samovar. *Mr. George Thomas, J.P.
- Two Idols (of wood) from the Oshogbo District of Southern Nigeria. (Typical of native art over a large portion of the West Coast of Africa.) *Mr. Alan Tatham.

Books.

GENERAL.

- Text Book of Topographical and Geographical Surveying, by Col. C. F. Close, C.M.G., R.E., revised by Captain E. W. Cox, R.E. Second Edition. London : Harrison and Sons, 1913 *The Authors.
- The Teaching of Geography and History : A Study in Method. Being a Practical Companion to the "Elementary Studies in Geography and History" by H. J. Mackinder, M.A., M.P. London : George Philip and Son, Ltd., 1914. (Two Copies.) (Price 1/- net.) *The Publishers.
- Our Island History : An Elementary Study in History, by H. J. Mackinder, M.A. Sketch Maps and Illustrations. (Part 2 of "Elementary Studies in Geography and History.") London : George Philip and Son, Ltd., 1914. (Two Copies.) (Price 2/-.) *The Publishers.
- The Modern British State : An Introduction to the Study of Civics by H. J. Mackinder, M.P. (Part 6 of "Elementary Studies in Geography and History.") London : George Philip and Son, Ltd., 1914. Two Copies. (Price 1/6.) *The Publishers.
- Environment : A Natural Geography, by G. R. Swaine, F.R.Met.S. Maps and Illustrations. London : Ralph, Holland and Co. *The Author per the Publishers.
- The Change in the Climate and its cause. Giving the date of the Last Ice Age based on a recent Astronomical Discovery and Geological Discovery, by Major R. A. Marriott, D.S.O. Diagrams. London : E. Marlborough and Co., 1914. (Price 1/6.) *The Publishers.
- The Nature and Origin of Fiords, by J. W. Gregory, F.R.S., D.Sc. Diagrams and Illustrations. London : John Murray, 1913. *Miss Kate Qualltrough, F.R.G.S.
- The Geographical Teacher. The Organ of the Geographical Association. 1914, Nos. 38, 39, 40. *Mr. H. Sowerbutts.
- Report of the Conference of Educational Associations, held at the University of London, January, 1914.
- The Traveller's Gazette. Illustrated. Vol. LXIV, Nos. 2, 3, 4, 5, 6, 7, 8. London : Thos. Cook and Son, 1913. *The Publishers.
- An Almanack for the Year of Our Lord, 1914, by Joseph Whitaker, F.S.A. London, 1914.
- The International Whitaker. A Statistical, Historical, Geographical and Commercial Handbook. London : J. Whitaker and Sons, 1914.
- The World Almanac and Encyclopædia, 1914. New York : The Press Publishing Co., 1914. *Mr. George Thomas, J.P.
- The Co-operative Wholesale Societies, Limited, Annual, 1914. *Mr. G. H. Warren.
- Industrial Progress Abroad, by George Thomas. Abstract of Proceedings of the Scientific and Mechanical Society, Manchester, 1870. Reprint, 1914. *Mr. George Thomas, J.P.
- The Incorporated Accountants' Year Book, 1914-15. *The Council of the Society of Incorporated Accountants and Auditors.

BRITISH ISLES.

- History of the Town and Borough of Devonport, sometime Plymouth Dock, by R. N. Worth. Plymouth : W. Brendon and Son, 1870. *Mr. Egbert Steinthal.
- Hertfordshire Maps : A Descriptive Catalogue of the Maps of the County, 1579—1900, by Herbert George Fordham. Maps. From the "Transactions of the Hertfordshire Natural History Society." Three Parts in 4 Vols. Hertford. *Hertfordshire Natural History Society and Field Club.
- Knutsford, its Traditions and History : with Reminiscences, Anecdotes, and Notices of the Neighbourhood, by Henry Green, A.M. Macclesfield : Swinnerton and Brown, 1859. *Mr. George Thomas, J.P.
- The Pictorial Record of the Royal Jubilee Exhibition, by Walter Tomlinson, with special articles by Thomas W. Harris, Charles Estcourt, F.C.S., F.I.C., and Joseph Nodal. Edited by John H. Nodal. Illustrated. Manchester : J. E. Cornish, 1888. *Mr. George Thomas, J.P.
- The Official Handbook of Manchester and Salford and Surrounding District, 1914.
- The Manchester and Salford Official Red Book, 1914. Manchester : Littlebury Bros., 1914.
- Report and Proceedings of the Manchester Field Naturalists' and Archaeologists' Society for the year 1913. *Mr. Wm. H. Ward.
- Ilkley : Ancient and Modern, by the Rev. Robert Collyer, D.D., and J. Horsfall Turner. Map and Illustrations. Otley : Wm. Walker and Sons, 1885. *Mr. George Thomas, J.P.

EUROPE.

- Den Norske Lods utgit av Norges Geografiske Opmaaling. 5te Hefte. Fra Bergen til Floro. 6te Hefte. Fra Floro til Aalesund. Omarbeidet, 1914. Kristiania : Norges Geografiske Opmaaling, 1914. *Norges Geografiske Opmaaling.
- Svenska Turistföreningens Arsskrift, 1914. Illustrated. Stockholm, 1914. *Svenska Turistföreningen (The Swedish Touring Club).
- Svenska Folket. The Swedish People, their Customs and Manners in Pictures and Legends, by J. W. Wallander and Onkel Adam. Stockholm : Albert Bonnier (1884). *Mr. George Thomas, J.P.
- Through Finland to St. Petersburg, by A. MacCallum Scott, M.P. Map and Illustrations. London : Grant Richards, Ltd., 1913. *Mr. George Thomas, J.P.
- Letters from Russia, in 1875, by E. J. Reed, C.B., M.P. London : John Murray, 1876. *Mr. George Thomas, J.P.
- Castilian Days, by the Honble. John Hay. Illustrated. London : William Heinemann, 1903. *Mr. George Thomas, J.P.
- Hannibal Once More, by Douglas W. Freshfield, M.A., F.R.G.S. Maps and Illustrations. London : Edward Arnold, 1914. (Price 5/- net.) *The Publisher.
- Indicateur Officiel Guide Général de la Corse. Illustré Compagnies de Navigation, Chemins de Fer, Transports sur Routes par Automobiles, etc. Cartes, Plans, etc. Paris : Clavel, 1914. *The Publisher.

- Attraverso l'Italia (Album containing 31 Parts). Raccolta di oltre 2,000 Fotografie di Vedute, Tesori Artistici, Tipi popolari. Testo de Prof. Ottone Brentari. Proprietario dell' Edizione Italiana il Touring Club Italiano. Milano. *Mr. George Thomas, J.P.
- The Adventures of Telemachus, the Son of Ulysses. With the Adventures of Aristonous. Written by the Archbishop of Cambray. Done from the new French Edition, by Mr. Ozell. Map. Two Vols. London: E. Curll and others. 1715. *Mr. George Thomas, J.P.
- Letters on Turkey: An Account of the Religious, Political, Social and Commercial Condition of the Ottoman Empire; the Reformed Institutions, Army, Navy, etc. Translated from the French of M. A. Ubicini by Lady Easthope. Two Vols. London: John Murray, 1856. *Mr. George Thomas, J.P.
- The British Chamber of Commerce of Turkey and the Balkan States. Year Book and Annual Report for the year 1913. Quarterly Trade Journal, Nos. 25, March; 26, June; 27, September. *Mr. George Thomas, J.P.

ASIA.

- Extinct Civilizations of the East, by Robert E. Anderson, M.A., F.A.S. Maps, etc. London: Hodder and Stoughton. *Miss Kate Qualtrough, F.R.G.S.
- Our Ride Through Asia Minor, by Mrs. Scott-Stevenson. Map. London: Chapman and Hall, 1881. *Mr. George Thomas, J.P.
- The Golden Horn; and Sketches in Asia Minor, Egypt, Syria, and the Hauraan, by Charles James Monk, M.A. Illustration. Two Vols. London: Richard Bentley, 1851. *Mr. George Thomas, J.P.
- Palestine Exploration Fund. Quarterly Statements, 1914. Annual Report, 1913.
- Eighth Report on Plague Investigations in India. Issued by the Advisory Committee appointed by the Secretary of State for India, the Royal Society and the Lister Institute. London: The Journal of Hygiene. Plague Supplement III, 1914. *The Chairman of the Advisory Committee.
- North West Frontier Province Gazetteer: B Parts. Bannu, Kurram, Peshawar, Dera Ismail Khan, Hazara and Kohat Districts. *H.M. Secretary of State for India.
- Punjab District Gazetteers. Vol. V—A, Delhi District; XX—A, Amritsar District; XV—B, Ludihana District and Maler Kotla State; XXII—B, Chamba State; XXVI—B, Gujranwala District; XXX—B, Mianwali District; XXXI—B, Lyallpur District. *H.M. Secretary of State for India.
- Gazetteer of the Bombay Presidency. 3 Vols. XVI, Na'sik and Surga'na; XVIII, Poona and Bhor; XIX, Sa'ta'ra, Phaltan and Aundh; XX, Shola'pur and Akalkot; XXIII, Bija'pur, Jath and Dafla'pur. *H.M. Secretary of State for India.
- Central Provinces District Gazetteers. B Vols: Akola, Amraoti, Bilaspur, Buldana, Drug, Narsinghpur, Raipur, Saugor, and Seoni. *H.M. Secretary of State for India.
- Bengal District Gazetteer. A Volume: 24—Parganas. B Vols.: Backergunge, Bankura, Burdwan, Chittagong, Chittagong Hill Tracts, Dacca,

- Hooghly, Jessore, Malda, Mymensingh, Nadia, Noakhali, Pabna, Rangpur, Tippera. *H.M. Secretary of State for India.
- Burma Gazetteer. Insein District. Vol. A. *H.M. Secretary of State for India.
- Census Tables, Nos. 39, Northern Shan States; 40, Southern Shan States; 41, Pakokku Hill Tracts; 42, Chin Hills. *H.M. Secretary of State for India.
- Antonio de Andrade, S.J., viajante no Himalaia e no Tibete (1624—1630) por C. Wessels. Traduzido do Original holandês por A. R. Gonçalves Viana. Lisboa: Sociedade de Geographia de Lisboa. *Sociedade de Geographia de Lisboa.

AFRICA.

- Narrative of a Ten Years' Residence in Tripoli in Africa: from the Original Correspondence in the possession of the family of the late Richard Tully, the British Consul. Comprising authentic Memoirs and Anecdotes of the Reigning Bashaw, his family, and other persons of distinction, also an account of the Domestic Manners of the Moors, Arabs, and Turks. Illustrations. Second Edition. London: Henry Colburn, 1817. *Mr. William B. Leech.
- The Country of the Moors: A Journey from Tripoli in Barbary to the City of Kairwân, by Edward Rae, F.R.G.S. Map and Illustrations. London: John Murray, 1877. *Mr. William B. Leech.
- Narrative of a Residence in Algiers; comprising a Geographical and Historical Account of the Regency; Biographical Sketches of the Dey and his Ministers; and Observations on the relations of the Barbary States with the Christian Powers, by Signor Pananti. With Notes by Edward Blaquiére. Map, Plan, and Illustration. London: Henry Colburn and Richard Bentley, 1830. *Mr. William B. Leech.
- The Scourge of Christendom. Annals of British Relations with Algiers prior to the French Conquest, by Lieut.-Colonel R. L. Playfair, H.M. Consul at Algiers. Plans and Illustrations. London: Smith, Elder and Co., 1884. *Mr. William B. Leech.
- Journal of a Tour in Marocco and the Great Atlas, by Joseph Dalton Hooker, K.C.S.I., C.B., etc., and John Ball, M.R.I.A., etc. With an appendix including a sketch of the Geology of Marocco by George Maw, F.L.S., F.G.S. Illustrated. London: Macmillan and Co., 1878. *Mr. William B. Leech.
- Our Mission to the Court of Marocco in 1880, under Sir John Drummond Hay, K.C.B., by Captain Philip Durham Trotter. Map and Illustrations. Edinburgh: David Douglas, 1881. *Mr. William B. Leech.
- Among the Moors: Sketches of Oriental Life, by G. Montbard. Illustrations. London: Sampson Low, Marston, and Co., 1894. *Mr. William B. Leech.
- Loss of the American Brig "Commerce," wrecked on the Western Coast of Africa, in the month of August, 1815. With an account of Tombuctoo, and of the hitherto undiscovered great City of Wassanah, by James Riley, late Master and Supercargo. London: John Murray, 1817. *Mr. William B. Leech.
- Narrative of Thirty-four Years' Slavery and Travels in Africa, by P. J. Dumont. Collected from the account given by himself by J. S. Quesne.

- Portrait. London : Sir Richard Phillips and Co., 1819. *Mr. William B. Leech.
- Travels in the Interior of Africa, to the Sources of the Senegal and Gambia ; performed by command of the French Government in the year 1818 by G. Mollien. Edited by T. E. Bowdich. Map and Illustrations. London : Henry Colburn and Co., 1820. *Mr. William B. Leech.
- West African Sketches : Compiled from the reports of Sir G. R. Collier, Sir Charles MacCarthy and other Official Sources. London : L. B. Seeley and Son, 1824. *Mr. William B. Leech.
- Travels in Western Africa, in the years 1818, 1819, 1820, and 1821, from the River Gambia, through Woolli, Bondoo, Galam, Kasson, Kaarta, and Foolidoo, to the River Niger, by Major William Gray and the late Staff Surgeon Dochard. Map and Illustrations. London : John Murray, 1825. *Mr. William B. Leech.
- Records of a Voyage to the Western Coast of Africa, in His Majesty's Ship "Dryad," and of the service on that station for the suppression of the Slave Trade in the years 1830, 1831, and 1832, by Peter Leonard, Surgeon, R.N. Edinburgh : William Tait, 1833. *Mr. William B. Leech.
- Seven Years' Service on the Slave Coast of Western Africa, by Sir Henry Huntley. In two Vols. Vol. II. is chiefly "Journal of an Ex-Governor ; or, Twelve Months on the Gambia." London : Thomas Cautley Newley, 1850. *Mr. William B. Leech.
- African Memoranda : Relative to an attempt to establish a British Settlement on the Island of Bulama, on the Western Coast of Africa, in the year 1792. With a brief notice of the Neighbouring Tribes, Soil, Productions, etc., and some observations on the facility of Colonizing that part of Africa, with a view to Cultivation and the Introduction of Letters and Religion to its Inhabitants : but more particularly as the means of gradually abolishing African Slavery, by Captain Philip Beaver, R.N. Map. London : C. and R. Baldwin, 1805. *Mr. William B. Leech.
- Sierra Leone Messenger. Illustrated, 1914, Nos. 85—88. *The Rev. Canon F. C. Smith, M.A., F.R.G.S.
- Akim-Foo : The History of a Failure, by Major W. F. Butler, C.B., F.R.G.S. Map and Illustrations. London : Sampson Low, Marston, Low and Searle, 1875. *Mr. William B. Leech.
- A Pilgrimage to my Motherland. An account of a Journey among the Egbas and Yorubas of Central Africa in 1859—60, by Robert Campbell. Map and Portrait. London : W. J. Johnson, 1861. *Mr. William B. Leech.

AMERICA.

- The Secret of the Pacific. A discussion of the Origin of the Early Civilisations of America, the Toltecs, Aztecs, Mayas, Incas, and their predecessors ; and of the possibilities of Asiatic influence thereon, by C. Reginald Enoch, F.R.G.S. Maps and Illustrations. London : T. Fisher Unwin, 1912. *Miss Kate Qualtrough, F.R.G.S.
- Fossil Forests of the Yellowstone National Park, by F. H. Knowlton, of the U.S. Geological Survey. Map and Illustrations. Washington : Department of the Interior, 1914. *The Secretary of the Department.
- Mount Rainier and its Glaciers, by F. E. Matthes, of the U.S. Geological

- Survey. Map and Illustrations. Washington: Department of the Interior, 1914. *The Secretary of the Department.
- Origin of the Scenic Features of the Glacier National Park, by M. R. Campbell, of the U.S. Geological Survey. Map and Illustrations. Washington: Department of the Interior, 1914. *The Secretary of the Department.
- Glaciers of Glacier National Park, by W. C. Alden, of the U.S. Geological Survey. Maps and Illustrations. Washington: Department of the Interior, 1914. *The Secretary of the Department.
- Wanderings in South America, etc. (1812), by Charles Waterton. With Review by Sydney Smith, 1826. Illustrated. London: Thomas Nelson and Sons, 1903. *Mr. George Thomas, J.P.
- Elementos para el estudio de la Demografía de la Provincia de Buenos Aires por Carlos P. Salas, Director de la Dirección General de Estadística. La Plata, 1913. *The Author.

OCEANIA.

- The Great Australian Artesian Basin and the Source of its Water, by E. F. Pittman, A.R.S.M. Maps and Illustrations. (Prepared for the British Association Meeting, 1914.) Sydney: Department of Mines, Geological Survey of New South Wales, 1914. *The Publishers.
- How Australia took German New Guinea. An illustrated record of the Australian Naval and Military Expeditionary Force, by F. S. Burnell. Sydney: W. C. Penfold and Co., 1914. *Mr. T. Fewster Wilkinson.

POLAR REGIONS.

- The South Pole. An account of the Norwegian Antarctic Expedition in the "Fram," 1910—1912, by Roald Amundsen. Translated from the Norwegian by A. G. Chater. Maps and Illustrations. Two Vols. London: John Murray, 1912. *Mr. George Thomas, J.P.
- "Out of the Jaws of Death." In the Home of the Blizzard, by Douglas Mawson. Map and Illustrations. London: "Strand Magazine," Aug. and Sept., 1914. *Mr. H. Sowerbutts, A.R.C.Sc.

List of Corresponding Societies, etc. (Exchanges).

NOTE.—Exchanges with Societies marked "S." have been suspended from August 1st, 1914.

BRITISH.

- Belfast. Natural History and Philosophical Society. (Nothing received.)
- Birmingham. Natural History and Philosophical Society. Annual Report, 1913.
- Cardiff. Naturalists' Society. Report and Transactions. Vol. XLVI; 1913.
- Croydon. Natural History and Scientific Society. Proceedings and Transactions, 1913—1914.
- Edinburgh. The Royal Scottish Geographical Society. The Scottish Geographical Magazine, 1914, Vol. XXX, Nos. 1-12 and Index.
- Glasgow. Geological Society. Transactions. Vol. XV, Part I, 1912-13.
- Glasgow. Royal Philosophical Society. Proceedings. Vol. XLV, 1913-14.
- Hertford. Hertfordshire Natural History Society and Field Club. Transactions. Vol. XV, Parts 2, 3. (See also list of maps.)
- Hull. Yorkshire Naturalists' Union. (Nothing received.)
- Leeds. Geological Association. Transactions. Part XVII, 1911-12 and 1912-1913.
- Leeds. Yorkshire Geological Society. Proceedings. Vol. XIX, Part I, 1914.
- Leicester. Literary and Philosophical Society. Transactions and Annual Report. Vol. XVIII, 1914. Inaugural Address of the President, October 5th, 1914 :—"Wheat—and its relation to the Present Crisis."
- Liverpool. Geographical Society. Transactions and Twenty-second Annual Report for the year 1913.
- London. The Anti-Slavery Reporter and Aborigines' Friend. 1914, Series V, Vol. III, No. 4; Vol. IV, Nos. 1, 2, 3.
- London. British Association for the Advancement of Science. Report of the Eighty-third Meeting, Birmingham, 1913. Report of the Corresponding Societies' Committee and of the Conference of Delegates held in Birmingham, 1913.
- London. Colliery Guardian, 1914, Nos. 2766—2817.
- London. The Colonial Journal. Vol. VII, 3, 4; VIII, 1, 2.
- London. The Royal Colonial Institute Journal. "United Empire." Vol. V, Nos. 1-12. Year Book, 1914.
- London. Emigrants' Information Office. Combined circulars on Canada, Australia and New Zealand, and South Africa. 1914, Quarterly.
- London. Royal Geographical Society. The Geographical Journal, 1914, Jan. to Dec. Year Book and Record.
- London. Imperial Institute. Bulletin. Vol. XII, Nos. 1-4.
- London. India Office. (See List of Books.)

174 Journal of the Manchester Geographical Society

- London. Royal Botanic Gardens, Kew. Bulletin, 1914, Nos. 1-10 and Appendices I—IV.
- London. Royal Society of Literature. Transactions. Vol. XXXIII, Part I. Report and List of Fellows, 1914.
- London. The Near East, 1914, Nos. 139—190.
- London. War Office. Geographical Section, General Staff. (See List of Maps.)
- London. War Office. Catalogue of Maps. Accessions. 1st January to 30th June, 1914.
- London. War Office Library. Accessions, 1914, January to December. Catalogue of the War Office Library, Part III (Subject Index). Second Annual Supplement, 1913.
- Manchester. The British Cotton Growing Association. Publications. Nos. 47, 51, 55, 56, 57.
- Manchester. Literary and Philosophical Society. Memoirs and Proceedings. Vol. 58, Parts I, II.
- Manchester. Museum. The University Museum Handbooks. (Nothing received.)
- Manchester. The University. (Nothing received.)
- Manchester. The Textile Recorder, 1914, January to December.
- Newcastle-upon-Tyne. Tyneside Geographical Society. (Nothing received.)
- Newcastle-upon-Tyne. North of England Institute of Mining and Mechanical Engineers. Transactions. Vol. LXIV, 3-8; LXV, 1, 2. Annual Report, 1913—1914.
- Oxford. Clarendon Press. (See List of Books.)
- Penzance. Royal Geological Society of Cornwall. (Nothing received.)
- Rochdale. Literary and Scientific Society. Thirty-Sixth Annual Report for the year 1914.
- Salford. Museum, Libraries and Parks Committee. Sixty-Sixth Report, 1913-14.
- York. Yorkshire Philosophical Society. Annual Report for 1913.

MISSIONARY.

- “S.” Freiburg im Breisgau. Die Katholischen Missionen, 1914, January to August.
- London. Baptist Missionary Society. The Herald, 1914, January to Dec.
- London. The British and Foreign Bible Society. 110th Annual Report, 1914. “In the Vulgar Tongue.” A Popular Illustrated Report, 1913—1914. “The Bible in the World,” 1914, January to December. Manchester and Salford Auxiliary, Annual Report, 1913.
- London. Church Missionary Society for Africa and the East. Report of Proceedings, 115th year, 1913-14.
- London. Church Missionary Review, 1914, January to December.
- London. Colonial and Continental Church Society. Greater Britain Messenger, 1914, January to December.
- London. The London Missionary Society. 119th Report, 1913-14.
- London. Illustrated Catholic Missions, 1914, January to April.
- London. Society for Propagation of the Gospel in Foreign Parts. Report of the year 1913.

- London. Universities' Mission to Central Africa. "Central Africa." 1914, January to December.
- London. The United Methodist Church. "Missionary Echo." 1914, Jan. to December.
- "S." Mangalore. Basel-German Evangelical Mission in South-Western India. Report for the year 1913.

COLONIAL.

- Adelaide. Royal Geographical Society of Australasia; South Australian Branch. (Nothing received.)
- Brisbane. Royal Geographical Society of Australasia. Queensland Branch. Queensland Geographical Journal. (Nothing received.)
- Brisbane. Queensland Museum. Memoirs. (Nothing received.)
- Brisbane. Department of Mines. Queensland Geological Survey. Publications, Nos. 238, 239.
- Bulawayo. Rhodesia Scientific Association. Proceedings. Vol. XIII (containing papers read from July 1913, to May 1914).
- Cape Town. Royal Society of South Africa. Transactions. Vol. IV, Parts 1, 2.
- Georgetown. The Royal Agricultural and Commercial Society of British Guiana. The Journal. "Timehri." (Nothing received.)
- Halifax. Nova Scotian Institute of Science. Proceedings and Transactions. (Nothing received.)
- Melbourne. Royal Geographical Society of Australasia (Victorian Branch). Victorian Geographical Journal. Vol. XXX, 1913; XXXI, Part I, 1914.
- Melbourne. Department of Agriculture of Victoria (per the favour of the Agent General). Journal. Vol. XII, Parts 1-12.
- Melbourne. Victorian Statistical Department. Year Book, 1913-14.
- Perth. Western Australia Geological Survey (per favour of the Agent General). Bulletins, Nos. 48, 49, 51-54.
- Port Moresby. Papua. Annual Report for the year. (Nothing received.)
- Quebec. Société de Géographie. Bulletin. Vol. VIII, Nos. 1, 2, 4, 5, 6; 1914.
- Sydney. New South Wales. Department of Mines. Annual Report for the year 1913.
- Toronto. Canadian Institute Transactions. (Nothing received.)
- Victoria, B.C. Minister of Mines. Province of British Columbia. Annual Report, 1913. British Columbia Bureau of Mines. Bulletin. No. 1, 1914. Preliminary Review and Estimate of Mineral Production, 1913.
- Wellington, New Zealand. Department of Lands and Survey. (Nothing received.)

FOREIGN.

- Alger. Société de Géographie d'Alger et de L'Afrique du Nord. Bulletin. Trimestre 4, 1913; 1, 1914. (Part 3, 1913 not received.)
- Ann Arbor. The Michigan Academy of Science. University of Michigan. Fifteenth Report, 1912-13.
- "S." Antwerp. Société Royale de Géographie d'Anvers. Bulletin.
- Baltimore. Johns Hopkins University. Studies in Historical and Political Science. Series XXXI, Nos. 3, 4; XXXII, Nos. 1, 2, 3. Circulars, 1913, Nos. 7-10; 1914, Nos. 1-10.

176 Journal of the Manchester Geographical Society

- Baltimore. Maryland Geological Survey. (Nothing received.)
- Barcelona. Sociedad de Geografia Comercial. Publicaciones. (Nothing received.)
- “S.” Belgrade. Société Serbe de Géographie. Bulletin.
- Berkeley. University of California. Publications in American Archaeology and Ethnology. Vol. X, No. 6; XI, 2. Publications in Geography. Vol. I, Nos. 3-7.
- “S.” Berlin. Gesellschaft für Erdkunde. Zeitschrift. 1914, Nos. 1-6.
- “S.” Berlin. Deutsche Kolonialzeitung. 1914, Nos. 1-30.
- Bern. Geographische Gesellschaft. (Nothing received.)
- Bordeaux. Société de Géographie Commerciale. Revue. 1914, January to June.
- “S.” Bremen. Deutsche Geographische Blätter. Band XXXVII, Heft 1, 2.
- “S.” Brussels. Congo Belge. Bulletin Officiel. 1914, Nos. 1—11.
- “S.” Brussels. Société Royale Belge de Géographie. Bulletin. 1914, No. 1.
- “S.” Brussels. Le Mouvement Géographique. 1914, Nos. 1—31.
- “S.” Brussels. Institut Colonial International.
- “S.” Brussels. Société Belge d’Etudes Coloniales. Bulletin. 1914, Nos. 1—6.
- “S.” Brussels. Commission Polaire Internationale.
- “S.” Budapest. Hungarian Geographical Society. Bulletin. Vol. XLII, Parts 3, 4, 5.
- Buenos Aires. Instituto Geográfico Argentino. Boletín. (Nothing received.)
- Buenos Aires. Museo Nacional de Historia Natural de Buenos Aires. Anales. Tomo XXV.
- Buenos Aires. Monthly Bulletin of Municipal Statistics. 1914, Nos. 1—12. Year Book of the City of Buenos Aires. Year XXIII; 1913.
- Buenos Aires. Ministerio de Agricultura. Boletín. (Nothing received.)
- Cairo. Société Khédiviale de Géographie. Bulletin. (Nothing received.)
- Cambridge. Peabody Museum of American Archaeology and Ethnology, Harvard University. Memoirs. (Nothing received.)
- “S.” Cassel. Gesellschaft für Erd-und Völkerkunde.
- Christiania. Norges Geografiske Opmaalning. (See List of Maps.)
- Copenhagen. Geografisk Tidsskrift udgivet af Bestyrelsen for det Kongelige Danske Geografiske Selskab. Bind XXII, Hefte V—VIII.
- “S.” Darmstadt. Verein für Erdkunde. Notizblätt, Folge IV, Heft 34.
- Dijon. Société Bourguignonne de Géographie et d’Histoire. Mémoires. (Nothing received.)
- “S.” Douai. Union Géographique du Nord de la France. Bulletin. 1914, 1, 2.
- “S.” Dresden. Verein für Erdkunde. Mitteilungen. Band II, Heft 9.
- Dunkerque. Société de Géographie. Bulletin. No. 40.
- Firenze (Florence). Rivista Geografica Italiana e Bollettino della Società di Studi Geografici e Coloniali. Annata XXI, Fasc. 1—10.
- “S.” Frankfurt. Verein für Geographie und Statistik.
- Geneva. “Le Globe.” Organe de la Société de Géographie. Bulletin. Tome LIII, Nos. 1, 2.
- Geneva. Société des Anciens Elèves de l’Ecole Supérieure de Commerce. Bulletin. Nos. 101—104.
- “S.” Giessen. Geographische Mitteilungen aus Hessen.

- "S." Greifswald. Geographische Gesellschaft zu Greifswald. Jahresbericht XIV, 1913—1914.
- "S." Halle. Sächsisch-Thüringischen Vereins für Erdkunde.
- "S." Halle. Kaiserliche Leopoldinisch-Carolinische Deutsche Akademie der Naturforscher. Leopoldina.
- "S." Hamburg. Geographische Gesellschaft. Mitteilungen. Band XXVIII.
- "S." Hamburg. Hauptstation für Erdbebenforschung. Professor Dr. R. Schütt.
- "S." Hannover. Geographische Gesellschaft.
- Havre. Société de Géographie Commerciale. Bulletin. 1913, Trimestres 3, 4; 1914, 1.
- Havre. Société Géologique de Normandie. Bulletin. (Nothing received.)
- Helsingfors. Société de Géographie de Finlande. Fennia 34, 37.
- Helsingfors. Meddelanden af Geografiska Foreningen. Velenskagliga. (Nothing received.)
- Irkutsk. Imperial Russian Geographical Society. East Siberian Section. Journal, Vol. XLIII, 1914.
- "S." Jena. Geographische Gesellschaft. Mitteilungen.
- Kazan. Naturalists' Society of the Imperial University. Journal. Vol. XLIV, Nos. 5, 6; XLV, 1-6; XLVI, 1-6. Report, 1911-12, 1912-13.
- "S." Königsberg. Physikalisch=ökonomischen Gesellschaft.
- La Paz. Sociedad Geografica de La Paz. (Nothing received.)
- La Paz. Republica de Bolivia. Direccion General de Estadistica y Estudios Geográficos. Boletin. Ano IX, No. 87.
- La Plata. Direccion General de Estadistica de la Provincia de Buenos Aires. Boletin Mensual. Ano XIV, Nos. 150—155.
- La Plata. Museo de La Plata. Revista. (Nothing received.)
- "S." Leipzig. Gesellschaft für Erdkunde. Wissenschaftliche Veröffentlichungen. Band VIII. (See also List of Books.)
- "S." Lille. Société de Géographie. Bulletin. 1914, January to April.
- Lima. Sociedad Geografica. Boletin. 1913, Tomo XXIX, Nos. 1-4.
- Lima. Cuerpo de Ingenieros de Minas del Peru. Boletin. No. 80.
- Lisbon. Sociedade de Geographia de Lisboa. Boletim. 1913, Nos. 10—12; 1914, Nos. 1—12.
- "S." Lübeck. Geographische Gesellschaft und Naturhistorische Museum. Mitteilungen. (Nothing received.)
- "S." Lwowie (Lemberg). Towarzystwo Ludozonaweze Kwartalnik Etnograficzny. "Lud."
- Madison. Wisconsin Academy of Science, Arts and Letters. Transactions. Vol. XVII, Part I, Nos. 1-6; II, Nos. 1-6.
- Madison. Wisconsin Geological and Natural History Survey. Bulletin. Nos. XXXIII, XLI.
- Madrid. Real Sociedad Geografica. Boletin. Tomo LVI, Trims. 1-4. Revista. Tomo XI, 1—12. (See also List of Maps.)
- Madrid. Ayuntamiento de Madrid. Boletin, Nos. 888—939.
- Marseille. Société de Géographie. Bulletin. Tome XXXVII, Nos. 1-4.
- "S." Metz. Verein für Erdkunde. Jahresbericht.
- Mexico. Sociedad Mexicana de Geografía y Estadística. Boletin. Tomo VI, Nos. 11, 12; VII, 1-4.

178 Journal of the Manchester Geographical Society

- Mexico. Sociedad Científica "Antonio Alzate." *Memorias y Revista*. Tomo XXXII, 9—10; XXXIII, 9—10.
- Milan. *L'Esplorazione Commerciale*. Anno XXIX, Fascs. 1—12.
- Missoula. University of Montana. *Bulletin*. (Nothing received.)
- Montevideo. Museo de Historia Natural. (Nothing received.)
- Montevideo. *Anuario Estadístico de la República Oriental del Uruguay*. Años 1909—1910, Tomo I, II.
- Montpellier. Société Languedocienne de Géographie. *Bulletin*. Tome XXXVII, 1, 2.
- Moscow. Geographical Section of the Imperial Society of Natural Science of the University. (Nothing received.)
- "S." Munich. Geographischen Gesellschaft in München. *Mitteilungen*. Band IX, Hefte 1, 2.
- Nancy. Société de Géographie de L'Est. *Bulletin*. 1914, Trim. 1.
- Nantes. Société de Géographie Commerciale. *Bulletin*. 1914, Trim. 1.
- Naples. Società Africana d'Italia. *Bollettino*. Anno XXXII, Fascs. 11—12; XXXIII, 1, 2.
- Neuchâtel. Société Neuchâteloise de Géographie. *Bulletin*. Tome XXIII, 1914.
- New Haven. Connecticut Academy of Arts and Sciences. *Transactions*. Vol. 18, pp. 291—345, April, 1914.
- New York. American Geographical Society. *Bulletin*. Vol. XLVI, Nos. 1—12 and Index.
- New York. American Museum of Natural History. *Bulletin*. Vol. XXIX, Index; XXXII, 1913; XXXIII, 1914. *Memoirs*, New Series, Vol. I, Part V. Forty-Fifth Annual Report for 1913.
- New York. Public Library. Astor Lennox and Tilden Foundations. *Bulletin*. 1914, January—December.
- Novara. Istituto Geografico de Agostini. (See List of Maps.)
- "S." Nürnberg. Naturhistorische Gesellschaft.
- Odessa. Club Alpin de Crimé et du Caucase. *Bulletin*. 1914, Nos. 1-4.
- Omsk. Imperial Russian Geographical Society. West Siberian Branch. (Nothing received.)
- Oran. Société de Géographie et d'Archéologie. *Bulletin*. Tome XXXIV, Fascs. 138, 139.
- Para. Museu Goeldi. *Boletim*. Vol. VIII, 1911-12.
- Paris. Société de Géographie. *La Géographie*. 1914, January to June.
- Paris. Société de Géographie Commerciale. *Bulletin*. 1914, January to December.
- Paris. Société de Spéléologie. *Bulletin and Mémoires*. Spelunca. Tome IX, Nos. 72, 73.
- Paris. Société de Topographie de France. *Bulletin Bimestriel*. 1914, Nos. 1, 2.
- Paris. Comité de L'Afrique Française et Comité du Maroc. *Bulletin*. 1914, Nos. 1—12. *Renseignements Coloniaux*. 1914, No. 1—12.
- Petrograd. Imperial Russian Geographical Society. (Nothing received.)
- Philadelphia. American Philosophical Society. *Proceedings*. Vol. LIII, Nos. 213, 214, 215.
- Philadelphia. The Commercial Museum. *Annual Report for the year 1913*. "Commercial America." 1914, January to December.

- Philadelphia. Geographical Society of Philadelphia. Bulletin. 1914, Nos. 1-4.
- Philadelphia. University of Pennsylvania. The Museum Journal. Vol. V, Nos. 1-4.
- "S." Prague. Société de Géographie tchéque à Prague. (Nothing received.)
- Rochefort. Société de Géographie. Bulletin. 1914, No. 1.
- Rolla, Mo. Missouri Bureau of Geology and Mines. Biennial Report of the State Geologist to the 47th General Assembly. Publications. Vol. XII, Second Series.
- Roma. Reale Società Geografica. Bollettino. 1914, Nos. 1—12.
- Roma. Direzione Generale della Statistica e del Lavoro. Censimento della Popolazione del Regno d'Italia al 10 Giugno, 1911. Vols. 1 and 2. Annuario Statistico Italiano. Seconda Serie, Vol. III, Anno 1913.
- Roma. Commissariato dell' Emigrazione. Bollettino. 1914, Nos. 1—13.
- Roma. Cosmos. Del Profr. Guido Cora. Serie II; Vol. XIII, No. VI.
- Rome. International Institute of Agriculture. Monthly Bulletin of Agricultural Intelligence and Plant Diseases. 1914, Nos. 1—12.
- Rouen. Société Normande de Géographie. Bulletin. 1913, Trims. 1, 2.
- San Francisco. Geographical Society of the Pacific. (Nothing received.)
- San Francisco. Southern Pacific Railway (per the favour of Mr. Rud Falck, Liverpool). "Sunset"—The Pacific Monthly. 1914, January to July.
- San José. Museo Nacional. Boletín de Fomento, organo del Ministerio de Fomento. Ano IV, Nos. 1-4.
- St. Louis, Mo. Washington University Studies. Vol. I, Part I, No. 2.
- St. Nazaire. Société de Géographie Commerciale. (Nothing received.)
- San Salvador. Direccion General de Estadistica. (Nothing received.)
- "S." Santiago de Chile. Deutschen Wissenschaftlichen Vereins.
- Shanghai. Chinese Maritime Customs. Gazette. Statistical Series. Nos. 3 and 4. Returns of Trade and Trade Reports. 1913, Parts I, II, Vols. 1-5, III, Vols. 1, 2. Index to Annual Trade Reports, 1903-07, 1908-12.
- Shanghai. Ministry of Communications. Directorate General of Posts. II. Public Series : No. 2. Report on the Working of the Chinese Post Office for 1913.
- "S." Stettin. Gesellschaft für Völker-u-Erdkunde. (Nothing received.)
- Stockholm. Svenska Sällskapet för Antropologi och Geografi. "Ymer," 1914, Häft 1-4.
- "S." Strassburg. Gesellschaft für Erdkunde und Kolonialwesen. Mitteilungen. (Nothing received.)
- "S." Stuttgart. Württembergische Vereins für Handelsgeographie. (Nothing received.)
- Tokyo. Geographical Society. Journal of Geography. Vol. XXV, Nos. 295—300, July to December, 1913.
- Toulouse. Société de Géographie. Bulletin. 1914, No. 1.
- Tours. Société de Géographie. Revue. 1914, No. 1.
- Upsala. University of Upsala. Geological Institution. Bulletin. Vol. XII.
- Urbana. Illinois State Geological Survey. Bulletins, Nos. 21, 22. Monograph, No. 1. Illinois Miners' and Mechanics' Institutes Bulletin. Nos. 1, 2. Illinois Coal Mining Investigations, Co-operative Agreement. Bulletin 2.
- "S." Vienna. K.K. Geographischen Gesellschaft. Mitteilungen. Band 57, Nos. 1-7.

180 Journal of the Manchester Geographical Society

- "S." Vienna. Verein der Geographen an der K.K. Universität in Wien.
(Nothing received.)
- "S." Vienna. K.K. Naturhistorische Hofmuseum. Annalen. Band XXVII,
No. 4.
- Washington, Conn. Association of American Geographers. Annals. Vol.
III, 1913.
- Washington, D.C. National Geographic Society. National Geographic
Magazine. 1914, Vol. XXV, Nos. 1-6; XXVI, 1-6.
- Washington, D.C. Department of Commerce, United States Coast and
Geodetic Survey. Annual Report for the year ended June 30, 1914.
Results of Observations made at the Magnetic Observatories at Sitka,
Alaska, 1911 and 1912; Vieques, Porto Rico, 1911 and 1912; near Tucson,
Arizona, 1911 and 1912. "Terrestrial Magnetism," Special Publications.
Nos. 15, 20. "Hypsometry," Special Publications, Nos. 18, 22. "Geo-
desy," Special Publication, No. 19.
- Washington, D.C. United States Department of the Interior. General Infor-
mation regarding Crater Lake, Glacier, Mesa Verde, Mount Rainier,
Sequoia and General Grant, Yellowstone, and Yosemite National Parks;
Season of 1914. (See also List of Books.)
- Washington, D.C. U.S. Geological Survey. Annual Report for the year
ended June 30, 1914.
- Washington, D.C. U.S. Geological Survey. Monograph. (None received.)
- Washington, D.C. U.S. Geological Survey. Mineral Resources for the year
1912, Parts 1 and 2; 1913, Part 1, Nos. 1-26; Part 2, Nos. 1-35.
- Washington, D.C. U.S. Geological Survey. Bulletin. Nos. 540-543, 545-
564, 567, 570-572, 574-580 Parts A-P.
- Washington, D.C. U.S. Geological Survey. Professional Papers. Nos. 81-
84, 85 a-e, 86-88.
- Washington, D.C. U.S. Geological Survey. Water Supply Papers. Nos.
309, 312, 321-331, 333-339, 340 a-j, 341, 343, 344, 345 a-i, 346-350.
- Washington, D.C. U.S. National Museum. Report for the year ending June
30, 1913.
- Washington, D.C. U.S. Geographic Board. Correct Orthography of Geo-
graphic Names, revised to January, 1911. Decisions, 1910-1912, 1912-
1913, 1913-1914.
- Washington, D.C. U.S. Department of Agriculture. Bulletin, No. 66.
Farmers' Bulletins, Nos. 564-602, 604, 606, 608, 611, 615-639. Report
of the Chief of the Weather Bureau, 1912-1913.
- Washington, D.C. U.S. War Department. Annual Reports. 1913, Vols.
I-IV.
- Washington, D.C. U.S. Bureau of Education. Report of the Commissioner
for the year ending June 30, 1913. Vols. 1 and 2.
- Washington, D.C. Library of Congress. Report for the year ending June 30,
1914. A List of Geographical Atlases in the Library of Congress, with
Biographical Notes. Vol. III.
- Washington, D.C. Pan American Union. Bulletin. 1914, January to Dec.
- Washington, D.C. Carnegie Institution. Department of Terrestrial Mag-
netism. Annual Report of the Director for the year 1914.
- Zurich. Geographisch-Ethnographischen Gesellschaft in Zurich. Jahres-
bericht. (Nothing received.)

- L Broome, Henry
 Brown, Alfred
 Brown, A. E. Buchanan
 L Brown, James, J.P.
 A Brown, Miss M. A.
 Brownell, Thos. W.
 Brumm, Charles, J.P.
 Bryant, James
 c Bryce, J. Annan, M.P.
 Buckley, J.
 Buckley, W. S.
 Burgess, Alfred, A.C.A.
 L Burgon, Anthony
 Burke, Thomas
 * Burnley Literary and Scientific Club
 Burstall, Miss S. A., M.A.
 Butterworth, Walter, J.P.
 Bythell, J. K., J.P.
 Bythell, W. J. S., B.A., M.D.
 Byrne, Miss T. G.

 Calvert, D. R.
 Campbell, Richardson
 A Cardwell, J. J.
 Carr, Arthur
 Carson, Isaac Pitman
 L Carver, W. Oswald
 Chadwick, J. J.
 Champ, F.
 A Charnock, Mrs E.
 Cheetham, Rt. Hon. J. F., J.P.
 A Chorley, Miss K.
 Chorlton, Isaac
 Chorlton, James
 Clapham, Col. W. W.
 Clapham, Thomas, F.R.G.S.
 Clarke, Charles A.
 Clay, Frederick
 A Cockshaw, Miss E.
 c Colbeck, Rev. A.
 L Colley, T. H. Davies
 A Collinge, Miss A.
 Collmann, C.
 c Colquhoun, A. R., F.R.G.S., M.I.C.E.
 Colt, W. H.
 Cooke, J. Herbert
 Cookson, G. P.
 Coop, Thos.
 L Cooper, Mrs. A. H.

 A Cox, C. H., B.Sc., L.C.P.
 Cox, Dr. Frederic
 Crawford, W. L.
 Crewdson, Alfred
 Crompton, Mrs.
 Crompton, Thos. A.
 Crook, Col. H. T., D.L., V.D.,
 M.Inst.C.E.
 Crosland, Leo
 A Crosthwaite, Robert, M.A., B.Sc.
 Crowther, Miss E.

 A Daves, Miss A.
 David, Henry E.
 A Davies, Charles J.
 Dawkins, Prof. W. Boyd, J.P., M.A.,
 F.R.S.
 H Deakin, Hon. Alfred, Australia
 Deakin, G. G. D.
 Deakin, Thos. S.
 Dean, Charley
 Dean, J.
 Dean, J. N.
 Dehn, Gustav
 Dennis, Cammack, J.P.
 L Derby, Rt. Hon. Earl, G.C.V.O.
 A Dewez, Mdle. F.
 Dickson, E. H. L.
 Dixon, H. C.
 Donner, Sir Edward, Bart.
 Downie, R. M.
 L Doxey, Alex. S.
 Draper, Walter T.
 Duckworth, Charles
 Duckworth, Alderman Sir James,
 J.P., F.R.G.S.
 Dugdill, John
 Dunkerley, Frank B.
 Dyckhoff, C.

 Earnshaw, John A.
 Eason, Edward A.
 * Eccles Prov. Ind. Co-op. Soc., Ltd.
 Eckhard, Gustav, J.P.
 Edleston, C. V. M.
 L Edwards, T. A., F.R.G.S.
 Egerton of Tatton, Rt. Hon. Lord
 Ellinger, George
 Ellinger, Martin

- Elliot, W.
 England, A.
 LErmen, Charles
 Evans, E. Roose
 Evans, E. Russell
 Evans, J. H.
 Evans, L. C.
 ΔEwbank, Miss

 Fairhurst, Thomas
 cFedotoff, A., Moscow
 Ferguson, Wm.
 Fern, George
 cFisher, Rev. A. B., F.R.G.S.
 Fletcher, Miss D. E.
 Fletcher, Miss E. M.
 Fletcher, R.
 Flinn, W. Leonard
 Follows, F. W.
 Forsyth, Henry
 ΔFosbrooke, Miss Agnes
 Franc, Henry
 Frank, Ernest
 Frankenburg, Alderman I., J.P.
 hFreshfield, Douglas W., F.R.G.S.
 Frischmann, A.
 Fullerton, Miss E.

 Gallé, L. A., Belgian Consul
 Gamble, J.
 ΔGarner, Miss P. M.
 ΔGarner, Charles T. I.
 Garnett, Mrs. Charles
 Garnett, Charles
 Gaythorpe, Thomas
 Geiler, Hermann
 Gibbons, Fred C.
 lGinger, George
 Glazebrook, Philip K., M.P.
 Gleave, Joseph James
 Glossop, J. P. B.
 Godbert, Councillor Chas. W.
 Godlee, Francis
 Goodbehere, Frederick G.
 Goodwin, F. W.
 Goodwin, J. W.
 Gordon, T. Hodgetts, C.C., B.A.
 Green, H., M.A.
 Green, Walter

 Greene, Miss Kate
 Greenhow, J. H., Vice-Consul for
 Norway
 ΔGreenough, Richard, Leigh
 Greg, Lieut.-Col. Ernest W., V.D.,
 C.C., F.R.G.S.
 Gregory, Joseph
 Gregory, Theodore, F.C.A., J.P.
 Grey, Dr. Edgar
 lGriffiths, Albert, D.Sc.
 Griffiths, Alderman John
 Griffiths, Horatio
 Grime, A.
 ΔGroves, Miss M.
 Groves, Charles V.
 lGroves, W. G.
 Guest, R.
 Guggenheim, A.
 ΔGumbrell, Mrs.
 Güterbock, Alfred
 Güterbock, Richard
 Guthrie, Mrs. S. F.

 Hacking, Nicholas H., J.P.
 Haerem, C. V.
 Hahlo, Charles
 Hailwood, Councillor Anthony, J.P.
 Hailwood, R. Emmett
 ΔHalksworth, Miss M.
 ΔHall, Miss Hilda
 lHall, Mrs. J. Howard
 lHall, J. Howard
 Hall, Robert, J.P.
 Hallworth, Joseph
 Halsall, Frank, F.C.A., J.P.
 ΔHamilton, Mrs.
 ΔHamilton, Miss Joyce
 Hammond, G. S.
 Hamp, E. H.
 Hancock, J.
 ΔHandcock, H. C.
 Hanemann, A.
 cHanlon, Rt. Rev. Henry, Bishop of
 Teos, and Vicar Apostolic of the
 Upper Nile
 Hardcastle, G. L.
 ΔHarden, Miss C.
 Hardy, H. Waters
 lHargreaves, George

- AHarper, William
 Harrap, Thomas
 AHarris, Miss E. M.
 AHarris, Miss Evelyn
 Harrop, James
 LHassall, Alderman Thomas, J.P.
 Hawkins, William
 Haworth, Alfred, J.P.
 Haworth, G. C., J.P.
 Heap, Alderman, W. T., J.P.
 Heighway, Mrs.
 Heighway, George
 Helm, John
 cHerbertson, Professor A. J., M.A.,
 Ph.D.
 Herd, Harry
 Hertz, F. M.
 Heskeith, W. R.
 Hewerdine, W. H.
 AHewit, R. P., J.P.
 Heycock, A. H.
 LHeys, John, J.P.
 Heywood, Abel, J.P.
 Hiersemann, K. W., Leipzig
 Higginbottom, Walter
 Higgins, J.
 Higham, J. Sharp, M.P.
 Hilditch, John, M.R.A.S., M.J.S.
 Hilton, Thomas
 Hindle, James, L.R.A.M.
 Hinrichsen, S.
 Hockin, C. Owen
 Hodgson, Jas. T.
 Hodgson, William
 AHolden, Henry
 AHollingworth, Edgar W.
 Holmes, W. Francis
 LHolt, Arthur
 Hopkinson, Sir A., K.C.
 Hopkinson, Edward, D.Sc.
 Horsfall, T. C.
 Houghton, John
 Houldsworth, Sir W. H., Bart.
 Hoyle, E.
 cHoyle, W. E., M.A.
 Hudson, James H., M.A.
 Hughes, Joseph David
 Hulme, C. J.
 Hutton, D. W.
 LHutton, J. Arthur
 Hyde, Thomas
 Illingworth, Charles
 Irving, R. J.
 AJackson, Miss A.
 Jackson, Fred J.
 HJameson, Rt. Hon. Sir L. S., C.B.
 Janovski, R.
 Janus, H.
 Jefferson, Alfred Hy.
 Jenkins, Alderman T. H., J.P.
 Johnson, Mrs. A. T.
 Johnson, E., J.P.
 Johnson, James
 Johnson, Lionel M.
 LJohnson, Wm. Morton, F.R.G.S.
 cJohnston, Sir H. H., G.C.M.G.,
 K.C.B., F.R.G.S.
 Johnstone, Charles Andrew
 Jones, R. Lomas
 Jones, Wm., J.P., Eccles
 Jones, Wm., Didsbury
 Jordan, Bernard
 Kalisch, Max
 Kalisch, Moritz
 Kalisch, Richard, F.R.G.S.
 cKeiffer, F., Moscow
 Keith-Roach, Edward
 AKelley, H. F.
 Kelley, J. Macpherson
 HKeltie, J. Scott, LL.D., F.R.G.S.
 Kessler, Philip W.
 AKewley, Miss Jane
 Keymer, Sidney L., F.R.G.S.
 AKiesling, A. E.
 Kinch, W. S., C.C.
 Knowles, Peter
 Knudsen, A., Consul for Denmark
 Kolp, Ernest
 Kukla, Charles
 Kullmann, Herbert C.
 cLabbé, Paul, Paris
 ALancaster, James, J.P.
 Langdon, E. H.
 Larmuth, Dr.

List of Members

185

- Lauder, Francis A.
- hLaurier, Rt. Hon. Sir W., G.C.M.G.
- ALaw, Miss Annie E., L.L.A.
- Lawson, R. G.
- Lea, John
- Leah, S. P.
- Leak, Rev. W. H.
- ALedward, H. Davenport
- Leech, Miss
- cLeech, Wm. Booth
- Leemann, E.
- Lees, Mrs. H. L., F.R.G.S., A.R.C.I.
- Lees, Walter
- *Leigh Literary Society
- Leite, J. Pinto, Vice Consul for
Portugal
- Lemon, Miss Ada
- Lemos, Professor Angel Ma Diaz
- Levinstein, Herbert
- Levinstein, Ivan
- Lewis, John Wm.
- ALightowler, Mrs. E.
- ALightowler, E.
- Little, David Ainsworth
- Littler, Henry Landon
- Lomas, J. A.
- Longden, A. W.
- Lord, Charles
- ALowe, Miss M. E.
- Lowe, Wm.
- Macara, Sir C. W., Bart., J.P.
- cMcDermott, Rev. P. A., C.S.Sp.
- hMacDonald, Major-Gen. Sir J. R. L.,
R.E.
- McDougall, Charles
- McDougall, Robert
- McFarlane, H. H.
- McFarlane, John, M.A., M.Com.,
F.R.G.S.
- M'Grath, W. A.
- hMacGregor, H. E. Sir Wm., M.D.,
K.C.M.G.
- McPherson, Alexander
- Makin, E., junr.
- *Manchester Corporation, Free Librar-
ies Committee
- Mandleberg, G. C., J.P.
- Mandleberg, S. L., J.P.
- AMarkham, Mrs. M.
- cMarrs, F. W., M.A., Bombay
- L Marsden, James, J.P.
- Martin, Horace C., F.R.G.S.
- Martin, Thomas
- Marx, Charles
- Massey, Harold F.
- Massey, L. F.
- L Mather, Loris Emerson, F.R.G.S.
- Mather, Rt. Hon. Sir William, J.P.
- Maude, Rev. J. G.
- May, Wm.
- AMaybury, J. H.
- AMaybury, W. H.
- Medlyn, Wm. John
- Melland, Edward
- Melland, Councillor Will
- L Mellor, E. W., J.P., F.R.G.S.
- L Mellor, Geoffrey Robert
- Middleton, T. C., J.P.
- Midwood, T. C.
- Miller, Paul C.
- Miller, T.
- Millers, R. Townley
- Milligan, Sir Wm., M.D.
- Mills, Albert
- hMoor, Rt. Hon. F. R., Natal
- Moore, A. E.
- AMoore, Miss Isabel
- Morehouse, James T.
- Morland, J. R.
- Morrau, M.
- Morris, A. C.
- Mort, Miss G. E.
- Moxon, Thomas Bouchier
- Murton, T. P., London
- hNansen, Dr. F., G.C.V.O.
- Nanson, Miss W.
- ANash, Miss M. R.
- Nathan, Fred P.
- L Neil, Alexander
- Neild, F. E., F.C.A.
- Neild, Jesse
- Newton, Geo. D.
- Nichol, Wm.
- Nicholls, Rev. Wm.
- Nichols, Geo. Wm.
- Nicholson, Joseph

- Nightingale, Thos. H.
 ANoar, H.
 Norbury, Thos.
 LNuttall, Harry, M.P., F.R.G.S.
 Nuttall, Mrs. Harry
 ANuttall, R. Wilson
- cOederlin, F.
 Ogden, A.
 Oldham, Edwin, J.P.
 Oldham, H. Yule, M.A., F.R.G.S.,
 Cambridge
 O'Leary, J. W.
 cO'Neill, H. E., F.R.G.S.
 Openshaw, Miss E. N.
 Oppenheim, F. S., M.A.
 Ormrod, Miss B.
 Osborn, John A.
 Ost, Emil
- APaine, Miss
 Parkinson, H. F.
 Parkinson, J. B.
 Parkinson, T. W. F., M.Sc., F.G.S.
 Peace, Alfred
 APearson, Miss E.
 Pearson, J. A.
 HPeary, Rear-Admiral R. E.
 Peters, Miss S. Kate
 APeters, Ralph
 Philips, Miss
 Phythian, J. Ernest
 Pickstone, E.
 Pidd, Arthur J.
 APidd, Leslie S.
 APidd, Mrs. Eli
 APidd, Miss Maggie
 Pigott, A. W.
 Pilcher, Colonel Jesse, V.D.
 Pilkington, Charles, J.P.
 LPilkington, Edward, J.P.
 Pilkington, Lawrence, J.P.
 cPingstone, G. A.
 Pingstone, H. C.
 APotts, Mrs.
 APrescott, Mrs.
 APrescott Miss E. M.
 Prestwich, R. H.
 Proctor, Mrs.
- AProctor, Miss
 Provis, Frank M.
 Prusmann, Robert Henry
 Putz, F. R.
 Qualtrough, Miss Kate
 Quine, Dr. R. H., L.R.C.P., etc.
- Raby, C. R.
 Ragdale, J. R., C.A., J.P.
 Ramsay, P. J., J.P.
 ARawlinson, Miss Maud
 Reade, Charles E.
 Réé, Alfred, Ph.D.
 Reed, J. Howard, F.R.G.S.
 Reekie, W. Maxwell
 Reid, James Stephenson
 LReiss, Alec
 Renold, Hans
 Renshaw, James
 ARenshaw, Miss L. W.
 AReynolds, Mrs. R. H.
 Rhodes, Edward
 Richardson, J. E. T.
 Richmond, Wm., J. P.
 Rigby, Wm.
 Riley, R. J.
 Robertshaw, James
 Robertson, W. J.
 Robinow, W.
 Robinson, T. Fletcher
 Robinson, W. H.
 Robson, J. Walter, J.P.
 Rogerson, James
 Rothband, H. L.
 Rotherham of Broughton, the Right
 Hon. Lord
 Rothwell, Alderman W. T., J.P.
 Row, O. M., M.I.M.E.
 Royse, Councillor Sir S. W., J.P.
 Russell, A. C.
 Russell, C. E. B.
 Ruttenau, Wm.
- Saalfeld, A.
 Salford, the Rt. Rev. the Bishop of
 *Salford Corporation Free Libraries
 Committee
 Samson, Oscar

- Schofield, Edwin, J.P.
 Scholfield, Councillor A. Y.
 Schütt, Professor Dr. R., Hamburg
 Scott, C. Archibald
 Scott, C. P., J.P.
 Scott, J. E. P.
 Scott, W.
 Segalla, Emil
 Sever, John
 rShackleton, Sir E. H., C.V.O.,
 F.R.G.S.
 Shann, Alderman Sir T. T., J.P.
 Shaw, A. E.
 AShaw, Miss A. E.
 Shaw, Matthew
 Sheppard, E. F.
 Shipman, Mrs. W. M.
 Shorrocks, Henry
 Sidebotham, John Jas.
 Siegler, H.
 Simmons, C. L.
 Simon, Alfred
 Simon, Louis
 Simpson, Alfred, J.P.
 Simpson, C. J.
 ASimpson, Miss F.
 Sivewright, Wm.
 LSmith, Rev. Canon F. C., M.A.,
 F.R.G.S.
 ASmith, Miss E.
 Smith, James, Oldham
 Smith, J., Moss Side
 Smith, J. H. H., J.P.
 ASmith, Miss M. J.
 Smith, R. Heaton
 ASmith, Mrs. R. Heaton
 Smith, Mrs. Samuel
 Smith, Sidney
 Smith, T. M.
 Somerset, Henry
 ASomerset, Henry, Junr.
 Southam, T. Frank, M.D., F.R.G.S.
 ASouthern, John E.
 rSowerbutts, Mrs. Eli
 ASowerbutts, Harry, A.R.C.Sc.
 Sowerbutts, T. W., F.S.A.A.
 Speakman, Walter
 ASpencer, Miss M. R.
 ASpencer, S.
 Spencer, Wm.
 Sprott, W. J., M.D., M.R.C.S.
 Stadelbauer, H.
 Staniforth, Harry
 Staniforth, R. A.
 lSteinthal, Egbert
 Stephens, Alderman Sir W., J.P.
 Sternberg, S.
 Stevenson, Frederick
 Stevenson, John
 AStevenson, Miss W.
 AStewart, Robert
 Stoker, R. B., F.R.G.S.
 lStonehewer, Walter.
 Stordy, Mrs.
 Storey, Henry E.
 AStott, Miss
 Stowell, Hugh
 Stubbs, Wm. T.
 ASummerville College, The Principal
 Susmann, Councillor E. F. M., J.P.
 Sussum, Geo. H.
 Sutton, Charles
 Swaine, Geo. Raymond
 Swallow, Miss Eunice
 rSwallow, Rev. R., M.D.
 Swallow, R. W., B.Sc.
 lSykes, Arthur H., D.L., J.P.
 Symonds, The Rev. Canon
 Tatham, Mrs. N.
 Tattersall, Herbert W.
 ATatton, Lees W.
 ATaylor, Albert
 Taylor, Miss A. I.
 Taylor, C.
 Taylor, Frederick
 Taylor, John Tyson
 ATaylor, Miss M.
 ATaylor, Miss Ruth
 Taylor, Walter
 Taylor, William
 Tejeria, Antonio Maria, Spanish
 Consul
 Terry, Henry
 Thewlis, Councillor J. Herbert, J.P.
 Thomas, E. H., F.C.I.I.
 lThomas, George, J.P.
 Thomson, A. E.

- cThomson, J. P., LL.D., Brisbane
Thomson, R.
Thomson, Wm., F.R.S. (Ed.)
Thorpe, Walter
Tout, Prof. T. F., M.A.
- LTrafford, Sir Humphrey F. de, Bart.
Tuke, Rev. R. M.
- LTulloch, Angus A. G.
Turner, Mrs. S. A.
- ATydeman, B. R.
- ATyldesley Higher Education Committee
Tyne, W. J.
- Vallance, A. C.
Vaudrey, Sir W. H., J.P.
Viehoff, Miss F.
- HWainwright, Joel, J.P.
Wainwright, Thomas Foster, J.P.
Walkden, Arthur
Walker, George
Walker, G. H.
Walker, J. Alan
Walker, John
Walker, Sam
- AWallace, Miss M. W.
- LWallace, Reginald W.
Walmsley, R.
Walter, Miss L. Edna, B.Sc., H.M.I.
Warburton, Miss L. M.
- HWard, Sir A. W., M.A., Litt.D.
- HWard, Rt. Hon. Sir J. G., K.C.M.G.,
New Zealand
- LWard, Wm. H.
Ward, Ziba Armitage
- AWardle, Miss
- cWardrop, Capt. A. Tucker, F.R.G.S.
- AWarren, Geo. H.
- AWarrington, Miss M.
Waterhouse, Gilbert, F.R.G.S.
- AWatson, Col. Sir C. M., K.C.M.G.,
R.E.
Watson, D. Fraser
Watson, Joseph
- AWebster, John
Welding, Miss
Welldon, Rt. Rev. Bishop, D.D.,
Dean of Manchester
Welsh, W.
- Welter, H. (Bibliothèque Nationale
Section des Cartes, Paris)
- Whalley, Joseph, F.R.G.S.
Whitby, W. H.
Whitehouse, E. C.
- LWhittaker, Mrs. A. H.
AWhittaker, Miss F.
Whitworth, Herbert
Wihl, G.
Wilde, Miss
Wilde, J. J.
Wilkinson, T. F.
Wilkinson, Wm.
Willcock, Thomas
- HWillcocks, Major-General Sir James,
K.C.M.G., D.S.O.
Williams, James
Williams, S. W.
Williamson, R. T., M.D., F.R.G.S.
Williamson, William Henry
Wilmore, Albert, D.Sc., F.G.S.
Winder, Mark
- AWinstanley, T. G.
Wood, A. W.
Wood, George Hervey
- LWood, George W. Rayner, J.P.
Wood, Henry
Wood, Thomas
Woodhouse, J. H., F.R.I.B.A.
Woodruff, Herbert
Woods, W. D
Woolf, Miss M. A.
Woolfenden, Miss Alice H.
Woolfenden, Joseph
Woolfenden, R. S. H.
Woolley, George Stephen
- LWoolley, Hermann, F.R.G.S.
Worthington, S. Barton
- LWrathmell, T.
Wright, Reginald
- Young, Harold
Young, Leonard
Young, Robert
- Zabern, T. von
Zellweger, I.
Zimmern, Fritz, F.R.G.S.
Zimmern, N. H.
Zimmern, W. H.

Rules.

I. OBJECT AND WORK.

The object of the Manchester Geographical Society is to promote the study of all branches of Geographical Science, especially in its relations to commerce and civilisation.

The work of the Society shall be:—

1. To further in every way the pursuit of the science; as, by the study of official and scientific documents, by communications with learned, industrial and commercial societies, by correspondence with consuls, men of science, explorers, missionaries, and travellers, and by the encouragement of the teaching of geography in schools and colleges.

2. To hold meetings at which papers shall be read, or lectures delivered by members or others.

3. To examine the possibility of opening new markets to commerce and to collect information as to the number, character, needs, natural products and resources of such populations as have not yet been brought into relation with British commerce and industry.

4. To promote and encourage, in such way as may be found expedient, either alone or in conjunction with other Societies, the exploration of the less known regions of the earth.

5. To inquire into all questions relating to British and Foreign colonisation and emigration.

6. To publish a Journal of the proceedings of the Society, with a summary of geographical information.

7. To form a collection of maps, charts, geographical works of reference, and specimens of raw materials and commercial products.

8. The Society shall not enter into any financial transactions beyond those necessarily attached to its declared object, and shall not make any dividend, gift, division, or bonus in money unto or between any of its members.

II. ORGANISATION.

9. The Society shall consist of ordinary, associate, corresponding, and honorary members.

10. A Council shall be chosen annually from the ordinary members to conduct the affairs of the Society. It shall consist of a President, four or more Vice-Presidents, a Treasurer, two or more Honorary Secretaries (including a Secretary for Foreign Correspondence), and twenty-one Councillors.

11. There shall be three Trustees elected by the Society, who shall hold office until death, disability, insolvency or resignation. They shall be members of the Council by virtue of their office.

12. Any vacancy occurring in the Council during the current year may be filled up by the Council.

III. ELECTION OF MEMBERS.

13. Every candidate for admission into the Society as an ordinary or an associate member must be proposed by a member. The proposal shall be read out at the next Ordinary Meeting of the members, and any objection shall be forwarded in writing to the Secretary within seven days.

14. The election of members is entrusted to the Council. The names of those elected shall be announced from the chair at the next Ordinary Meeting after the election.

15. The Secretary shall within three days forward to every newly-elected member notice of his election, a copy of the Rules of the Society, and a card

announcing the days on which the Ordinary Meetings will be held during the session. But the election of an ordinary or associate member shall not be complete, nor shall he be permitted to enjoy the privileges of a member, until he shall have paid his first year's subscription. Unless such a payment be made within three calendar months from the date of election the election shall be void.

16. The Council shall have power to elect honorary and corresponding members.

17. Women shall be eligible as members and officers of the Society.

IV. PAYMENTS.

18. An ordinary member shall pay an annual subscription of £1. 1s., or he may compound by one payment of £10. 10s. An associate member shall pay an annual subscription of 10s. 6d. The Society's year shall begin on the first day of January.

19. Members shall not be entitled to vote or to enjoy any other privilege of the Society so long as their payment shall continue in arrear, but associate members shall not vote nor shall they take any part in the government of the Society.

20. The first annual payment of a member elected in November or December shall cover his subscription to the 31st of December in the year following.

21. On the first day of January in each year there shall be put up in the rooms of the Society a complete list of the members with the amount of their subscription due, and as the amounts are paid the fact shall be marked on the list.

22. Notice shall be sent to every member whose subscription shall not have been paid by the first of February, and if the arrears are not discharged by the first of July the Council may remove the member from the list of members. Any member, whose subscription is in arrear for two years shall not be entitled to receive the Journal of the Society.

V. MEETINGS.

23. The meetings of the Society shall be of three kinds—Ordinary, Annual, and Special.

24. In all meetings a majority of those present shall decide on all questions, the President or Chairman having a casting vote in addition to his own.

ORDINARY MEETINGS.

25. The Ordinary Meetings of the Society shall be held once a month, from the month of October to the month of May, or oftener, if judged expedient by the Council.

26. All members whose subscriptions are not in arrear shall have a right to be present. All ordinary members shall have the privilege of introducing one visitor.

27. The order of the proceedings shall be as follows:—

- (a) The minutes of the last meeting to be read and if correctly recorded they shall be signed by the Chairman.
- (b) Presents, whether of money, books, maps, charts, instruments or specimens, made to the Society to be announced.
- (c) The election of new members to be declared and the names of candidates to be read.
- (d) Papers and communications to be read and discussed.

28. At these meetings nothing relating to the rules or management shall be brought forward, but the minute book of the Council shall be on the table at each meeting for the inspection of any member, and extracts therefrom may,

with the consent of the chairman, be read to the meeting on the requisition of any member.

23. On occasions of exceptional interest the Council may make provision for a larger admission of visitors.

ANNUAL MEETINGS.

30. The Annual Meeting of the members shall be held at such time and place as the Council may determine.

31. Fourteen days' Notice of such meeting shall be sent to every member within the United Kingdom who has given his address to the Secretary, and notice of the meeting shall be advertised in such newspapers as the Council may direct.

32. The object of this meeting shall be to receive the Annual Report of the Council and the Treasurer's Balance Sheet, to hear the President's address, to elect the Council and officers for the ensuing year, and to transact any other business.

33. Any two ordinary members may nominate candidates for the Council or for office not later than one week prior to the day of election, and the names of candidates so nominated shall be at once put up in the rooms of the Society. The election of the Council and officers shall be by ballot.

SPECIAL GENERAL MEETINGS.

34. The Council may call a Special General Meeting of the Society whenever they shall consider it necessary, and they shall do so if required by 20 ordinary members.

35. A week's notice of the time and object of every Special Meeting shall be sent to all members. No other business shall be entertained than that of which notice has been thus given.

36. Twenty ordinary members shall form a quorum.

VI. COUNCIL AND OFFICERS.

THE COUNCIL.

37. The government of the Society shall be entrusted to the Council, subject to the rules of the Society.

38. The Council shall annually elect a Chairman and Vice-Chairman.

39. The President or the Chairman, or any three members of the Council, may at any time call a meeting thereof, to which every member of the Council shall be summoned.

40. Seven shall form a quorum.

41. In order to secure the most efficient study and treatment of the various subjects which constitute the chief work of the Society, the Council may appoint Committees for special purposes. These Committees, with the approbation of the Council, may associate with themselves any persons—whether members of the Society or not—from whom they may desire to obtain special assistance or information. The Committees shall report to the Council the results of their proceedings.

42. The President, Chairman, Vice-Chairman of the Council, and the Honorary Secretaries, shall, by virtue of their offices, be members of all Committees appointed by the Council.

PRESIDENT AND VICE-PRESIDENTS.

43. The President, is, by virtue of his office, the chairman of all the meetings of the Society. In the absence of the President, one of the Vice-Presidents may preside.

CHAIRMAN OF THE COUNCIL.

44. It is the duty of the Chairman of the Council to see that the rules are

properly observed, to call for reports and accounts from Committees and Officers, and to summon, when necessary, special meetings of the Council and of Committees.

TREASURER.

45. The Treasurer has the charge of all accounts; he shall pay all accounts due by the Society after they have been examined and approved by the Council.

46. He shall see that all moneys due to the Society are collected, and shall have power, with the approval of the Council, to appoint a Collector. All moneys received shall be immediately paid to the bankers of the Society.

47. The bank passbook and the book of accounts shall be laid upon the table at every ordinary meeting of the Council.

48. The accounts shall be audited annually by two members, who shall be elected at an ordinary meeting at least one month before the Annual Meeting.

SECRETARIES.

49. The duties of the Honorary Secretaries shall be:—

- (a) To conduct the correspondence of the Society and of the Council.
- (b) To attend the meetings of the members and of the Council, and minute their proceedings.
- (c) At the ordinary meetings, to announce gifts presented to the Society since their last meeting; to read the names of all new members and of candidates for admission, and the papers communicated to the Society, which have been directed by the Council to be read.
- (d) To have immediate superintendence of all persons employed, to make arrangements for the meetings of the Society, and to take charge of all maps, books, furniture and other effects.

50. It shall be the more especial duty of one of the Honorary Secretaries to conduct, as may be directed by the Council, correspondence with Foreign Societies, and with persons resident abroad.

51. In addition to the Honorary Secretaries, there shall be a paid Secretary appointed by the Council, whose duties shall be to assist the Honorary Secretaries, to issue the notices of the Council and of the Society, and to act under the instructions of the Council.

The foregoing Rules, as now amended, were approved and adopted at a meeting of the members of the Society, of which due notice had been given to the members, held in the Town Hall, Manchester, Wednesday, October 3rd, 1894.

(Signed) GEORGE, President.

S. ALFRED STEINTHAL, Chairman

F ZIMMERN, Honorary Secretary.

JAS. D. WILDE, M.A., Honorary Secretary.

ELI SOWERBUTTS, Secretary.

[Copy.]

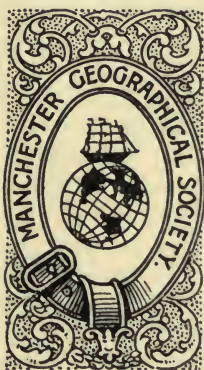
It is hereby certified that this Society is entitled to the benefit of the Act 6 and 7 Vict., Cap. 36, intituled "An Act to exempt from County, Borough, Parochial, and other Local Rates, Lands and Buildings, occupied by Scientific or Literary Societies."

Seal of Registry of
Friendly Societies.

This 15th day of January, 1895.

E. W. B.

THE
JOURNAL
OF THE
MANCHESTER GEOGRAPHICAL
SOCIETY



VOL. XXXI.

PUBLISHED FOR THE
MANCHESTER GEOGRAPHICAL SOCIETY
BY
SHERRATT & HUGHES
LONDON AND MANCHESTER
1915

THE
COUNCIL AND OFFICERS
OF THE
MANCHESTER GEOGRAPHICAL SOCIETY
FOR 1915.

Patron.

HIS MAJESTY THE KING.

President.

MR. HARRY NUTTALL, M.P., F.R.G.S.

Vice-Presidents.

<p>The Right Hon. the EARL OF DERBY, G.C.V.O.</p> <p>The Right Hon. EARL EGERTON OF TATTON.</p> <p>The Right Hon. LORD ROTHERHAM OF BROUGHTON.</p> <p>The Right Rev. the BISHOP OF SALFORD.</p> <p>The Right Rev. BISHOP WELLDON, D.D., Dean of Manchester.</p> <p>The Right Hon. the LORD MAYOR OF MANCHESTER.</p> <p>His Worship the MAYOR OF SALFORD.</p> <p>The Right Hon. Sir WILLIAM MATHER.</p> <p>The Rt. Hon. J. F. CHEETHAM.</p> <p>Sir W. H. HOULDSWORTH, Bart.</p> <p>Sir C. W. MACARA, Bart.</p> <p>Sir HUMPHREY F. DE TRAFFORD, Bart.</p> <p>Alderman Sir J. DUCKWORTH, J.P., F.R.G.S.</p>	<p>Colonel H. T. CROOK, J.P., V.D.</p> <p>Professor W. BOYD DAWKINS, J.P., F.R.S.</p> <p>Major P. K. GLAZEBROOK, M.P.</p> <p>Colonel E. W. GREG, J.P., C.C., F.R.G.S.</p> <p>Mr. J. G. GROVES, D.L., J.P.</p> <p>Mr. J. S. HIGHAM, M.P.</p> <p>Mr. JOHN MCFARLANE, M.A., M.Com., F.R.G.S.</p> <p>Mr. E. W. MELLOR, J.P., F.R.G.S., <i>Vice-Chairman of the Council.</i></p> <p>Mr. J. HOWARD REED, F.R.G.S.</p> <p>Mr. C. P. SCOTT, J.P.</p> <p>Mr. GEORGE THOMAS, J.P.</p> <p>Mr. HERMANN WOOLLEY, F.R.G.S.</p> <p>Mr. F. ZIMMERN, F.R.G.S., <i>Chairman of the Council.</i></p>
--	---

Trustees.

MR. H. NUTTALL, M.P., F.R.G.S. MR. SIDNEY L. KEYMER, F.R.G.S.
MR. E. W. MELLOR, J.P., F.R.G.S.

Honorary Treasurer.

MR. DAVID A. LITTLE.

Honorary Secretary.

MR. EGBERT STEINTHAL.

Honorary Secretary (Victorians).

MR. C. A. CLARKE.

Council.

<p>Mr. W. S. ASCOLI, F.R.G.S.</p> <p>Mr. J. E. BALMER, F.R.G.S.</p> <p>Miss S. A. BURSTALL, M.A.</p> <p>Mr. C. A. CLARKE.</p> <p>Mr. C. COLLMANN.</p> <p>Mr. GEORGE GINGER.</p> <p>Mr. J. HOWARD HALL.</p> <p>Mr. Alderman T. HASSALL, J.P.</p> <p>Mr. RICHARD KAY, F.R.G.S.</p> <p>Mr. H. C. MARTIN, F.R.G.S.</p> <p>Mr. L. EMERSON MATHER, F.R.G.S.</p>	<p>Mr. T. C. MIDDLETON, J.P.</p> <p>Mr. F. S. OPPENHEIM, M.A.</p> <p>Mr. J. A. OSBORN.</p> <p>Mr. T. W. F. PARKINSON, M.Sc., F.G.S.</p> <p>Mr. ALFRED RÉE, Ph.D.</p> <p>Mr. J. STEPHENSON REID.</p> <p>Mr. WM. ROBINOW.</p> <p>Mr. J. WALTER ROBSON, J.P.</p> <p>Mr. T. W. SOWERBUTTS, F.S.A.A.</p> <p>Miss L. EDNA WALTER, B.Sc., H.M.I.</p>
---	---

Honorary Auditor.

MR. THEODORE GREGORY, J.P., F.C.A.

Secretary.

HARRY SOWERBUTTS, Assoc.R.C.Sc.

CONTENTS.

	PAGE	PAGE	
A			
Abeokuta, present condition	3	Corresponding Societies, List of ...	109
Accessions to Library, List of	101	Council, Report of, for 1914	75
Accounts, 1914	79	Cross River, Transport on the	12
Administration of Nigeria.....	13	D	
Africa—Nigeria	1	Deaths of Members announced...	
Agaba, of Awka—Ibo devil	11	88, 89, 90, 91,	95
Agwobasimi, Chief of Benin	8	Deaths of Members in 1914	78
Alps of Japan.....	23	Delegate's Report, British Association Meeting	71
America, South, Venezuela.....	16	" <i>Descriptive Handbook to the Relief Model of Wales</i> ".....	51
Annual Meeting, 1915.....	75	Diyatalawa, Ceylon	50
Army, British, in Flanders.....	93	E	
Asaba, Nigeria	11	Education in Nigeria	10
Ascent of Northern Japanese Alps	24	Education in Venezuela	17
Asia, Ceylon, Glimpses of	36	Edwards, T. A., F.R.G.S.—Progress in South Africa under the Union	91
Asia, Japanese Alps, Northern	23	Effect of Geographical Features on the War at Sea—T. Whyman	19
Atlases added to Library	102	Egba Country, History and Development of.....	3
Auditor, Election of Hon.	87	Election of Members, 88, 89, 94, 95, 96, 98, 99	
B			86
Balance Sheet, 1914	79	Election of Officers and Council ...	91
Bandarawela	50	Eller, Wm.—The Channel Islands	91
Barnard, A. Sedgwick, M.I.M.E.—Ceylon	36, 98	Eller, Wm.—The Panama Canal...	99
Basha, or native country 'bus.....	25	Elliott, Rev. W. H., F.R.G.S.—Bothaland	97
Benin, History and Present Condition.....	7	Eni Ordeal, at Useri, Nigeria	9
Berwick, J. D.—The North of Ireland	96	Exchanges, list of	109
Books added to Library	104	Exchanges suspended	109
Botanical Gardens at Peradeniya...	46	Exhibition, First Niger Industrial, at Onitsha	10
Breaking the Ordeal at Useri.....	9	Explorations in the Japanese Alps—Rev. W. Weston, M.A., F.R.G.S.	23
British Army in Flanders	93	F	
British Association, Manchester Meeting 1915. Delegate's Report	71	Flanders, British Army in	93
British Corresponding Societies ...	109	Flinn, W. Leonard—Persia: Past and Present.....	100
Burkitt, Rev. J. H.—Belgium: Before the War and Since	95	Food in Venezuela.....	17
C			14
Calabar.....	12	Forcados, Port, Niger River	6
Cameron Mountains	12	Foreign Corresponding Societies ...	112
Ceylon—A. Sedgwick Barnard; M.I.M.E.....	36	Fox, Rev. A. W., M.A.—Life and Character in County Galway...	89
Climate of Ceylon.....	37	French Enclaves on the Niger.....	6
Coal Fields in Nigeria.....	2		
Colombo Harbour.....	38		
Colonial Corresponding Societies ...	111		
Command of the Sea	19		
Copland-Crawford, W. E. B., F.R.G.S.—Nigeria	1		

G		PAGE	PAGE
Gardens, Royal Botanical, at Peradeniya	46	Mathematical Geography and Research.....	56
Gbadebo, the Alake of Abeokuta...	3	Meeting, Annual, 1915.....	75
Geographical Features and War at Sea.....	19	Meetings, Reports of	88
Geographical Progress—Address by President	83	Mellor, E. W., J.P., F.R.G.S.—Remarks at Annual Meeting...	81
Geographical Research, Importance of—Major H. G. Lyons, D.Sc.	52	Mellor, E. W., J.P., F.R.G.S.—Southern India—Some Dravidian Landmarks.....	92
Geographical Section, B.A.A.S. ...	52	Members, Deaths of, in 1914	78
Geographical Societies, Work of ...	70	Members, List of	117
Geography at the Universities ...	53	Members, New, Elected, see Election of Members.	
Ginger, George—Journeys in the Mediterranean.....	89	Missionary Corresponding Societies	110
Glimpses of Ceylon—A. Sedgwick Barnard, M.I.M.E.	36	Mountains of Japan.....	24
Godbert, Councillor C. W.—A Chat about Russia	92	Murshi Natives.....	14
Gramophone in Nigeria	5	N	
Gregory, T., J.P., F.C.A. Election as Hon. Auditor	87	Nakabusa (Hot Springs)	29
H		Nigeria—W. E. B. Copland-Crawford, F.R.G.S.	1
Harcourt, Port, Nigeria.....	2	Northern Japanese Alps, Explorations in.....	23
Hilditch, John, M.R.A.S.—Ancient Arts of China	91	Northern Provinces of Nigeria ...	1
History of the Society	98	Nuttall, Harry, M.P., F.R.G.S.—Geographical Progress in 1914	83
Hodaka-yama, ascent of	32	Nuttall, Harry, M.P., F.R.G.S.—History of the Society.....	98
Hospitals in Nigeria.....	3	O	
I		Oldham, H. Yule, M.A.—Round the World in War Time	88
Ibadan	4	Olumo Rock, Abeokuta	4
Importance of Geographical Research	52	Omachi, Japan	26
J		Onitsha Industrial Mission.....	10
Japanese Alps, Explorations in ...	23	Ordeal Trials in Nigeria.....	9
Jekris, of Southern Nigeria	6	O Renge (the Great Lotus Peak), Ascent of.....	24
K		Osborn, J. A.—The Sea and the Shore.....	88
Kandy	45	Otenjo-dake, ascent of	28
Kano	5	P	
Karuizawa, Hill Station in Japan...	25	Peradeniya Botanical Gardens	46
L		Percival, F.G., B.Sc., F.G.S.—Venezuela	16, 96
Lagos, improvements of the Port...	2	Physical Geography and Research	63
Lantern Slides added to the Library	116	Pilkington, Christopher — British Army in Flanders and France	92
Library additions	101	President's Address at Annual Meeting.....	83
List of Accessions, 1915	101	Proceedings of the Society	88
List of Members	117	R	
Lord Mayor of Manchester, Remarks at Annual Meeting ...	81	Railways of Ceylon	39, 44
Lyons, Major H. G., D.Sc., F.R.S., F.R.G.S.—The Importance of Geographical Research.....	52	Railways in Nigeria	2
M		Railways in Venezuela.....	16
McCabe, Alderman, Lord Mayor, at Annual Meeting	81	Report for Year 1914	75
Mahomedans of Lagos and the War with Turkey	5	Report of Delegate to British Association	71
Maps added to Library	101	Research, Importance of Geographical	52
		Revenue Account	79

CONTENTS

vii

PAGE	U	PAGE
Review		
Roads in Venezuela	Universities and Geography	53
Rubber in Ceylon		
Rules of the Society	V	
	Vegetation of Ceylon	48
S	Venezuela—F. G. Percival, B.Sc., F.G.S.	16
Sea War and Geographical Features	W	
Shaw, James, F.R.P.S.—Dolomite Tyrol.....	Walter, Miss L. Edna, B.Sc., H.M.I.—The Fascination of Holland.....	95
Shaw, James F.R.P.S.—Three Picturesque Cities of Italy ...	War at Sea and Geographical Features	19
Sinhalese People	Ward, W. H.—The Italian and French Rivièras.....	94
Society, Accounts, 1914	War with Turkey and Mahomedans of Lagos	6
Society, Annual Meeting, 1915	Waterhouse, G., M.A., F.R.G.S.— Visit to North America	89
Society, Annual Report for 1914 ...	Welldon, Rt. Rev. Bishop, Remarks at Annual Meeting	82
Society, List of Members of the ...	Wells, Samuel, F.R.G.S.—Across Europe by Water	89
Society, Meetings of.....	Weston, Rev. Walter, M.A., F.R.G.S.—Explorations in the Japanese Alps	23, 97
Society, Rules of the.....	Whyman, T.—Geographical Features and War at Sea	19, 96
Society, the 1,000th Meeting	Whyman, Thomas—Life in the Navy.....	100
Solf, Dr., in West Africa	Y	
Southern Provinces of Nigeria ...	Yakedake, the highest active volcano in Japan	34
Sowerbutts, Harry, see Delegate to British Association.	Ypres, Life in, during the War ...	94
T		
Tamils in Ceylon		
Tea Estates of Ceylon		
"The North-West and North-East Passages, 1576-1611"		
The One Thousandth Meeting of the Society		
Trees of Ceylon.....		
Trials by Ordeal in Nigeria		
Tyrol—James Shaw, F.R.P.S.		

MAPS AND ILLUSTRATIONS.

	PAGE
AFRICA—	
Nigeria, "Agaba," of Awka	12
Nigeria, Agara of Ute and his Wives	12
Nigeria, Agwobasimi, Chief of Benin City.....	<i>Frontispiece</i>
Nigeria, Bronze Heads made in Benin City	8
Nigeria, Bronze Plaque made in Benin City.....	8
Nigeria, Gbadebo, the Alake of Abeokuta.....	<i>Frontispiece</i>
Nigeria, Harry Lauder entertains the Natives on a Gramophone	4
ASIA—	
Ceylon, A Tree Fern at Hatton	44
Ceylon, Cocoa Palms on the South-West Shore.....	40
Ceylon, Coolie Children at Bandarawela	48
Ceylon, "Grass-clad Humps and Hill-sides" of Bandarawela	44
Ceylon, "Poochies"—Butterflies, etc.	48
Ceylon, The Beach at Mount Lavinia	40
Japan, Map of the Northern Japanese Alps	34
Japan, Hodaka-yama, from Yari-ga-take	28
Japan, Snow Ravine on East of Shiro-uma-dake.....	24
Japan, Yare-dake and Norikura, from Yari-ga-take	30
Japan, Yari-ga-take, from the East	26



Fig. 1. Nigeria. Gbadebo, the Alake of Abeokuta.



Fig. 2. Nigeria. Agwobasimi in 1897. Now paramount Chief of Benin City.

The Journal

OF THE

Manchester Geographical Society.

* * *

“NIGERIA.”

By W. E. B. COPLAND-CRAWFORD, F.R.G.S.
(Commissioner, Nigeria.)

(Addressed to the Society in the Geographical Hall on
Tuesday, January 18th, 1916.)

NIGERIA is a country full of present wealth, and, I believe, of future possibilities, a country that I have had the pleasure of seeing develop—during my nineteen years of official connection with it—from comparatively small beginnings, to be, as it is to-day, the greatest of all your tropical possessions with the solitary exception of India.

By route of the Canaries, Sierra Leone, the British Gold Coast, the late German Togoland, and the French Dahomey—we reach Lagos, the present administrative capital of Nigeria, in about 16 days.

Nigeria is bounded on the north by the French hinterland of Dahomey and the French Sudan, on the west by French Dahomey, on the east by what until recently was German Cameroons and Lake Chad, and on the south by the Bight of Benin.

Nigeria, for administrative purposes, is divided into two main divisions, the Northern Provinces and the Southern Provinces, of which the northern group coincides with the former Protectorate of Northern Nigeria, and the southern group with the former Protectorate of Southern Nigeria.

The native population is roughly 17 millions (or 2 millions more than all former German Colonies combined), and the European population is roughly 2,500.

The area of Nigeria is some 336,000 square miles—an area greater than the combined areas of Germany, Switzerland, Belgium, Bulgaria, Montenegro, Denmark and Serbia.

The revenue, which in 1904 was one million sterling, in

1913 was three millions—trebled within 10 years!—while trade during the same period has proportionally increased.

Until recently the port of Lagos was accessible only for vessels of small draught—owing to a dangerous Bar: a sea breakwater is, however, now nearing completion. The western mole will be 6,000 feet, and the eastern 8,500. This will enable Liners of deep draught to cross the Bar and enter the Lagos Lagoon. In June, 1914, I entered Lagos on a vessel drawing, so far as my memory serves, about 18 feet.

From Lagos the railway runs to Kano in the Northern Provinces, a distance of 712 miles. There is also a branch line of approximately 100 miles from the neighbourhood of Zaria to Bauchi which serves the adjacent tin mines; and another branch line of approximately 100 miles from Minna (near Zungeru) to Baro, an important station on the River Niger.

In 1913 over 1,150,000 passengers were carried by this railway, the gross earnings being on an average £59,500 per month. During the first seven months of 1914 (before the war) the gross earnings on an average per month amounted to £72,500. The effect of the railway in developing trade has of course been enormous. An eastern railway has now been started from Port Harcourt at the head of the Bonny Estuary to the coal fields at Udi—150 miles distant. It is hoped that it will eventually be extended to Kaduna (the proposed future administrative capital of Nigeria)—to form a junction with the main line from Lagos to Kano. In addition to the coal fields this railway will tap an enormously rich palm produce country. The gauge of both railways is three and a half feet.

The chief industry of Nigeria is agriculture, and crops consist of cocoa, cotton, maize, plantains, ground-nuts, yams, cassava and tobacco. The principal natural products exported are palm oil and kernels, rubber, mahogany, tin ore, maize, hides and skins. In 1913 some 1,130,000 hides and skins were exported, valued at £197,200—and this trade will probably increase, as we shall tap an increased portion of the trade that previously went via Kano and Chad to Tripoli.

In 1913, 5,530 tons of tin ore were exported. The value of the palm oil and palm kernels export, which in 1907 amounted to nearly 3 millions sterling, in 1913 amounted to nearly 5 millions! Considerably over a quarter of a million

tons of palm kernels is exported annually from West Africa, worth from four to five millions sterling, the bulk of which has hitherto gone to Germany through Hamburg. We have now an excellent opportunity of capturing a considerable amount of that German trade.

With regard to the Coal fields at Udi, some 600 tons of excellent coal were stacked by the end of the first half year of 1915, and it is estimated that from five to ten thousand tons will be stacked by the time the railway arrives there very shortly. As £3 5s. a ton was being asked for coal when I left Nigeria three months ago, these Udi coal fields will obviously prove of enormous local benefit.

Abeokuta, the populous chief town of the Egba country, is reached by rail soon after leaving Lagos.

Electric light and an excellent water supply have recently been obtained by means of the River Ogun.

New corn mills have recently been erected here, and it is interesting to note that the first corn mills at Abeokuta were presented by the late Prince Consort to that place so far back as 1849.

The Egba country until recently was a largely independent self-governed country—the British Resident acting as friendly Adviser to the Alake and Council, and being President of the Alake's Financial Advisory Board. Certain modifications in the Administration have recently been accepted by the Native ruling Authorities, which have the effect of bringing Egbaland more directly in touch with the British Administration.

Gbadebo, the Alake of Abeokuta (see Fig. 1), an extremely friendly and enlightened Native Ruler, visited England some years ago and was received by King Edward. At the outbreak of war the Alake and people contributed £500 to the Princess Mary Fund, and offered their services for the defence of Lagos against the Germans.

The quarries from which the Lagos breakwater was constructed are at Abeokuta, and an excellent granite is obtained from them.

I laid down a cricket ground at Abeokuta in the Residency grounds when last there, and the local Native team used to give us a good game.

One of the best hospitals in Nigeria has been erected here by Father Coquard, the Reverend gentleman in charge of

the Roman Catholic Missions. It proved of great service during a recent outbreak of yellow fever. The Protestant Missions are also strongly represented in Egband, and amongst other duties are carrying on a useful educational work.

The Olumo rock is the venerated rock of the Egba people. So far back as 1856 it was graphically described by Miss Tucker of the Yoruba Missions :—

“ In the south-western part of the Kingdom of Yoruba, amid hills and rocks of primitive formation, there stands near the eastern margin of the River Ogun a huge porphyritic rock called ‘ Olumo,’ or ‘ the hiding place,’ from the concealment it used to afford to a band of robbers. The summit is composed of large rounded masses of stone, and at one spot the intervening space forms a kind of deep but low cavern capable of giving shelter to a considerable number of persons. It was deserted by these robbers some short time before the year 1825, and in that year became the refuge of a few poor people who had fled from the merciless hands of the slave hunters and knew not where else they could be so secure.

“ The party who first took possession of the cavern was soon joined by others who, like themselves, had been driven from their homes and friends, often in want of food and obliged to subsist on the leaves of the pepper plant, wild roots or any animals that came within their reach.

“ The different parties settled themselves down in small but separate communities, each under its own laws, each with its own Chief and Judge and war Captain, and with its own Council House, and each giving to this new found home the name of the town or village from which it had been driven. To the whole they gave the name of ‘ Abeokuta,’ or ‘ understone.’

“ Fresh parties continued to join them till the remnant of 130 towns had found refuge in Abeokuta, and the spot in which 30 years ago a robbers’ cave was the only habitation now in 1853 numbers 80,000 as its population.”

From Abeokuta the next important place is Ibadan. Ibadan has the distinction of being perhaps the most populous town in British West Africa. The Alafin of Oyo near here is the recognised head of Yorubaland : the Oni of Ife the-



Fig. 3. Nigeria. Harry Lauder entertains the natives on a Gramophone.

Spiritual head. The head chief of Ibadan is called the Bale. I happened to be at Ibadan when the then Bale died. The Alafin of Oyo took part in the appointment of his successor.

Important cotton producing areas are in this neighbourhood, the Moor plantation and ginnery being established here; and cotton has been grown both in the Northern and Southern Provinces of Nigeria from time immemorial in connection with the cotton spinning industry. During seven years prior to 1913, the exports of cotton lint have increased from 36,000 cwt., valued at £97,000, to 56,000 cwt., valued at £160,000. The native looms (see Vol. xxiii, page 133) are perhaps not quite equal yet to your Manchester looms, though doubtless they may some day surpass them!

The effect of a Harry Lauder laughing song given on the gramophone is seen in the reproduction of a photograph taken at Ibadan (see Fig. 3). I have found the gramophone most useful when visiting newer parts of the country. The fame of the gramophone precedes you! It is your *avant coureur*. There is no need to arrange for meetings, they are there waiting for you—or possibly for the gramophone. Its influence is great—equal to a company of soldiers!

We next visit Kano, which has been described as the Manchester of West Africa. Whether the description be a correct one or not, it is I believe a fact, that Kano for long supplied cotton goods to a considerable portion of the Sudan. Caravans have for long traded between Tripoli and Kano—and it is interesting to note that Tripoli Arabs living at Kano sent a most loyal address on the outbreak of war to the Governor-General, Sir Frederick Lugard. In fact all the Mahomedan population, as well as our other Native Races, scorned with contempt the German intrigues so assiduously and unscrupulously attempted.

In addition to contributions in men and kind the Emir of Sokoto contributed to the war funds £7,539, the Emir of Kano £6,542, the Shehu of Bornu £4,000, the Emir of Bida £2,190, and so on, accompanied by letters of the utmost loyalty to the British Government.

The Mahomedan community of Lagos wrote:—

“We have the honour to say that we are nearly maddened with surprise at the unjust and ungrateful attitude taken up by the Turkish Government against

Great Britain, who has ever been the one friend and helper of the Turkish Government

“We do say solemnly, consciously and without hesitation, that our loyalty to His Majesty King George V, is as firm as a rock, and that there is nothing that can interfere with our loyalty and goodwill towards the British Crown.”

The Port of Forcados is situated at the main mouth of the Niger. This river, rising in the Sierra Leone hinterland and flowing some 2,600 miles, enters the Bight of Benin at Forcados. The surrounding land is low lying mangrove swamp and considerable building up has been required in order to render the various stations habitable. I remember years ago cutting the first bush where the Forcados government and trading stations now stand. There was no telegraphic cable at that time at Forcados, and I endeavoured to secure communication with Lagos by a system of carrier pigeons. One of the present sites at Forcados is known as “Pigeon” beach.

By our Treaty with France some years ago she is entitled to two enclaves on the Niger for commercial purposes, the one at Bajibo in the Northern, and the other I selected for the Government at Forcados in the Southern Provinces.

The Ijos and Jekris are the principal Native Races around here; the former live principally by fishing, the latter are excellent traders. The Jekris are to be found principally in the Warri, Benin River and Sapele districts. The Jekri chiefs have always proven themselves loyal and industrious.

Manchester cloths are largely in demand in these parts for wearing apparel, and they have much improved in quality within recent years. I remember the time when King Edward's head and shoulders figured largely on these cloths, which were widely worn by the Natives. The King was generally depicted with a bright vermilion face, gamboge hair and impossible blue eyes! I trust it is no disparagement to Manchester to say that the colours toned down in the washing.

At one time the Sobos were the principal oil producers in these parts, the Jekris acting as middlemen between the producer and the European firms. The Sobos having now gained confidence bring the major portion of their palm oil to the firms.

Some of the Creeks around Benin River and Sapele are

extremely beautiful, with deep and clear water. They are a great centre for the mahogany trade. In the year 1913 no fewer than 18,214 logs, valued by the Customs roughly at £100,000, were shipped from near here.

Benin, called by the natives Ibini or Bini, was discovered in 1485 by the Portuguese navigator, Joao Alfonso de Aveiro, who on his return to Europe took back an Envoy or Ambassador from the King, as a result of whose visit missionary Fathers were sent to endeavour to Christianise the inhabitants, but apparently with small success. They were followed by merchants and others of their countrymen, who obtained a strong footing in the country, many traces of which exist at the present day. The first English adventurers visited Benin in 1553. In the sixteenth and seventeenth centuries, and during a considerable part of the eighteenth, Benin was a powerful and important kingdom, probably the most extensive and powerful that ever existed in Western Africa. For some years prior to 1897 Benin City had been closed to Europeans, and I believe only three were able to visit it and they saw but little of the place.

In January 1897, a peaceful Government Mission endeavoured to get to Benin City with a view to stopping the terrible cruelties which were perpetrated there and opening the country to trade. Of the nine Europeans on the mission seven, including my brother Major Copland-Crawford, were massacred, together with a number of Native carriers who were carrying up presents for Overami, the King or Oba of Benin.

An expedition was immediately organised and left England within five days of the receipt of the news of the massacre. I went out with that expedition and then had my first experience of Nigeria. The troops captured the City but found a terrible condition of things within it. A Report at the time states :—

“ The ghastly condition of the City overcame men who had never flinched from fighting or privation. Benin, in fact, was a mere charnel-house, literally reeking with human blood. Mutilated bodies, detached heads and skulls lay everywhere, crucified victims swung on the trees, and pits and wells were choked with dying as well as dead. Three Natives, who had accompanied the unfortunate expedition,

were found in a half dead condition. These poor wretches had evidently been condemned to a lingering death of starvation amid the decaying bodies of their comrades."

Benin city was captured and Overami deported to Calabar. Here he died quite recently, and his son Agwobasimi is now paramount Chief at Benin (see Fig. 2). This picture of Agwobasimi I took in 1897 when he was handed over to me by the Royal Niger Company.

Benin bronze work was evidently introduced by the Portuguese centuries ago. (See Figs. 4 and 5.)

Six years after the massacre, having just returned from Benin City, I am reported to have stated as follows:—

"When on my tour of inspection through Benin City and Territories I was much impressed by the contrast of Benin City of to-day as compared with the Benin City of six years ago. Then the country groaned under the most cruel system of barbarism and oppression that the world has probably ever known. Human sacrifices were of common occurrence and no man's life was safe, and no property was secure. Crucifixion was a favourite form of human sacrifice, and the ex-King of Benin told me in 1897, when he had just been taken prisoner, that he had always been in the habit of sacrificing his people in the event of rain or dry weather being required.

"Human sacrifices and fetish outrages are, of course, to-day a thing of the past, and human life is as safe and property is as secure in Benin City as they are in any town in England.

"I attended Court, with the Chiefs sitting and assisting in cases as Assessors, and found them cordially co-operating with the British Officials in every movement conducive to the welfare of their people. These, it must be remembered, are the Chiefs who were ready, six years ago, to massacre the 'White man' rather than receive him as a friend in the City.

"I inspected the Government schools there—schools largely supported by the Chiefs, and was much struck by the aptitude shown by the young native children. From examinations I made, I consider that their work would compare favourably with that of any children of the same



Fig. 4. Nigeria. Bronze Plaque made in Benin City.



Fig. 5. Nigeria. Bronze Heads made in Benin City.

age in this country. The Natives appeared to me to be contented and prosperous, and they had not the crushed and hopeless appearance which I had noticed in earlier years.

“The trade in Benin City is good, and now that protection for property is assured it will probably improve, especially if light railways are established for the transport of produce. Excellent government buildings have been erected with bricks made in the locality.

“On every hand there was evidence of the advantages which had accrued from six years of British rule, and one saw with satisfaction how order, security and liberty had been evolved from savagery and oppression.”

I will now describe one of those trials by ordeal that used to be so prevalent in Nigeria before British rule became firmly established. This particular ordeal is known as the Eni ordeal at a place called Useri, inland from Asseh on the Niger.

The ordeal was undergone in the following way: Persons suspected of witchcraft or of using poison to cause death or disease were taken to the shore of Useri Lake during high water and embarked in canoes holding from six to ten persons each. They were paddled to the middle of the lake and told to jump into the water, which they did. The lake was full of crocodiles, and the people around the lake fired guns into the air—a sort of luncheon gong for the crocodiles—and the canoes were paddled to shore. Those reaching shore after the ordeal were deemed innocent and were decorated by the head chief Oluwa with feathers and cloth and chalk.

As this ordeal was a fruitful source of loss of human life I decided to stop it. I visited Useri, being the first White man there, and had a long interview with Oluwa. He insisted it was the Ju Ju, or the prevailing Spirits of the lake, that killed the people, and that they only died if they were guilty of witchcraft. Oluwa had a small son with him, and I suggested that he should go with me to the lake and cast his son into the water under the usual conditions, as, being innocent, he would escape. He replied with a smile that he thought he would rather not! After several visits I induced Oluwa to break the ordeal on condition I brought all the Chiefs from surrounding countries so that they might warn their people not to go to the ordeal. This I did, and the ordeal was finally broken.

I obtained a subsidy for Oluwa from the British Government, and made him Vice-President of a Native Court established at his town.

Oguta Lake, inland from the lower Niger, is a trading station of some importance. Extremely small canoes are here used by the natives, one of which I have presented to the Liverpool Museum.

Disraeli once said: "The Youth of a nation are the trustees of posterity"; and the Government and the various Missions are alive to educational requirements. In the Southern Provinces of Nigeria at the close of 1913 there were fifty-four government schools, eighty assisted schools, and some 400 private schools, representing 52,000 scholars. Not only are the children taught "book" education, but also crafts and industries. At Onitsha there was an excellent Industrial Mission school, the pupils of which largely furnished the various government stations on the lower Niger.

The Government believe not merely in the education that makes scholars, but also in the education that tends to the formation of character, and tends to make useful members of society and good and loyal subjects of the King.

I remember examining some children on Empire Day at Calabar and the statements in two of the essays were interesting. One child wrote that Empire Day and the British Empire were discovered by Lord Meath, and that prior to that time he had earned his living in cutting down trees! Another child in a patriotic vein wrote: "The British Flag is the best Flag. Should anyone tread on the Flag he must be killed"—and by way of making sure of the job added "likewise executed"!

We do not contend that by education alone we can eradicate all the pernicious habits and customs of centuries, but we do contend that in affording education to the native child we are giving him an opportunity of starting fair on the battle of life, and are laying the foundation stone upon which a more civilized and enlightened superstructure may ultimately be raised.

Onitsha, on the left bank of the Niger, is an important government and trading station. Some years ago I held the first Niger Industrial Exhibition there. The exhibition was attended by the various Native Races in large numbers, and prizes were given for every conceivable object from calves to

wood-carving and from turkeys to tobacco. We also held athletic sports, the native wrestling matches proving exceedingly popular. I remember when the fireworks went off some of the natives hastily picked up their scanty belongings and bolted homeward.

A representation of the famous Ibo devil "Agaba," of Awka (see Fig. 6) was brought in to me at Onitsha on that occasion, tied up to show that his power had been broken. This Awka ordeal was a somewhat similar one to that at Useri. The Natives charged with witchcraft and using poison were taken down a long passage into a cave where a terrible noise was produced by means of beating pots and pans. The alleged evil doers were brought before the figure "Agaba," while a man speaking into an earthen pot so disguised his voice that it was taken to be a Divine utterance pronouncing the fate of the victims. In the case of guilt the victim was knocked down senseless into a pit, dragged off and killed. The ordeal, unlike that at Useri, was performed in private, and not infrequently those supposed to have been killed in the ordeal were secretly taken away and sold into slavery in the interior.

Native blacksmiths carry on important work at Awka and elsewhere in the neighbourhood, and as they are great travellers very useful information regarding other parts of the country was in earlier days obtainable from them.

Asaba is on the right bank of the Niger nearly opposite Onitsha. Here were the old judicial headquarters of the then Royal Niger Company. Lignite is obtainable near Asaba, specimens were sent to the Imperial Institute for analysis, and the reports were favourable. It would to a large extent have superseded the use of wood for river craft, but now that good coal is obtainable from Udi, inland from Onitsha, the lignite will be of little present use.

Medical Missions are well established around Asaba and Onitsha. The political advantages derivable from medical labours are far reaching.

I remember a Native rising in 1904 in the Asaba hinterland. Government Courts and Mission Stations were destroyed and friendly Chiefs and natives killed, and troops were required to restore order and protect the friendly and peaceably disposed natives.

One day when we wanted to change our camp a doctor

volunteered to ride down and inspect another site. He returned some time later and the next day we moved camp. I was somewhat surprised to meet with no opposition and then the reason transpired. It appeared that the bush had been full of armed natives as the doctor rode along, who were quite prepared to fire, but one of them recognised him as the "Medicine Man" who some years before had successfully operated on their Chief for cataract. Not a shot was fired, and the natives explained that they could not shoot one who had, miraculously as it seemed to them, restored sight to their Chief! I have always considered that an interesting instance of the political advantages to be derived from medical agencies; and it would also appear to dissipate the very erroneous misimpression that gratitude is a quality unknown to the Native nature.

I have not visited Lake Chad, but several views of Lake Chad were taken some years ago by my late friend Captain Boyd Alexander, a familiar name in geographical circles. (See Vol. xxiv, p. 145, of the Journal of the Manchester Geographical Society.) I understand that Lake Chad is somewhat disappointing, being shallow and to some extent a magnified swamp.

Calabar, on the eastern borders of Nigeria, was formerly the old headquarters of the old Niger Coast Protectorate, and in still earlier days of the Oil Rivers Protectorate. It adjoins the late German Cameroons where Nigerian troops have been successfully operating against the Germans. The Cameroon mountains, 13,000 feet high, are clearly discernible from Calabar.

Calabar is situated on fairly high ground, but from here to the sea mangrove swamps abound. Above Calabar the main stream is the Cross River, and as one proceeds up it the land gradually rises. The hills around Oban are of considerable height.

Transport on the Cross River is difficult in the dry season (our winter season), and stern wheelers of small draught, similar to those used on the Nile, are used. Sandbanks largely abound. The rivers at certain seasons of the year rise very rapidly. I have known the Aboine River, near Abakaliki, rise over twenty feet in as many hours.

Lead is found in the neighbourhood of Abakaliki.

Ogoja is the principal government station of the Province



Fig. 6. Nigeria. "Agaba" of Awka.



Fig. 7. Nigeria. Agara of Ute, a Minshi native Chief and his Wives.

up the Cross River that bears its name. It abuts upon the Cameroons, and during the war, columns have successfully operated against the enemy from Idah, on the Cross River, and from Obudu and the Northern Provinces.

Since the declaration of war, German trade has been swept from the seas, thanks in a large degree to our magnificent Navy. Germany has lost all her Colonies with the exception of East Africa, and that she will presumably soon lose.

Hamburg, to which before the war so much West African trade found its way, is now like a city of the dead, so much so that Dr. Solf, the German Colonial Secretary of State, when recently visiting there was quite unable to make the dead bones live! He spoke in regard to what would happen when Germany regained her Colonies, an event that some consider may be advantageously relegated to the Greek Kalends!

I photographed Dr. Solf a few months before the war when I met him in West Africa. I remember he was good enough to express the hope that he might see me in Berlin, a hope that I trust may be speedily realised. To-day Dr. Solf occupies the somewhat trying and anomalous office of a Colonial Secretary without Colonies.

Our Government has made it a point to try and administer Nigeria as far as possible on Native lines, and with a due regard to the sentiment and traditions of the people. With this object we have established what we call "Native Courts." Upon these Courts native Chiefs sit, representing the various localities within the jurisdiction of the court. The Government officer assists with his advice when required.

The benefits derived from this system of courts are reciprocal. On the one hand, the chiefs and people become familiar with our views upon what we know as justice and fair play between litigants; on the other hand, the Government officer has the inestimable advantage of becoming acquainted with native law and custom as existing in the various localities.

It is the Government object to try and rule the country through the medium of the Chiefs, and to make them realise as far as possible that the advent of Government does not mean the weakening of the authority of the Chief over his

people, but rather the strengthening and consolidation of his influence. One cannot rule primitive Races on purely British legal lines. Great allowance must be made for local native sentiment and tradition.

I remember trying a case years ago, inland from the Niger, where the "White man's" views were unknown. Nine men had killed their mothers with a poison, known as the "Sasswood" poison, which was derived from the bark of a tree, pounded up and administered in water.

There had been a smallpox epidemic in the locality, and the mothers feared that if all their sons died off there would be no one left to administer to them the last rites and ceremonies according to native custom. The mothers obtained the poison and insisted on the sons administering it. This they did, with the result that the mothers died.

A hideous crime according to the purely British aspect! A filial duty from the native point of view!

I remember a hostile demonstration on the part of the natives who were averse to my taking the offenders away. I settled the trouble by kicking a football amongst them upon which they bolted into the bush, but returning shortly they enjoyed a game of football, several hundreds taking part, though not under Cup tie regulations!

After the football I took the men away. They were duly tried, found guilty of murder, sentenced—and reprieved. To have carried out the death sentence demanded by English law would have been in itself a crime, for the offenders knew no better.

I took those men back to their country and was met by a great crowd of women waving boughs of trees who escorted me into the village. I, of course, explained that poisoning mothers must cease; but I cite this case to show the futility of trying to prematurely govern primitive native Races according to the strict letter of English law and English sentiment; and one of the great advantages of these Native Courts is that one acquires an insight into native law and custom.

The Munshi people are a fine race to the east and north of Nigeria. The men have a special weakness for a fight; and the women for beads (see Fig. 7). The Munshis fight largely with poisoned arrows, the poison being obtained from the *Strephanthus* plant and other sources. The Munshis are

industrious and good agriculturists, and now that Government can insure protection for life and property they are beginning to trade.

I shall be glad if anything I may have said or shown this evening may induce my audience to view with a sympathetic eye Nigerian affairs.

The task that lies before us in that country is a responsible and interesting one. To open up and develop the country in the interests of humanity and to the advantage of every class of the community, European and Native alike. To weld these various Races into one united whole, loyal, prosperous, and contented under British rule; and upon the firm and sure foundations of justice and liberty, to build up an Empire worthy of a great Imperial Race.

VENEZUELA.

By F. G. PERCIVAL, B.Sc., F.G.S.

(Addressed to the Society in the Geographical Hall on
Tuesday, October 19th, 1915.)

VENEZUELA is assuredly a land with a future,—but how far ahead that future is one hesitates to guess. The rapidity with which other South American republics have developed may be equalled by that of Venezuela when she gets thoroughly in touch commercially with more stable states. At present the country is badly handicapped by its lack of communications, and by its somewhat turbulent history, but there are signs already that this unstable phase is nearing its end.

The railways are few in number, and the difficulties in their construction are very great. The coast range that intervenes between Caracas and the sea makes the journey by the La Guaira to Caracas railway extremely interesting, and at times, perhaps thrilling to the stranger, but it reduces the possible load per train tremendously, and increases the cost of carriage proportionately. The route from Caracas by Valencia to Puerto Cabello is similarly striking—at one point the incline is so steep as to necessitate a rack-rail.

The roads, away from the larger towns, are the merest tracks, and the smaller rivers, liable to sudden floods, are not much used. To go a journey of any distance it is usually most convenient to go to the coast and take a vessel. Strings of donkeys carry much of the traffic.

The writer was a member of a party that traversed some of the lesser known parts of Venezuela in 1910. La Guaira, where the visitor usually makes his first acquaintance of the country, is the port of Caracas, and is built on a steep hillside, facing the sea. It has a wide reputation for its heat, yet Macuto, a few miles east along the coast, has cooling breezes that make it the Brighton of Venezuela. There is a break in the hills behind Macuto which probably explains the difference between its temperature and that of La Guaira. Caracas, the capital, has a pleasant cooler climate owing to its altitude,

and is much like a southern European city. It has rather narrow streets, in which its electric trams look rather dangerous, but the lowness of most of the houses makes the narrowness of the streets less noticeable.

It is not till one gets well away from the capital, however, that one realises how undeveloped the country really is. The smaller towns and villages are built of single-storied houses, often with mud-plastered walls, and thatched with palm leaves. As one rides through such a small town one may hear the droning of many voices in unison, and see the schoolmistress sitting at the door of the room that serves as a school, rocking her child to sleep while the class reads. The three R's are taught, with needlework in addition for the girls. The Government was awake, however, to the necessity for a more systematised scheme of education and improvements were promised. Caracas has a university, but the facilities elsewhere are not very great.

The people, whether of pure Spanish or mixed descent, have a natural courtesy and hospitality that is charming, and place their best at the disposal of the traveller, though as they often live in a very happy-go-lucky manner, one must be prepared to live at times on a rough monotonous diet, sweetened mainly by the cordiality with which it is offered. In many places wheaten bread is not obtainable. Maize cakes,—often very coarsely ground and insipid,—are used instead, or sometimes only millet-seed cakes are available, with fowl, goat-flesh or pork. The coffee is always excellent. Cocoa is grown, but is rarely drunk in the villages, and milk is often difficult to obtain. Where goat farming is carried on, as in the district round Coro, delicious goat-milk and cheese can be had. On the sugar farms one may have the inevitable fowl, with yams, boiled bananas (the unsweet varieties), and thin sheets of dry cassava cake, with crude brown candied sugar (“papelon”) as a sweet. Fruits can be grown with little trouble, but only in a few rare oases can one be so fortunate as to get such dainties. Life is easy and comfortable in the villages for those whose tastes are simple. The exertion of planting fruits is not thought worth while. For a similar reason one may find it difficult to get labour. The men are extremely independent, and proud of their Republic and their freedom. If they feel inclined to work they will do so for fairly low wages, but if they don't want to work no reasonable

offer will tempt them. Why should it? They have no fear of starvation. Old age does not mean the workhouse. Would they be any happier with a system like ours?

But as a result the country is undeveloped. They are waiting for foreign capital to come and organise things, bringing the mixed blessings of modern industrialism, in order to get their stores of copper and petroleum. Their other minerals will be exploited in turn. Their animal and vegetable products,—cattle, goatskins, sugar, coffee, cocoa, and tobacco will become more and more important, but the country is waiting and depending too much upon foreign capital. British companies are dealing with their cattle and petroleum, amongst other things, but during the next few years European capital will be needed in Europe. It is to Venezuela's interest to encourage her people to develop the national resources themselves without waiting for foreign capitalists to take the initiative.

THE EFFECT OF GEOGRAPHICAL FEATURES ON
THE WAR AT SEA.

By T. WHYMAN.

*(Secretary of the Port of Manchester Branch of the Navy
League.)**(Addressed to the Society in the Geographical Hall on
Tuesday, November 2nd, 1915.)*

WAR, both on sea and land, is an art and not a science; its rules are not invariable rules, and its definitions have not the same precision as a mathematical formula. With the endeavour, as far as possible, to avoid technical terms, there are two that cannot be avoided, and so must be defined. The first is "Command of the Sea." Where one nation is capable as a general thing of using the sea passages for transit, and at the same time of denying them to an enemy, that nation possesses "Command of the Sea." That command may be absolute, as in the present case of the Pacific, where the enemy has not afloat a single war ship; or it may be conditional, as in the North Sea, where the enemy has a fleet capable of interfering if it chooses to attempt to do so.

The other phrase is "Fleet in Being." Where the enemy's fleet is still intact it exercises influence on the war in three ways, even although it may never leave port. First, it compels our fleet to keep watch over it in superior force, because, since the enemy can choose his own moment for attack, and at that moment some of our ships might be away coaling, it is necessary to have at least five ships to watch four. Secondly, this watch exposes us to various risks and a certain degree of toil, hardship and expense. Thirdly, as long as the German Fleet remains undefeated we can not send our Fleet into the Baltic and leave it behind us unguarded.

Having thus cleared the ground the war at sea can be considered as a whole. The problems before the Admiralty are the same in this war as in every sea war, right back to the time when Rome and Carthage were fighting for the mastery of the Mediterranean. The old rule still holds good, that the essential thing is to seek out the enemy's fleet and destroy it.

The various objects for which a navy exists; to protect our

own trade overseas; to prevent that of the enemy; to prevent him invading us, and to invade him if necessary; all these are secured at once (and can only be secured) by either destroying the enemy's fleet, or by preventing it from putting to sea.

England has been greatly helped in this war by her position, lying straight across the routes by which Germany might seek access to the open sea. From Dover we control the narrow straits; the North Sea is just large enough to be convenient, and just small enough to be well in touch in every part, with the Admiralty at Whitehall. We owe a great debt of gratitude to Signor Marconi for his invention of wireless, and its invaluable assistance to us in our watch.

We are all in the habit of speaking of ports controlling sea passages, but, as a matter of fact, a fortified port without warships in it is very much like a railway station without any trains, and controls nothing except the area under the immediate range of its own guns. We have had an illustration of this in the case of Tsing-Tau which the Germans boasted before the war "controlled the Yellow Sea." We saw when war broke out how this fortified port was besieged and taken at leisure, as all fortified ports have been taken when command of the sea is lost, by an attack from the landward side.

The only campaign in this war that has spread at all spaciouly has been the hunt for Admiral Von Spee in the Pacific. It had probably been Von Spee's intention to pick up the hundred thousand German reservists at Buenos Ayres and bring them across the Atlantic to assist the defence of German South West Africa; and so we see that the conquest of Bothaland was made possible by a victory won off the coast of South America.

Allied with and helping to complicate this campaign has been the hunt for the Emden. War against our trade at sea has been tried many times, and has always failed. It was always defeated by the same method. The commerce destroyer at sea must get supplies from somewhere, and the best method to defeat him is to stop his supplies. In this way, as source after source of supply was stopped, the Emden was driven to try to break the net that the wireless telegraph was weaving round her, and was caught and destroyed in the act.

All the other campaigns have been more local and more

affected by local conditions. Without saying much about the Dardanelles it may be noted that although the results so far have been below our expectations, yet they have drawn a German army into an adventure among the Balkan mountains at a time when Germany needs every man on her Eastern and Western Fronts.

In the Adriatic, Italy has a particularly weak spot in the fact that her main line of railway runs along the coast. On the 23rd May, the opening day of the war with Italy, the Austrian Fleet raided this railway and succeeded in breaking it in several places. It was a brilliant operation, all carried out in two hours; but the Austrians have not been able to repeat it.

In the Eastern Mediterranean the escape of the Goeben in August, 1914, was the beginning of many sorrows for us in Lancashire, but there was a reason and a compensation. The position taken by our Fleet was chosen to intercept her if she endeavoured to interfere with transport operations, between Algiers and Marseilles. The 19th French Army Corps was in line in the North of France on that disastrous day when Namur fell, and if it had not been there Verdun would certainly have fallen and probably Paris. The Goeben at Constantinople was a very small set-off against the 19th Army Corps safe in France.

During eight months of the submarine war against our commerce, and with a total of thirty-one thousand, three hundred and eighty-five entries and departures of ships from our ports, of that number we have lost 98. The price Germany has paid for that certainly not magnificent result has been great in boats, and still greater in her trained men, the loss of whom she must sorely feel in the future.

But behind all the other activities of the other ships of the Fleet is the Battle Fleet ready for action; although none of its ships has yet fired a gun in anger, it is the knowledge that they are there and ready that keeps the Germans in port. There have been some raids, and the raiders have been severely punished. There may be raids in the future, but raiding will be as risky as going into a lion's cage on a foggy day and hoping to escape notice.

In the Baltic, where the German trade with Sweden is being dealt with by our submarines, we are showing Von Tirpitz that a war against commerce can be carried on both

humanely and efficiently; our submarines have sunk 20 ships within ten days, and the Germans are learning that the new departure in warfare that they had invented is a sword with two edges. In the Baltic we have a very good example of disputed command. The Russian cruiser squadron is being most ably handled, and the German losses in this type of ship have been so heavy that they are forced either to risk their big battle ships for work for which they are unsuitable, or to let the Russians do as they please in the Baltic.

Finally, the North German coast is defended not so much by the forts of Heligoland, as by its shoals and sandbanks. In the Kiel Canal the German navy is lying in wait, and some day we believe that it will come out. That fleet has been built on borrowed money at a cost of £300,000,000, and the Prussian mind, nothing if not commercial, will want a dividend on that investment. As the public feels the pressure of our sea power more and more, a clamour is sure to arise for the fleet to go out and do something. There have been signs already of the influence at work. It has happened, over and over again, in the course of history. Sooner or later the insistent demand that they shall see something for their money will send the German Fleet out to fight.

We must be under no delusion about one thing. When they come they will come to do everything that science and cunning and a diabolical hatred can suggest, and they will be hampered by no considerations of humanity or fair play. We must be prepared to face heavy losses in ships and lives, but we can look forward to the result with confidence.

Including with the German fleet every ship they had that was not actually known to be destroyed, and only reckoning with our Fleet, the ships actually present in the North Sea, we have 49 ships to 40, 442 guns to 282 and 480,000 lbs. weight of broadside fire against 230,000.

With regard to the men, for without the men the best ship or the biggest gun is merely useless metal, the men are all that we expect of the British Navy, and have never been better since King Alfred commissioned our first Fleet. The officers are worthy of the men they lead; their leader is by universal consent the finest tactician that has ever handled a steam fleet at sea; and we can look forward with confidence when the great day comes, to him justifying at the Germans' expense the name the lower deck has admiringly given him of "Hellfire Jack."

RECENT EXPLORATIONS IN THE JAPANESE ALPS.*

By Rev. WALTER WESTON, M.A., F.R.G.S.

(Addressed to the Society in the Houldsworth Hall on Tuesday, November 9th, 1915.)

I HAVE already had the honour, on two previous occasions, of reading papers before this Society on exploration in the Japanese Alps. My first subject, in 1896, was that of mountaineering in the northern ranges; in 1906 I dealt with travel in the southern. To-night I ask you to come back with me once more to the wild and unfamiliar regions of the northern Japanese Alps. If, therefore, for the sake of clearness, I have to repeat what I have already said on certain points, I am sure I shall be forgiven.

“The Japanese Alps” is the title I ventured to annex twenty years ago for the great mountain mass which stretches across the mainland of Japan at its widest span, lying approximately between 35° — 37° N. and 137° — 139° E. Its central portion is practically on the same latitude as the Sierra Nevada, in Southern Spain. Tokyo, the capital of Japan, from close to which some of the southern peaks are visible, is on almost the same latitude as Gibraltar.

Into the geological features of the main range I need not now enter, as I have already referred to them in previous papers. But in passing I may again remind you that it is mainly an immense backbone of granite, through which at various times mighty volcanic upheavals have thrust themselves; it is partly to this combination, together with the peculiar and marked climatic conditions of Central Japan, that we owe the varied peaks that rise from deep-cut romantic valleys, with their magnificent forest-clad flanks and wild, torrent-dinned ravines, the chief charms of the Japanese Alpine world.

* We are indebted to the Royal Geographical Society for permission to print this paper with the map and the four illustrations.

The principal mountain expeditions on which I will now ask you to accompany me, I will take in geographical order, beginning with the most northerly : Ō Renge—"The Great Lotus Peak," about 120 miles north-west of Tokyo, and 30 miles south of Itoigawa, on the Sea of Japan, where the main granite axis of the range rises in bold tree-topped cliffs abruptly from the shore known as *Oya Shiradzu*. Strictly speaking, Ō Renge is the name given to the cluster of summits (supposed to resemble the petals of a lotus flower) as seen by the people of the province of Etchu on the north; while the inhabitants of the great province of Shinshu on the south know the highest peak itself as Shirouma-dake or Hakuba San. Both these names mean "The White Horse Peak," though the one is the Japanese and the other the Chinese reading of the same characters.

A good many years ago I explored the mountain by the northern route, only knowing it then as Ō Renge. I well remember the kind and unremitting attentions of a friendly little policeman, whom I met on my way from the coast; he forthwith took me in charge and never left me, night or day, for the whole week of the expedition. He wore a white drill suit, white cotton gloves many sizes too large, and carried his great two-handed sword even to the mountain-top. In our little shelter-shed at the bath house of the Renge Onsen (5000 feet up the north flank of Ō Renge) he made his bed on the bare board floor, but when my hammock gave way above, and I landed on him somewhat heavily as he lay snoring peacefully below, his only reference to the midnight interruption was a polite apology, *O jama wo itashimashita, i.e.,* "I am so sorry to have been in your honourable way." The Japanese Government subsequently began to issue (not necessarily, I hope, as a result of this experience) a series of police instructions for the public in country places and elsewhere, to guide them in their intercourse with the foreigner. Some of their precepts are worthy of mention :—

"No criticism should be made, either by gesture or words, regarding the language, action, or attire of foreigners."

"Foreigners are most sensitive regarding cruelty to animals, therefore special attention should be given to this matter."

"It should be remembered that ladies will not take off their hats" (there are no such things as *matinée* hats in



Fig. 1. Japan. Snow Ravine on East of Shiro-uma-dake.

Japan) "even in public places, and that it is the usual custom for a man and wife to walk the streets hand in hand."

"When a foreigner pulls out his watch and *looks at it*, you should think that he has business elsewhere, and that it is time for you to leave."

"It is a mistake to suppose that foreigners will always respond to an application for a loan of money."

From the highest point of Ō Renge, which I climbed from the north, my policeman friend and I looked down a steep rock-face falling sheer to a wild ravine filled with slopes of dazzling snow. Later on I learned it was possible to reach this ravine from the east, and it was to this task that Mrs. Weston and I applied ourselves at the end of our summer holiday in 1913. Our natural starting-point was Karuizawa, a popular "hill station" near the foot of the famous volcano of Asama yama, on the railway that runs from Tokyo across Japan to Naoetsu on the Japan Sea.

Near the station of Komoro, on the right bank of the Chikumagawa, the Buddhist temple of Shakusonji juts out from the face of a great cliff (like the *musharabiyeh*, the carved bow window, of some Egyptian palace): at its foot a lovely lotus pond was blooming in all its glory of pink and white. The train pierces and worms its way through and over a mountain barrier for six hours westwards, to the wide long plain of Matsumoto, and we were finally set down at the way-side station of Akashina. Here a sign-post on the platform tells us that this is the most convenient way of approach to the eastern outskirts of the northern Japanese Alps now rising before us. A handsome new inn now offers excellent accommodation, and the garden in early summer is a charming spot. From Akashina a native country 'bus, known as a *basha*, plies along the length of the plain northwards for a dozen miles to the finely placed little town of Ōmachi, between low hills on the right and the dark snow-seamed folds of the outliers of the main chain on the left.

This *basha* is a vehicle deserving of passing notice. It is a sort of cross between a hearse and an ambulance waggon, and the emotions it inspires, on a typical Japanese country road, are quite appropriate to either. Its speed, under favourable conditions, averages 3 to 4 miles per hour, and its employment, in those circumstances, always proved one of the fond delusions to which one at times so unaccountably clings.

I must confess that a *basha* usually needs a good deal of clinging to, for an average day's outing in its creaking and gyrating frame offers one of the most strenuous forms of exercise in which a person of robust frame and unimpaired nerves is, if unmarried, justified in indulging. In some districts the *basha*, however, is now being driven off the road by "European style" landaus and victorias, themselves superseded in Tokyo streets by automobiles.

Near Ōmachi, one of the big boys' schools was holding the function known as "Commencement exercises," so called apparently, because they always take place at the *end* of the summer term. The Japanese are not a warlike people, though so intensely patriotic; but the Japanese boy is familiarized with the idea of universal military service from childhood, and he is taught that his greatest glory consists not so much in fighting for his country, as in *dying* for it. For it is death in battle that will bring prestige, not to his own name merely, but, what is much more, to that of his family, and it is still the *family*, and not the individual, that is the unit of social life at the present day. Nevertheless, the increase of railway and steamship communications, of emigration, etc., by scattering the individual members, is slowly loosening the old family ties. The subject is a fascinating one, and the facts are bound to have far-reaching effects in the future.

Near the town of Ōmachi the upland plain widens for a while and here horse and man are baited at a good inn, the Taisan-kwan (literally, "Grand Hotel des Alpes"). A tall post at the main entrance tells us that this is "the chief climbing centre for the Japanese Alps." Ōmachi will probably one day become a Chamonix or a Grindelwald, and may then doubtless be fitly described somewhat as is another Japanese mountain town, of which I once saw an ingenuous railway advertisement declaring that "the principal occupation of its inhabitants is to feed peacefully upon tourists!"

Down the broad streets of Ōmachi run sparkling streams; the broad low house-roofs, with paper windows in the chimneys, like many in these Alpine regions, have their shingling weighted with boulders from the neighbouring river-bed. Beyond them, westwards, the snowy peaks of the Ō Renge or Shirouma range rise boldly. Over these the Harinoki-tōge, the finest pass in Japan, and the only one for 50 miles, leads across towards the city of Toyama, near the Sea of Japan.



Photo by O. M. Poole.

Fig. 2. Japan. Yari-ga-take, from the East.

As the hills draw closer on either hand the plain contracts and the road climbs up, passes two lovely lakes, Kizaki and Aoki, and at length reaches Yotsuya, a small village surrounded by mulberry plantations in a broad plain traversed by the waters of the Matsukawa. It was the silkworm season, and during the whole night long the landlord and his family were kept busy feeding the *O ko sama* ("the honourable little gentleman," as the precious worm is entitled). The noise of the nibbling myriads, on their bamboo trays, arranged in tiers in every available space outside our room, was exactly the noise of the scratching of pens in a university examination room. The only interruption to their operations that night was the louder but momentary uproar caused by an alarm of thieves, and the crashing of doors and windows as a burglar made his escape after a futile attempt to appropriate some of our baggage left in a ground-floor room.

Our actual start for Shirouma was delayed by the late arrival of our coolies. They had been busy celebrating, with *sake* and song, the festival of the *Ni-hyaku-tōka*, "the 210th day." This is regarded as the most critical of the whole year for the rice harvest, and the gods are then supplicated for good weather. It is a sort of Japanese St. Swithin's Day, and, if fine, is expected to betoken a favourable season for the forthcoming harvest.

The route to Shirouma leads due west, crossing the wide swift current of the Matsukawa, and mounting along the right bank of the main stream through a dense forest-clad valley, till we reach the tongue of the great snow ravine by which the final ridge of Shirouma is attained. This was the ravine on which years before I had looked down from the top of Ōrengē. On the left bank of the snow-slope we found the little shelter under a wedge of rock which is now used by the hunters of the district. This bivouac lies 5000 feet above the sea, and from it the following day we made the ascent, leaving a coolie behind to guard our provisions against possible bears and other roaming beasts in search of food. Each of our men carried a primitive kind of ice-axe and a pair of the native *crampons* known as *kana-kanjiki*.

The actual ascent, including halts, took about five hours. We rose the first 2,500 feet of altitude up the snowy ravine, whose surface is here and there seamed by crevasses, sometimes lateral but usually transverse. Near the head of the

ravine, on the left, rises the triangular top of Shakushi-dake, and on the rocky slopes above the snow bloom Alpine flowers of every hue and kind. It is probably the richest spot in the whole of Japan for the variety and abundance of its Alpine flora. The rocks of the ravine itself are supposed to show traces of glacial action, but in my two ascents of the mountain I saw very little to justify the attempts that were made some years ago to give proofs of such a phenomenon. Above the flowery slopes we mounted to a saddle on the main arête and gained the top of Shirouma northwards, over broken rocks thinly carpeted here and there with low-growing *goyo no matsu*, a kind of creeping pine. The height of the peak is nearly 9,700 feet, and the prospect it commands is one of the most extensive in the whole of the Empire. For this reason it enjoys, with Hodaka, of which I shall presently speak, the distinction of the formal title of *Ittō* or "first class" bellevue.

These two, however, are not the only peaks dignified with an official title to fame. As far back as a thousand years ago the Japanese authorities, probably alarmed by the violent behaviour of a certain active volcano in Southern Japan—which I ascended and described some twenty years ago—bestowed upon it the order of the "Junior branch of the 4th rank," which is very much like awarding to Vesuvius the Italian equivalent of a D.S.O. But whether this was to keep him quiet or actually to commend his behaviour under fire is not actually recorded.

Our next expedition of importance was the exploration of a fine mountain lying 30 miles due south of Shirouma, which rejoices in the title of *Ōtenjō-dake*, "The peak of highest heaven." Our natural starting-point was once more Akashina, in the Matsumoto plain, which we traversed for 8 miles westwards in jinrikisha and on foot to the mouth of the Nakabusa valley, which, as yet, no foreign traveller had ever penetrated.

At the hamlet of Miyashiro stood a Shinto shrine dedicated to the god Hodaka-yama. This divinity is said to reign over wind and storm, and in times of drought is approached with propitiatory rites known as *amagoi*, "intercessions for rain." Fires are lighted and guns discharged to compel her attention and induce her to quench the desecrating flames with the needed showers. The only available accommodation was at the house of the chief priest. Though he had never before seen a foreign visitor he received us kindly and gave us a



Photo by O. M. Poole. . . . Fig. 3. Japan. Hodaka-yama, from Yari-ga-take.

charming room overlooking a pretty garden. Half hidden in the azalea bushes and irises, the waters of a noisy cascade fell into a little pool with ceaseless roar. A chance remark on this, as offering a somewhat violent lullaby, produced unexpected results. During the midnight hours the noise suddenly ceased, and we awoke to see dark forms moving to and fro across the garden. Our host had turned out of bed to divert the water into a remoter channel to ensure our repose!

Our actual starting-point for Ōtenjō was the *onsen* of Nakabusa, which lies, as do the majority of these Japanese Alpine hot springs, at an altitude of 5,000 feet. The situation of some of them is most picturesque. This one is approached by a valley of surpassing and romantic beauty. A well-made track, here and there supported on struts of timber on the side of granite crags, winds in and out through dense vegetation, with the flashing green waters of the torrent of the Yu-gawa often 500 feet sheer below us. Above tower the extraordinarily steep cliffs of Ōtenjō on the right bank, or of Ariake-San on the left, 5,000 to 7,000 feet.

On a second visit to this "enchanted valley" we found that as a result of our praises of its beauty, the worthy landlord of the *onsen* had been inspired to put up signboards at suitable spots for the benefit of future prospective European visitors, to draw attention to the views, *e.g.*, "*Byobu magari*.. From here it is 5 miles to Nakabusa; far and away up in the sky can be seen the peaks of the Japanese Alps." Nakabusa itself stands at the end of the valley in a *cul-de-sac* about 20 miles from Akashina, and almost completely shut in by dark wooded heights. Except by the way we have come no exit is possible but over precipitous ridges 7,000 or 9,000 feet in height. During our stay we explored all the principal peaks that rise above Nakabusa, but on the details of these, though wholly new to foreign travel, I have not now time to dwell.

The waters of the *onsen* abound in sulphur and carbonic acid gas and leave the source at a temperature of 200° Fahr. The water is wholesome both for internal and external use.

Excellent quarters had been hurried to completion in honour of our visit, and the good proprietor also pointed out with pride one special spring of whose radio-activity a Government analyst had assured him, arousing hopes of unbounded usefulness and wealth.

The accommodation for the public is varied. We ourselves

were given an excellent room, and during our stay a special bath was set aside for our use with the open-work lattice carefully papered to keep out prying eyes. The precaution was not unneeded. In the public baths the customs were different. The division of string or bamboo often stretched across the bath tanks, as a concession to foreign feelings in the larger towns, with the legend, "This side for ladies, that for gentlemen," was not here to be found. The only annoyance we suffered was afforded by certain specimens of the student class—whose rowdiness made night hideous to all within earshot, and whose rudeness to a foreign lady in such surroundings is sometimes one of the most unpleasant incidents of travel off the beaten tracks.

From Nakabusa with our mountain coolies we climbed for four hours up precipitous forest-clad slopes to the crest of the granite ridge at 9,000 feet, that runs parallel to and on the east of the main chain of which the sharp arrowhead of Yarigatake is the culminating point. As far as the eye could reach stretched a confused sea of mountain ridges, from 8,000 to nearly 10,500 feet, wave after wave, with densely tree-clothed flanks. Their crests here and there rose bare and gaunt—excepting where the low branches of the creeping pine spread a thick cushion, often thick and close enough to walk over without great difficulty. The slope is barer and more gentle on the west; that on the east is extraordinarily steep.

The ascent of Ōtenjō involved a series of ups and downs along the ridge for over four hours, and the final peak rose abruptly from a wild and shattered gap from which a great landslide had fallen at no distant date. The highest point is of granitic gneiss, nearly 9,700 feet, and we bivouacked for the night in a hole burrowed out on the south arête about 1,000 feet below the actual crest.

From here we made a descent to Kamikōchi, a splendid expedition of about ten hours. The prospect as we started at dawn revealed on the west the magnificent ramparts of the Yarigatake-Hodaka ridge running north and south, while beyond the shoulder of the pyramid of Jōnen-dake, one of my earliest climbs, the graceful cone of Fuji suddenly appeared nearly 100 miles away; on the north the Sea of Japan lay shimmering in the sunlight 50 miles distant.

The descent leads southward along the ridge and then abruptly drops down its western flank by slippery watercourses

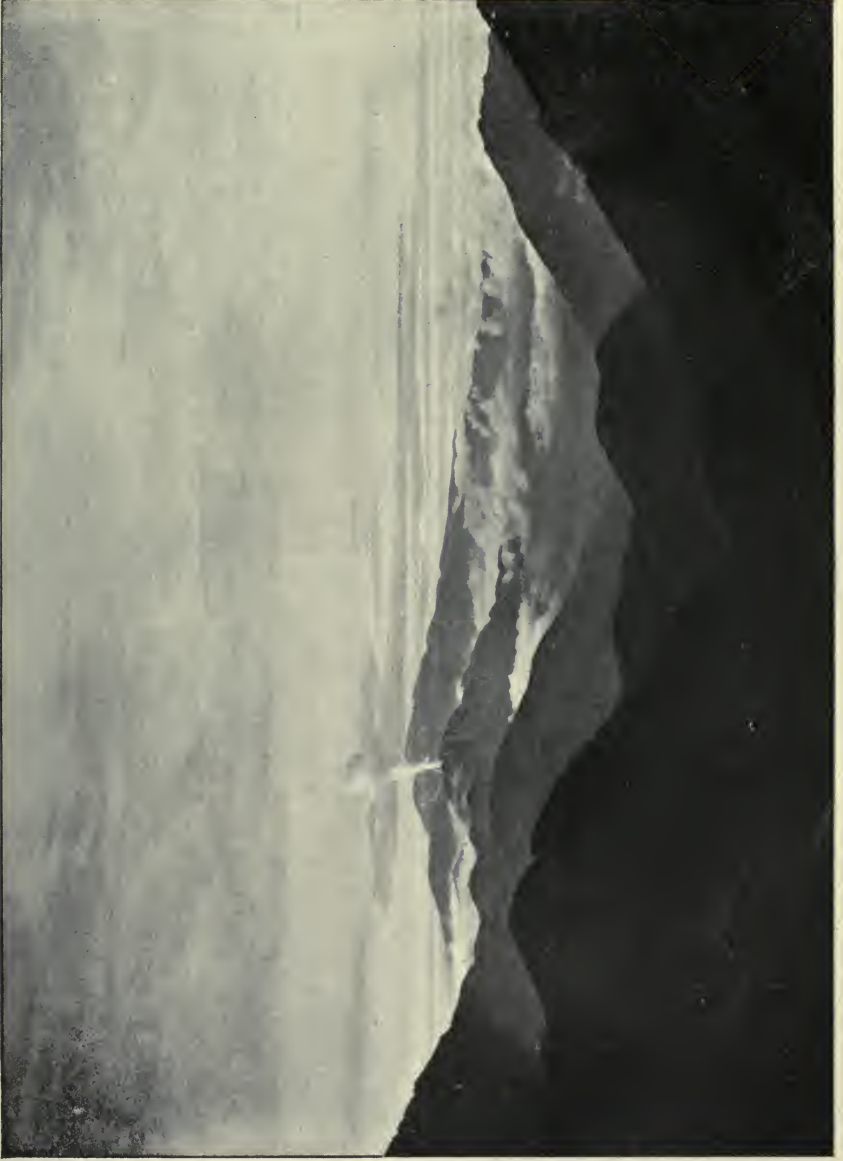


Fig. 4. Japan. Yare-dake and Norikura, from Yari-ga-take.



and the broken granite boulders of the torrent beds. In the Ninomata, one of the two main sources of the Adzusagawa, a great landslide scars the red granite cliffs and has dammed the green waters into a lovely emerald lake whose still surface mirrors every single bush and tree with crystal clearness. High up, on the left, as we climbed over and among the mighty boulders of the torrent bed or forced our way through the dense vegetation, the dark sides of Cho-ga-dake rose forbiddingly. On this "Butterfly peak" some time ago our hunter coolies found the body of an outlaw whose native villagers had expelled him from their midst for his persistently wicked deeds. In some of those far-off hamlets some form of mutual discipline is often needed to enforce order for the common good; and, as in this case, it was usual for incorrigible evil-doers when their crimes became unbearable to be presented with their birth certificate, to see their name erased from the village roll, and themselves driven from the commune never to return.

Few things are more interesting and curious than the traditions of ancient custom and internal administration in some of the remoter hamlets of Alpine Japan. One I have seen where the heads of households are all women; it is called *Onna taka*, "The Woman's Hill." It is stated that should a mere man outsider venture to marry therein, his days are fated to be few and full of bitterness and woe. The rule there is one of a heavy hand as well as of a sharp tongue. Sometimes a village is famous or notorious as *Kaka-denka*, *i.e.*, literally, "a woman's throne." It usually indicates a masculine spirit housed in a feminine form. The most notable example of this I have met with happens to be a village where the good wife of the excellent inn is the most charming Japanese lady I know. She told Mrs. Weston and myself, however, in a moment of confidence, that she was regarded by the rest of her family as in every sense their *enfant terrible*, or, as she herself put it, a "regular devil."

The fact is that, for obvious reasons, the woman, who in remoter Japan bears her full share of life's burdens, plays, in some ways, a more important or at least more active part in household affairs. It is somewhat singular that such a people can apply to her the engaging titles by which a Japanese husband usually denotes his spouse when speaking of her to others in formal intercourse; he employs terms such as

(literally interpreted) "*my stupid wife,*" or "*the thing which lives in the back part of the house.*"

The Ninomata joins the main stream of the Adzusagawa some 4 or 5 miles south-east of the foot of Yarigatake, and our crossing of Ōtenjo was successfully accomplished as we followed its great bend round the broad base of Hodaka, past the foot of the Tokugo-tōge, finally pulling up at the familiar *onsen* of Kamikōchi, now the most famous and frequented of all the resting-places of those travellers who come to pay in yearly growing numbers their homage at the shrine of the divinities of Yarigatake, Hodaka Yama, or their attendant satellites.

Kamikōchi lies near the foot of the great granite ramparts and spires of Hodaka-yama, 5,000 feet above the sea. During the course of many visits since first I traversed the region twenty years ago its fascination has grown, and with Mrs. Weston or alone I have explored all the peaks and valleys for which it is the natural starting-point. Of these expeditions I have chosen as the most deserving of your notice the ascent of the highest of the Hodaka group, which I first made, alone, in the summer of 1912, in storm, and repeated in sunshine in the following year, with Mrs. Weston as my companion.

Our leader, on nearly every occasion, was the famous old bear-hunter, Kamonji Kamijo, with whom I have made most of my climbs in this romantic region. Kamonji is a remarkable character, and though at times his aspect is that of a good-natured and intelligent gorilla, his behaviour is always that of a man; those who have ever heard his weird laughter and observed his simian agility, even at sixty-three, upon a mountain-side, will never forget his quaint personality. He occupies a little hut at the base of Hodaka, where in summer he fishes for trout in the dark meres hard by, or matures his plans for stalking the bear and chamois that engage his winter activities.

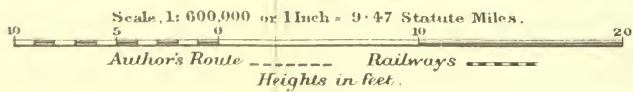
Our start was an early one, for the ascent is long and strenuous. A clear crescent moon with upturned horns was sailing across the gateway of the hills, purple shadows filled the valley and grey mists rose from the bed of the Adzusagawa, while above the tops of the tall pines white bands of cloud hung motionless. Heavy dew fell in showers from every leaf as we pushed through the rank vegetation, and we



THE NORTHERN JAPANESE ALPS

to illustrate a paper by the Rev. Walter Weston.

Reproduced by permission
from
THE GEOGRAPHICAL JOURNAL, 1915



were soon so soaked that the fording of the streams on our way to the foot of the mountain failed to make us wetter.

At a height of 6,500 feet we found quantities of luscious black currants growing wild in the forest, and as we emerged from this our course lay for some distance up the Shirasawa, a ravine filled with broken boulders hurled down in confusion from the surrounding cliffs. The ascent of this river of rock was tedious enough until we found we were not making it alone—for, only 300 yards ahead, we suddenly espied the unwieldy form of a magnificent black bear lurching along towards the cliffs on our right. Above the rocks came a long slope of hummocky wind-blown snow, with here and there a *moulin* in full work; and this at length ended in a huge bergschrund fully 50 feet deep at the foot of the rock-face up which our further way must lie. The climbing was of a high order of interest and exceedingly strenuous, till at length we reached the upper part of the granite wall from which the summit rises. Here it eased off a little, and the top, 10,200 feet, was reached without further difficulty.

The main mass of Hodaka is a gigantic horseshoe of granite cliffs, and it is the central point that forms its apex. Even up to the very top Alpine flowers abound—soldanellas, white anemones, gentians of various kinds, and the invariable *Potentilla gelida*, whose cheerful little yellow bloom I have now found on the actual summit of nearly every one of the highest peaks of the Japanese Alps. The climb had cost us seven hours of hard work and resolute perseverance, and Kamonji's delight at conducting his *Okusama*, his "honourable mistress," thither was as pleasing as it was sincere. It was the first time a lady climber had gained any such distinction in the Japanese Alps, and what legends may not hereafter be woven around the achievement it is impossible to predict.

The most striking feature of the wide prospect from the top is undoubtedly the serpentine windings of the great wall that connects the granite battlements and towers of Hodaka with the mass of igneous rocks that suddenly throw up the sharp arrowhead of Yurigatake—10,430 feet. On either hand rugged flanks fall down steeply to densely wooded torrent ravines, the home only of the bears and chamois, wolves and boars, in which the region abounds. The sole object that marked any movement was the delicate column of pearl-grey

smoke that rose in the still air from the active crater of Yakedake, about 8,500 feet, the highest active volcano in Japan. Its outbursts are connected with those of Asamayama, 50 miles to the north-east. On our return to Kamikōchi from the ascent of Hodaka we had a visit from Dr. Omori, the Professor of Seismology at the Imperial University. He told us that his observations during a number of years show that there is an alternation of eruptions quite mathematical in its regularity, proving that there is a sort of subterranean connection of hidden volcanic fires between the two mountains.

The reluctant escape from Kamikōchi to the outer world may best be made either by traversing the pass of Tokugo and down the ravine of a tributary torrent of the Adzusagawa (the river on whose banks the *onsen* stands), or by following the wooded slopes that in the main rise high above its right bank. The latter is the longer and more arduous route, but it is the more picturesque. Close by Kamikōchi it passes the Tashiro-ko, a secluded mere, whose waters mirror the surrounding cliffs in their still, untroubled surface. Some hours further on the *onsen* of Shirahone lies in a secluded hollow at the foot of the massive, double-topped, extinct volcano of Norikura. It has been in the possession of the Saito family, its present owners, for over three hundred years. A good road is gradually approaching it from the east, and it is along this that the way lies to Matsumoto, one of the chief towns in the province of Shinshu, famous for its silk trade. A magnificent defile, in many places reminding one of the valley of the Derbyshire Derwent at Matlock, but on a far grander scale, finally opens out towards the Matsumoto plain at the village of Shimajima. From here the railway station of Matsumoto may be gained in a *basha* ride of some 13 miles.

In closing this paper, I should like to repeat my conviction expressed nearly twenty years ago, that Japan, for the traveller who knows where to seek it, is still that Japan in which the twentieth century joins hands with the tenth. The Japan most of you are familiar with, in its up-to-date adoption (for the purposes of adaptation) of the most modern civilization, is the Japan of the "globe-trotter," whom want of time or of inclination detains in the beaten tracks and the beautiful show-places exploited for his especial benefit. It is the land of those amusing fictions, "that its flowers have no scent, its birds have no song, and its children never cry." But in those

regions I have during the last twenty years explored and attempted to describe you find yourself transported back nearly one thousand years; with human nature, and, for the most part, human ways, still almost what they were before the Normans invaded England.

There is one spot above all others (in every sense) where those far-sundered centuries meet—the loftiest height in the land of the Rising Sun, the summit of Fuji San. By the side of the most sacred shrine on that most sacred summit, at a height of nearly 12,400 feet, where there is worshipped one of Japan's most august divinities, there stands a post-office, from which the summer tourist sends his picture post-cards for a halfpenny to the remotest regions of the empire. There, outside the most modern of meteorological stations, you may find nearly every summer morning at early dawn the shivering form of some aged pilgrim, who has at length gained the loftiest goal of his heart's desire—to be able, from the eastern edge of the crater lip, to clap his wrinkled hands in invocation and bow his head in humble adoration to the Rising Sun.

NOTE.—The map to illustrate this paper is based on the latest maps of the Topographical Survey of Japan, and the new large scale ($1/50000$) map of the Imperial General Staff, published in 1913, with some alterations and additions. The former is beautifully drawn and engraved, but needed many corrections in the mountain regions. The latter is extraordinarily detailed, but it is not well printed; unfortunately, owing to the fact of all the names being printed in Chinese characters, it is almost useless to the ordinary European traveller, and many of the names are often unintelligible to the average Japanese. It is, nevertheless, a fine production, and represents a great deal of careful labour carried on for a considerable period.

GLIMPSES OF CEYLON.

By A. SEDGWICK BARNARD, M.I.E.E., A.M.Inst.C.E.

(Notes from a Lecture delivered to the Society on Tuesday,
November 23rd, 1915.)

I THINK I am voicing no uncommon experience when I explain that my residence of rather more than four years in the Island of Ceylon convinced me that the average European, if he is to talk about that country in a really comprehensive and authoritative style, must either devote a lifetime to the study, or must limit his stay in the island to a few weeks or months at the most. I shall not, therefore, attempt to give you much account of the history, anthropology, ethnology, or any other of the "ologies" of this, the premier Crown Colony of the British Empire; but rather I shall try to interest you for a short time in some of the natural beauties, and other features, that came within the scope of my own very limited experience of the island.

According to "The Ceylon Manual," the derivation of the name "Ceylon" and its native equivalent "Sinhala" is uncertain, though "Sinha" means a lion. Lions, however, and even tigers properly so-called, are at the present date unknown in Ceylon. There is an Arabic form of the same word which gives the name "Serendib" or "Lion Island," but in the classical language of India, as in the everyday native use in Ceylon, the island is called "Lanka." Yet another, and probably the oldest name, is "Tamraparni,"—oldest, that is, if we except the hoary tradition that Ceylon is really the Garden of Eden, and that Adam's-Peak carries the footprint in stone of the common ancestor of Sinhalese and Britisher alike.

I need, perhaps, hardly remind you that Ceylon is situated at the southern end of the Indian peninsula, between the Indian Ocean and the Bay of Bengal, and lying from 6 to 10 degrees north of the equator. Shaped somewhat like a pear, the lesser, or northern end, is separated from India by a

channel only about 40 miles wide, and this is almost bridged across by the Island of Mannar and a series of coral reefs called Adam's Bridge. This natural causeway, attributed by tradition to Hanumann and his army of monkeys, has within the past few years been utilised as the foundation for a fine railway-viaduct, by which the railway systems of India and Ceylon are nearly united. The Paumben viaduct of 145 spans of 40 feet, and a lifting bridge of 225 feet clear span, together with the railway works in connection, were opened for traffic in February of last year.

Ceylon is 270 miles long and 140 miles wide, and in area it is about equal to Belgium and Holland together, or about three-quarters the size of Ireland. It consists chiefly of undulating plains, surrounding a mountainous district which rises abruptly from the low country in the south-west, and covers an area of about 4,000 square miles. Across the central plateau of this district, from north to south, there runs a range of mountains reaching at one point an altitude of 8,290 feet.

There are three harbours on the coast of Ceylon, that at Trincomalee on the east being a magnificent land-locked harbour which, until some ten or fifteen years ago, was the headquarters of the East India Squadron. It is unfortunately on the least accessible, as well as the least fertile and populous side of the island.

Galle harbour, or as it was generally called Point de Galle, on the south, was for many years the port of call for all vessels plying from England to India, Australia and the Far East; but it was a very dangerous port and has now entirely fallen into the background with the development of the new and commodious harbour at Colombo.

None of the rivers are navigable by ships. The largest is the Mahaweli-ganga, which covers over two hundred miles in its course from the mountains to the sea near Trincomalee.

Ceylon lies directly in the path of the south-west and north-east monsoon currents, and these, together with the range of mountains I have already mentioned, form the controlling influences in the climate and rainfall of the island. There are, roughly speaking, two seasons, known as the south-west or "big" monsoon, and the north-east monsoon. During the former the rainfall is usually best described as "tropical," and is frequently accompanied by terrific thunderstorms. In this monsoon the rain falls chiefly in the south-

west part of the island, whereas in the later, or north-east monsoon, it is more equally distributed.

The mean annual temperature of the sea-coast and low country is about 80 degrees Fahrenheit; while up-country, at Newara-Eliya, it is 58 degrees, and during the cold season the temperature occasionally falls to freezing-point. The rainfall is equally variable, averaging 30 to 40 inches per annum in the north-west and south-east, and as much as 200 inches in the interior.

The traveller from Europe, approaching Ceylon from the south-west after a week or ten days on board ship without sight of land, and with a memory of the arid deserts of Arabia and Egypt as the last land left behind, is naturally captivated by the beauty of the island, with its fringe of graceful palms almost dipping to the surf and breakers of the coral-reef that surrounds its southern shore. (See Fig. 1.) Everywhere the luxurious green of the tropical vegetation, the rich dark red of the cabouk roads, and the glorious colouring of the flowering shrubs and trees, make an arresting contrast to the monotony of the Indian Ocean with its set smile left behind. As his vessel enters the harbour of Colombo, he cannot fail to be impressed with its capacity and importance. With an area of 680 acres, protected by magnificent breakwaters, and with a depth of 30 feet at low water for nearly two-thirds of that space, it is natural that Colombo harbour has become a port of call of the greatest importance for almost all the lines of steamers running to the East and to Australia. The harbour-works were commenced in 1875, and though the main breakwaters were nearly completed when I left the island, I do not suppose that the whole of the construction work is even yet accomplished. During the prevalence of the south-west monsoon immense rollers come up from the Indian Ocean which would render the harbour untenable but for the magnificent breakwaters. It is an impressive sight to see such a roller spending its force in rearing a tremendous mountain of water behind which the ships ride safely at anchor.

Colombo harbour was not always in the possession of the British. In the sixteenth century it was occupied by the Portuguese, who erected a fortified town, of which they were dispossessed by the Dutch in 1656. This town was evidently built with a view to the strength of the position between the

lake on the one side, and the rocks forming the base of what is now the breakwater on the other. The most ancient quarter is the native bazaar, or Pettah—Pettah meaning in Tamil the extramural suburb of a fortress. During the Dutch occupation one district was inhabited by slaves. These at some later date revolted, and were driven by the Dutch to live on a large island in the lake, still known by the name of Slave Island.

In 1796 the Dutch gave way to the British, since when the town of Colombo has grown and developed in importance. The fortifications have practically disappeared, though the great business centre of the town, including the Governor's residence, the Treasury, banks, and chief business premises, still retains the title of "The Fort." Inland, a new district known as the Cinnamon Gardens has sprung up, where are the residences of the European and wealthier native communities.

On the open sweep of country on the seashore south of Colombo, known as the Galle Face, there are several fine buildings, such as the Galle Face Hotel, the Colombo Club, etc. Colombo possesses a fine museum, erected in 1877 during the Governorship of Sir Wm. Gregory, whose statue is erected in front of the building.

In Ceylon the railways are owned and worked by the Government, and have their headquarters in Colombo. From there a railway line runs southwards to Galle and Matara along the very edge of the sea-shore. So perilously close to the sea is it, that during the south-west monsoon it is by no means unusual for portions of the line to be washed away and buried in the sand. The line runs for many miles through beautiful groves of coconut palms, and about seven miles south of Colombo there is a well-known hotel at Mount Lavinia. This hotel, originally built by a Dutchman as a residence for his wife, was later adapted by the British for the accommodation of Arabi Pasha, during his enforced sojourn on the island as a guest of the Government. One of the chief attractions of the Mount is the excellent sea-bathing, to which a spice of adventure is sometimes added by the report of a shark having shown his fins within the little bay. As a matter of fact I believe that the sharks never come within the outer coral-reef which skirts the shore along the south-west coast of the island, but other visitors do occasionally appear. I remember witnessing here the capture of a good-sized turtle

that had been driven in by heavy seas, and was unable to make his way out again against the breakers. A crowd of excited coolies watched his floundering about, and when at last a big wave brought him within a few yards of the shore, four of them rushed into the water and caught him by his flippers, and bore him in triumph into the hotel kitchen. We met again at dinner in the evening and our acquaintance, though necessarily brief, was of the pleasantest so far as I was concerned. (See Fig. 2.)

The little village adjoining the hotel is chiefly dependent upon sea-fishing and supplies a large quantity of very excellent fish to the Colombo market. It is most interesting to watch the skilful way in which the Sinhalese fisherman will bring in his rather clumsy boat on the crest of a wave, leaping through the shallows of the coral-reef, and running the boat up on to the sand—to be dragged up high by an eager crowd of his fellow villagers. These fishing boats are fitted with a peculiar outrigger which is a distinctive feature of the Ceylon canoe. These canoes are frequently, but wrongly, termed catamarrans. True catamarrans are to be seen in Colombo harbour, and consist of roughly shaped logs of wood on which little native boys paddle round the passenger steamers, singing “Ta-Ra-Ra-Boomeday,” or something equally English (probably nowadays “It’s a long way to Tipperary!”), to induce passengers to throw coins into the water; for which they promptly dive, with invariable success.

The Ceylon outrigger, however, is a much more skilfully designed boat, with a deep, if narrow, well; and it is really well adapted for its purpose as a fishing-boat, and is thoroughly seaworthy. The long beam at the side keeps the boat upright even in very rough weather; and in a gale it is customary for one or more of the crew to climb out onto this beam so that his added weight may increase the stability. This has led to the classification by the natives of gales of wind as “one man,” “two man” or “three man” gales, according to the number of men required on the outrigger to counterbalance the pressure of wind on the sail.

Pleasant as it was at the Mount Lavinia Hotel, I naturally lived for the most part in my own bungalow. My first bungalow in Ceylon was on the main road from Colombo to Mount Lavinia, surrounded by coconut palms, and within two minutes of the sea, which was separated from the road



Fig. 1. Ceylon. Cocoa Palms on the South-West Shore.



Fig. 2. Ceylon. The Beach at Mount Lavinia



only by the railway and a grove of coconut palms. Two very pretty king-coconuts formed a natural arch over the entrance, and for the large sum of twelve rupees per month (or about ten pounds per annum) a native gentleman kept my compound, or garden, in a state of artificial beauty. He was an interesting man, by name Samuel, a Tamil who had come from the over-populated districts of Southern India to make his fortune in Ceylon, leaving his wife and children behind, and remitting money to them as opportunity offered by the return of one of his brethren to their native land. Among other things he was a Christian, which in this instance means that he was attached to the Roman Catholic Mission. This had drawbacks and advantages. Being a Christian, he naturally wanted more or less of a holiday on Sundays, though this made no difference to his taking advantage of all the multitudinous Buddhist, Hindoo and native festivals. On the other hand, not being a Buddhist, it fell to his lot to be public executioner. Whenever the lady of the house wanted a chicken killed for dinner, or the master found a snake, Samuel it was who gave the *coup-de-grace*, though the other servants were not above watching him do it.

Of Samuel's fellow-servants, the two ricksha coolies were Sinhalese, or natives of Ceylon, as also were the two Ayahs. The Sinhalese do not wear the elaborate and imposing turbans of the Tamils and other Indian servants, but content themselves with a handkerchief round their head, or at the most a Fez cap. They are rather an effeminate race of men, and of distinctly feminine appearance, with long black hair, and flowing white skirts, or "comboys."

I have several times spoken of the Sinhalese, and it is worthy of note that this people, though of Aryan extraction, and originally coming from the North of India, is peculiar to Ceylon, or Sinhala. They form the bulk of the population, and talk their own language which is closely akin to Sanskrit. The large majority are Buddhists, though there are many Christian converts, chiefly like my garden coolie already mentioned, attached to the Roman Catholic Church. They are natural fishermen and cultivators, with some few minor industries, such as wood-working, carving, and lace-making, which last still flourishes, particularly at Galle. The lace is very popular among European visitors to the island, though it is hardly as fine or valuable as that made in some parts of

India. The Sinhalese wear their hair long, and another minor industry of some importance is the manufacture of elaborate haircombs, some of which are veritable works of art, in real tortoise-shell, and often of considerable value. They vary in size and shape with the wearer's rank and caste. The Buddhist priest, however, shaves his head and wears no comb, but carries a palm-leaf fan to protect his eyes from the allurements of this world. His robe is of yellow, the shade varying from a very crude saffron or chrome to a deep orange, according to the stage that he has reached in progress through the long drawn-out education of the priest. As a novice he would enter the service of the Temple at about eight years of age, and would have to take upon himself three vows:—Chastity, Poverty, and Obedience. The vow of poverty is very strictly observed, and the priest is allowed to possess eight articles only, viz., three strips of cotton cloth, forming his robes; a girdle; an alms-bowl; a razor; a needle; and a strainer through which to strain the water that he drinks. The fan, being a palm-leaf of no value, is presumably not counted in the inventory.

As a contrast to the closely-shaven priests, there are the grotesque Sinhalese devil-dancers. The devil-dancer occupies an intermediate position between a physician and a priest. His services are called for in cases of sickness to exorcise the evil spirits, and the noise that he and his attendant tom-tom beaters make might certainly be expected to kill or cure the patient. Devil-dancers are also in evidence at all feasts, marriages, and similar jollifications.

Of the native population of Ceylon there is a small element of considerable interest formed by the "Veddahs," or hunters. These are supposed to represent the pre-aryan aboriginal inhabitants of the land, and they seem to be akin to some of the hill tribes of India. They speak Sinhalese or Tamil, according to the neighbourhood where they dwell; and their chief industry, if it can be called such, is hunting or fishing. They are very primitive in all their habits, and mix sparingly with their neighbours of other races. From the colonist's point of view probably the most important of the native races is the Tamil. The Tamils are immigrants who have found their way from Southern India, either in past centuries as invaders and conquerors, or in later years as peaceful workers in search of employment on the coffee, tea, and rubber estates.

They are altogether a robuster race than the Sinhalese, and their labour is much sought after on the estates, and indeed their immigration is carefully fostered and encouraged by the Government of the island.

While there are a certain number of horses in Ceylon the Sinhalese make more extensive use of bulls for draught purposes than of anything else. These little bulls, which are shod like horses, are very nimble on their feet and with a light hackery will travel at a really respectable pace. The driver does not use a whip but prods the animal from behind with a stick, or with his toe, and depends upon his voice to do the rest. The heavy goods carts are drawn by one or two bulls, and are used for all the goods transport by road throughout the island. The carts have no springs, and the bulls are yoked to a pole by a heavy cross-piece, the cart being covered with a tilt or roof of cadjans—the dried and plaited leaves of the coco-palm. These carts meander along the roads at a pace of about two miles per hour, swaying from side to side with the awkward motion of the bulls, and grinding the roads to powder with the sideways movement of their wheels. They may be picturesque, but they are certainly less efficient than the fearsome things of steam and petrol which make life hideous on some of the main roads of Lancashire. All the same, the Colombo bullock-cart drivers are an important power in the land, and I remember seeing as pretty a strike carried into effect by these gentlemen as ever was managed in Lancashire. The Town Council of Colombo had been much exercised over the problem of controlling the traffic in their streets, and they issued sundry new bye-laws with a view to improving a somewhat haphazard and disorganised state of affairs. Among other things they ruled that the driver of a bullock cart should always walk by his bulls, and penalties were prescribed for the driver who should be found to be riding in or on his cart. Now the favourite position of a driver is sitting on the pole between or behind the bulls, with his legs dangling in the air, for there his ruminating mind is free from disturbance by any thought of foolish hurrying people who may wish to pass his cart on the road. There he can slumber peacefully, lulled by the rhythmic swaying of the cart, and automatically prodding his bulls or twisting their tails to prevent their coming to a dead standstill. This bye-law liked him not. He said little, but on the morning that

the new rule was officially supposed to come into force, not one of the drivers went to work. The residents in the fort, the shopkeepers and merchants, looked in vain for the long strings of carts that should be plying to and from the customs houses and harbour. Business came to a standstill, and in (I believe) about forty-eight hours the offending bye-law was amended, and Colombo breathed again. The rights of custom immemorial were vindicated, and the drowsy bells began to tinkle, and the carts to creak and grind, as they had been doing for centuries before Town Councils or bye-laws came to trouble the placidity of a tranquil-minded people.

The Ceylon railways embrace engineering features of unusual difficulty and magnitude. On the main line, from the low country to the hills, for instance, the 5 ft. 6 in. gauge railway is carried to an altitude of 6,225 feet above the sea level, which, though it would scarcely be noteworthy in the case of a narrow-gauge line, is a record height for such heavy traffic as is carried on a broad gauge railway. Everywhere along the line, as it rises from Colombo to Kandy, the scenery is a revelation of beauty. The train crawls and burrows round and through the mountain corners, on ledges cut in the face of rocky precipices, overlooking miles of luxuriant and virgin jungle, in which a herd of elephants might roam unseen. Here and there the eye is caught by a terraced patch of brilliant green, where a native irrigator has turned to advantage one of the innumerable little streams that trickle down the face of the cliff. Jutting out from the dense and mysterious forest are fierce and rugged shapes of rock, and over all the heavy stillness of the land that has yet to learn the priceless value of the crowding factories and their attendant pall of smoke.

During the monsoon, when the mountain streams are liable to be swollen in an hour into veritable torrents, the danger of landslides or detachments of rock-masses is such that constant and diligent watch has to be kept along the line, and many a picturesque rock as it shows signs of breaking away is blasted from its foundation before it shall come crashing down to block the all-important artery of the land.

It must not be imagined, however, that all the noteworthy features of the line have been removed. In the 160 miles of line between Colombo and Bandarawela there are hair-raising thrills in plenty yet remaining to be experienced, and the



Fig. 3. Ceylon. A Tree Fern at Hatton.



Fig. 4. Ceylon. "Grass-clad Humps and Hill-sides" of Bandarawela.

grandeur of the mountain views is too big a thing to be affected by the removal of a few odd masses of rock which in the past have arrested the attention of the photographer.

At an altitude of about 1,500 ft. above sea level there is a branch line running into the historic little town of Kandy. This is the ancient mountain capital of the island, and with its dependent provinces, Kandy retained its independence for nearly twenty years after the British took possession of Colombo. Even to this day the Kandians are to some extent a race apart, having their own system of chiefs and peculiar marriage laws duly recognised by the Colonial Government. The town itself is unusually picturesque, with a beautiful lake formed by an ornamental bund, or dam, across a stream, a tributary of the Kelani-ganga which runs through the valley below.

Overlooking the lake is the quaint old Buddhist "Temple of the Tooth," with its pierced parapet wall and "broken-back" roof which are distinctive features of Kandyan architecture. Jealously guarded in this temple is what is claimed to be a tooth of Buddha, a relic which unbelievers assert is either a piece of carved ivory or the tooth of a cow. This is brought out and shown to the multitude at certain great religious festivals, but at all other times securely hidden away in case within case of gold and silver, and watched over by the priests of the temple. The temple contrasts very well in its simple and artistic lines with what to me appears to be the over-decoration and almost tawdry ornamentation characteristic of the Hindu temples.

I have mentioned the Kandyan Chiefs, and they always arrest attention by the gorgeous, if cumbersome, robes they wear on state occasions. Various attempts had been made to modify the powers of the native chiefs or headmen by the Dutch Governors of the island, who at one time instituted a system of Dubashes, to whom the collection of taxes, customs and other revenues was farmed out. These men were for the most part Moors, Parsees, and Chetties from the coast, who have been described as "enemies to the religion of the Sinhalese, strangers to their habits, and animated by no impulse but extortion." Eventually, in 1797, the Sinhalese were exasperated beyond endurance and rose in revolt. When, in 1815, the Kandyan Provinces were brought under the British dominion the old native feudal system, or at any rate

a near approach to it, was reverted to, and though this did not immediately prove successful in operation, yet ultimately it has been retained as the basis of the Kandyan government of to-day. The Chiefs hold their appointments, which are paid offices, by warrant of the Governor of the island, and though there are privileges attached to the office, such as freedom from taxation for the holder's lands, there are few if any chances for the chief to grow rich at the expense of the people, as his predecessors were wont to do.

Ceylon is, after all, a garden country; and it is the fruits (and leaves) of the earth that form its wealth. It is this fact, in all probability, which is responsible for the establishment of the Royal Botanical Gardens at Peradeniya near Kandy. These gardens were established in 1821, twenty-five years after the arrival of the British in Ceylon, and five or six years after the final conquest of the Kandyan Kingdom. They comprise nearly 150 acres of beautifully undulating land, situated in a horse-shoe bend of the Kelani-ganga, the river that finds its outlet to the sea near Colombo. There are evidences that this exceptionally beautiful site was appreciated by the Kandyan kings before the formation of the gardens, in which several old carved stone pillars and other relics still remain. The gardens show specimens of many beautiful and majestic trees, including, naturally, a great variety of palms.

The Talipot palm is a native of Ceylon, where it grows to sixty or seventy feet high, with a straight cylindrical trunk, marked by rings and surmounted by a crown of gigantic fan-like leaves. These leaves have prickly stalks, six or seven feet long, and when fully expanded form a complete circle of about thirteen feet in diameter, and composed of from ninety to a hundred radiating segments, joined together and plaited like a fan. Near the edge these segments separate and form a fringe of double points. Large fans made of these leaves are carried by priests and people of rank among the Sinhalese. They are also used as umbrellas, and in the construction of tents, as well as providing the native substitute for paper on which many of the sacred books are written. The Talipot flowers only once in its life, when (so it is said) it is nearly a hundred years old, and after ripening its seed it usually dies rapidly.

The beauties of the Peradeniya gardens are greatly enhanced by the river surrounding them on three sides, and

one of the most remarkable sights is the groups of giant bamboo. It is hardly necessary to tell you how useful the bamboo canes can be, but one does not realise in England the enormous size to which these grow, and their importance in their native lands for ladders, scaffold poles, building, and a hundred and one other purposes. The stems often grow to be as thick as a man's body, so that short sections make excellent buckets, flower-pots and other vessels.

The Palmyra palm, which specially flourishes in the north of the island, is one of the most useful trees to the native races. A Tamil poet has immortalised this tree in a poem enumerating 801 uses to which it may be put—and even then is said not to have exhausted the catalogue of its economic virtues. Among other things it furnishes the Toddy or palm wine from which is distilled that potent spirit known as Arrack. The paternal Government of the island derives a handsome revenue from the letting of the rights to produce and sell this commodity. The same tree also furnishes a delicious form of palm sugar, known as Jaggery, and boiled rice and jaggery is a very tolerable substitute for the nursery rice pudding of England.

Ceylon is blessed with a number of varieties of plantain, or banana, some small and yellow and of exquisite flavour, and others of very large size, green or purple when ripe, but of coarser nature. They are a staple dish at every meal, and natives and Europeans alike use them freely. Under good cultivation a banana plant will produce on an average rather more than a hundredweight of fruit per annum, and the yield per acre of land under banana cultivation is far in excess of the maximum obtainable from our tuberous plants, which are besides less nutritious than an equal weight of bananas.

The Breadfruit tree (*Artocarpus incisa*) is another of Ceylon's food bearing products. The fruit, which is as large as a man's head, is gathered before it is perfectly ripe, cut in slices, cooked, and eaten like bread, which it somewhat resembles in taste. There is another variety of *Artocarpus* known as the Jak tree, in which the fruits are even larger, but coarser and possessing a very strong smell and taste which are disagreeable to the unaccustomed European. The Jak tree also furnishes a useful timber, not unlike mahogany.

Very closely allied to *Artocarpus* is the genus *Ficus*, including *Ficus elastica*, the true Indian rubber tree. In

common with many other species of *Ficus*, the bark, by incision, yields a large quantity of an acrid and caustic milk, or latex, conveying Caoutchouc or rubber. Although there are many of these trees in Ceylon it is not from them that Ceylon rubber is chiefly prepared, but rather from the Para rubber tree, *Hevea brasiliensis*, which has more recently been introduced. Another species of *Ficus* (*F. altissima*) is the great Banyan tree of the East. This tree attains an enormous size—indeed there is a Banyan in India on the banks of the Nerbudda which covers an area of nearly 25 acres, and whose branches are supported by over 300 columns, formed by adventitious roots. Young roots, when hanging down from the branches, are led into hollow pieces of bamboo, placed at an angle so as to give most support to the heavy boughs. The end where the root enters the bamboo is filled with moss to keep out squirrels and rats, which would otherwise attack the young root tip, which is very sweet and tender. Where the roots are not thus protected they are very liable to be eaten off by cattle passing underneath. When the root has reached the ground it soon becomes self-supporting, and the bamboo is removed.

One of the features of tropical vegetation is the number of giant creepers and trailing plants, such as we are not accustomed to in English woods or wild places. There is one very noticeable and luxuriant creeper of no commercial value of the genus *Pothos*, which has been nicknamed the "Colombo Agent," the implication being that the Colombo agent of a tea-estate waxes fat and flourishes while the hard-working planter (represented by the tree) only lives to support him.

Closely allied to the Colombo Agent is the genus *Anthurium*, but these plants justify their existence by the beauty of their wonderfully velvety leaves, with their still more wonderful veinings. There are many species of *Anthurium* native to Ceylon, which amply repay cultivation as ornamental pot plants. Flowering shrubs and trees are also abundant at the Peradeniya Gardens, where also can be seen several handsome groups of tree-ferns. They are true ferns, and not palm trees, in spite of their height. (See Fig. 3.)

Leaving now the old kingdom of Kandy, we rise another 2,500 feet by the railway to the heart of the mountain tea-growing country at Hatton. One tea estate is apt to be very



Fig. 5. Ceylon. Coolie Children at Bandarawela.



Fig. 6. Ceylon. "Poochies"—Butterflies, Hawk-moth, Locust and Leaf Insect.

like another, and this part of the country has rather a monotonous and bare appearance where the jungle growth has been cleared away to make room for the profit-bearing crop. The tea bushes are not allowed to grow more than a few feet high, and though they are usually interspersed with rows of shade trees, yet the whole effect is very much like the chess-board country of "Alice through the Looking-Glass."

The European staff on a Ceylon estate generally consists of the Periya Dory, or Manager; the Sina-Dory, or Assistant (literally the "Little Master"), and one or more "Creepers," or apprentices. The clerical work may call for a Burgher or Eurasian clerk, but the overseers and foremen are nearly always Sinhalese or Tamils who are responsible for gangs of labour, male and female. Labour is by no means too plentiful, and there is an organised system of assisted immigration from India, and very strict laws about what is called "pinching" coolies from other estates: in fact, something akin to an important clause of our Munitions Act has been in operation there for many years.

Only the young leaves, or "flush," are picked, and seldom more than two or three leaves from a branch. In the factory the leaves undergo various processes of withering, steaming, rolling, polishing, and packing for shipment, after which the cases are loaded on the bullock carts for transport to the nearest railway station.

A more recent development, which bids fair to rival if not eclipse the tea industry in Ceylon, is the growth and manufacture of rubber. During the past few years immense numbers of rubber trees have been planted, and many old estates have even given preference to this new favourite over their old ally the tea-bush. The Para rubber tree undergoes one of various forms of treatment for extracting its precious latex. This, which is a milky juice, is found just within the outer bark of the tree, and it is collected by draining it from incisions at regular intervals of time. The process, known as "tapping," takes various forms, two of the most successful being the spiral cut and the herring-bone pattern. The latex drains from the spiral down a vertical cut into a little tin at the base, whence it can be collected and taken to the factory for curing.

As the railway continues to ascend, after leaving Hatton and the great tea-growing district of which it is the centre,

we climb through glorious country to a summit-level of 6,220 feet above the sea. The air becomes fresh and invigorating, and if the journey has been made by night the traveller has a delightful experience in waking up to a cool fresh morning air, after having fallen asleep in the muggy heat of the low country. Passing through several small tunnels as we cross the range of mountains, we gradually emerge on the eastern side among the rolling grass patana-slopes which are typical of the higher regions of the province of Uva. Here, among the grass-clad humps and hill-sides, lies the little town of Diyatalawa, a station famous for its large camp where, in 1900, some 5,000 Boer prisoners of war were accommodated. One wonders whether the busy scenes of those days are being even now re-enacted; but, be that as it may, there are certainly many less delightful places in which to be forcibly detained than the sunny slopes and well-watered valleys of this ideal district. From here to Bandarawela, which is the terminus of the railway, the line winds round the hills, cuts its way through the rich red-brown of the rocks, and swings triumphantly on swaying steel girders over the innocent-looking ravines which at times develop into roaring torrents as the monsoon rains come pouring from the hill-sides where they fell. (See Fig. 4.)

Bandarawela itself, though it has never been developed or become fashionable like Newara Eliya, is a delightful little health resort at which to recruit after the heat of Colombo has begun to tell. Society there may be none, but pure air, clean skies, green trees, birds, beasts and butterflies, the ever-changing majesty of sunrise and sunset, and behind all and surrounding all the constant watchfulness of the everlasting hills—these have an attraction that it is no easy task to attempt to convey to others either by word or picture. Looking back, I think it is the quiet of this little town, and the beauty of the surrounding country, which held me more than all the wonders of the East as they are portrayed in the gaudy native bazaars and thronging crowds of Kandy or Colombo. (See Figs. 5 and 6.)

“Larger constellations burning, mellow moons and happy
skies,
Breadths of tropic shade and palms in cluster, knots of
Paradise.

Never comes the trader, never floats an European flag,
 Slides the bird o'er lustrous woodland, swings the trailer
 from the crag;
 Droops the heavy-blossom'd bower, hangs the heavy-
 fruited tree—
 Summer isles of Eden lying in dark purple spheres of
 sea."

While Ceylon is too highly cultivated and civilised to fit the quotation in its entirety, yet Tennyson's lines have a wonderful power of conjuring up the haunting charm of many of the remoter spots in this land of Nature's prodigality.

Review.

"Descriptive Handbook to the Relief Model of Wales." By WALLACE E. WHITEHOUSE, L.C.P. With an introduction by H. J. FLEURE, D.Sc. Cardiff: The Museum, 1915.

The author does not claim any value for the book apart from the model, yet it has a certain value even so. Many teachers of geography will appreciate the clearness of the chapter on the structure of Wales, and will find here and there useful suggestions as to the use of relief models they may have made themselves, and others will be stimulated to give such aids a trial.

The book wisely begins with a very careful description of the method adopted in making the model, thus delimiting the possibilities of error. In his "Descriptions of Ten Selected Blocks" the author follows the excellent plan, which others have recently carried out in describing certain ordnance sheets. There is also a chapter on suggestions for the use of the model. Mr. Whitehouse is careful to point out that the model is not to replace the map, but to supplement it, and that the suggestions do not pretend to be exhaustive; yet they are many and good, especially for advanced work, but the chapter might perhaps have been strengthened by a paragraph on the use of the relief model as an aid to map reading.

In the preface, and again later, it is promised that arrangements will be made for sections of the model to be supplied at a moderate price to schools and other institutions. There are hints on the "grouping of blocks" which will help us in our selection of the blocks when the arrangements are made. The ordnance map plays a great part in geographical work of many kinds, but the relief model is easier to read, and should have a great future if only "schools and institutions" can afford to buy it.

In brief, this cheap, workmanlike and thorough book, which makes such modest claims, must be invaluable to those who can use the models and should serve as an inspiration and example to others.

H. G.

THE IMPORTANCE OF GEOGRAPHICAL
RESEARCH.

By Major H. G. LYONS, D.Sc., F.R.S., F.R.G.S.

(The Presidential Address delivered to Section E, Geography, at the Manchester Meeting of the British Association for the Advancement of Science, and taken as read at a Meeting of the Society held in the Geographical Hall on Tuesday, December 14, 1915.)

THIS year, when the British Association is holding its meeting in times of the utmost gravity, the changed conditions which have been brought about by this war must occupy the attention of all the Sections to a greater or less extent, and our attention is being called to many fields in which our activities have been less marked or more restricted than they might have been, and where more serious study is to be desired. The same introspection may be usefully exercised in geography, for although that branch of knowledge has undoubtedly advanced in a remarkable degree during the last few decades, we have certainly allowed some parts of the subject to receive inadequate attention as compared with others, and the necessity for more serious study of many of its problems is abundantly evident.

Nor is the present occasion ill adapted to such an examination of our position, for when the British Association last met in this city, now twenty-eight years ago, the President of this Section, General Sir Charles Warren, urged in his address the importance of a full recognition of geography in education on the grounds that a thorough knowledge of it is required in every branch of life, and is nowhere more important than in diplomacy, politics, and administration.

Matters have certainly advanced greatly since that time, and a much fuller appreciation of geography now exists than that which formerly prevailed. At the time of the address to which I have referred the serious study of geography in this country was on the eve of important developments. The Council of the Royal Geographical Society had for some time been urging the importance of geography being studied at

the Universities so that there should be an opportunity for advanced students to qualify themselves as scientific geographers by study and original research in the subject. The time had arrived for this ideal to become an accomplished fact, and in the following year, 1888, a Reader in Geography was appointed at Oxford University, and a Lectureship in the same subject was established at Cambridge. Since then the advance has been steady and continuous not only in the increased attention given to the subject, but also in the way in which it is treated. The earlier bald and unattractive statistical presentation of the subject has now been almost everywhere replaced by a more intelligent treatment of it, in which the influences of the various environments upon the life which inhabits a region are appreciated, and the responses to such influences are followed up. Instruction in the subject is given by those who have seriously studied it, who realise its importance, and who are in a position to train up new scientific workers in the field of geography. Though much remains to be done there should be now a steady output of geographical investigators capable of providing an ever-increasing supply of carefully observed data, which they will have classified methodically and discussed critically, in order that these may be utilised to form sound generalisations as to their relationships and sequence in accordance with the method which is employed in all scientific work.

In order that we may see what advance has been made in the scientific study of geography in this country during the last quarter of a century, we must turn to the results that have been attained by the activity of geographical investigators who have devoted themselves to the serious study of various phenomena, and the detailed investigation of particular regions. If we do so I think that we must admit that the number of original investigators in scientific geography who are extending its scope in this way is not so large as it might be, nor are we yet utilising sufficiently all the material which is available to us. Anyone who will examine the geographical material which has been published in any period which he may select for review will find that purely descriptive treatment still far outweighs the analytical treatment which alone can lead to definite advances in scientific geography. If pleasing descriptions of this or that locality are sought for, they are for the most part to be found readily in the very large

amount of such material that has been and is being published each year by residents, travellers, and explorers; but if information is desired in the prosecution of a piece of geographical research, we are checked by the lack of precise details. Few of this class of descriptions are sufficiently definite to enable the necessary comparisons to be made between one locality and others which are similarly situated; thoroughly quantitative treatment is for the most part lacking, and while a pleasing picture is drawn which is probably true in character, it is usually inadequately furnished with those definite facts which the geographer requires.

I propose, therefore, to examine a little more closely the question of geographical investigation and research in order to see where we stand and in what direction it behoves us to put forth our energies to the end that a branch of knowledge which is of such importance shall rest upon that basis of detailed study and investigation which alone can supply the starting-point for further advance. The intricate and complicated character of the subject, the extent of its purview, the numerous points at which it touches and imperceptibly passes into other well-defined branches of knowledge, render the study of geography very liable to degenerate into a purely descriptive treatment of the earth's surface and all that is to be found thereon, rather than to follow the narrow path of scientific progress in which the careful collection of data furnishes the material for systematic discussion and study in order that trustworthy generalisations may be reached.

The opportunity to undertake long journeys through distant lands comes to few of us, but this is not the only direction in which research can be profitably undertaken, for there is no part of these islands where a geographer cannot find within his reach some geographical problem which is well worth working out, and which, if well and thoroughly done, will be a valuable contribution to his science. Even for such as cannot undertake such field work the library will provide a host of subjects which have not received nearly the amount of attention and of careful study that they deserve. The one thing essential is that the study should be as thorough as possible, so that all the contributory lines of evidence shall be brought together and compared, and so that the result may prove to be a real addition to geographical science on which other workers may in their turn build.

For those who desire to undertake such investigations there is at any rate no lack of geographical material, for travellers, explorers, and others engaged in various occupations in every part of the world are continually recording their experiences and describing their surroundings in books and pamphlets; they recount their experiences to the Geographical Societies, who apparently have no difficulty in obtaining communications of wide interest for their meetings. Most portions of the British Empire as well as regions belonging to other nations are in these days more or less fully examined, surveyed, and investigated with a view to their development, and those who undertake such work have ample opportunities for the most part for preparing descriptions of the lands in which they have sojourned and with which they are well acquainted. But although the material is so ample the quality of it is not generally such as makes it suitable for an adequate study of the phenomena or the region to which it relates. The ease with which a tract of country or a route can be described by the traveller, and the attractiveness of such a description of a little-known region, results in the provision of a vast quantity of geographical information, the greater part of which has probably been collected by those who have no adequate training in the subject. In such cases it is not uncommon for the writer to disclaim any geological or botanical knowledge, for instance, but the great majority of those to whom the opportunity is given to travel and see new lands and peoples are fully convinced of their competence to describe accurately and sufficiently the geography of the regions which they traverse. But anyone who has had occasion to make use of such material in a serious investigation is only too well aware how little precise and definite information he will be able to extract from the greater part of this wealth of material, and in most cases this is due to the traveller's lack of geographical knowledge. He probably does not know the phenomena which should be observed in the type of region which he is traversing, nor can he read the geographical evidence which lies patent to a trained observer at every point of the journey; much, therefore, of what he records may be of interest, but probably lacks data which are essential to the geographer if he is to understand the geographical character of the region, and utilise it properly.

Thus it happens that although the amount of geographical

material which is being garnered may be large, the proportion of it which is available for use in a scientific investigation of an area is smaller than is probably realised by those who have not made the experiment. And yet it is only by this scientific investigation of selected localities or of a single phenomenon and by working them out as thoroughly as possible that any real advance in geographical science can be made. The accounts of such pieces of work will not appeal to those who desire picturesque descriptions of little-known lands, but they will be welcomed by geographers who can appreciate the value of such studies. There should now be an ever-increasing number of such geographers, trained to proceed in their investigations by the true scientific method, and there should be a very considerable amount of sound work in various branches of the subject which aims at thoroughly investigating some phenomenon, or group of phenomena, so as to present a grouping of data, carefully verified and critically discussed, in order to arrive at conclusions which may form a useful addition, however small, to the sum of our geographical knowledge.

So far as I am able to judge, the output of serious work of this character is not nearly as large as it should be, and I would indicate some fields in which there is a lack of individual work of this character. Until more of it is undertaken we shall lack in this country the material from which the foundations of scientific geography can be built up, and while our own islands and the various parts of the British Empire furnish unrivalled opportunities for such work, there are still far too many subjects where the most thorough investigations have been made in other countries.

Mathematical Geography presents a field for research which had comparatively little attention paid to it in this country. In many respects this part of the subject is peculiarly suitable for such treatment, since it admits of the employment of precise methods to an extent which is not always practicable in cases where so many of the factors can only be approximately defined. The determination of positions on the earth's surface is carried to great refinement in the national surveys of most civilised countries in order to furnish the necessary controls for the preparation of large-scale maps, but when we pass to the location of travellers' routes, where considerable allowance has to be made for the conditions under which the

observations have to be taken, we find that very inadequate attention is usually paid to the discussion of the results. Usually a mean value for each latitude, longitude or azimuth is obtained by the computer, and he remains satisfied with this, so that when the route of another traveller follows the same line or crosses it at one or more points, it is almost impossible for the cartographer to say which of the two determinations of any position is entitled to the greater confidence. In this class of work, whether the results are obtained from absolute observations at certain points or from the direction of march, and the distance traversed, it is quite practicable to determine the range of uncertainty within which the positions of different points are laid down, and it is eminently desirable that this should always be done in order that the adjustment of various routes which may intersect in partially-known regions may be adjusted in accordance with definite mathematical processes. Some important expeditions on which infinite labour and considerable sums have been expended have presented their results, in so far as they relate to the routes which have been followed and the position of points which have been determined, in such a way that it is impossible to say within what precision such positions have been determined, and consequently any combination of these results with those of later expeditions has to be carried out empirically, since adequate data are no longer available for the employment of better and more scientific methods.

This crude and unsatisfactory way of treating observations, which in many cases have been obtained under conditions of the greatest difficulty and even hardship, is largely due to the lack of interest which geographers have shown in this part of their subject. Methods of observation and methods of computation are rarely discussed before any of our Geographical Societies or in any of our publications, and it is only by such discussions that the importance of properly working out the available material at a time when the observer can be consulted on points which are doubtful, or where further explanation is desirable, becomes generally appreciated.

No set of physical or astronomical observations is ever discussed or even presented without the degree of precision or reliability being definitely stated; yet in geography this sound rule is too often neglected.

There are several regions where travellers' routes intersect

which should provide ample material for the careful reduction and adjustment of the results. I fear, however, that there would be great difficulty in obtaining the original observations which are indispensable in such an investigation, and in the interest of research it is highly desirable that the original documents of all work of importance should be preserved and the place where they may be consulted recorded in the published account.

There is room in the geographical investigation of sea and land, even within the limits of the British Empire, for the employment of methods of observation and computation of the highest precision as well as of the simpler and more approximate kinds, but everyone who presents the results of his work should deem it his first duty to state explicitly the methods which he employed, and the accuracy to which he attained, in such a form that all who make use of them can judge for themselves of the degree of their reliability.

In such work, while the instruments used are of great importance, too often the briefest description, such as "a 4-inch theodolite," is deemed sufficient. If the observer wishes his work to be treated seriously as a definite contribution to science we require to know more than this, and a clear account of the essentials of the instrument, a statement of its errors, and of the methods of observation adopted are the least that will suffice. The account of any expedition should treat so fully of the instruments, observations, and computations utilised to determine the positions of places visited that anyone can re-examine the evidence and form his opinion on the value of the results obtained. A mere tabular statement of accepted values, which frequently is all that is provided, is of small value from a scientific point of view. Probably one reason for this state of things is that too little attention is being paid by geographers to their instruments. Theodolites, levels, compasses, clinometers, tacheometers, plane-tables, pantographs, co-ordinatographs, planimeters, and the many other instruments which are used by the surveyor, the cartographer, the computer, have in no case arrived at a final state of perfection, but it is seldom that we find a critical description of an instrument in our journals. Descriptions there are from time to time, but these are for the most part weak and insufficient. Not only is a technical description required, which treats fully of both the optical

and mechanical details, but we need an extended series of observations with the instrument which have been made under the ordinary conditions of practical work, and these must be mathematically analysed, and the degree of the reliability of the results clearly demonstrated. The description should be equally thorough and complete, including scale drawings showing the construction of the instrument as well as photographs of it. Nothing less than this is of any use to the scientific cartographer.

While I am on the subject of instruments I would draw attention to the importance of the whole history of the development of surveying instruments. In the latter part of the eighteenth century Great Britain provided the best class of surveying instruments to all countries of Europe, at a time when high-class geodetic work was being commenced in several countries; and about this time von Reichenbach spent a part of his time in this country working in the workshops of Dollond and learning this particular class of work. Upon his return to Bavaria he set up at Munich that establishment which soon provided instruments of the highest class for many of the cadastral surveys which were being undertaken in Central Europe. At Munich there is now a fine typical collection of such instruments, but in this country the early advances of British instrument-makers of surveying instruments are far from being adequately represented in our National Museum in a manner commensurate with their importance. The keen and enlightened zeal of geographers who are interested in this branch of the subject would doubtless quickly bring to light much still remaining that is of great interest, but which is yet unrecognised, while a closer attention to instrumental equipment would lead to improvements and advances in the types that are now employed. There is no modern work in this country on the development of such instruments, and references to their history are conspicuously rare in our journals, so that there is here an opportunity for those whose duties prevent them from undertaking travel or exploration of a more ambitious kind. In the same way, those whose opportunities of field work are few can find a promising field of study in the early methods and practice of surveying which have been discussed by many authors from classical times onwards, and for which a considerable amount of material exists.

In Geodesy and Surveying of high precision there is ample scope for all who are attracted by the mathematical aspect of the subject; the critical discussion of the instruments and methods employed and results obtained, both in this country and in other lands, provides opportunity for much work of real value, while its bearing upon geology, seismology, etc., has not yet been adequately treated here. The detailed history of this part of our subject is to be found in papers which have been published in the technical and scientific journals of other countries for the most part; here too little attention has been given to the subject, in spite of the large amount of geodetic work which has been executed in the British Empire, and which remains to be done in our Colonies and overseas Dominions.

The final expression of the surveyor's detailed measurements is found in the map, and the adequate representation of any land surface on a map-sheet is both a science and an art. Here we require additional work on all sides, for there is hardly any branch of geography which offers so remunerative a field for activity as cartography. We need the co-operation of trained geographers to study requirements, and to make acquaintance with the limits of technical methods of reproduction, so that they may be in a position to deal with many questions which arise in the preparation of a map regarding the most suitable mode of presentation of data, a matter which is purely geographical, but which at the present time is too often left to the skilled draughtsman. Neither the compilation nor the reduction of maps are merely mechanical processes. The first requires great skill and care as well as technical knowledge and a sound method of treatment if the various pieces of work, which are brought together to make up the map of any considerable area, are to be utilised according to their true worth. This demands a competent knowledge of the work which has been previously done on the region, a first-hand acquaintance with the data collected by the earlier workers, and the critical examination of them in order that due weight may be given to the better material in the final result. This is not a task to be handed over to the draughtsman, who will mechanically incorporate the material as though it were all of equal accuracy, or will adjust discrepancies arbitrarily and not on any definite plan. Such preliminary preparation of cartographical material is a

scientific operation which should be carried out by scientific methods and should be completed before the work reaches the draughtsman, who will then have but to introduce detail into a network of controls which has been prepared for him and of which the accuracy at all points has been definitely ascertained. Similarly in the second case the elimination of detail which must of necessity be omitted is an operation needing the greatest skill, a full understanding of the material available, and an adequate appreciation of the result which is being aimed at, such as is only to be found in a competent geographer who has made himself intimately acquainted with all the material which is available and has his critical faculty fully developed.

The use of maps has steadily increased of recent years, but we should look forward to an even more widely extended use of them in the future; and this will be greatly facilitated if there are geographers who have made themselves masters of the technique of map reproduction and, as scientific geographers, are prepared to select such data as are needed for any particular class of map on a well-considered method, and not by the haphazard procedure to which the want of a scientific study of cartographic methods must inevitably lead. The paucity of papers dealing with practical cartography and the compilation of maps is clear proof that this branch of the subject awaits far more serious attention than it now receives.

All these problems are well within the reach of the geographer to whom the opportunity of travel in other regions does not come, and in them he will find ready to his hand a field of research which is well worth working and which will amply repay any labour that is spent upon it. The same precise methods of investigation which are employed in the discussion of observations should be applied to all cartographic material in order to ascertain the exact standard of its reliability, in which is included not only the correctness of distance and direction, but also the accuracy of the information which has been incorporated in it; and these may be brought to bear also on those early maps of which so many are preserved in our libraries in this country. In this field of study several investigators have already achieved results of great interest and value, but I think that they will be ready to admit that there is here a wide and profitable field of activity for many more workers who will study closely these

early maps and, not being contented with verbal descriptions, will use quantitative methods wherever these are possible.

In the study of map projections some activity has been visible in recent years, and we may hope that those who have worked in this branch of the subject will see that British Geography is provided with a comprehensive manual of this subject which will be worthy of the vast importance of cartography to the Empire. The selection of suitable projections is receiving much more attention than was formerly accorded to it, but the number of communications on this subject which reach geographical journals are few and far between. The subject is not one which can appeal strongly to the amateur geographer, but its importance renders it imperative that the scientific geographer who realises its intimate bearing upon all his work should so arrange that the matter does not fall into the background on this account.

A closer relation and a more active co-operation between those who are prepared to work seriously at cartography and its various problems may reasonably be expected to raise the standard of that class of map which is used to illustrate books of travel, or works descriptive of a region. At the present time the inadequate character of many of the maps and plans which are reproduced in such publications shows clearly that the public demand for maps which have been compiled with a view to illustrating the volume in question is still very ineffective.

The whole subject of cartography, with its component parts of map projection, compilation, reproduction, cartometry and the history of its development, is so important, not only to the individual geographer but also to the advancement of scientific geography, that we should aim at fostering it and encouraging the study of it in every way, and it will be the zeal of individuals rather than the benevolent aid of institutions which will achieve this.

But it may be suggested that the lack of activity in Mathematical Geography is due to the somewhat specialised nature of the subject, and to the fact that the number of those who have received an adequate mathematical training and are prepared to devote themselves to geography is few. When we turn to Physical Geography in its treatment of the land we do find a field which has been more actively worked, for this

is just the one to which the traveller's and explorer's observations should contribute most largely, and where therefore their material should be utilised with the best results. Even here there is room for much more work of the detailed and critical type, which is not merely general and descriptive, but starts from the careful collection of data, proceeds to the critical discussion of them, and continues by a comparison of the results with those obtained in similar observations in other regions.

To take a single branch of Physical Geography, the study of Rivers, the amount of accurate material which has been adequately discussed is small. In our own country the rainfall of various river basins is well known through the efforts of a meteorological Association, but the proportion of it which is removed by evaporation, and of that which passes into the soil, has only been very partially studied. Passing to the run-off, which is more easy to determine satisfactorily, the carefully measured discharges of streams and rivers are not nearly so numerous as they should be if the hydrography of the rivers is to be adequately discussed; for although the important rivers have been gauged by the authorities responsible for them in many cases, the results have usually been filed, and the information which has been published is usually a final value but without either the original data from which it has been deduced, or a full account given of the methods of measurement which have been employed. For the requirements of the authority concerned such a record is no doubt adequate, but the geographer requires the more detailed information if he is to co-ordinate satisfactorily the volume discharged with local rainfall, with changes in the rates of erosion or deposition, and the many other phenomena which make up the life-history of a river. Here too it is usually only the main stream which has been investigated; the tributaries still await a similar and even fuller study. A valuable contribution to work of this kind exists in the hydrographical study of the Medway and of the Exe which has been undertaken by a Committee of the Royal Geographical Society during recent years, and this may serve as a guide to other workers; but, however welcome such a piece of work may be, I should much prefer to see the hydrography of a tributary of a river system worked out by a geographer as a piece of individual work, just as the geology or the botany or the zoology of a single

restricted area is investigated by those whose interests are centred in these subjects.

In the same way we still know too little of the amounts of the dissolved and suspended matter which is carried down by our streams at various seasons of the year and in the different parts of their course. This class of investigation does not need very elaborate equipment, and may provide the opportunity for much useful study, which may be extended as information is increasingly acquired. In this way when numerous individual workers have studied the conditions prevailing in their own areas, and traced them through their seasonal and yearly variations, we shall possess a mass of valuable data with which we may undertake a revision of the results which have been arrived at in past years by various workers from such data as were then at their disposal.

In this one branch of the subject there is ample scope for workers of all interests in the measurement of discharges, in the determination of level, and of the movement of flood waves, in determining the amount of matter transported both in suspension and in solution, in tracing out the changes of the river channel, in following out the variation of the water-table which feeds the stream, in ascertaining the loss of water by seepage in various parts of its course, and generally in studying the hundred other phenomena which are well worth investigating, and which give ample scope for workers of all kinds and of all opportunities. There is work not only in the field, but also in the laboratory and in the library which needs doing, for the full account of even a single stream can only be prepared when data of all classes have been collected and discussed.

On the Scottish lakes much valuable scientific work has been done, and also on some of the English lakes, so that excellent examples of how such work should be done are available as a guide to anyone who will devote his spare time for a year or two in making a thorough acquaintance with the characteristics and phenomena of any lake to which he has access.

Coast-lines provide another class of geographical control which repays detailed study, and presents numberless opportunities for systematic investigation and material for many profitable studies in geography. The shores of these islands include almost every variety of type, and furnish exceptional

opportunities for research of a profitable character, especially as lying on the border-line between the domain of the oceanographer on the one hand and the physiographer on the other. The precise methods of representation which are possible on the land have to give way to a more generalised treatment over the sea, and the shore line is liable to be handed over to the latter sphere, so that there is much interesting and useful work open to anyone who will make an accurate and detailed study of a selected piece of coast-line, co-ordinating it with the phenomena of the land and sea respectively.

The teaching of Professor Davis in pressing for the employment of systematic methods in describing the landscapes with which the geographer has to deal has brought about a more rational treatment, in which due recognition is given to the structure of the area, and the processes which have moulded it, so that land forms are now for the most part described more or less adequately in terms which are familiar to all geographers and which convey definite associated ideas, in the light of which the particular description is adequately appreciated. It has been urged by some that such technical terms are unnecessary and serve to render the writings in which they occur intelligible only to the few; that anyone should be able to express his meaning in words and sentences which will convey his meaning to all. There is no great difficulty in doing this, but in such descriptions to convey all that a technically-worded account can give to those who understand its terms would be long and involved on account of the numerous related facts which would be included. It is consequently essential in all accurate work that certain terms should have very definite and restricted meanings, and such technical terms, when suitably chosen, are not only convenient in that they avoid circumlocution, but when used in the accepted sense at once suggest to the mind a whole series of related and dependent conditions which are always associated with it.

The compilation of a glossary of geographical terms has been in progress in this country for many years without having reached finality, and much of the difficulty which has been experienced is doubtless due to the fact that so many words have not been consistently used with a well-defined meaning. Such looseness of expression is more liable to occur in the case of foreign words which have been imported

in the first case by writers who are not scientifically trained, and therefore do not use them in connection with a specified set of conditions. This, however, is unimportant if only scientific geographers, when they accept a term as a desirable addition to the geographical vocabulary, will associate it definitely with such conditions and use it consistently in that connection. As an instance I may quote the word "sadd," which etymologically means to block, or stop. This term was naturally and reasonably used to indicate masses of uprooted marsh vegetation which had been carried along by the current and, if checked at a sharp bend or a narrow point of the stream, blocked the channel. So long as it is used in this restricted sense it is a useful term to describe a phenomenon which occurs under certain definite conditions and which leads to equally well-defined geographical results. This use of it is associated with a meandering river channel in an alluvial flood plain, where shallow lagoons occur, in which such marsh vegetation grows luxuriantly; when this vegetation is uprooted by storms and carried by the rising water into the main stream it provides the drift material which makes up the block or "sadd."

But this term has been extended immoderately to mean the region in which these physical conditions occur, or the type of vegetation which grows under these conditions, and even the type of country where such conditions prevail. One writer has even used the word in describing fossil vegetation of a character such as is associated with marsh lands.

The crystallisation of such geographical terms into true technical terms is an important step in the furtherance of scientific geography, but it must be done by the geographers themselves, and no means of doing this is more fruitful than the work of original research and investigation in definite areas or on specific problems.

It would take too long to discuss each branch of physical geography and indicate the opportunities for individual effort, but what has been said of one may be said of all the others. Not only in all parts of the Empire but in these islands also there is ample opportunity for the detailed geographical study of single localities or individual phenomena, just as much as in geology, in botany, or in zoology; and it is these separate pieces of work which, when thoroughly carried out and critically discussed, provide the material on which wider generali-

sations or larger investigations can be based. Herein lies, therefore, the importance of the prosecution of them by as many workers as possible, and the value of communicating the results to others for criticism and for comparison with the results which they have obtained; for such work, if it cannot be made accessible to other workers in the same and related fields, loses a large proportion of its value.

If we now consider some of the problems of human geography we shall find the need for such systematic study to be even greater; for the variable factors involved are more numerous than in physical geography, and many of them are difficult to reduce to precise statement; the quantitative study of the subject is therefore much more difficult than the qualitative or descriptive, so that the latter is too frequently adopted to the exclusion of the former. The remedy lies, I believe, in individual research into special cases and special areas where the factors involved are not too numerous, where some of them at least can be defined with some accuracy, and where, consequently, deductions can be drawn with some precision and with an accuracy which gives grounds for confidence in the result. The settlements of man, his occupations, his movements in their geographical relations are manifested everywhere, and subjects of study are to be found without difficulty, but their investigation must be based on actual observation, and on data which have been carefully collected and critically examined, so that the subject may be treated as completely as possible, and in such a way that the evidence is laid before the reader in order that he may form his own conclusions.

It is probable that some of the lack of precision which is to be found in this part of the subject is to be attributed to the want of precision in its terminology. For many things in human geography good technical terms are required, but these must be selected by those who have studied the type or phenomenon concerned and have a clear idea of the particular conditions which they desire to associate with the term; this is not the work of a Committee of Selection, but must grow out of the needs of the individual workers.

There is, it must be admitted, no small difficulty in using the same preciseness of method in this portion of the subject as is readily attainable in mathematical geography, and is usually practicable in physiography; but at any rate it is undesirable to indicate any condition as the controlling one

until all other possible influences have been carefully examined and have been shown to have less weight than that one which has been selected.

Whether the investigation deals with the settlements of man or his movements and means of communication it is important that in the first instance problems of a manageable size should be undertaken and thoroughly treated, leaving larger areas and wider generalisations until a sufficient stock of thoroughly reliable material which is in the form in which it can properly be used for wider aims is available.

The relation of geographical conditions to small settlements can be satisfactorily worked out if sufficient trouble is taken and all possible sources of information, both of present date and of periods which have passed away, are utilised. Such studies are of a real value and pave the way to more elaborate studies, but we need more serious study of these simpler cases both to set our facts in order and to provide a methodical classification of the conditions which prevail in this part of the subject. Out of such studies there will grow such a series of terms with well-defined associations as will give a real precision to the subject which it seems at the present time to lack.

The same benefit is to be anticipated from detailed work in relation to man's communications and the interchange of commodities in all their varied relations. Generalised and descriptive accounts are readily to be found, and these are for the most part supported by tables of statistics, all of which have their value and present truths of great importance in geography, but the spirit of active research which aims at clearing up thoroughly a small portion of the wide field of geographical activities has unequalled opportunities in the somewhat shadowy relations between the phenomena which we meet in this part of the subject, for focussing the facts better, and obtaining a more exact view of the questions involved.

Where the geography of States (political geography) is concerned the same need for original investigation as a basis for generalisations may be seen. At the present time there is much said about the various boundaries of States, and in general terms the advantages and disadvantages of different boundaries under varied conditions can be stated with fair approximation to accuracy. But I do not know of many detailed examinations of these boundaries or portions of them.

where full information of all the factors involved can be found set out in an orderly and authoritative manner, thus forming a sure foundation for the generalised description and providing the means of verifying its correctness or revising it where necessary.

Perhaps there is really more scientific research in geography being undertaken by individuals than I have given credit for, but certainly in geographical periodicals, and in the bibliographies which are published annually, the amount shown is not large; neither is the number of authors as large as might be expected from the importance and interest of the subject and from the activity of those centres where geography is seriously taught. There seems to be no reason why individual research on true scientific lines should not be as active in geography as it is in geology, botany, zoology, or any other branch of knowledge; and, just as in these, the real advance on the subject is dependent on such investigations rather than on travels and explorations in little-known lands, unless these too are carried out scientifically and by thoroughly trained observers who know the problems which there await solution, and can read the evidence which lies before them on their route.

If research in these directions is being actively prosecuted, but the appearance of its results is delayed, let us seek out the retarding causes if there be any, and increase any facilities that may be desirable to assist individual efforts.

Short technical papers of a thoroughly scientific character, such as are the outcome of serious individual research, are, of course, not suitable for those meetings of Geographical Societies where the majority of the Fellows present are not scientific geographers, but should be presented to small meetings of other workers in the same or allied fields, where they can be completely criticised. The reading, discussion, and the publication of papers of this class are for geography a great desideratum, for it is in them and by them that all real advance in the subject is made, rather than by tales of travel, however interesting, if these are not the work of one trained in the subject, having a knowledge of what he should observe, and of what his predecessors have done in the same field. The regional aspect of geography in the hands of its best exponents has given to young geographers a wide and comprehensive outlook on the interaction of the various

geographical factors in a region, the responses between the earth's surface and the life upon it, and the control that one factor may exercise upon another. In this form the fascination of geographical study is apparent to everyone, but I sometimes wonder whether the exposition of such a regional study by one who is thoroughly master of the component factors, having a first-hand knowledge of all the material involved, and knowing exactly the reliability of each portion, impresses sufficiently upon the student the necessity of personal research into the details of some problem or phenomenon in such a way as to gain a real working acquaintance with them; or does it on the other hand tend to encourage generalisations based on descriptive accounts which have not been verified, and where coincidences and similarities may be accepted without further inquiry as evidence of a causal connection which may not really exist? I imagine that the student may be attracted by the apparent simplicity of a masterly account of the geographical controls and responses involved, and may fail to realise that geographical descriptions, even though technically phrased, are not the equivalent of original quantitative investigation, either for his own education or as a contribution to the subject.

For these reasons I believe that Societies can do far more good in the promotion of geography as a science by assisting competent investigators, by the loan of books and instruments and by giving facilities for the discussion and publication of technical papers, than by undertaking the investigation of problems themselves.

Among the earlier Presidential Addresses of this Section some have laid stress on the importance of the recognition by the State of geography in education; others have represented the great part which the Geographical Societies have played in supporting and advancing the subject; others again have urged the fuller recognition of geography by educational institutions. I would on this occasion attach special importance to the prosecution of serious research by individuals in any branch of the subject that is accessible to them, to the discussion of the results of such by others of like interests, and to the publication of such studies as having a real value in promoting the advancement of scientific geography.

MEETING OF THE BRITISH ASSOCIATION FOR
THE ADVANCEMENT OF SCIENCE, MAN-
CHESTER, SEPTEMBER 7TH—11TH, 1915.

(Report of the Delegate, HARRY SOWERBUTTS, A.R.C.Sc.,
taken as read at the Meeting of the Society held on
Tuesday, December 14th, 1915.)

THIS meeting was curtailed in regard both to length of the meeting and to the social gatherings, on account of the condition of affairs due to the War.

The opinion was expressed by many that the amount of benefit which would accrue to Science from the discussions and decisions at the meeting itself would be equal to, if not greater than, usual, but of course the smaller membership would necessitate a slight reduction of the amount available for grants to finance the Committees appointed to carry on Scientific Investigation and Research.

The Conference of the Delegates of Corresponding Societies met on two occasions, both of which meetings your delegate attended. At the first meeting the President of the Conference, Professor Sir T. H. Holland, K.C.I.E., F.R.S., gave an address on "The Classification of Scientific Societies." The main point raised was whether it is more satisfactory for local scientific societies (which deal with science generally) to each publish the papers read at their meetings than for the Royal Society to decide which papers were of important scientific value and worthy a place in the *Journal* of the Royal Society, to print these therein and thus give them a world-wide circulation. The question was referred to the Committee of the Conference for consideration. After consideration, if advisable, they will refer the question to the different Societies, so that the delegates may be able to take definite action, if thought fit, at the next meeting of the Association at Newcastle.

A paper on "Local Museums" was given by Mr. W. E. Hoyle, M.A., D.Sc., of Cardiff, late of Manchester. One point raised was the doubt if sufficient care was taken in many local museums of valuable additions, and if the most valuable

objects should not be sent to National or similar Museums, where they would be safer, and possibly, replicas of such objects would be deposited in the local museum.

At the second meeting a paper on "Colour Standards" was read by Mr. J. Ramsbottom, M.A., and, after discussion, it was resolved that the Committee of the Conference be requested to consider this matter, and if, after consultation with representative manufacturers and others, further action seems possible, to refer the matter to the various Corresponding Societies, so that the question of the issue of a colour standard at a reasonable price may be brought before the delegates at Newcastle.

The papers read in Section E (Geography) were mainly of a scientific character. The address sent by the President of the Section (Major H. G. Lyons, F.R.S.), who owing to urgent duties for the War Office was unable to attend, was the most important, and will be found preceding this Report (p. 52). This address will be brought before the Council for consideration, and if thought advisable, some action may be taken after the conclusion of the war to carry out some of the suggestions contained therein.

The address which attracted the largest attendance was that by Professor Patrick Geddes and Miss M. Barker on "The Growth of Cities."

After the address, which was the last given in Section E, those present, on the invitation of the Professor, proceeded to the School of Technology to inspect the collection of Exhibits organised originally by the Professor in Edinburgh last February, taken in July to King's College, London, in connection with the Summer Meeting there and now brought to Manchester. In one room were a series of diagrams, charts, photographs and essays, many by children, relating to regional surveys, and also diagrams illustrating the growth of cities (usually on unsatisfactory lines). The other four rooms contained a collection of maps, diagrams, pictures and literature dealing with war and its problems, more especially in relation to the present war. The whole exhibition was of intense interest to all who attended.

Another paper of great interest was on "The Racial Distribution in the Balkans," by Professor Elliot Smith, F.R.S., delivered at a joint meeting of Sections E and H in the rooms of Section H (Anthropology). At this meeting the

President-elect of the Association, Sir A. J. Evans, F.R.S., spoke in description of a Map which he had prepared to illustrate the Ethnic Relations between the Adriatic, the Drave and the Danube.

There was an afternoon devoted to Australian Questions, when Mr. O. J. R. Howarth, M.A., Professor J. W. Gregory, F.R.S., Mr. J. McFarlane, M.A., M.Com., F.R.G.S., and Mr. H. Yule Oldham, M.A., F.R.G.S., spoke. They had all visited Australia in the previous year and so were able to give valuable original information.

Several papers were read, dealing with local Geography, such as were suggested by the President of the Section in his Address. The two chief papers of this character were upon the "Leek District" by Mr. R. Curtis, and "The Middle Tees" by Mr. C. B. Fawcett.

Mr. A. R. Hinks, F.R.S., F.R.G.S., the Secretary of the Royal Geographical Society, made some remarks in continuation of his paper in the *Geographical Journal* dealing with the Map on the Scale 1 : 1,000,000, which is being prepared by the Royal Geographical Society for the War Office. He specially mentioned the representation of elevation by varying shades of colour, and the names of countries, etc., on the Map. It has been decided to print a small key map on each sheet giving the boundaries of countries, etc., with the names of the larger areas. Colonel H. T. Crook, D.L., in discussing the matter expressed his agreement with the proposals of Mr. Hinks, especially as regards leaving the names of large areas off the sheets of the map.

There were only two papers describing journeys, by Professor P. M. Roxby on "North China and Korea," and Dr. R. N. Rudmose Brown on "Spitsbergen," which were both of great interest.

The various meetings thus gave the leading geographers of the country the opportunity to deal with the subjects in which they were specially interested, and to exchange ideas on various points, as discussions generally took place after the papers.

The evening discourses delivered in the Free Trade Hall were not of a geographical character, though the President's Address was a fine intellectual treat and well worth reading, and the two scientific lectures dealing with Botany and Astronomy were of interest, as containing new and original

matter. Some of the lantern slides on both occasions had not been shown previously in public.

The Reception in the School of Technology by the Right Hon. the Lord Mayor and the Lady Mayoress was well attended and very successful. The visits to works and institutions were, I am given to understand, satisfactorily carried out.

As mentioned previously the meeting was considered to have been as satisfactory a meeting as any of the earlier ones, when the special circumstances of the war were taken into account, and to have fully justified the action of the Council of the Association and of the Local Committee in deciding to hold the meeting at this time.

The meeting next year will be held in Newcastle-on-Tyne, with Sir Arthur J. Evans, F.R.S., as President.

Review.

“The North-West and North-East Passages, 1576—1611.” Edited by P. F. Alexander, M.A. Cambridge: University Press.

The volume opens with a useful list of the world's most important geographical discoveries dating from B.C. 327 to the voyage of Captain Scott to the South Pole, and then gives a concise and well edited record of the early voyages between 1576—1611, readable alike to the student and to the casual reader. It represents a library of Arctic literature told in the words of the chroniclers of those times, and embraces the voyages of Frobisher, Davis, Hudson's last voyage and Barents (third voyage). The link of the latter with modern times is to be found in the discovery of ancient relics, brought from Nova Zembla in 1871, after lying undisturbed for 300 years. There is a good view of these relics as they repose in the National Museum at Amsterdam.

The book contains 18 illustrations, excellent reproductions of the original woodcuts.

The only improvement that could be suggested in this admirable collection of early voyages would be a chart showing the various routes taken by these early pioneers of Arctic discovery. G.H.W.

Annual Meeting, 1915.

THE 30th Annual Meeting of the Society was held, by kind permission, in the Lord Mayor's Parlour, Town Hall, Manchester, on Friday, May 7th, 1915, at 3-0 p.m.

The Right Hon. the Lord Mayor (Mr. Alderman McCabe) presided.

The following members and friends attended :—Mr. Harry Nuttall, M.P., F.R.G.S., the Right Rev. Bishop Welldon, D.D., Messrs. E. W. Mellor, J.P., F.R.G.S., and F. Zimmern, F.R.G.S., Miss E. Blanchoud, Mrs. Bucknall, Mrs. G. W. Nichols, Miss L. E. Walter, H.M.I., B.Sc., Messrs. J. E. Balmer, F.R.G.S., Gustav Behrens, J.P., W. J. Dean, R. M. Downie, C. T. I. Garner, G. Ginger, J. W. Goodwin, Wm. Harper, Alderman Thos. Hassall, J.P., Hinners, Rev. W. H. Leak, W. Booth Leech, A. W. Longden, W. A. M'Grath, F. Mills, G. W. Nichols, J. Stephenson Reid, T. M. Smith, Harry Sowerbutts, A.R.C.Sc., T. W. Sowerbutts, F.S.A.A., R. A. Staniforth, R. B. Stoker, F.R.G.S., George Thomas, J.P., Cecil B. Thonger, Joel Wainwright, J.P., T. F. Wilkinson, S. W. Williams, Ralph Yates, J.P., and others.

Apologies were received from Messrs. D. A. Little and J. Howard Reed, F.R.G.S.

The Minutes of the Twenty-ninth Annual Meeting, held on May 8th, 1914, were taken as read, a full Report appearing in the *Journal*, Vol. XXX, page 88.

The following Annual Report and Balance-Sheet were submitted by the Secretary, who made explanatory references to the principal matters dealt with therein.

REPORT OF THE COUNCIL

FOR THE YEAR ENDING DECEMBER 31ST, 1914.

THE Council have pleasure in reporting that, notwithstanding the national crisis, the work of the Society has been carried on successfully during the year.

The weekly meetings held during the winter months have been more largely attended than in any previous year, and the Council desire to express their thanks to all those who have given valuable help.

Unfortunately on three occasions many members were unable to obtain admission owing to the large attendance, and the Council therefore thought it advisable to call the attention of members to Rule 26, which provides that each ordinary member may introduce one visitor only.

The interesting and instructive character of the lectures delivered will be seen from the following list:—

- “Manchester to the Highlands of Scotland by Road.” Mr. Charles Sutton.
- “The Theatre of the War.” Rev. T. T. Norgate, F.R.G.S., F.R.Hist.S.
- “A Few Places in Sweden.” Mr. H. L. Joseland, M.A.
- “The Romance and Tragedy of the Volga and its Towns.” Mr. Wm. Barnes Steveni.
- “Where Three Empires Meet: Poland.” Mr. Samuel Wells, F.R.G.S.
- “A Geographer’s Holiday Study of the Rhine and the Rhineland.” Mr. Albert Wilmore, D.Sc., F.G.S.
- “A Journey to the Rhine and the Black Forest.” Mr. Charles Sutton.
- “In the Zuider Zee.” Mr. T. E. Green, F.R.G.S.
- “Belgium: The Land of Art; Its Economic and Political History.” Mr. Arnold Williams.
- “Belgium, the Battleground of Europe.” Mr. Albert Wilmore, D.Sc., F.G.S.
- “To and Over the Simplon Pass.” Mr. W. H. Ward.
- “Sunny Sicily.” Mr. George Ginger.
- “Tramps in the Tyrol.” Mr. G. Waterhouse, F.R.G.S.
- “Journeys in the Middle East.” Mr. M. Philips Price, F.R.G.S.
- “Armenia, in Olden Times and Nowadays.” Professor C. F. Lehmann-Haupt, Ph.D., LL.D.
- “A Holiday in the Indian Empire.” Mr. John Hancock.
- “In the Home of the Rajput.” Mr. E. W. Mellor, J.P., F.R.G.S.
- “British Burma.” Mr. E. G. P. Cotelingam.
- “The Marches of Chinese Tibet.” Mr. T. M. Ainscough, M.Com., F.R.G.S.

- "Newfoundland: Our Oldest Colony." Mr. W. Herbert Garrison, F.R.G.S.
- "America's Wonderland: The Yellowstone Park." Mr. W. H. Shrubsole, F.G.S.
- "Personal Experiences among Maoris and Mountains in New Zealand." Mrs. Edward Melland (late of New Zealand).
- "A Journey round the World, with special reference to the Far East." Mrs. H. L. Lees, F.R.G.S., A.R.C.I.
- "Recent Great Earthquakes." Mr. F. E. Tillemont-Thomason, F.R.G.S.
- "Some Recent Changes in our National Maps." Colonel H. T. Crook, J.P., V.D.
- "The Influences of Geographical Environment." Mr. G. R. Swaine, F.R.Met.Soc.
- "The Genesis of Geography." Miss Kate Qualtrough, F.R.G.S.

These addresses, with the exception of four, were delivered in the Geographical Hall, three being given in the Houldsworth Hall, and one in the Free Trade Hall.

As a result of the lectures by Mr. Hilaire Belloc in the Free Trade Hall, and by the Rev. T. T. Norgate, F.R.G.S., in the Houldsworth Hall, sums amounting to £50 17s. 5d. in the former case and of £18 17s. 10d. in the latter case were handed over to the Belgian Relief Fund.

The lectures by Mr. E. W. Mellor, J.P., F.R.G.S., and Mr. T. E. Green, F.R.G.S., in the Houldsworth Hall were well attended, and the large audiences fully appreciated the able addresses delivered, and the fine lantern illustrations (including many photographs in colour) and, in the case of Mr. Mellor's lecture, the cinematograph views which were shown.

The Council thank the Vice-Chairman, Mr. E. W. Mellor, J.P., F.R.G.S., for the use of his powerful electric lantern for the lectures in the Houldsworth Hall and the Free Trade Hall, and for engaging the Houldsworth Hall for the two lectures in January. His valuable help is highly appreciated.

The Journal for 1913 has been issued during the year in half-yearly parts.

Valuable additions to the Library and Map Collection have been made during the year, full particulars of which are given in the Journal.

The services so freely given by the Victorians in lecturing are greatly esteemed.

The Council greatly deplore the loss by death of the following members :—

- His Grace the Duke of Argyll, K.G., K.T., G.C.M.G., &c.
- Mr. J. H. Abbott.
- Mr. G. H. Bell.
- Mr. C. Beving.
- Mr. G. I. Blake.
- Mr. A. R. Colquhoun, F.R.G.S.
- Mr. J. G. Groves, D.L.
- Mr. Hy. Kirkpatrick, J.P.
- Mr. James Leigh.
- Mr. Joseph Lunn.
- Mr. S. Massey.
- Mr. T. Newbigging, M.Inst.C.E.
- Mr. Frank Radcliffe.
- Mr. Wm. Rigby.
- Mr. G. Reiss.
- Mr. Salis Simon, Swedish Consul.

The Balance Sheet for the year with the Report of the Honorary Auditor is appended.

It will be seen that there is a small deficiency on the Revenue Account for the year.

The Council greatly appreciate the generosity of Mrs. Thomasson and of Mr. George Thomas, J.P., in presenting fifty shares and ten shares respectively in the Manchester Geographical Society Building Co., Ltd.

It has been considered advisable to open an Investment Reserve Account against the shares in the Building Company now in the hands of the Society.

The number of members on December 31, 1914, was 721, being a net increase of 13 during the year.

Additions to the membership are urgently needed to take the place of members who have had to withdraw owing to the war, so as to enable the work of the Society to be carried on as efficiently as possible.

BALANCE SHEET, DECEMBER 31ST, 1914.

LIABILITIES.

	£	s.	d.
To Sundry Creditors	91	13	9
„ Subscriptions Paid in Advance	64	11	6
„ Life Membership Reserve Account	189	0	0
„ Investment Reserve Account	386	5	0
„ Kirkpatrick Endowment Fund	50	0	0
„ Balance as at December 31, 1913.....	180	16	8
Less Deficiency for 1914	2	4	0
Add Donations of Shares :—	178	12	8
Mrs. Thomasson (fifty)	500	0	0
Mr. G. Thomas, J.P. (ten)	100	0	0
	778	12	8
Transfer to Reserve Account	386	5	0
	392	7	8
	£1,173	17	11

ASSETS.

	£	s.	d.
By 151 Shares of £10 each fully paid in the M.G.S. Bldg. Co. Ltd. as under :—			
56 Shares purchased	191	5	0
95 Shares presented	950	0	0
	1,141	5	0
„ Subscriptions in Arrear	14	3	6
„ Cash in Bank	15	15	0
„ Cash in Hand	2	14	5
	18	9	5
	£1,173	17	11

NOTE.—The Furniture, Fittings, Books, Maps, Lantern Slides, Stock of Journals, etc., which are insured for £1,000, are not included as Assets in the above Statement. There are 49 Life Members (of whom one is Honorary), and the subscriptions of 30 of this number have been taken as revenue in years prior to 1908.

I have audited the above Balance Sheet and certify the same to be correct. I have inspected the Certificates for the Shares in the Building Company.

THEODORE GREGORY, F.C.A.,
Honorary Auditor.
 May 6th, 1915.

The Lord Mayor, in moving the adoption of the report and balance-sheet, said that, considering the times, he thought they were fairly satisfactory. Next year promised to be better because they would have some interest from the shares in the Building Company. Regarding the membership, it would be a pity if there was any marked falling off. A great commercial city like Manchester, with so many interests throughout the world, should not be remiss in supporting such a Society. He believed that the Manchester Geographical Society was the second to be founded in the British Isles. It was almost a fortnight before the one established in Edinburgh, and to be in front of the Scottish was in itself a great achievement. He remembered, in reading the proceedings that were held in the Athenæum, under the chairmanship of Mr. J. F. Hutton, to celebrate the formation of the Society, that Lord Aberdare said that for every square mile in Great Britain and Ireland we had sixty-six square miles across the sea. Lord Aberdare referred to the extent of other countries' possessions, but did not mention Germany. That country, the Lord Mayor thought, must have had very small possessions at that time, but since then it had annexed many places. When the Manchester Society was started, however, Germany had a similar number of Geographical Societies to France, namely, twenty-four. That showed that Germany was even then much alive to the importance of knowing all it could about the world and where commerce could be promoted. It was essential for us, as commercial people, to take a keen interest in Geography and so gain a knowledge of possible markets for our manufacturers and of places where we could get raw materials.

Mr. E. W. Mellor, J.P., F.R.G.S., Vice-Chairman of the Council, who seconded the resolution, said that he thought they would agree that the Executive Committee had worked the affairs of the Society during a somewhat trying season with very great care and with thrift. At the outset of the session it was a question with the Committee whether they were justified, with all the horrors of a great war prevailing, in organising a series of lectures. As they could not arrive at a decision they referred the question to the Council. The Council, very wisely he thought, came to the conclusion that the civilian population required something to occupy their minds besides the daily tale of fighting and that the occupation of their minds might just as well be of an intellectual

character as of light amusement. Therefore the Committee were empowered to arrange a series of lectures, and the result was that they had had a very interesting and intellectual series, while many of the lectures had also partaken of an entertaining character. The lectures, too, were arranged with some degree of enterprise, because it was entirely due to the work of the Committee that, for example, they succeeded in getting Mr. Hilaire Belloc, at a time when he was extremely busy, to come and lecture. The interest in this side of the Society's work was shown by the crowded attendances, so crowded that it became necessary to call the attention of members to the fact that they were each entitled to introduce one friend only. It was not that the Society did not welcome guests, but because it was hardly fair that members who paid subscriptions should have difficulty in getting into the room. The Society has lost in deaths just a little more than the average number of members, and it was a bad time, perhaps, when people had so much to occupy their minds and had so many calls upon their pockets, to ask for additions to the membership. At the same time, if the Society was to keep up its useful work and arrange high-class lectures, it was necessary to have the wherewithal to carry out such work, and that could only be got by keeping up the number of members. Therefore, he hoped members would do their best to induce friends to join the Society.

The Right Rev. Bishop Welldon, in supporting the resolution, which was carried unanimously, agreed that the decision to maintain the lectures during the war was a wise one. Apart from the constant interest a city like Manchester should have in Geography, there was a need for giving people something else to think of as well as the war. The war was becoming an obsession and there was need of relief, both artistic and intellectual. It could not be doubted that the war itself had thrown light upon the geography of places that were not known before by a great many people. It might be well in future lectures to look at events which were already casting their shadows upon the world. There would be when the war was over such political and material changes as had never, or seldom, occurred in past history. It was, therefore, very important to increase our knowledge of geography. Lord Curzon had drawn attention to mistakes made by English statesmen in the past through ignorance of geography. There would be a re-making not only of the map of

Europe but, to some extent, of the whole world. He hoped that that re-making would be on sound, scientific, and righteous principles, and that when it did take place the interests of the British Empire would be thoroughly recognised. No one in that room, however, would wish Great Britain to pursue any selfish policy, or greed, in the manner of the German Empire. He hoped that schoolmasters would be wiser than in his generation, and give more attention to geography. The Society was doing good work and he heartily commended it to the support of the public.

Mr. Harry Nuttall, M.P., F.R.G.S., the President of the Society, then gave an Address. When he addressed them about a year ago he pointed out that the prospects of the world were especially bright. We were looking to, and believing we would have, good harvests. The Balkan settlement had taken place, and no one would have believed that the whole of that question would be revived in so comparatively short a time. He remembered saying that we were left to the peaceful occupation of making new maps of that part of the world. Communications and facilities for exchanging products had increased very rapidly. Nations had come closer together. There was greater international confidence in trade and finance, and altogether at that time a great impetus was being given to the development of the world and its resources.

But three months later all this was put an end to, and the greatest war in history suddenly burst upon us, putting an end to all our hopes of present progress.

In regard to Geographical Exploration there was not much new in consequence of the war. Nevertheless we had some interesting information as to expeditions which had already been arranged for, and seeing that we were interested both in scientific and commercial geography, it would be well to look at not only the explorations which were going on, but also at the great geographical problems which would arise out of and after the war.

With regard to the first, explorations, there was a report from Sir Aurel Stein, whose expedition into Central Asia, under the auspices of the Indian Government, he referred to last year. In the report, Sir Aurel Stein mentioned, for example, his discoveries in the neighbourhood of the old Chinese wall. He found there relics of the occupation of that

distant part of the Chinese Empire which had remained where he found them for 1,000 years, relics of implements and similar things.

He referred last year to the Mawson Expedition, and since then we had had a publication by Sir Douglas Mawson. A most important part of his work was mapping a great area in the Antarctic borders, and also his investigations with regard to meteorology, which were of the highest importance to Australia. There had been a large number of minor expeditions, a considerable number of which were undertaken by Russians. He referred especially to those because of our present and future interest in Russia. That Russian continent—he called it such because it was so large, especially in Asia—had been explored and exploited probably less than any other part of the world. It had immense resources, both mineral and agricultural, which it was hoped, when the war was over, would be developed through the greater friendship and intimacy which would exist between Russia and Great Britain. That development might make up for some of the other difficulties and drawbacks we should have to suffer. The Russian Expeditions were mainly in Polar Regions, starting from Northern Russia in Europe and Asia. There were yet no results to report, but we could reflect upon the courage and enterprise of the Russians, and we had to sympathise with them because the explorers had been very unfortunate. Captain Sedoff had lost his life in trying to penetrate Franz Joseph Land. Parties under Brusiloff and Russanoff were missing, and Dr. Sverdrup, the Norwegian explorer, had gone in search of them. There was also another Russian explorer, Vilkitsky, missing.

Dr. Fillipi, who started for Northern Kashmir about a year ago, had completed his explorations, and there was a good deal that was interesting about them. He determined longitudes, by wireless, probably the first time by that method, and latitudes by astronomical observations. He was also engaged in meteorology and other subjects. Captain Bailey and Mr. Morshead had completed their explorations of the Brahmaputra, tracing the course of the river among the Himalayas almost to its source.

Another instance of the unceasing activity of geographers was that the Dutch were systematically engaged on the exploration of Western New Guinea. We had also had the

expedition, under Mr. Massey Baker and Mr. H. J. Ryan, in British Papua.

Captain Amundsen's expedition to the North Pole, which he proposed to carry on by similar methods to those of Dr. Nansen, had been postponed. As to Sir Ernest Shackleton, we should be having news of him about this time. If he started, as he expected to do, in December last from Weddell Sea he should have arrived at Ross Sea this month. If we did not hear from him before very long it would be probably next March before we heard from him. It was a journey of 1,700 miles from Weddell Sea to Ross Sea.

Touching upon the teaching of Geography, Mr. Nuttall said that, perceiving the deficiency in that matter, one of the first things the Society took in hand was to try to encourage greater study of geography and draw more attention to the subject. As a result they had, twenty-seven years ago, an exhibition in the Royal Institution in Mosley Street, and for a period they provided part of the cost of a lecturer in Geography at Owens College. It is of interest to note that the first lecturer appointed here is now head of the Geographical Department at Cambridge University, and the second is head of the same department at Oxford. Thus the Society claimed that they had done a good deal in bringing geography into its right place as a subject of study.

Turning to geographical problems which would be created by the war, he said that whatever happened after the war there was no doubt we would see a very different world from that we lived in at present. A portion of the population formerly was set aside for the purposes of defence, but now we were in the position that the whole of the vigorous manhood of nations came into the field to fight. If the whole of the vigorous male population was to be engaged in fighting no man could calculate what the end of it would be, nor could any man foretell when the war would end. Every country was affected by the war, either directly or indirectly, and there would be great poverty and difficulties over the whole world when the war was finished. The longer the war went on and the worse would be the effect. It was a curious thing that some time previous to the breaking out of the war there appeared to be a great movement or upheaval over the whole world, both East and West. Chinese women, for example, burst into their House of Assembly about their votes. Japan had become very active

and in a way which caused us great anxiety. She joined us, or we joined her, in turning the Germans out of China, and now, as far as we could gather, whilst everyone else was engaged in the war, she was trying to establish for herself a predominant position in that country. All these things added to problems brought about by the war, and it behoved us to study these problems. We would see surprises that very few of us expected or anticipated. Political boundaries would be altered, trade currents and financial movements changed. Great movements of populations would continue and probably increase. It was a remarkable fact that the movement of population for thousands of years had been always from East to West. But not very long ago a movement began in the opposite direction, and now we had, in America, the Chinese and Japanese meeting the movement of population to the West.

Reverting to the war, Mr. Nuttall said, that for his part he never believed that the Germans could have been such fools as to risk in war all the prosperity they had acquired in the world. They were said to be a very intelligent people, and they were in a certain way, but if we wanted an example of stupidity in main principles and great factors we had it in what the Germans had done in plunging into this war. It was an example of the greatest stupidity it was possible to find.

After touching upon the folly of nations fighting against each other instead of against the forces of nature for mutual progress and development, he expressed the opinion that through weight of numbers and resources we should eventually and without doubt gain the victory. Might that victory come soon, so that the nations would be brought into a sane state of mind in regard to armaments and that even Germany would learn how great a folly she had committed.

The Secretary announced that the retiring Officers and Council had been nominated for election.

Mr. R. A. Staniforth, in moving the resolution "That the Officers and Council, as nominated, be elected, and that the thanks of the Meeting be given to the President for his Address," expressed on behalf of the members thanks to the retiring Officers and Council for their services during the year, making special reference to the lectures which had been arranged and to the crowded condition of the Hall on most occasions.

Mr. Wm. Harper, in seconding the resolution, referred to the very interesting address for which they were greatly indebted to the President.

The resolution was passed unanimously. (See list of Officers and Council with Title Page.)

Mr. J. Stephenson Reid drew attention to the fact that the Society was now indebted to Mr. Theodore Gregory for thirty years service as Honorary Auditor, and moved the following resolution :—" That the best thanks of the Society be given to Mr. Theodore Gregory, F.C.A., J.P., for his services as Honorary Auditor, and that he be re-elected." Mr. T. M. Smith seconded the resolution, which was passed unanimously.

Mr. Joel Wainwright, J.P., moved, Mr. T. W. Sowerbutts, F.S.A.A., seconded the following resolution, which was passed unanimously :—" That the best thanks of this Meeting be tendered to the Right Hon. the Lord Mayor for the use of his Parlour, and for presiding over the Meeting."

Proceedings of the Society.*

January 1st to December 31st, 1915.

The 978th Meeting of the Society was held on Tuesday, January 5th, 1915, at 7.30 p.m. In the Chair, Mr. J. McFarlane, M.A., M.Com., F.R.G.S.

The Minutes of the Meeting held on December 15th and 18th were taken as read.

The election of Messrs. L. A. Gallé, Belgian Consul, J. H. Billinge, and E. H. Thomas, F.C.I.I., as Ordinary Members was announced.

The Chairman mentioned the loss by death of Sir James Duckworth, Vice President, and a resolution of sympathy with Lady Duckworth and family was passed by all present rising in silence.

Mr. H. Yule Oldham, M.A., F.R.G.S., gave a lecture on "Round the World in War Time," and illustrated his address with many original lantern views.

The Chairman moved and it was unanimously resolved that hearty thanks be tendered to Mr. Oldham for the very interesting description which he had given of his journey and for the illustrations shown.

The 979th Meeting of the Society was held on Tuesday, January 12th, 1915, at 7.30 p.m. In the Chair, Colonel H. T. Crook, D.L., V.D.

The Minutes of the Meeting held on January 5th were taken as read.

The Chairman announced the election of Miss Welding as an Ordinary Member, and Miss Wilkinson as an Associate.

Mr. J. A. Osborn gave a lecture on "The Sea and the Shore: A Study in Coast Erosion," and illustrated the lecture with many lantern views.

The Chairman, in moving a vote of thanks to the Lecturer, which was passed unanimously, referred to the Royal Commission on Coast Erosion and the delay of action thereon, also to the legal decision *re* Coast Line which had enabled landowners to annex the land covered at high water, and thus the amount of land taken into account has been increased.

The 980th Meeting of the Society was held on Tuesday, January 19th, 1915, at 7.30 p.m. In the Chair, Mr. E. W. Mellor, J.P., F.R.G.S.

The Minutes of the Meeting held on January 12th were taken as read.

* The Meetings are held in the Geographical Hall, unless otherwise stated.

The Rev. A. W. Fox, M.A., gave a lecture on "Life and Character in County Galway," illustrating his remarks with many lantern views.

The Chairman moved, and it was unanimously resolved, that hearty thanks be given to the lecturer for his racy, interesting and instructive account, so well illustrated, of his visits to County Galway and the Aran Islands.

The 981st Meeting of the Society was held on Tuesday, January 26th, 1915, at 7.30 p.m. In the Chair, Colonel H. T. Crook, D.L., V.D.

The Minutes of the Meeting held on January 19th were taken as read.

The death of Mr. Ralph Peters, an original member of the Society, was mentioned, and on the motion of the Chairman a resolution of sympathy with his children was passed unanimously by all rising in silence.

Mr. Samuel Wells, F.R.G.S., gave a lecture on "Across Europe by water; from the Black Country to the Black Sea." The lecturer illustrated his remarks with a very large number of lantern views.

The Chairman moved, and it was unanimously resolved, that the hearty thanks of the meeting be given to the lecturer for his interesting, instructive and humorous address and for the interesting slides shown.

The 982nd Meeting of the Society was held on Tuesday, February 2nd, 1915, at 7.30 p.m. In the Chair, Mr. J. Stephenson Reid.

The Minutes of the Meeting held on January 26th were taken as read.

The Chairman, after mentioning the loss by death of Mr. T. C. Middleton, J.P., a member of the Council for twenty years, and of Mr. N. Bradley, J.P., moved a resolution of sympathy with the relatives of both. The resolution was passed by the members rising in silence.

Mr. George Ginger described "Journeys in the Mediterranean," and illustrated his lecture with a large number of lantern views.

On the motion of the Chairman, a hearty vote of thanks was passed to Mr. Ginger for his very interesting address and for the many slides shown.

The 983rd Meeting of the Society was held on Tuesday, February 9th, 1915, at 7.30 p.m. In the Chair, Mr. J. A. Osborn.

The Minutes of the Meeting held on February 2nd were taken as read.

The Chairman announced the election of Mr. W. J. Dean as an Ordinary Member and Mrs. Hoole and Miss Lancashire as Associate Members.

Mr. Gilbert Waterhouse, M.A., F.R.G.S., described "A Flying Visit to Eastern Canada and the State of New York," and illustrated his remarks with many original lantern views.

On the motion of Mr. R. A. Staniforth, it was unanimously resolved that the hearty thanks of the meeting be given to Mr. Waterhouse for his humorous, instructive and interesting account of his visit and for the slides shown.

The 984th Meeting of the Society was held in the Houldsworth Hall, on Tuesday, February 16th, 1915, at 7.30 p.m. In the Chair, Mr. E. W. Mellor, J.P., F.R.G.S.

The Chairman mentioned the loss by death of Mr. S. Barton Worthington, to whose relatives a letter of condolence had been sent by the Secretary by direction of the Council.

Mr. James Shaw, F.R.P.S., described "A Four Hundred Mile Walk in Dolomite Tyrol," and illustrated his remarks with a large number of natural colour and other lantern views, all taken by himself and shown by the powerful electric lantern of the Vice-Chairman.

On the motion of the Chairman, seconded by Mr. T. W. F. Parkinson, M.Sc., F.G.S., a hearty vote of thanks was passed to the lecturer for the very interesting account of his journeys in the Tyrol and for the magnificent slides shown.

The lecturer, in acknowledging the vote of thanks, said that he never had his slides so well shown as they had been with Mr. Mellor's powerful lantern.

A short report here follows:—

"A large audience assembled in the Houldsworth Hall, Deansgate, on Tuesday evening, to hear Mr. James Shaw describe a 400-mile walk which he took in June of last year in Dolomite Tyrol, Austria. The lecture was one of the current weekly series arranged by the Manchester Geographical Society. Mr. E. W. Mellor, who not only presided, but acted as lanternist, in opening the meeting, said by the death of Mr. S. B. Worthington the Society had lost one of its oldest members. Mr. Worthington, who had reached his ninety-fifth year, visited the Society's rooms in the Parsonage a few years ago, and instead of making use of the lift mounted the flight of steps. There he saw a map of Manchester made about 1824, and, pointing to it, said, 'That is the town as I knew it as a little boy.' Entering upon his story, Mr. Shaw for an hour and a half entertained his audience with his delightful account of his tramp. A Fellow of the Royal Photographic Society, and one of our most noted Manchester men with the camera, Mr. Shaw is gifted with the seeing eye, and he has been a considerable traveller in this country as well as abroad. Further, he makes himself at home wherever he goes, and gains friends and pictures at the same time, especially among peasant folk. Examples of figure groups, as well as pictures of natural scenery and old-world buildings, including castles and homesteads, and the Dolomites, that grandly impressive range of mountains, were shown on the screen. Not a few were in colour, and, referring to these as well as to the other slides, Mr. Shaw complimented Mr. Mellor on the excellence of his task with the lantern—a tribute which was richly

deserved. The lecture itself, the word description, was equal to the pictures—simple and strong throughout, with touches of timely humour here and there, and over and above all was the flavour of the artistic sense for colour and beauty and grandeur which evolved naturally as the story proceeded. Added to all this was the excellent delivery. For the time being the war has closed the Tyrol to English tourists, and Mr. Shaw expressed the hope that the day was not far distant when this famous holiday resort, which had such pleasant memories for him, would be once more available.”—(*Manchester City News.*)

The 985th Meeting of the Society was held in the Houldsworth Hall, on Tuesday, February 23rd, 1915, at 7.30 p.m. In the Chair, Mr. Richard Kalisch, F.R.G.S.

The Chairman read a letter from the Manchester Cruising Association inviting the Members of the Geographical Society to attend a lantern lecture on “The Gulf Stream and the Weather,” by Dr. Johnstone, of the Fisheries Laboratory, Liverpool University, on Friday, February 26th.

Mr. John Hilditch, M.R.A.S., gave a lecture on the “Ancient Arts of China,” and illustrated the paper with photographs of the Chinese objects recently exhibited at Stretford, and which form part of the Hilditch Collection.

The Chairman moved, Mr. D. A. Little seconded, and it was unanimously resolved that the thanks of the meeting be given to Mr. Hilditch for his informing and interesting lecture and for the illustrations shown.

The 986th Meeting of the Society was held on Tuesday, March 2nd, 1915, at 7.30 p.m. In the Chair, Mr. George Ginger.

The Minutes of the Meetings held on February 9th, 16th and 23rd were taken as read.

The Chairman referred to the death of Mr. Charles Illingworth, a member for twenty-three years, and a resolution of sympathy with his relatives was unanimously passed.

Mr. Wm. Eller gave a lecture on the “Channel Islands,” and illustrated his description with a fine collection of lantern slides kindly lent by the Chambers of Commerce of Jersey and Guernsey.

On the motion of Mr. Richard Kalisch, F.R.G.S., seconded by Mr. C. Owen Hockin, it was unanimously resolved that the best thanks of the meeting be given to Mr. Eller for his interesting account of the Islands so well illustrated.

The 987th Meeting of the Society was held on Tuesday, March 9th, 1915, at 7.30 p.m. In the Chair, Mr. Gilbert Waterhouse, M.A., F.R.G.S.

The Minutes of the Meeting held on March 2nd were taken as read.

Mr. T. A. Edwards, F.R.G.S., gave a lecture on “Progress in South Africa under the Union,” and illustrated his remarks with a

large number of lantern slides from his own photographs taken during visits in 1908, 1911 and 1914.

Mr. E. Pickstone moved, Mr. J. Hancock seconded, and it was unanimously resolved that a hearty vote of thanks be given to Mr. Edwards for his very interesting and informing lecture so well and clearly illustrated.

The 988th Meeting of the Society was held in the Houldsworth Hall on Tuesday, March 16th, 1915, at 7.30 p.m. In the Chair, Colonel H. T. Crook, D.L., V.D.

The Minutes of the Meeting held on March 9th were taken as read.

Mr. E. W. Mellor, J.P., F.R.G.S., gave a lecture on "Southern India—Some Dravidian Landmarks." The address was illustrated with natural colour photographs taken by the lecturer, and shown by means of his powerful lantern.

On the motion of Mr. J. Stephenson Reid, seconded by the Chairman, it was unanimously resolved that the hearty thanks of the meeting be given to Mr. Mellor for his interesting and instructive address, for the beautiful slides with which it was illustrated, and for his splendid lantern, which enabled the slides to be adequately shown.

The 989th Meeting of the Society was held on Tuesday, March 23rd, 1915, at 7.30 p.m. In the Chair, Mr. J. Stephenson Reid.

The Minutes of the Meeting held on March 16th were taken as read.

As Colonel W. G. Giel, of the Hague, was unable to cross over from Holland, his lecture on the "East Indian Colonies of the Netherlands" was unavoidably postponed, and Councillor C. W. Godbert kindly gave "A Chat about Russia," illustrated with lantern views, mostly taken by himself.

On the motion of the Chairman, it was resolved that a hearty vote of thanks be given to the lecturer for his very interesting and instructive account of the places visited and of the various experiences during his journeys in the country.

The 990th Meeting of the Society was held in the Houldsworth Hall on Friday, March 26th, 1915, at 7.30 p.m. In the chair, Mr. E. W. Mellor, J.P., F.R.G.S., Vice-Chairman of the Council.

Mr. Christopher Pilkington gave an account of the "British Army in Flanders and France," illustrated with lantern views, mostly hand painted, and all from his own photographs.

Mr. J. Stephenson Reid moved a vote of thanks to Mr. Pilkington for the intensely interesting account which he had given of his experiences with the Seventh Division and for the photographs, all taken by himself, with which it was illustrated.

Sergeant Wilford, in seconding the resolution, which was carried unanimously, made an urgent appeal for all to help in obtaining recruits for the army.

Mr. Pilkington, after suitably acknowledging the vote of thanks, tendered special thanks to Mr. Mellor for presiding and for so splendidly showing the slides with his powerful lantern.

A full report here follows :—

“ It is almost certainly true that no one who has lectured or written on the war has had the same opportunities of seeing things and taking photographs as Mr. Christopher Pilkington. His opportunities were those of a soldier, armed with a camera, who had permission to go anywhere and take anything. One gathered that he is making an official regimental record of the doings of the Scots Guards. Early in September he went out with the 2nd Battalion, and he was attached to the famous Seventh Division through the terrible fighting round Ypres. His unaffected descriptions were full of a kind of closeness to the reality only possible from a man who has lived with the soldiers as one of them. He told us that of 1,000 men who left the Tower with him on September 15, “ so cheerful and jolly,” only 100 now remain, and of the officers, Lord Dalhousie and the others whose photographs we saw taken on the boat going over, there is a remnant of two. You realised the terrible wastage in another way from two photographs—one the thick, brown crowd of the battalion gathered on the landing stage at Zeebrugge, and the other the thin ranks mustered on the Menin road after weeks in the trenches.

“ From his account of the first days of marching and counter-marching in Belgium—Bruges, Ostend, Ghent, and back to Ypres—you got a curious impression of the men’s ignorance of the coming storm, how they wondered, ‘ when the fun was going to begin,’ and asked, ‘ Is this going to be a Cook’s tour round Belgium?’ He gave a touching account of the enthusiastic welcome given the English by the Belgian people, and said that when the word came to leave Ghent ‘ there was hardly a man in the Seventh Division who could not have cried. We felt we were deserting the people who had welcomed us as their deliverers.’

“ Round about Ypres the Seventh Division got into the thick of the German guns. ‘ You continually heard men who had been through Indian campaigns and South Africa say that what they had been through before was an absolute picnic compared to what they had to put up with from the Germans.’ The battle of Ypres, which lasted for weeks and is not over yet, was for Mr. Pilkington a time of cycling about with his camera, usually under shell fire, taking extraordinary pictures of smashed-up houses and anything particularly exciting that happened. One of his photographs shows the smoke actually clearing away the moment after a shell has destroyed the tower of the village church—one of many vivid glimpses of the wreckage of war.

“ Mr. Pilkington was so near the actual thing that he would see a shell fall into a house full of sleeping soldiers, and a few minutes afterwards would rush in with his camera and take a photograph of the horrible mess inside. He said he would be talking to an officer one day, and the next morning someone would come to him and ask

if he would take a photograph of that officer's grave. He said that the firing line was often the safest place, as the shells raked the country for miles behind, and death might come at any moment from the most unexpected quarter. During the height of the attacks on Ypres at the end of October he was constantly passing along the Menin road while the shells were searching out the transports. He said that after a time men became curiously indifferent about the shells, and he showed a photograph of some transport drivers calmly gazing round to see exactly where the shells were going to fall and if it was time to move on. At such times the drivers would think first of their horses' safety and only second of their own. Mr. Pilkington was only a few yards away from the château which contained a general and his staff at the moment when a shell struck it, killing six officers and wounding the general.

"People seem to have been living much as usual in the houses on the Menin road during this terrible time, and ten minutes after a shell had wrecked a house Mr. Pilkington saw and photographed people hunting for souvenirs. One astonishing thing was the sight of some children playing with toys on a doorstep in one of the hottest places. He photographed a soldier having his hair cut by a comrade with shells falling all around at a spot christened by the soldiers "Hell Corner." He saw the French burying their dead in layers in a big hole made by a Jack Johnson. 'They were like herrings in a barrel.' He insisted that there is nothing picturesque to be seen, and his photograph of a line of Guardsmen advancing to the attack showed nothing but a few blobs of khaki in a muddy field.

"Mr. Pilkington lived in Ypres in a convent, which was struck by shells while he was sheltering in the cellar. His photograph of the ruin of the Cathedral and the Cloth Hall suggested that in spite of what has been said it will be impossible ever to restore them, and he told us that all the soldiers in Ypres know very well that these priceless buildings were destroyed by the Germans 'for spite and for nothing else.'—(*Manchester Guardian*.)

The 991st Meeting of the Society was held on Tuesday, March 30th, 1915, at 7.30 p.m. In the Chair, Mr. E. W. Mellor, J.P., F.R.G.S.

The Minutes of the Meetings held on March 23rd and 26th were taken as read.

The election of Mrs. W. L. Gaudie as an Associate Member was announced.

Mr. Wm. H. Ward (Victorian Lecturer) described his visit to "The Italian and French Riviéras," and illustrated his remarks with a large number of original and other lantern views.

On the motion of Mr. George Ginger, seconded by the Chairman, it was unanimously resolved that the hearty thanks of those present be given to the lecturer for his full, interesting and instructive account of the places visited by him along the Riviera, so beautifully illustrated.

The 992nd Meeting of the Society was held on Tuesday, October 5th, 1915, at 7.30 p.m. In the Chair Mr. J. Howard Reed, F.R.G.S.

The Minutes of the Meeting held on March 30th were taken as read.

The Chairman mentioned that since the last meeting the Society had lost the following members by death, and that letters of regret and sympathy had been sent to their relatives by direction of the Council :—Professor A. J. Herbertson, D.Sc., Messrs. James Chorlton, Joseph Hallworth, Wm. Jones, J.P., and Wm. H. Robinson. The Chairman also mentioned the loss by death (two days before the meeting) of Miss Leech, a regular attender at the meetings, and asked those present to show their regret and sympathy by rising.

The election of the following members was announced :—
Corresponding : Captain E. Keith-Roach and Captain N. Zimmern ;
Ordinary : Mrs. A. G. M. Clark, Mrs. F. Grundy, Miss M. Cookson, Miss Stocks, Messrs. J. A. Makin and Arnold Williams ; Associate : Mrs. L. Barnes, Miss F. Mellor, Miss M. Ashworth, Mr. and Mrs. F. Briggs.

A letter was read from Professor Sedgefield, M.A., drawing attention to a class in Russian at the University.

The Rev. J. H. Burkitt gave a lecture on "Belgium : Before the War and After." The lecturer gave a short history of the country and described journeys in Belgium before the war, dealing very fully with the town of Bruges, also with Ghent, Brussels, Antwerp, Louvain, Liège, Namur, and Dinant. He then described its present condition as the result of the German invasion and occupation. The lecture was illustrated with many fine lantern views.

On the motion of the Chairman, it was unanimously resolved that the best thanks of the meeting be given to the lecturer for his interesting address and for the illustrations shown.

The 993rd Ordinary Meeting of the Society was held on Tuesday, October 12th, 1915, at 7.30 p.m. In the Chair, Mr. J. Stephenson Reid.

The Minutes of the Meeting held on October 5th were taken as read.

Miss L. Edna Walter, B.Sc., H.M.I., gave a lecture on "The Fascination of Holland." The address was illustrated with original and other lantern views, some of which were kindly lent by Mr. S. L. Coulthurst.

On the motion of Mr. J. E. Balmer, F.R.G.S., seconded by the Chairman, it was unanimously resolved, that the best thanks of the meeting be tendered to Miss Walter for her intensely interesting account of the country and the people and for the illustrations shown.

The 994th Ordinary Meeting of the Society was held on Tuesday, October 19th, 1915, at 7.30 p.m. In the Chair, Mr. E. W. Mellor, J.P., F.R.G.S.

The Minutes of the Meeting held on October 12th were taken as read.

The election of the following members was announced:—
 Ordinary: Messrs. A. Harris, L. Hope, R. Huntbach and W. R. Livesey; Associate: Mrs. J. Allen, Miss Gladys E. A. Bruce, Miss M. Garner, Miss Holt, Miss M. Houghton, Miss L. W. Warburton, Mrs. W. E. Walch, and Mr. W. R. Shaw.

A paper by Mr. J. Hutcheon, M.A., of the Department of Geography at Capetown, on "Geography, its Field, its Fascination, and its Future, with special reference to South Africa," was submitted by the Chairman, and taken as read. (See Vol. XXX, p. 145.)

Mr. F. G. Percival, B.Sc., F.G.S., gave an account of his journey to "Trinidad and Venezuela," as a member of an expedition engaged in prospecting for petroleum. He described many personal experiences, and illustrated his remarks with lantern views, mostly original. (See p. 16.)

Mr. W. H. Zimmern moved, Mrs. A. de Bolivar seconded, and it was unanimously resolved, that the lecturer be thanked for his interesting address and for the slides shown.

The 995th Meeting of the Society was held on Tuesday, October 26th, 1915, at 7.30 p.m. In the Chair, Mr. J. Stephenson Reid.

The Minutes of the Meeting held on October 19th were taken as read.

Mr. James D. Berwick described visits made to "The North of Ireland," and illustrated his remarks with a large number of lantern views, made, and many coloured, by himself.

On the motion of Mr. Robert Stewart, seconded by the Chairman, it was resolved that the hearty thanks of the meeting be given to Mr. Berwick for his interesting, poetical and very humorous address, so splendidly illustrated with his beautiful slides.

The 996th Meeting of the Society was held on Tuesday, November 2nd, 1915, at 7.30 p.m. In the Chair, Mr. R. B. Stoker, F.R.G.S.

The Minutes of the Meeting held on October 26th were taken as read.

The election of the following members was announced:—
 Ordinary: Mrs. M. M. White; Associate: Miss D. H. Todd.

Mr. Thomas Whyman, Secretary of the Port of Manchester Branch of the Navy League, gave a lecture on "The Effect of Geographical Features on the War at Sea," and illustrated his address with a large number of lantern slides of maps, diagrams and views. (See p. 19.)

Mr. E. W. Mellor, J.P., F.R.G.S., moved, Mr. R. A. Staniforth seconded, and the Chairman supported, a resolution of thanks to the lecturer for his very interesting account of the work of the Navy in the last sixteen months, and for the many lantern views shown.

The 997th Meeting of the Society was held in the Houldsworth Hall, on Tuesday, November 9th, 1915, at 7.30 p.m. In the Chair, Mr. Hermann Woolley, F.R.G.S., Vice President of the Society and late President of the Alpine Club.

The Rev. Walter Weston, M.A., F.R.G.S., Member of the Alpine Club and First Honorary Member of the Japanese Alpine Club, described "Recent Explorations in the Japanese Alps." (See page 23.) The lecture was illustrated with many beautiful, Japanese coloured, lantern views.

Mrs. H. L. Lees, F.R.G.S., moved, and Mr. Wm. Robinow seconded a hearty vote of thanks to the lecturer for his intensely interesting address and for the beautiful slides.

The Chairman, in putting the resolution, mentioned that both mover and seconder had visited Japan, and he also asked to be permitted to add to the resolution thanks to the Vice-Chairman for arranging the meeting in this hall and for having his powerful lantern erected so that the slides could be so splendidly shown as they had been. The resolution, as amended, was carried with acclamation.

The 998th Meeting of the Society was held in the Houldsworth Hall on Tuesday, November 16th, 1915, at 7.30 p.m. In the Chair, Colonel H. T. Crook, D.L., J.P.

The Rev. W. H. Elliott, F.R.G.S., gave a lecture on "Bothaland : or German Colonization in South West Africa, its objects and results." The synopsis of his lecture was as follows :—First coming of Europeans to South Africa : the Stone Cross : England and Germany, allies in Mission Work : The True Cross : Early Explorers : Boer treks and Boer troubles, the tragedy of drought : the partition of Africa, Germany's share : The Iron Cross.

The Territory, its size, surface and climate, deserts which engulf, rivers which disappear : Vegetable poverty and mineral wealth, a great and terrible wilderness : imported water.

Population : Bushman, Hottentot, Bantu : Their tribes and tongues, their rule and religion.

Development under German rule : the German terror and Herero tragedy : Cultivating the desert, destroying the inhabitants : Settlements : Oases and their extensions : Ranching and agriculture : Railways, roads and routes.

German methods and British methods : The German menace : South West Africa necessary to the Union.

The lecture was well illustrated with lantern views shown by the powerful lantern of the Vice-Chairman of the Society.

Mr. T. A. Edwards, F.R.G.S., in moving that the hearty thanks of the meeting be given to the lecturer for his very interesting and instructive address, so well illustrated, described some of his experiences in various parts of South Africa ; Mr. J. Howard Reed, F.R.G.S., in seconding the resolution, asked that the thanks of the

meeting should also be given to the Vice-Chairman for his valuable help. The resolution as amended was passed unanimously.

The 999th Meeting of the Society was held on Tuesday, November 23rd, 1915, at 7.30 p.m. In the Chair, Mr. George Ginger.

The Minutes of the Meetings held on November 2nd, 9th, and 16th were taken as read.

The Chairman announced the election of Mrs. Bubb and Mr. S. Wigham as Associate Members.

Mr. A. Sedgwick Barnard, M.I.E.E., A.M.Inst.C.E., lectured on "Something about Ceylon." He specially referred to the railways which had been constructed in the island, to the Botanical Gardens at Peradeniya, and to native life and questions. (See p. 36.)

The address was illustrated with views, mostly taken by the lecturer.

Mr. C. A. Clarke moved, Mr. R. A. Staniforth seconded, and it was unanimously resolved, that the hearty thanks of the meeting be tendered to Mr. Barnard for his very interesting lecture and for the illustrations shown.

The 1,000th Meeting of the Society was held in the Houldsworth Hall on Tuesday, November 30th, 1915, at 7.30 p.m.

Mr. Harry Nuttall, M.P., F.R.G.S., President of the Society, presided.

Mr. Nuttall said the occasion was one of which they ought to take some notice, by calling to their minds what happened thirty years ago. He held in his hands the minutes of the first ordinary meeting in 1885. Since that time, as he had said, they had met one thousand times for the purpose of hearing different eminent men on geographical matters, gathering knowledge of all kinds relating to geography. At the first ordinary meeting, to which he had referred, they had in the chair Mr. J. F. Hutton, the then President of the Manchester Chamber of Commerce, father of Mr. Arthur Hutton, who was doing such excellent work in connection with the cotton trade; the Bishop of Salford (afterwards Cardinal Vaughan), Lord Aberdare, President of the Royal Geographical Society; Professor Boyd Dawkins, the late Mr. Arthur Arnold, then one of the Parliamentary representatives for Salford, and others. A resolution was passed at that meeting that "the establishment of the Manchester Geographical Society would very largely aid in advancing science, commerce, and civilisation, and that the Society deserved the hearty support of the people of Lancashire, Cheshire and the adjoining districts." Of the Council elected at that meeting five were still serving the Society in that capacity:—The Rt. Rev. the Bishop of Salford, Rt. Hon. Sir Wm. Mather, Sir W. H. Houldsworth, Bart., Professor W. Boyd Dawkins, J.P., F.R.S., and Mr. F. Zimmern, F.R.G.S. Among the

eminent men who had addressed them might be mentioned Sir H. M. Stanley, Nansen, Peary, Sven Hedin—who was not very popular with us now, though he was an eminent traveller,—Captain Scott, Sir Ernest Shackleton, and Captain Amundsen. The last three were Antarctic explorers, and they were now awaiting news from Sir E. Shackleton from the neighbourhood of the South Pole, which they expected to have about the middle of next year.

It has been said that war taught geography. He thought most people in this country, and perhaps throughout the civilised world, knew more about the map of the world now than they ever did in their lives before. We were all familiar with the Balkans and, indeed, with other parts of the globe, because events relating to the war were happening everywhere. The study of geography had always been very important, and certainly after the war we should need to pay more attention to it than ever we had done in the past. He had always regarded geography as the basis of knowledge. We should need after the war more than ever in the past, not only to study geography—which included a knowledge of the products of the earth and of the peoples of the earth,—but everything connected with geography in its relation to commerce and to the advancement of science and civilisation.

The President then introduced Mr. James Shaw, F.R.P.S., who gave a lecture on “Three Picturesque Cities of Italy: Perugia, Orvieto and Siena.” Before proceeding with the lecture, Mr. Shaw described a number of natural colour lantern views of the Austro-Italian frontier where fighting is taking place.

The lecture was illustrated with a large number of very fine photographs shown to the best advantage by means of the powerful electric lantern of the Vice-Chairman.

On the motion of the Chairman, a hearty vote of thanks was unanimously passed to Mr. Shaw for his very interesting lecture, for the slides with which it was illustrated, and for the natural colour views of the frontier.

Mr. Shaw, after acknowledging the resolution, said that both for himself and for all present, he wished to thank Mr. Mellor for his kindness and generosity in enabling the slides to be so well shown with his powerful lantern in that fine hall.

The 1,001st Meeting of the Society was held on Tuesday, December 7th, 1915, at 7.30 p.m. In the Chair, Colonel H. T. Crook, D.L., V.D.

The Minutes of the Meetings held on November 23rd and 30th were taken as read.

The Chairman announced that Miss M. G. Walker, Miss B. Wylde, and Messrs. H. Dakin and R. Palmer had been elected Ordinary Members.

Mr. Wm. Eller gave a lecture on “The Panama Canal,” which he described as the greatest liberty man had ever taken with nature.

The lecture was illustrated with a fine collection of slides, many obtained direct from the Canal Authorities and never before shown in this country.

Mr. Ewin Pickstone moved, and the Chairman seconded, a hearty vote of thanks to Mr. Eller for his interesting and instructive address, and to the American Consul, Mr. R. E. Holaday, and the Canal Authorities for their assistance in regard to the slides. The resolution was passed unanimously.

The 1,002nd Meeting of the Society was held on Tuesday, December 14th, 1915, at 7.30 p.m. In the Chair, Mr. E. W. Mellor, J.P., F.R.G.S.

The Minutes of the Meeting held on December 7th were taken as read.

The Chairman announced that Dr. E. J. Bles, Mr. C. M. Bles and Mr. S. D. Bles, the sons of the late Mr. A. J. S. Bles, J.P., who was a member of the Society for twenty-one years, have presented to the Society thirty-seven volumes of "Le Tour du Monde" from the beginning in 1860 to 1897, all beautifully bound.

On the motion of the Chairman, it was resolved that the Report of the Delegate (Mr. Harry Sowerbutts, A.R.C.Sc.) to the Manchester Meeting of the British Association for the Advancement of Science, which was submitted to the meeting, be taken as read. (See p. 71.)

Mr. W. Leonard Flinn gave a lecture on "Persia: Past and Present," and illustrated his remarks with many original lantern views.

On the motion of the Chairman, it was unanimously resolved that the hearty thanks of the meeting be given to Mr. Flinn for his very interesting description of Persia, and for the illustrations shown.

The 1,003rd Meeting of the Society was held on Friday, December 17th, 1915, at 7.0 p.m., and took the form of a lecture to the children of the members and their friends. Miss Kate Qualtrough, F.R.G.S., presided.

Mr. Thomas Whyman, Secretary of the Port of Manchester Branch of the Navy League, gave a lecture on "Life in the Navy," illustrated with many fine lantern views.

Miss Qualtrough gave expression to the thanks of all to Mr. Whyman, and the children showed their appreciation of the interesting lecture and of the pictures shown on the screen by rounds of hearty applause.

List of Maps, Books, Journals, etc.,

ACQUIRED BY THE SOCIETY

FROM JANUARY TO DECEMBER 31st, 1915.

Maps.

GENERAL.

A Collection of 219 Maps and Charts (416 sheets), mostly published by Laurie and Whittle from 1794 to 1830. *Mr. W. Richardson Kettle, F.R.G.S.

Six Wall Diagrams of the World illustrating Ancient and Modern Projection. Constructed by Mr. Reed. *Mr. J. Howard Reed, F.R.G.S.

EUROPE.

Teatro della Guerra Europa. Scala 1/4,000,000 Novara: Istituto Geografico de Agostini. *The Publishers.

Europa Sud-Orientale. Carta Politica. Scala 1/3,000,000. Novara: Istituto Geografico de Agostini. *The Publishers.

Carta-Base pel Raggruppamento politico delle Nazionalità nell' Austria-Ungheria e Stati limitrofi. Adriano Colocci. Scala 1/4,000,000. 2d edizione. Novara: Istituto Geografico de Agostini. 1915. *The Publishers.

The Theatre of War in Eastern Europe (Standford's War Map, No. 11). Including Poland and the Russo-German Frontier on the North, the Northern part of Serbia on the South, and Transylvania, Bukowina, and Rumania as far as Bucharest on the South-East. Scale 18 miles to an inch (1/1,140,000). London: Edward Stanford, 1915. (Price, Coloured Sheet 7/6). *The Publisher.

Scacchiere Franco-Belga-Tedesco. Scala 1/1,000,000. Con indice-dizionario di 2,000 nomi. Novara: Istituto Geografico de Agostini, 1915. *The Publishers.

Scacchiere Russo-Austro-Tedesco. Scala 1/1,500,000. Con indice-dizionario di 4,000 nomi. Novara: Istituto Geografico de Agostini, 1915. *The Publishers.

La Guerra nell' Adriatico. Carta del mare Adriatico, Adiacenze e Porti Principali. Con 18 Piani Portuali. Scala 1/1,500,000. Novara: Istituto Geografico de Agostini, 1915. *The Publishers.

I due confini d'Italia. Carta fisico-politica. Scala 1/1,250,000. Seconda edizione. Novara: Istituto Geografico de Agostini, 1915. *The Publishers.

La Regione Veneta e le Alpi Nostre dalle fonti dell' Adige al Quarnaro. Carta Etnico-Linguistica. Scala 1/500,000. 3d edizione. Novara: Istituto Geografico de Agostini, 1915. *The Publishers.

Carta del Teatro della Guerra Nostra. Scala 1/500,000. Novara: Istituto Geografico de Agostini, 1915. *The Publishers.

Le Tre Venezie—la Venezia Tridentina. La Venezia Propria—la Venezia Giulia. Grande Carta Ipsometrica in due fogli. Scala 1/250,000. Seconda edizione. Novara: Istituto Geografico de Agostini, 1915. *The Publishers.

Katalog over Norske Sjøkarter, den 1 Januar, 1915. Kristiania, 1915. *Norges Geografiske Opmaalning.

AFRICA.

Twelve Wall Diagrams of Africa, illustrating the Progress of Discovery, Constructed by Mr. Reed. *Mr. J. Howard Reed, F.R.G.S.

AMERICA.

Panoramic View of the Yellowstone National Park, Wyoming-Montana-Idaho. Scale 1/187,500. Prepared by John H. Renshawe from topographic sheets of the U.S. Geological Survey. Engraved and Printed by the U.S. Geological Survey. Washington: Department of the Interior, 1915. *Department of the Interior.

ATLASES, PHOTOGRAPHS, Etc.

Atlas Minor L. Selectarum Tabularum Geographicarum Homanni (Johann Baptist Homann), ad Mentem recentiorum geographorum recognitus et dispositus. Nurnberg: Homannischen Officin. [1740]. *Mr. William Richardson Kettle, F.R.G.S.

A General Atlas, describing the whole Universe. Being a complete and new collection of the most approved Maps extant; corrected with the utmost care, and augmented from the latest Discoveries: The whole being an improvement of the Maps of D'Anville and Robert. Engraved on 62 Copper Plates by Thomas Kitchen, senior, and others. London: Robert Sayer, 1773. *Mr. William Richardson Kettle, F.R.G.S.

A New and Complete Pilot, from the Mouth of the Thames, to the Cape of Good Hope: Comprehending on a very extensive scale the whole of that Navigation, chiefly selected from the large East-India Pilot, and particularly adapted for Ships bound to the Cape only. London: Robert Laurie and James Whittle, 1796. *Mr. William Richardson Kettle, F.R.G.S.

A New Royal Atlas, by the Rev. John Evans, A.M. London: James Cundee, 1810. *Mr. J. Howard Reed, F.R.G.S.

A New General Atlas, Ancient and Modern, Accurately Constructed by James Playfair, D.D., and elegantly engraved by the most eminent Artists in London. Revised and Corrected. Edinburgh: Macredie, Skelly and Co., 1822. *Mr. William Richardson Kettle, F.R.G.S.

Atlas de l'Océan Pacifique—Hemisphere Austral—dressé par M. de Krusenstern, Commodore de la Marine. Publié par ordre de sa Majesté Impériale. St. Petersbourg, 1824. *Mr. William Richardson Kettle, F.R.G.S.

Atlas de l'Océan Pacifique—Hemisphere Boreal—dressé par M. de Krusenstern, Contre-Amiral. Publié par ordre de sa Majesté Impériale. (Five Maps missing.) St. Petersbourg, 1827. *Mr. William Richardson Kettle, F.R.G.S.

- A Classical Atlas on an entirely new plan. Revised by Rev. D. Blair. London : T. J. Allman. *Mr. J. Howard Reed, F.R.G.S.
- A Classical Atlas to illustrate Ancient Geography; comprised in twenty-five Maps, showing the various divisions of the World as known to the Ancients. With an Index of Ancient and Modern Names, by Alexander G. Findlay, F.R.G.S. London : William Tegg, 1853. *Mr. William Richardson Kettle, F.R.G.S.
- Atlante Geografico Metodico, Dott. Prof. Giovanni de Agostini. Terza Edizione Riveduta ed Ampliata, 75 Tavole con 196 Carte, cartine e figure. Novara : Istituto Geografico de Agostini. *The Publishers.
- Atlante Geografico Muto fisico politico a colori ed albo di esercitazioni cartografiche in due fascicoli. G. de Agostini. Fascicolo Primo, Tavole 17. Fascicolo Secondo, Tavole 11. 3d. edizione. Novara : Istituto Geografico de Agostini. (Price : Fasc. 1, L. 1,50. Fasc. 11. L. 1,00.) *The Publishers.
- Calendario-Atlante de Agostini, 1915, con notiziario redatto da L. F. de Magistris. Novara : Istituto Geografico de Agostini, 1915. *The Publishers.
- An Historical Atlas of Modern Europe from 1789 to 1914. With an Historical and Explanatory Text, by C. Grant Robertson, M.A., C.V.O., and J. G. Bartholomew, F.R.S.E., F.R.G.S. London : Oxford University Press, 1915. (Price, 3/6 net.) *The Delegates of the Clarendon Press, Oxford.
- Great Britain's Coasting Pilot : in two parts. Being a new and exact Survey of the Sea-Coast of England and Scotland, from the River of Thames to the Westward and Northward; with the Islands of Scilly, and from thence to Carlisle : likewise the Islands of Orkney and Shetland. With directions for coming into the Channel between England and France, by Captain Greenville Collins. London : J. Mount and T. Page, 1764. *Mr. William Richardson Kettle, F.R.G.S.
- The Coasting Pilot for Great Britain and Ireland; done from Actual Surveys and Observations by Capt. Joseph Huddart, George Burn, James Grosvenor, and many other Navigators. The whole engraved on thirty-six copper-plates, with sailing directions on the Charts. London : Laurie and Whittle, 1794-1800. *Mr. William Richardson Kettle, F.R.G.S.
- Pilot for the Eastern Coasts of Great Britain, from London to Edinburgh, including the new general Chart of the North Sea. London : Robert Laurie and James Whittle, 1810. *Mr. William Richardson Kettle, F.R.G.S.
- A New and Enlarged Baltic Pilot, comprehending a Collection of Surveys and General Charts, from London to St. Petersburg; including the North Sea, Kattegat, the Belts, Sound, and Gulf of Finland, etc. The Third Edition. London : Robert Laurie and James Whittle, 1809. *Mr. William Richardson Kettle, F.R.G.S.
- A New Atlas of France : Comprising Maps of the Eighty-three Departments, each being divided into its several Districts and Cantons. Also, two General Maps of France, exhibiting that Country both in its Former and Present Divisions. To which is added, a General Alphabetical Index. London : John Wallis, 1794. *Mr. William Richardson Kettle, F.R.G.S.

- Atlas Géographique et Militaire de la France, divisé en deux parties. Part 1, Carte de France et des Etats limitrophes. Part 2, Plans et descriptions des principales places de Guerre. Paris: R. J. Julien, 1751. *Mr. William Richardson Kettle, F.R.G.S.
- Carte Générale du Théâtre de la Guerre en Italie et dans les Alpes par Bacler Dalbe. Two parts, bound in one. Fifty-four Sheets. Paris: l'Auteur, 1792. *Mr. William Richardson Kettle, F.R.G.S.
- A Bengal Atlas: Containing Maps of the Theatre of War and Commerce on that side of Hindoostan, by James Rennell. London: J. Rennell, 1781. *Mr. William Richardson Kettle, F.R.G.S.
- The American Atlas: or, a Geographical Description of the whole Continent of America; wherein are delineated at large, its several regions, countries, States and Islands; and chiefly the British Colonies, composed from numerous surveys, several of which were made by Order of Government by Major Holland, Lewis Evans, William Scull, Henry Mouzon, Lieut. Ross, J. Cook, Michael Lane, Joseph Gilbert, Gardner, Hillock, etc., etc. Engraved on 49 Copper-Plates by the late Thomas Jefferys. London: R. Sayer and Bennett, 1778. *Mr. William Richardson Kettle, F.R.G.S.

Books.

GENERAL.

- Atti del X Congresso Internazionale di Geografia. Roma, 1913. Maps, Diagrams and Illustrations. Roma: Reale Società Geografica, 1915. *Mr. William Heinemann.
- An Introduction to General Geography, by Alec A. Golding, B.Sc. (Marlborough Grammar School). Diagrams. Cambridge: University Press (C. F. Clay, Manager), 1915. (Price, 4/-.) *The Publishers.
- The Teaching of Geography, by B. C. Wallis, B.Sc. (Econ.) London, F.C.P., F.R.G.S. Sketch Map, Diagrams, etc. Cambridge: Cambridge University Press (C. F. Clay, Manager), 1915. (Price, 3/6 net.) *The Publishers.
- Economic Geography, by John McFarlane, M.A., M.Com., Lecturer in Geography in the University of Manchester. Maps. London: Sir Isaac Pitman and Sons. (Price, 7/6 net.) *The Author.
- Physical Geography, by Philip Lake, M.A., University Lecturer in Regional and Physical Geography. Maps, Figures and Illustrations. Cambridge: University Press, 1915. (Price, 7/6 net.) *The Publishers.
- The Surface of the Earth: Elementary, Physical and Economic Geography, by Herbert Pickles, B.A., B.Sc. Maps, Diagrams and Illustrations. Cambridge: University Press (C. F. Clay, Manager), 1915. (Price, 2/-.) *The Syndics of the Cambridge University Press.
- A Manual of Map-Making and Mechanical Geography, by Alexander Jamieson, LL.D. Maps and Diagrams. London: A. Fullerton and Co., 1846. *Mr. J. Howard Reed, F.R.G.S.
- A Treatise on Astronomy, by Sir John F. W. Herschel, Bart., K.H., M.A., etc. Illustrations. London: Longman and others, 1851. *Mr. J. Howard Reed, F.R.G.S.

- The Geographical Journal, Vols. XXIX to XLIII, January, 1907, to June, 1914. London: Royal Geographical Society. *Mr. J. Howard Reed, F.R.G.S.
- The Geographical Teacher, 1915, Nos. 41, 42, 43. *Mr. H. Sowerbutts, A.R.C.Sc.
- Report of the Conference of Educational Associations held at the University of London, January, 1915.
- Le Tour du Monde. Journal des Voyages et des Voyageurs. Fondé par Edouard Charton. Maps and Illustrations, 1860-1897. (37 Bound Volumes.) Paris: Hachette et Cie, 1860-1897. *Dr. E. J. Bles, Mr. C. M. Bles and Mr. S. D. Bles.
- Stories of Exploration and Discovery, by Arthur B. Archer, M.A. Maps and illustrations. Cambridge: At the University Press, 1915. *The Publishers.
- The Fortnightly Review, 1915. *Miss K. Qualtrough, F.R.G.S.
- Almanack for the Year 1915, by Joseph Whitaker, F.S.A., London.
- The Co-operative Wholesale Societies, Limited, Annual, 1915. *Mr. G. H. Warren.
- The Incorporated Accountants' Year-Book, 1915-16. *The Council of the Society of Incorporated Accountants and Auditors.
- A Student's Book on Soils and Manure, by E. J. Russell, D.Sc. Illustrated. Cambridge: University Press, 1915. (Price, 3/6 net.) *The Syndics of the University Press.

BRITISH ISLES.

- The New Lancashire Gazetteer, or Topographical Dictionary, by Stephen Reynolds Clarke. London: Henry Teesdale and Co., 1830. *Mr. J. Howard Reed, F.R.G.S.
- Geological Essays, and Sketch of the Geology of Manchester and the Neighbourhood, by John Taylor. Illustrated. Manchester: Alex. Ireland and Co., 1864. *Mr. J. Howard Reed, F.R.G.S.
- The Official Handbook of Manchester and Salford and Surrounding District. With information on Local Institutions and Societies, 1915. Manchester: Manchester Corporation, 1915.
- Manchester. City of Manchester. Report of the Sanitary Committee on the Subject of Air Pollution, April, 1915.
- Report and Proceedings of the Manchester Field Naturalists and Archaeologists' Society for the year 1914. Illustrations. Manchester, 1915. *Mr. Wm. H. Ward.
- Descriptive Handbook to the Relief Model of Wales, by Wallace E. Whitehouse, L.C.P. With an Introduction by H. J. Fleure, D.Sc. Illustrated. Cardiff: National Museum of Wales, 1915. (Price, 6d.) *The Author and the Director of the National Museum.
- Handbook and Guide to Dundee and District. Edited by A. W. Paton, F.I.P.S., etc., and A. H. Millar, LL.D., etc. Maps and Illustrations. Prepared for the British Association Meeting. Dundee: 1912. *Mr. J. Howard Reed, F.R.G.S.
- Dundee. Five Illustrated Handbooks of Dundee. Souvenirs of the British Association Meeting, 1912. *Mr. J. Howard Reed, F.R.G.S.

EUROPE.

- Den Norske Lods utgit av Norges Geografiske Opmaaling. Hefte 2, Kyststrækningen fra Langesund til Kristiansand, 1896. Omarbeidet, 1914. Kristiania: Norges Geografiske Opmaaling, 1915. *Norges Geografiske Opmaaling.
- The Times Russian Supplement. *Mr. Isaac Chorlton.
- Guide to Jersey, Guernsey, Herm, Sark, Alderney and Western Normandy, by C. B. Black. Five Plans and ten Maps. 15th Edition. London: A. and C. Black, 1913. *Mr. William Eller.
- The Alps from End to End, by Sir William Martin Conway. With 16 full-page Illustrations by A. D. McCormick, and a Chapter by the Rev. W. A. B. Coolidge. London: Archibald Constable and Co., Ltd., 1905. *Mr. Wm. H. Ward.
- Along the Riviéras of France and Italy, by Gordon Home. Map and Illustrations. London: J. M. Dent and Co., 1908.
- With the Turks in Thrace, by Ellis Ashmead-Bartlett. In Collaboration with Seabury Ashmead-Bartlett. Map and Illustrations. London: William Heinemann, 1913.

ASIA.

- Palestine: Notes, Descriptive and Historical. With a Map of the Countries travelled by the Apostles. Second Edition. London: R. H. Laurie, 1833. *Mr. William Richardson Kettle, F.R.G.S.
- Palestine Exploration Fund. Quarterly Statement, 1915. Annual Report for 1914.
- Ninth Report on Plague Investigations in India. Issued by the Advisory Committee, appointed by the Secretary of State for India, the Royal Society and the Lister Institute. London: The Journal of Hygiene, Plague Supplement IV, 1915. *The Chairman of the Advisory Committee.
- Campaigns on the North-West Frontier, by Captain H. L. Nevill, D.S.O. Maps and Illustrations. London: John Murray, 1912.
- Punjab District Gazetteers, Vol. XXI A. Gurdaspur District, with Maps, 1914. *H.M. Secretary of State for India.
- Gazetteer of the Bombay Presidency. B. Vols. II, Surat and Broach; III, Kaira and Panch Mahals; V, Cutch, Palanpur, Mahi Kantha; VI, Rewa Kantha, Cambay and Surat Agency; VIII, Kathiawar; XII, Khandesh and Mehwas Estates; XXI, Belgaum; XXIV, Kolhápúr and Southern Mahratta Jachirs. *H.M. Secretary of State for India.
- Central Provinces and Berar District Gazetteers. B Volumes (1891-1911): Damoh, Hoshangabad, Jubbulpore and Yeotmal Districts. *H.M. Secretary of State for India.
- Central Provinces and Berar District Gazetteers. Addenda and Corrigenda to B Volumes of the Akola, Amraoti, Bilaspur, Buldana, Drug, Mandla, Narsinghpur, Raipur, Saugor and Seoni Districts (1912-13 and 1913-14). *H.M. Secretary of State for India.

- District Gazetteers of the United Provinces of Agra and Oudh. Supplementary Notes and Statistics to Vols. VI, VII, VIII, X, XIII, XIV, XVI, XVII, XVIII, XXII, XXIII, XXV, XXVI, XXVIII, XXX, XXXV, XXXVI, XXXVIII, XXXIX, XL, XLI, XLII, XLIII, XLV, XLVIII, and the Rampur State. *H.M. Secretary of State for India in Council.
- Bengal District Gazetteers Vol. XXXII- A, Murshidabad District. *H.M. Secretary of State for India.
- Bengal District Gazetteers. B Volumes (Statistics): Gaya, Muzaffarpur, Darbhanga, Patna, Palamau, Champaran, Saran, Singhbhum, Bhagalpur and Ranchi Districts. *H.M. Secretary of State for India.
- Assam District Gazetteers. Supplements to Vols. I, Cachar; III, Goalpara; IX, Naga Hills and Manipur. *H.M. Secretary of State for India.
- Burma Gazetteer. Henzada District, Vol. A; Syriam District, Vol. A; Toungoo District, Vol. A. *H.M. Secretary for State for India.
- Notes from a Frontier, by Thomas M. Ainscough, M.Com., F.R.G.S. Illustrated. Shanghai: Kelly and Walsh, Ltd., 1915. *The Author.
- On and Off Duty in Annam, by Gabrielle M. Vassal. Illustrated. London: William Heinemann, 1910.
- The Opening of China. Six Letters reprinted from the Times on the Present Condition and Future Prospects of China, by A. R. Colquhoun, A.M.Inst.C.E., etc. With an Introduction by S. H. Louttit. London: Field and Tuer, 1884. *Mr. J. Howard Reed, F.R.G.S.
- Korea, by Angus Hamilton. Map and Illustrations. London: William Heinemann, 1904.

AFRICA.

- An Account of Timbuctoo and Housa, Territories in the Interior of Africa, by El Hage Abd Salem Shabeeny. With Notes, Critical and Explanatory. To which is added, Letters descriptive of Travels through West and South Barbary, and across the Mountains of Atlas, etc., etc., by James Grey Jackson. Maps. London: Longman and others, 1820. *Mr. J. Howard Reed, F.R.G.S.
- Narrative of Discovery and Adventure in Africa, from the earliest ages to the present time, by Professor Jameson, James Wilson, F.R.S.E., and Hugh Murray, F.R.S.E. Map and Illustrations. Edinburgh: Oliver and Boyd, 1830. *Mr. J. Howard Reed, F.R.G.S.
- The Travels of Richard and John Lander, into the Interior of Africa, for the discovery of the Course and Termination of the Niger; from unpublished documents in the possession of the late Capt. John William Barber Fullerton. With a prefatory analysis of the previous travels of Park, Denham, Clapperton, Adams, Lyon, Ritchie, etc., into the hitherto-unexplored Countries of Africa, by Robert Huish. Illustrations. London: John Saunders, 1836. *Mr. J. Howard Reed, F.R.G.S.
- The Story of Africa and its Explorers, by Robert Brown, M.A., etc. Maps and Illustrations. Four Vols. (40 parts). London: Cassell and Co., 1892-1895. *Mr. J. Howard Reed, F.R.G.S.
- From the Congo to the Niger and the Nile. An account of the German Central African Expedition of 1910-1911, by Adolf Friedrich Duke of

- Mecklenburg. With 514 Illustrations and a Map. In two Vols. London : Duckworth and Co., 1913.
- In the Tail of the Peacock, by Isabel Savory. Illustrations. London : Hutchinson and Co., 1903. *Mr. William B. Leech.
- A Transformed Colony : Sierra Leone, as it was, and as it is. Its Progress, Peoples, Native Customs, and Undeveloped Wealth, by T. J. Alldridge, I.S.O., F.R.G.S. Map and Illustrations. London : Seeley and Co., 1910. *Mr. William B. Leech.
- Sierra Leone Messenger. Illustrated. 1915, Nos. 89-92. *Rev. F. C. Smith, M.A., F.R.G.S.
- Government Handbook of the Transvaal. Compiled for the South African Products Exhibition, 1907. Maps, Diagrams and Illustrations. Pretoria : Transvaal Department of Agriculture, 1907. *Mr. J. Howard Reed, F.R.G.S.
- The Life and Work of Emin Pasha in Equatorial Africa, by the Rev. Henry W. Little. Portrait and Map. London : J. S. Virtue, 1889. *Mr. J. Howard Reed, F.R.G.S.
- Modern Egypt, by the Earl of Cromer. Portrait and Map. Two Volumes. London : Macmillan and Co., Ltd., 1908.
- Egypt in Transition, by Sidney Low. With an Introduction by the Earl of Cromer, G.C.B., etc. Portraits. London : Smith, Elder and Co., 1914.

AMERICA.

- The New North. Being some account of a Woman's Journey through Canada to the Arctic, by Agnes Deans Cameron. Illustrated. New York : D. Appleton and Co., 1910.
- Guide-book of the Western United States. Part A. The Northern Pacific Route. With a Side Trip to Yellowstone Park, by Marius R. Campbell and others. Maps, Diagrams and Illustrations. Washington : U.S. Geological Survey, Bulletin 611, 1915. (Price, one Dollar.) *The Director of the Survey.
- Guide-book of the Western United States. Part B. The Overland Route. With a Side Trip to Yellowstone Park, by W. T. Lee, R. W. Stone, H. S. Gale, and others. Maps, Diagrams and Illustrations. Washington : United States Geological Survey, Bulletin 612, 1915. (Price, one Dollar.) *The Director of the Survey.
- Guide-book of the Western United States. Part C. The Santa Fé Route. With a Side Trip to the Grand Canyon of the Colorado, by N. H. Darton and others. Maps, Diagrams and Illustrations. Washington : U.S. Geological Survey, Bulletin 613, 1915. (Price, one Dollar.) *The Director of the Survey.
- Guide-book of the Western United States. Part D. The Shasta Route and Coast Line, by J. S. Diller and others. Maps, Diagrams and Illustrations. Washington : U.S. Geological Survey, Bulletin 614, 1915. (Price, one Dollar.) *The Director of the Survey.
- The Discovery of Guiana, and the Journal of the Second Voyage thereto, by Sir Walter Raleigh. London : Cassell and Co., 1887. *Mr. J. Howard Reed, F.R.G.S.

OCEANIA.

A Narrative of Missionary Enterprises in the South Sea Islands, by John Williams. Map and Illustrations. 13th Thousand. London: John Snow, 1839. *Mr. J. Howard Reed, F.R.G.S.

POLAR REGIONS.

The North-West and North-East Passages, 1576-1611. Edited by Philip F. Alexander, M.A. Maps and Illustrations. Cambridge: At the University Press, 1915. *The Publishers.

My Life with the Eskimo, by Vilhjálmur Stefánsson. Maps and Illustrations. London: Macmillan and Co., 1913.

Scott's Last Expedition. Arranged by Leonard Huxley. With a Preface by Sir Clements R. Markham, K.C.B., F.R.S. Maps and Illustrations. In two Vols. London: Smith, Elder and Co., 1913.

List of Corresponding Societies, etc.
(Exchanges).

NOTE.—Exchanges with Societies marked "S." have been suspended from August 1st, 1914.

BRITISH.

Belfast. Natural History and Philosophical Society. Report and Proceedings for the Session 1914-1915.

Birmingham. Natural History and Philosophical Society. (Nothing received.)

Cardiff. Naturalists' Society. Report and Transactions. Vol. XLVII, 1914.

Croydon. Natural History and Scientific Society. Proceedings and Transactions, 1914-1915.

Edinburgh. The Royal Scottish Geographical Society. The Scottish Geographical Magazine, 1915, Vol. XXXI, Nos. 1-12 and Index.

Glasgow. Geological Society. Transactions. Vol. XV, Part II, 1913-1914.

Glasgow. Royal Philosophical Society. Proceedings. Vol. XLVI, 1914-1915.

Hertford. Hertfordshire Natural History Society and Field Club. Transactions. Vol. XV, Part 4; XVI, 1.

Hull. Yorkshire Naturalists' Union. (Nothing received.)

Leeds. Geological Association. Transactions. (Nothing received.)

Leeds. Yorkshire Geological Society. Proceedings. (Nothing received.)

Leicester. Literary and Philosophical Society. Transactions and Annual Report. Vol. XIX, 1915.

Liverpool. Geographical Society. Transactions and Twenty-third Annual Report for the year 1914.

London. The Anti-Slavery Reporter and Aborigines' Friend. 1915, Series V, Vol. IV, No. 4; V, 1, 2, 3.

London. British Association for the Advancement of Science. Report of the Eighty-fourth Meeting, held in Australia in 1914. Report of the Corresponding Societies' Committee and of the Conference of Delegates held at Havre, 1914.

- London. Colliery Guardian, 1915. Nos. 2818-2870.
- London. The Colonial Journal. Vol. VIII, 3, 4; IX, 1, 2.
- London. The Royal Colonial Institute Journal. "United Empire." Vol. VI, Nos. 1-12. Year Book, 1915.
- London. East India Association. Journal, 1915, Vol. VI, Nos. 1-4.
- London. Emigrants' Information Office. Combined circulars on Canada, Australia and New Zealand, and South Africa. 1915, January to July.
- London. Royal Geographical Society. The Geographical Journal, 1915, Jan. to Dec.
- London. Imperial Institute. Bulletin. Vol. XII, Nos. 1-4.
- London. India Office. (See List of Books.)
- London. Royal Botanic Gardens, Kew. Bulletin, 1915, Nos. 1-10 and Appendices I-IV.
- London. Royal Society of Literature. Transactions. Vol. XXXIII, Part 2, 3, 4. Report and List of Fellows, 1915.
- London. The Near East, 1915, Nos. 191-243.
- London. War Office. Geographical Section, General Staff. (See List of Maps.)
- London. War Office. Catalogue of Maps. Accessions. (Nothing received.)
- London. War Office Library. Accessions, 1915, January to December. Catalogue of the War Office Library, Part III (Subject Index). Third Annual Supplement, 1914.
- Manchester. The British Cotton Growing Association. Publications. No. 59.
- Manchester. Literary and Philosophical Society. Memoirs and Proceedings. Vol. 58, Part III; 59, I, II, III.
- Manchester. Museum. The University. Publications, Nos. 75, 76.
- Manchester. The Textile Recorder, 1915, January to December.
- Newcastle-upon-Tyne. Tyneside Geographical Society. (Nothing received.)
- Newcastle-upon-Tyne. North of England Institute of Mining and Mechanical Engineers. Transactions. Vol. LXXV, 3, 4, 6. Annual Report, 1914-1915.
- Oxford. Clarendon Press. (See List of Books.)
- Penzance. Royal Geological Society of Cornwall. Transactions, Vol. XIII, Part X.
- Rochdale. Literary and Scientific Society. (Nothing received.)
- Salford. Museum, Libraries and Parks Committee. Sixty-Seventh Report, 1914-1915.
- York. Yorkshire Philosophical Society. Annual Report for 1914.

MISSIONARY.

- "S." Freiburg im Breisgau. Die Katholischen Missionen.
- London. Baptist Missionary Society. The Herald, 1915, January to Dec.
- London. The British and Foreign Bible Society. 111th Annual Report, 1915.
- "The Book and the Sword." A Popular Illustrated Report, 1914-1915.
- "The Bible in the World," 1915, January to December. Manchester and Salford Auxiliary, Annual Report, 1914.
- London. Church Missionary Society for Africa and the East. Report of Proceedings, 116th year, 1914-1915.
- London. Church Missionary Review, 1915, January to December.

- London. Colonial and Continental Church Society. Greater Britain Messenger, 1915, January to December.
- London. The London Missionary Society. 120th Report, 1914-1915.
- London. Illustrated Catholic Missions. (Nothing received.)
- London. Society for Propagation of the Gospel in Foreign Parts. Report of the year 1914.
- London. Universities' Mission to Central Africa. "Central Africa." 1915, January to December.
- London. The United Methodist Church. "Missionary Echo." 1915, Jan. to December.
- "S." Mangalore. Basel-German Evangelical Mission in South-Western India.

COLONIAL.

- Adelaide. Royal Geographical Society of Australasia; South Australian Branch. Proceedings for the Session 1913-1914, Vol. XV.
- Brisbane. Royal Geographical Society of Australasia. Queensland Branch. Queensland Geographical Journal. Vols. XXVIII-XXIX, 1912-1914.
- Brisbane. Queensland Museum. Memoirs. Vols. III, IV.
- Brisbane. Department of Mines. Queensland Geological Survey. Publications, Nos. 227, 243, 246.
- Bulawayo. Rhodesia Scientific Association. Proceedings. Vol. XIII (July 1913, to May 1914).
- Cape Town. Royal Society of South Africa. Transactions. Vol. IV, Part 3; V, 1, 2.
- Georgetown. The Royal Agricultural and Commercial Society of British Guiana. The Journal. "Timehri." Vol. III, No. 2, May, 1915.
- Halifax. Nova Scotian Institute of Science. Proceedings and Transactions. Vol. XIII, Parts 3, 4, 1912-1914.
- Melbourne. Royal Geographical Society of Australasia (Victorian Branch). Victorian Geographical Journal. Vol. XXXI, Part II, 1915.
- Melbourne. Department of Agriculture of Victoria (per the favour of the Agent General). Journal. Vol. XIII, Parts 1-8.
- Melbourne. Victorian Statistical Department. (Nothing received.)
- Perth. Western Australia Geological Survey (per favour of the Agent General). Bulletins, Nos. 56-59, 61, 62, 65.
- Port Moresby. Papua. Annual Report for the year (Nothing received.)
- Quebec. Société de Géographie. Bulletin. Vol. IX, Nos. 1-6, 1915.
- Sydney. New South Wales. Department of Mines. Annual Report for the year 1914.
- Sydney. New South Wales. Department of Mines. Geological Survey. Mineral Resources. Nos. 18, 19.
- Toronto. Canadian Institute. Transactions. No. 24, Vol. X, Part 2, May, 1915. General Index to Publications, 1852-1912.
- Victoria, B.C. Minister of Mines. Province of British Columbia. Annual Report, 1914.
- Wellington, New Zealand. Department of Lands and Survey. (Nothing received.)

FOREIGN

- Alger. Société de Géographie d'Alger et de L'Afrique du Nord. Bulletin. (Nothing received.)
- Ann Arbor. The Michigan Academy of Science. University of Michigan. (Nothing received.)
- "S." Antwerp. Société Royale de Géographie d'Anvers. Bulletin.
- Baltimore. Johns Hopkins University. Studies in Historical and Political Science. Series XXXIII, Nos. 1-3. Circulars, 1915, Nos. 1-5.
- Baltimore. Maryland Geological Survey. (Nothing received.)
- Barcelona. Sociedad de Geografía Comercial. Publicaciones. (Nothing received.)
- "S." Belgrade. Société Serbe de Géographie. Bulletin.
- Berkeley. University of California. Publications in American Archaeology and Ethnology. Vol. X, No. 7, Title-page and Index; XI, 3, 4.
- "S." Berlin. Gesellschaft für Erdkunde. Zeitschrift.
- "S." Berlin. Deutsche Kolonialzeitung.
- Bern. Geographische Gesellschaft. (Nothing received.)
- Bordeaux. Société de Géographie Commerciale. Revue. (Nothing received.)
- "S." Bremen. Deutsche Geographische Blätter.
- "S." Brussels. Congo Belge. Bulletin Official.
- "S." Brussels. Société Royale Belge de Géographie.
- "S." Brussels. Le Mouvement Géographique.
- "S." Brussels. Institut Colonial International.
- "S." Brussels. Société Belge d'Etudes Coloniales. Bulletin.
- "S." Brussels. Commission Polaire Internationale.
- "S." Budapest. Hungarian Geographical Society. Bulletin.
- Buenos Aires. Instituto Geográfico Argentino. Boletín. (Nothing received.)
- Buenos Aires. Museo Nacional de Historia Natural de Buenos Aires. Anales. Tomo XXVI. Indices. Tomos I-XX; 1864-1911.
- Buenos Aires. Monthly Bulletin of Municipal Statistics. 1915. Nos. 1-6.
- Buenos Aires. Ministerio de Agricultura. Boletín. (Nothing received.)
- Cairo. Société Khédiviale de Géographie. Bulletin. (Nothing received.)
- Cambridge. Peabody Museum of American Archaeology and Ethnology. Harvard University. "The Library of Harvard University: Descriptive and Historical Notes," 3rd Edition.
- "S." Cassel. Gesellschaft für Erd-und Völkerkunde.
- Christiania. Norges Geografiske Opmaalning. (See List of Maps.)
- Copenhagen. Geografisk Tidsskrift udgivet af Bestyrelsen for det Kongelige Danske Geografiske Selskab. Bind XXIII, Hefte 1-4.
- "S." Darmstadt. Verein für Erdkunde. Notizblatt.
- Dijon. Société Bourguignonne de Géographie et d'Histoire. Mémoires. (Nothing received.)
- "S." Douai. Union Géographique du Nord de la France. Bulletin.
- "S." Dresden. Verein für Erdkunde. Mitteilungen.
- Dunkerque. Société de Géographie. Bulletin. (Nothing received.)
- Firenze (Florence). Rivista Geografica Italiana e Bollettino della Società di Studi Geografici e Coloniali. Annata XXII, Fasc. 1-10.

- "S." Frankfurt. Verein für Geographie und Statistik.
 Geneva. "Le Globe." Organe de la Société de Géographie. Bulletin.
 Tome LIV.
 Geneva. Société des Anciens Elèves de l'Ecole Supérieure de Commerce.
 Bulletin. Nos. 105-108.
- "S." Giessen. Geographische Mitteilungen aus Hessen.
- "S." Greifswald. Geographische Gesellschaft zu Greifswald. Jahresbericht.
- "S." Halle. Sächsisch-Thüringischen Vereins für Erdkunde.
- "S." Halle. Kaiserliche Leopoldinisch-Carolinische Deutsche Akademie
 der Naturforscher. Leopoldina.
- "S." Hamburg. Geographische Gesellschaft. Mitteilungen.
- "S." Hamburg. Hauptstation für Erdbebenforschung. Professor Dr. R.
 Schütt.
- "S." Hannover. Geographische Gesellschaft.
- Havre. Société de Géographie Commerciale. Bulletin. (Nothing received.)
- Havre. Société Géologique de Normandie. Bulletin. (Nothing received.)
- Helsingfors. Société de Géographie de Finlande. Fennia. (Nothing received.)
- Helsingfors. Meddelanden af Geografiska Foreningen. Velenskagliga. (Nothing
 received.)
- Irkutsk. Imperial Russian Geographical Society. East Siberian Section.
 Journal. (Nothing received.)
- "S." Jena. Geographische Gesellschaft. Mitteilungen.
- Kazan. Naturalists' Society of the Imperial University. Journal. Vol.
 XLVII, No. 1.
- "S." Königsberg. Physikalisch-ökonomischen Gesellschaft.
- La Paz. Sociedad Geografica de La Paz. (Nothing received.)
- La Paz. Republica de Boliwia. Direccion General de Estadistica y Estudios
 Geográficos. Boletin. (Nothing received.)
- La Plata. Direccion General de Estadistica de la Provincia de Buenos Aires.
 Boletin Mensual. (Nothing received.)
- La Plata. Museo de La Plata. Revista. Tomo XIX, Primera Parte; XX;
 XXII.
- "S." Leipzig. Gesellschaft für Erdkunde.
- "S." Lille. Société de Géographie. Bulletin.
- Lima. Sociedad Geográfica. Boletin. 1914, Tomo XXX, Trim 1, 2.
- Lima. Cuerpo de Ingenieros de Minas del Peru. Boletin. No. 81.
- Lisbon. Sociedade de Geographia de Lisboa. Boletim. 1915, Nos. 1-10.
 Boletim Comemorativo do V Centenario da Tomada de Ceuta. 21 d'Agosto
 de 1915.
- "S." Lübeck. Geographische Gesellschaft und Naturhistorische Museum.
 Mitteilungen.
- "S." Lwowie (Lemberg). Towarzystwo Ludozonaweze Kwartalnik Etno-
 graficzny. "Lud."
- Madison. Wisconsin Academy of Science, Arts and Letters. Transactions.
 (Nothing received.)
- Madison. Wisconsin Geological and Natural History Survey. Bulletin.
 Nos. XXXIV; XLII; XLV.

- Madrid. Real Sociedad Geografica. Boletin. Tomo LVII, Trims. 1-4.
Revista. Tomo XII, 1-12.
- Madrid. Ayuntamiento de Madrid. Boletin, Nos. 940-991.
- Marseille. Société de Géographie. Bulletin. Tome XXXVIII, Nos. 1-4.
"S." Metz. Verein für Erdkunde. Jahresbericht.
- Mexico. Sociedad Mexicana de Geografía y Estadística. Boletin. (Nothing received.)
- Mexico. Sociedad Científica "Antonio Alzate." Memorias y Revista. (Nothing received.)
- Milan. L'Esplorazione Commerciale. Anno XXX, Fascs. 1-12.
- Missoula. University of Montana. Bulletin. (Nothing received.)
- Montevideo. Museo de Historia Natural. (Nothing received.)
- Montevideo. Anuario Estadístico de la República Oriental del Uruguay.
Libro XXIII, 1911-1912.
- Montpellier. Société Languedocienne de Géographie. Bulletin. Tome XXXVII, 3, 4; XXXVIII, 1, 2, 3.
- Moscow. Geographical Section of the Imperial Society of Natural Science of the University. (Nothing received.)
- "S." Munich. Geographische Gesellschaft in München. Mitteilungen.
- Nancy. Société de Géographie de L'Est. Bulletin. (Nothing received.)
- Nantes. Société de Géographie Commerciale. Bulletin. (Nothing received.)
- Naples. Società Africana d'Italia. Bollettino. Anno XXXIV, 1-9.
- Neuchâtel. Société Neuchâteloise de Géographie. Bulletin. Tome XXIII (Fin) et Tome XXIV.
- New Haven. Connecticut Academy of Arts and Sciences. Transactions. Vol. 19, pp. 1-110; 20, 1-160.
- New York. American Geographical Society. Bulletin. Vol. XLVII, Nos. 1-12 and Index.
- New York. American Museum of Natural History. Bulletin. Vol. XXV, Part 2.
- New York. Public Library. Bulletin. 1915, January-December.
- Novara. Istituto Geografico de Agostini. (See List of Maps.)
- "S." Nürnberg. Naturhistorische Gesellschaft.
- Odessa. Club Alpin de Crimé et du Caucase. Bulletin. 1915, Nos. 1, 2.
- Omsk. Imperial Russian Geographical Society. West Siberian Branch. (Nothing received.)
- Oran. Société de Géographie et d'Archéologie. Bulletin. Tome XXXIV, Fascs. 140; XXXV, 141, 142.
- Para. Museu Goeldi. Boletin. (Nothing received.)
- Paris. Société de Géographie. La Géographie. 1914, July to December; 1915, April.
- Paris. Société de Géographie Commerciale. Bulletin. 1915, January to December.
- Paris. Société de Spéléologie. Bulletin and Mémoires. Spelunca. (Nothing received.)
- Paris. Société de Topographie de France. Bulletin Bimestriel. (Nothing received.)

- Paris. Comité de L'Afrique Française et du Comité du Maroc. Bulletin. 1915, Nos. 1-12. Renseignements Coloniaux. 1915, Nos. 1-12.
- Petrograd. Imperial Russian Geographical Society. (Nothing received.)
- Philadelphia. American Philosophical Society. Proceedings. Vol. LIV, Nos. 216, 217, 218, 219.
- Philadelphia. The Commercial Museum. Annual Report for the year 1914. "Commercial America." 1915, January to December.
- Philadelphia. Geographical Society of Philadelphia. Bulletin. 1915, Nos. 1-4.
- Philadelphia. University of Pennsylvania. The Museum Journal. Vol. VI, Nos. 1, 2.
- "S." Prague. Société de Géographie tchéque à Prague.
- Rochefort. Société de Géographie. Bulletin. 1914, No. 2.
- Rolla, Mo. Missouri Bureau of Geology and Mines. (Nothing received.)
- Roma. Reale Società Geografica. Bollettino. 1915, Nos. 1-12.
- Roma. Direzione Generale della Statistica e del Lavoro. Annuario Statistico Italiano. Seconda Serie, Vol. IV. Anno 1914.
- Roma. Commissariato dell' Emigrazione. Bollettino. 1915, Nos. 1-9.
- Roma. Cosmos. Del Profr. Guido Cora. (Nothing received.)
- Rome. International Institute of Agriculture. Monthly Bulletin of Agricultural Intelligence and Plant Diseases. 1915, Nos. 1-12.
- Rouen. Société Normande de Géographie. Bulletin. (Nothing received.)
- San Francisco. Geographical Society of the Pacific. (Nothing received.)
- San Francisco. Southern Pacific Railway (per the favour of Mr. Rud Falck, Liverpool). "Sunset"—The Pacific Monthly. 1915, January.
- San José. Museo Nacional. Boletín de Fomento, órgano del Ministerio de Fomento. (Nothing received.)
- St. Louis, Mo. Washington University Studies. Vol. II, Part, I, No. 1.
- St. Nazaire. Société de Géographie Commerciale. (Nothing received.)
- San Salvador. Dirección General de Estadística. (Nothing received.)
- "S." Santiago de Chile. Deutsche Wissenschaftliche Verein.
- Shanghai. Chinese Maritime Customs. Gazette. Statistical Series. Nos. 3 and 4. Returns of Trade and Trade Reports. 1914, Parts I, II, Vols. 1-3; III, Vol. 1.
- Shanghai. Ministry of Communications. Directorate General of Posts. II. Public Series: No. 2. Report on the Working of the Chinese Post Office for 1914.
- "S." Stettin. Gesellschaft für Völker- u- Erdkunde.
- Stockholm. Svenska Sällskapet för Antropologi och Geografi. "Ymer," 1915, Häft 1-4.
- "S." Strassburg. Gesellschaft für Erdkunde und Kolonialwesen.
- "S." Stuttgart. Württembergische Vereins für Handelsgeographie.
- Tokyo. Geographical Society. Journal of Geography. (Nothing received.)
- Toulouse. Société de Géographie. Bulletin. 1914, Nos. 2, 3, 4; 1915, 1.
- Tours. Société de Géographie. Revue. 1914, No. 2.
- Upsala. University of Upsala. Geological Institution. Bulletin. Vol. XIII, Part 1.

- Urbana. Illinois State Geological Survey. Bulletins, Nos. 28, 29, 31.
 Illinois Coal Mining Investigations, Co-operative Agreement. Bulletin.
 Vol. I, Nos. 1-5.
- "S." Vienna. K.K. Geographische Gesellschaft. Mitteilungen.
- "S." Vienna. Verein der Geographen an der K.K. Universität in Wien.
- "S." Vienna. K.K. Naturhistorische Hofmuseum. Annalen.
- Washington, Conn. Association of American Geographers. Annals. (Nothing received.)
- Washington, D.C. National Geographic Society. National Geographic Magazine. 1915, Vol. XXVII, Nos. 1-6; XXVIII, 1-6.
- Washington, D.C. Department of Commerce, United States Coast and Geodetic Survey. "Geodesy," Special Publication, Nos. 24, 28.
- Washington, D.C. United States Department of the Interior. General Information regarding Crater Lake, Glacier, Mesa Verde, Mount Rainier, Sequoia and General Grant, Yellowstone, Yosemite, and Wind Cave National Parks; Season of 1915.
- Washington, D.C. U.S. Geological Survey. List of Publications of the Survey, March, 1915. (See also List of Books.)
- Washington, D.C. U.S. Geological Survey. Monograph. Vols. LIII, LIV.
- Washington, D.C. U.S. Geological Survey. Mineral Resources for the year 1914, Part 1, Nos. 1-9; Part 2, Nos. 1-20.
- Washington, D.C. U.S. Geological Survey. Bulletin. Nos. 544, 565, 566, 568, 569, 573, 581 A-E, 582-596, 598-602.
- Washington, D.C. U.S. Geological Survey. Professional Papers. Nos. 90 A-L, 95 A-D.
- Washington, D.C. U.S. Geological Survey. Water Supply Papers. Nos. 340 k, l, 342, 353, 354, 356-358, 363-368, 371.
- Washington, D.C. U.S. National Museum. Report for the year ending June 30, 1914.
- Washington, D.C. U.S. Geographic Board. (Nothing received.)
- Washington, D.C. U.S. Department of Agriculture. Weather Bureau. Farmers' Bulletins, Nos. 640-651, 653-667, 670, 672-698.
- Washington, D.C. U.S. War Department. (Nothing received.)
- Washington, D.C. U.S. Bureau of Education. Report of the Commissioner for the year ending June 30, 1914. Vols. 1 and 2. Bulletin No. 27.
- Washington, D.C. Library of Congress. (Nothing received.)
- Washington, D.C. Pan American Union. Bulletin. 1915, January to Dec.
- Washington, D.C. Carnegie Institution. Department of Terrestrial Magnetism. (Nothing received.)
- Zürich. Geographisch-Ethnographische Gesellschaft in Zürich. Jahresbericht. XIV und XV, 1913-14 und 1914-15.

LANTERN SLIDES.

1,200 Lantern Slides of prominent people and places of interest in various parts of the World. *Mr. J. Howard Reed, F.R.G.S.

List of Members.

DECEMBER 31st, 1915.

Note.—H signifies Honorary, C—Corresponding, L—Life, A—Associate,
* Affiliated Societies. All others are Ordinary Members.

- Abbott, F. S., F.C.A.
 Abson, Miss Ada
 Adnett, Madame M.
 LAinsworth, John, C.M.G., F.R.G.S.
 (Kisumu)
 Aldred, John C., A.C.A.
 Alexander, W. T., J.P.
 AAllen, Mrs. James
 HAmundsen, Captain Roald
 Appleby, Wm.
 Armitage, G. F., J.P. (His Worship
 the Mayor of Altrincham)
 Armstrong, F.
 Arning, A. W.
 Arnold, W. A.
 Aron, L.
 Ascoli, W. S., F.R.G.S.
 Ashton, Miss B.
 AAshworth, Mrs. Ada
 AAshworth, Miss D.
 Ashworth, Francis, J.P.
 AAshworth, Miss Mary
 AAshworth, Miss M. B.
 AAshworth, S.
 Ashworth, Wm., F.C.A.
 Ashworth, W. E.
 Atkinson, George, F.R.G.S.
- Bacon, W. C.
 Baerlein, H. A.
 Bailey, W. D.
 LBalmer, J. E., F.R.G.S.
 LBalmforth, Alfred
 Bardsley, G. W.
 Barlow, Edwin
 Barlow, John R., J.P.
 ABarnes, Mrs. Lily
 Barningham, Mrs. James
 Barningham, Thomas, J.P.
 Barón, J. W., C.C.
 Baronian, Z. S. Ipliejian
- Bax, Wm. Robert
 ABayley, Mrs. C. H.
 ABeck, H. S.
 Beer, Walter
 Behrens, Councillor Sir Charles, J.P.
 Behrens, Gustav, J.P.
 cBellamy, C. H., F.R.G.S., Tourcoing
 ABellamy, Reginald C., A.C.A.
 Bennett, Miss Ruth
 Bentley, John Howard, F.R.G.S.
 Berry, G.F.
 Berry, R. H.
 Berry, W. H., Free Public Library,
 Oldham.
 ABickerton, Richard
 Billinge, J. H.
 Bishop, J. K.
 Blaikie, W. V.
 ABlanchoud, Miss
 Blass, A.
 Bles, Marcus S., J.P.
 Bock, Richard
 LBoddington, Henry, J.P.
 HBodio, Senator Luigi, Rome
 ABolivar, Mrs. A. de
 HBonaparte, S. A. Prince Roland, Paris
 HBond, Rt. Hon. Sir R., K.C.M.G.,
 Newfoundland
 HBotha, Rt. Hon. Louis, Pretoria
 Bowen, E.
 Bradshaw, Wm.
 Bramwell, Samuel
 cBrice, A. Montefiore
 Brier, Charles
 LBrierley, James, M.A., F.R.G.S.
 ABriggs, Mrs. F.
 ABriggs, Frederick
 Briggs, Henry
 Briggs, Herbert
 Broadhurst, E. Tootal, D.L., J.P.
 ABrobson, Miss M.

- LBrooks, Mrs. S. H.
 LBrooks, S. H., J.P., F.R.G.S.
 Broome, Henry
 Brown, Alfred
 Brown, A. E. Buchanan
 LBrown, James, J.P.
 ABrown, Miss M. A.
 Brownell, Thos. W.
 ABruce, Miss Gladys E. A.
 Brumm, Charles, J.P.
 Bryant, James
 cBryce, J. Annan, M.P.
 ABubb, Mrs.
 Buckley, J.
 Buckley, W. S.
 Burgess, Alfred, A.C.A.
 lBurgon, Anthony
 Burke, Thomas
 *Burnley Literary and Scientific Club
 Burstall, Miss S. A., M.A.
 Butterworth, Walter, J.P.
 Bythell, J. K., J.P.
 Bythell, W. J. S., B.A., M.D.
 Byrne, Miss T. G.

 Calvert, D. R.
 Campbell, Richardson
 ACardwell, J. J.
 Carr, Arthur
 lCarver, W. Oswald
 Chadwick, J. J.
 Champ, F.
 ACharnock, Mrs E.
 Cheetham, Rt. Hon. J. F., J.P.
 AChorley, Miss K.
 Chorlton, Isaac
 Clapham, Col. W. W.
 Clapham, Thomas, F.R.G.S.
 Clarke, Mrs. A. G. M.
 Clarke, Charles A.
 Clay, Frederick
 ACockshaw, Miss E.
 cColbeck, Rev. A.
 lColley, T. H. Davies
 ACollinge, Miss A.
 Collmann, C.
 Colt, W. H.
 Cooke, J. Herbert
 Cookson, G. P.

 Cookson, Miss Marion
 Coop, Thos.
 LCooper, Mrs. A. H.
 ACox, C. H., B.Sc., L.C.P.
 Cox, Dr. Frederic
 Crawford, W. L.
 Crewdson, Alfred
 Crompton, Mrs.
 Crompton, Thos. A.
 Crook, Col. H. T., D.L., V.D.,
 M.Inst.C.E.
 Crosland, Leo
 ACrosthwaite, Robert, M.A., B.Sc.
 Crowther, Miss E.

 Dakin, Harold
 ADaves, Miss A.
 David, Henry E.
 ADavies, Charles J.
 Dawkins, Prof. W. Boyd, J.P., M.A.,
 F.R.S.
 rDeakin, Hon. Alfred, Australia
 Deakin, G. G. D.
 Deakin, Thos. S.
 Dean, J.
 Dean, J. N.
 Dean, W. J.
 Dennis, Cammack, J.P.
 lDerby, Rt. Hon. Earl, G.C.V.O.
 ADewez, Mdlle. F.
 Dickson, E. H. L.
 Dixon, H. C.
 Donner, Sir Edward, Bart.
 Downie, R. M.
 lDoxey, Alex. S.
 Draper, Walter T.
 Duckworth, Charles
 Dugdill, John
 Dyckhoff, C.

 Earnshaw, John A.
 Eason, Edward A.
 *Eccles Prov. Ind. Co-op. Soc., Ltd.
 Eckhard, Gustav, J.P.
 Edleston, C. V. M.
 lEdwards, T. A., F.R.G.S.
 Egerton of Tatton, Rt. Hon. Lord
 Ellinger, George
 Ellinger, Martin

- Eliot, W.
 cEngland, Major A.
 lErmen, Charles
 Evans, E. Roose
 Evans, E. Russell
 Evans, J. H.
 Evans, L. C.
 AEwbank, Miss
- Fairhurst, Thomas
 cFedotoff, A., Moscow
 Ferguson, Wm.
 Fern, George
 cFisher, Rev. A. B., F.R.G.S.
 Fletcher, Miss D. E.
 Fletcher, R.
 Flinn, W. Leonard
 Follows, F. W.
 Forsyth, Henry
 AFosbrooke, Miss Agnes
 Franc, Henry
 Frank, Ernest
 Frankenburg, Alderman I., J.P.
 HFreshfield, Douglas W., F.R.G.S.
 Frischmann, A.
 Fullerton, Miss E.
- Gallé, L. A., Belgian Consul
 Gamble, J.
 AGarner, Miss M.
 AGarner, Miss P. M.
 AGarner, Charles T. I.
 Garnett, Mrs. Charles
 Garnett, Charles
 AGaudie, Mrs. W. L.
 Gaythorpe, Thomas
 Geiler, Hermann
 lGinger, George
 Glazebrook, Phillip K., M.P.
 Gleave, Joseph James
 Glossop, J. P. B.
 Godbert, Councillor Chas. W.
 Godlee, Francis
 Goodbehere, Frederick G.
 Goodwin, F. W.
 Goodwin, J. W.
 Gordon, T. Hodgetts, C.C., B.A.
 Green, H., M.A.
 Greene, Miss Kate
- Greenhow, J. H., Vice-Consul for
 Norway
 AGreenough, Richard, Leigh
 Greg, Lieut.-Col. Ernest W., V.D.,
 C.C., F.R.G.S.
 Gregory, Joseph
 Gregory, Theodore, F.C.A., J.P.
 cGrey, Dr. Edgar
 lGriffiths, Albert, D.Sc.
 Griffiths, Alderman John
 Griffiths, Horatio
 AGroves, Miss M.
 Groves, Charles V.
 lGroves, W. G.
 Grundy, Mrs. F.
 Guest, R.
 Guggenheim, A.
 AGumbrell, Mrs.
 Güterbock, Alfred
 Güterbock, Richard
 Guthrie, Mrs. S. F.
- Hacking, Nicholas H., J.P.
 Haerem, C. V.
 Hailwood, Councillor Anthony, J.P.
 AHall, Miss Hilda
 lHall, Mrs. J. Howard
 lHall, J. Howard
 Halsall, Frank, F.C.A., J.P.
 AHamilton, Mrs.
 AHamilton, Miss Joyce
 Hammond, G. S.
 Hamp, E. H.
 Hancock, J.
 AHandcock, H. C.
 cHanlon, Right Rev. Henry
 Hardcastle, G. L.
 AHarden, Miss C.
 lHargreaves, George
 Harlow, Charles
 AHarper, William
 Harrap, Thomas
 Harris, Arthur
 AHarris, Miss E. M.
 AHarris, Miss Evelyn
 Harrop, James
 lHassall, Alderman Thomas, J.P.
 Hawkins, William
 Haworth, Alfred, J.P.

- Haworth, G. C., J.P.
 Heap, Alderman, W. T., J.P.
 Heighway, Mrs.
 Heighway, George
 Herd, Harry
 Hertz, F. M.
 Hesketh, W. R.
 Hewerdine, W. H.
^AHewit, R. P., J.P.
^LHeys, John, J.P.
 Heywood, Abel, J.P.
 Higginbottom, Walter
 Higgins, J.
 Higham, J. Sharp, M.P.
 Hilditch, John, M.R.A.S., M.J.S.
 Hilton, Thomas
 Hindle, James, L.R.A.M.
 Hinrichsen, S.
 Hockin, C. Owen
 Hodgson, Jas. T.
 Hodgson, William
^AHolden, Henry
^AHollingworth, Edgar W.
 Holmes, W. Francis
^AHolt, Miss
^LHolt, Arthur
^AHoole, Mrs.
 Hope, Leonard
 Hopkinson, Edward, D.Sc.
 Horsfall, T. C.
^AHoughton, Miss May
 Houghton, John
 Houldsworth, Sir W. H., Bart.
^cHoyle, W. E., M.A.
 Hudson, James H., M.A.
 Hughes, Joseph David
 Hulme, C. J.
 Huntbach, Robert
^LHutton, J. Arthur
 Hyde, Thomas

 Irving, R. J.

^AJackson, Miss A.
 Jackson, Fred J.
^HJameson, Rt. Hon. Sir L. S., C.B.
 Janus, H.
 Jefferson, Alfred Hy.
 Jenkins, Alderman T. H., J.P.

 Johnson, E., J.P.
^LJohnson, Wm. Morton, F.R.G.S.
^cJohnston, Sir H. H., G.C.M.G.,
 K.C.B., F.R.G.S.
 Johnstone, Charles Andrew
 Jones, R. Lomas
 Jones, Wm., Didsbury
 Jordan, Bernard

 Kalisch, Moritz
 Kay, Max M.
 Kay, Richard, F.R.G.S.
^cKeiffer, F., Moscow
^cKeith-Roach, Captain Edward
^AKelley, H. F.
 Kelley, J. Macpherson
^HKeltie, J. Scott, LL.D., F.R.G.S.
 Kessler, P. W.
^AKewley, Miss Jane
 Keymer, Sidney L., F.R.G.S.
^AKiesling, A. E.
 Kinch, W. S., C.C.
 Knowles, Peter
 Knudsen, A., Consul for Denmark
 Kukla, Charles

^cLabbé, Paul, Paris
^ALancashire, Miss M.
^ALancaster, James, J.P.
 Larmuth, Dr.
 Lauder, Francis A.
^HLaurier, Rt. Hon. Sir W., G.C.M.G.
^ALaw, Miss Annie E., L.L.A.
 Lawson, R. G.
 Lea, John
 Leah, S. P.
 Leak, Rev. W. H.
^ALedward, H. Davenport
^cLeech, Wm. Booth
 Leemann, E.
 Lees, Mrs. H. L., F.R.G.S., A.R.C.I.
 Lees, Walter
 *Leigh Literary Society
 Leite, J. Pinto, Vice Consul for
 Portugal
 Lemon, Miss Ada
^LLemos, Professor Angel Ma Diaz
 Levinstein, Herbert
 Levinstein, Ivan

List of Members

121

- Lewis, John Wm.
 ALightowler, Mrs. E.
 ALightowler, E.
 Little, David Ainsworth
 Littler, Henry Landon
 Livesey, W. R.
 Lomas, J. A.
 Longden, A. W.
 Lord, Charles
 Lowe, Wm. °
- Macara, Sir C. W., Bart., J.P.
 cMcDermott, Rev. P. A., C.S.Sp.
 hMacdonald, Major-Gen. Sir J. R. L., R.E.
 McDougall, Charles
 McDougall, Robert
 McFarlane, H. H.
 McFarlane, John, M.A., M.Com., F.R.G.S.
 M'Grath, W. A.
 hMacGregor, H. E. Sir Wm., M.D., K.C.M.G.
 McPherson, Alexander
 Makin, E., junr.
 Makin, John A.
 *Manchester Corporation, Free Libraries Committee
 Mandelberg, G. C., J.P.
 Mandelberg, Colonel S. L., J.P.
 AMarkham, Mrs. M.
 cMarrs, F. W., M.A., Bombay
 LMarsden, James, J.P.
 Martin, Horace C., F.R.G.S.
 Marx, Charles
 Massey, Harold F.
 Massey, L. F.
 LMather, Loris Emerson, F.R.G.S.
 Mather, Rt. Hon. Sir William, J.P.
 Maude, Rev. J. G.
 May, Wm.
 AMaybury, J. H.
 AMaybury, W. H.
 Medlyn, Wm. John
 Melland, Edward
 Melland, Councillor Will
 LMellor, E. W., J.P., F.R.G.S.
 AMellor, Miss F.
 LMellor, Geoffrey Robert
- Midwood, T. C.
 Millers, R. Townley
 Milligan, Sir Wm., M.D.
 Mills, Albert
 hMoor, Rt. Hon. F. R., Natal
 Moore, A. E.
 Morehouse, James T.
 Morland, J. R.
 Morreau, M.
 Mort, Miss G. E.
 Moxon, Thomas Bouchier
 Murton, T. P., London
- hNansen, Dr. F., G.C.V.O.
 Nanson, Miss W.
 ANash, Miss M. R.
 Nathan, Fred P.
 LNeil, Alexander
 Neild, F. E., F.C.A.
 Neild, Jesse
 Nichol, Wm.
 Nicholls, Rev. Wm.
 Nichols, Geo. Wm.
 Nicholson, Joseph
 Nightingale, Thos. H.
 ANoar, H.
 LNuttall, Harry, M.P., F.R.G.S.
 Nuttall, Mrs. Harry
 ANuttall, R. Wilson
- cOederlin, F.
 Oldham, H. Yule, M.A., F.R.G.S., Cambridge
 cO'Neill, H. E., F.R.G.S.
 Openshaw, Miss E. N.
 Oppenheim, F. S., M.A.
 Ormrod, Miss B.
 Osborn, John A.
 Ost, Emil
- APaine, Miss
 Palmer, Robert
 Parkinson, H. F.
 Parkinson, J. B.
 Parkinson, T. W. F., M.Sc., F.G.S.
 APearson, Miss E.
 Pearson, J. A.
 hPeary, Rear-Admiral R. E.
 Peters, Miss S. Kate

- Philips, Miss
 Phythian, J. Ernest
 Pickstone, E.
 Pidd, Arthur J.
^APidd, Leslie S.
^APidd, Mrs. Eli
^APidd, Miss Maggie
 Pilcher, Colonel Jesse, V.D.
 Pilkington, Charles, J.P.
^LPilkington, Edward, J.P.
 Pilkington, Lawrence, J.P.
^CPingstone, G. A.
 Pingstone, H. C.
^APotts, Mrs.
^APrescott, Mrs.
^APrescott Miss E. M.
 Prestwich, R. H.
 Proctor, Mrs.
^AProctor, Miss
 Provis, Frank M.
 Prusmann, Robert Henry
 Putz, F. R.
- Qualtrough, Miss Kate, F.R.G.S.
 Quine, Dr. R. H., L.R.C.P., etc.
- Raby, C. R.
 Ragdale, J. R., C.A., J.P.
 Ramsay, P. J., J.P.
^ARawlinson, Miss Maud
 Reade, Charles E.
 Réé, Alfred, Ph.D.
 Reed, J. Howard, F.R.G.S.
 Reekie, W. Maxwell
 Reid, James Stephenson
^LReiss, Alec
 Renold, Hans
 Renshaw, James
^ARenshaw, Miss L. W.
 Rhodes, Edward
 Richardson, J. E. T.
 Richmond, Wm., J. P.
 Rigby, Wm.
 Riley, R. J.
^ARobertshaw, James
 Robertson, W. J.
 Robinow, W.
 Robinson, T. Fletcher
 Robinson, Miss R.
- Robson, J. Walter, J.P.
 Rogerson, James
 Rothband, H. L.
 Rotherham of Broughton, the Right
 Hon, Lord
 Rothwell, Alderman W. T., J.P.
 Row, O. M., M.I.M.E.
 Royse, Councillor Sir S. W., J.P.
 Russell, A. C.
 Russell, C. E. B.
 Ruttenau, Wm.
- Saalfeld, A.
 Salford, the Rt. Rev. the Bishop of
 *Salford Corporation Free Libraries
 Committee
 Schofield, Edwin, J.P.
 Scholfield, Councillor A. Y.
 Scott, C. Archibald
 Scott, C. P., J.P.
 Scott, J. E. P.
 Scott, W.
 Segalla, Emil
 Sever, John
^HShackleton, Sir E. H., C.V.O.,
 F.R.G.S.
 Shann, Alderman Sir T. T., J.P.
 Shaw, A. E.
 Shaw, Matthew
^AShaw, Wm. Runciman
 Sheppard, E. F.
 Shipman, Mrs. W. M.
 Shorrocks, Henry
 Simmons, C. L.
 Simon, Louis
 Simpson, Alfred, J.P.
 Simpson, C. J.
^ASimpson, Miss F.
 Sinclair, Harry.
 Sivewright, Wm.
^LSmith, Rev. F. C., M.A., F.R.G.S.
 Smith, James, Oldham
 Smith, J., Moss Side
 Smith, J. H. H., J.P.
^ASmith, Miss M. J.
 Smith, R. Heaton
^ASmith, Mrs. R. Heaton
 Smith, Mrs. Samuel
 Smith, Sidney

- Smith, T. M.
Somerset, Henry
ASomerset, Henry, Junr.
Southam, T. Frank, M.D., F.R.G.S.
ASouthern, John E.
H Sowerbutts, Mrs. Eli
ASowerbutts, Harry, A.R.C.Sc.
Sowerbutts, T. W., F.S.A.A.
Speakman, Walter
ASpencer, Miss M. R.
ASpencer, S.
Spencer, Wm.
Sprott, W. J., M.D., M.R.C.S.
Stadelbauer, H.
Staniforth, Harry
Staniforth, R. A.
LSteinthal, Egbert
Stephens, Alderman Sir W., J.P.
Sternberg, S.
Stevenson, Frederick
Stevenson, John
AStewart, Robert
Stocks, Miss A.
Stoker, R. B., F.R.G.S.
LStonehewer, Walter.
Stordy, Mrs.
Storey, Henry E.
AStott, Miss
Stowell, Hugh
Stubbs, Wm. T.
ASummerville College, The Principal
Sussum, Geo. H.
Sutton, Charles
Sutton, Councillor E. F. M., J.P.
cSwaine, Lieut. Geo. Raymond
Swallow, Miss Eunice
H Swallow, Rev. R., M.D.
Swallow, R. W., B.Sc.
LSykes, Arthur H., D.L., J.P.
Symonds, The Rev. Canon

Tatham, Mrs. N.
Tattersall, Herbert W.
ATatton, Lees W.
ATaylor, Albert
Taylor, Miss A. I.
Taylor, Frederick
Taylor, John Tyson
ATaylor, Miss M.

ATaylor, Miss Ruth
Taylor, Walter
Taylor, William
Tejeria, Antonio Maria, Spanish
Consul
Terry, Henry
Thewlis, Councillor J. Herbert, J.P.
Thomas, E. H., F.C.I.L.
LThomas, George, J.P.
cThomson, J. P., LL.D., Brisbane
Thomson, R.
Thomson, Wm., F.R.S. (Ed.)
Thorpe, Walter
ATodd, Miss Dorothy H.
Tout, Prof. T. F., M.A.
LTrafford, Sir Humphrey F. de, Bart.
Tuke, Rev. R. M.
LTulloch, Angus A. G.
Turner, Mrs. S. A.
ATydeman, B. R.
ATyldesley Higher Education Commit-
tee
Tyne, W. J.

. Vallance, A. C.
Vaudrey, Sir W. H., J.P.
Viehoff, Miss F.

H Wainwright, Joel, J.P.
Wainwright, Thomas Foster, J.P.
AWalch, Mrs. W. E.
Walkden, Arthur
Walker, G. H.
Walker, J. Alan
Walker, John
Walker, Miss Mary G.
Walker, Sam
AWallace, Miss M. W.
LWallace, Reginald W.
Walmsley, R.
Walter, Miss L. Edna, B.Sc., H.M.I.
Warburton, Miss L. M.
AWarburton, Miss L. W.
H Ward, Sir A. W., M.A., Litt.D.
H Ward, Rt. Hon. Sir J. G., K.C.M.G.,
New Zealand
LWard, Wm. H.
Ward, Ziba Armitage
AWardle, Miss

- cWardrop, Capt. A. Tucker, F.R.G.S. Williamson, R. T., M.D., F.R.G.S.
 AWarren, Geo. H. Williamson, William Henry
 AWarrington, Miss M. Wilmore, Albert, D.Sc., F.G.S.
 Waterhouse, Gilbert, F.R.G.S. Winder, Mark
 AWatson, Col. Sir C. M., K.C.M.G., Winstanley, T. G.
 R.E. Wood, A. W.
 Watson, D. Fraser Wood, George Hervey
 Watson, Joseph LWood, George W. Rayner, J.P.
 AWebster, John Wood, Henry
 Welding, Miss Wood, Thomas
 Welldon, Rt. Rev. Bishop, D.D., Woodhouse, J. H., F.R.I.B.A.
 Dean of Manchester Woodruff, Herbert
 Welsh, W. Woods, W. D.
 Whalley, Joseph, F.R.G.S. Woolf, Miss M. A.
 Whitby, W. H. Woolfenden, Miss Alice H.
 White, Mrs. M. M. Woolfenden, Joseph
 LWhittaker, Mrs. A. H. Woolfenden, R. S. H.
 AWhittaker, Miss F. Woolley, George Stephen
 Whitworth, Herbert LWoolley, Hermann, F.R.G.S.
 AWigham, Sam LWrathmell, T.
 Wihl, G. Wright, Reginald
 Wilde, J. J. Wylde, Miss Bertha
 AWilkinson, Miss
 Wilkinson, T. F. Young, Harold
 Wilkinson, Wm. Young, Leonard
 Willcock, Thomas Young, Robert
 HWillcocks, Major-General Sir James,
 K.C.M.G., D.S.O. Zellweger, I.
 Williams, Arnold, A.C.A. Zimmern, Fritz, F.R.G.S.
 Williams, James cZimmern, Captain N. H.
 Williams, S. W., C.A. Zimmern, W. H.

Rules.

I. OBJECT AND WORK.

The object of the Manchester Geographical Society is to promote the study of all branches of Geographical Science, especially in its relations to commerce and civilisation.

The work of the Society shall be :—

1. To further in every way the pursuit of the science; as, by the study of official and scientific documents, by communications with learned, industrial and commercial societies, by correspondence with consuls, men of science, explorers, missionaries, and travellers, and by the encouragement of the teaching of geography in schools and colleges.

2. To hold meetings at which papers shall be read, or lectures delivered by members or others.

3. To examine the possibility of opening new markets to commerce and to collect information as to the number, character, needs, natural products and resources of such populations as have not yet been brought into relation with British commerce and industry.

4. To promote and encourage, in such way as may be found expedient, either alone or in conjunction with other Societies, the exploration of the less known regions of the earth.

5. To inquire into all questions relating to British and Foreign colonisation and emigration.

6. To publish a Journal of the proceedings of the Society, with a summary of geographical information.

7. To form a collection of maps, charts, geographical works of reference, and specimens of raw materials and commercial products.

8. The Society shall not enter into any financial transactions beyond those necessarily attached to its declared object, and shall not make any dividend, gift, division, or bonus in money unto or between any of its members.

II. ORGANISATION.

9. The Society shall consist of ordinary, associate, corresponding, and honorary members.

10. A Council shall be chosen annually from the ordinary members to conduct the affairs of the Society. It shall consist of a President, four or more Vice-Presidents, a Treasurer, two or more Honorary Secretaries (including a Secretary for Foreign Correspondence), and twenty-one Councillors.

11. There shall be three Trustees elected by the Society, who shall hold office until death, disability, insolvency or resignation. They shall be members of the Council by virtue of their office.

12. Any vacancy occurring in the Council during the current year may be filled up by the Council.

III. ELECTION OF MEMBERS.

13. Every candidate for admission into the Society as an ordinary or an associate member must be proposed by a member. The proposal shall be read out at the next Ordinary Meeting of the members, and any objection shall be forwarded in writing to the Secretary within seven days.

14. The election of members is entrusted to the Council. The names of those elected shall be announced from the chair at the next Ordinary Meeting after the election.

15. The Secretary shall within three days forward to every newly-elected member notice of his election, a copy of the Rules of the Society, and a card

announcing the days on which the Ordinary Meetings will be held during the session. But the election of an ordinary or associate member shall not be complete, nor shall he be permitted to enjoy the privileges of a member, until he shall have paid his first year's subscription. Unless such a payment be made within three calendar months from the date of election the election shall be void.

16. The Council shall have power to elect honorary and corresponding members.

17. Women shall be eligible as members and officers of the Society.

IV. PAYMENTS.

18. An ordinary member shall pay an annual subscription of £1. 1s., or he may compound by one payment of £10. 10s. An associate member shall pay an annual subscription of 10s. 6d. The Society's year shall begin on the first day of January.

19. Members shall not be entitled to vote or to enjoy any other privilege of the Society so long as their payment shall continue in arrear, but associate members shall not vote nor shall they take any part in the government of the Society.

20. The first annual payment of a member elected in November or December shall cover his subscription to the 31st of December in the year following.

21. On the first day of January in each year there shall be put up in the rooms of the Society a complete list of the members with the amount of their subscription due, and as the amounts are paid the fact shall be marked on the list.

22. Notice shall be sent to every member whose subscription shall not have been paid by the first of February, and if the arrears are not discharged by the first of July the Council may remove the member from the list of members. Any member, whose subscription is in arrear for two years shall not be entitled to receive the Journal of the Society.

V. MEETINGS.

23. The meetings of the Society shall be of three kinds—Ordinary, Annual, and Special.

24. In all meetings a majority of those present shall decide on all questions, the President or Chairman having a casting vote in addition to his own.

ORDINARY MEETINGS.

25. The Ordinary Meetings of the Society shall be held once a month, from the month of October to the month of May, or oftener, if judged expedient by the Council.

26. All members whose subscriptions are not in arrear shall have a right to be present. All ordinary members shall have the privilege of introducing one visitor.

27. The order of the proceedings shall be as follows :—

- (a) The minutes of the last meeting to be read and if correctly recorded they shall be signed by the Chairman.
- (b) Presents, whether of money, books, maps, charts, instruments or specimens, made to the Society to be announced.
- (c) The election of new members to be declared and the names of candidates to be read.
- (d) Papers and communications to be read and discussed.

28. At these meetings nothing relating to the rules or management shall be brought forward, but the minute book of the Council shall be on the table at each meeting for the inspection of any member, and extracts therefrom may,

with the consent of the chairman, be read to the meeting on the requisition of any member.

23. On occasions of exceptional interest the Council may make provision for a larger admission of visitors.

ANNUAL MEETINGS.

30. The Annual Meeting of the members shall be held at such time and place as the Council may determine.

31. Fourteen days' Notice of such meeting shall be sent to every member within the United Kingdom who has given his address to the Secretary, and notice of the meeting shall be advertised in such newspapers as the Council may direct.

32. The object of this meeting shall be to receive the Annual Report of the Council and the Treasurer's Balance Sheet, to hear the President's address, to elect the Council and officers for the ensuing year, and to transact any other business.

33. Any two ordinary members may nominate candidates for the Council or for office not later than one week prior to the day of election, and the names of candidates so nominated shall be at once put up in the rooms of the Society. The election of the Council and officers shall be by ballot.

SPECIAL GENERAL MEETINGS.

34. The Council may call a Special General Meeting of the Society whenever they shall consider it necessary, and they shall do so if required by 20 ordinary members.

35. A week's notice of the time and object of every Special Meeting shall be sent to all members. No other business shall be entertained than that of which notice has been thus given.

36. Twenty ordinary members shall form a quorum.

VI. COUNCIL AND OFFICERS.

THE COUNCIL.

37. The government of the Society shall be entrusted to the Council, subject to the rules of the Society.

38. The Council shall annually elect a Chairman and Vice-Chairman.

39. The President or the Chairman, or any three members of the Council, may at any time call a meeting thereof, to which every member of the Council shall be summoned.

40. Seven shall form a quorum.

41. In order to secure the most efficient study and treatment of the various subjects which constitute the chief work of the Society, the Council may appoint Committees for special purposes. These Committees, with the approbation of the Council, may associate with themselves any persons—whether members of the Society or not—from whom they may desire to obtain special assistance or information. The Committees shall report to the Council the results of their proceedings.

42. The President, Chairman, Vice-Chairman of the Council, and the Honorary Secretaries, shall, by virtue of their offices, be members of all Committees appointed by the Council.

PRESIDENT AND VICE-PRESIDENTS.

43. The President, is, by virtue of his office, the chairman of all the meetings of the Society. In the absence of the President, one of the Vice-Presidents may preside.

CHAIRMAN OF THE COUNCIL.

44. It is the duty of the Chairman of the Council to see that the rules are

properly observed, to call for reports and accounts from Committees and Officers, and to summon, when necessary, special meetings of the Council and of Committees.

TREASURER.

45. The Treasurer has the charge of all accounts; he shall pay all accounts due by the Society after they have been examined and approved by the Council.

46. He shall see that all moneys due to the Society are collected, and shall have power, with the approval of the Council, to appoint a Collector. All moneys received shall be immediately paid to the bankers of the Society.

47. The bank passbook and the book of accounts shall be laid upon the table at every ordinary meeting of the Council.

48. The accounts shall be audited annually by two members, who shall be elected at an ordinary meeting at least one month before the Annual Meeting.

SECRETARIES.

49. The duties of the Honorary Secretaries shall be:—

- (a) To conduct the correspondence of the Society and of the Council.
- (b) To attend the meetings of the members and of the Council, and minute their proceedings.
- (c) At the ordinary meetings, to announce gifts presented to the Society since their last meeting; to read the names of all new members and of candidates for admission, and the papers communicated to the Society, which have been directed by the Council to be read.
- (d) To have immediate superintendence of all persons employed, to make arrangements for the meetings of the Society, and to take charge of all maps, books, furniture and other effects.

50. It shall be the more especial duty of one of the Honorary Secretaries to conduct, as may be directed by the Council, correspondence with Foreign Societies, and with persons resident abroad.

51. In addition to the Honorary Secretaries, there shall be a paid Secretary appointed by the Council, whose duties shall be to assist the Honorary Secretaries, to issue the notices of the Council and of the Society, and to act under the instructions of the Council.

The foregoing Rules, as now amended, were approved and adopted at a meeting of the members of the Society, of which due notice had been given to the members, held in the Town Hall, Manchester, Wednesday, October 3rd, 1894.

(Signed) GEORGE, President.

S. ALFRED STEINTHAL, Chairman

F ZIMMERN, Honorary Secretary.

JAS. D. WILDE, M.A., Honorary Secretary.

ELI SOWERBUTTS, Secretary.

[Copy.]

It is hereby certified that this Society is entitled to the benefit of the Act 6 and 7 Vict., Cap. 36, intituled "An Act to exempt from County, Borough, Parochial, and other Local Rates, Lands and Buildings, occupied by Scientific or Literary Societies."

Seal of Registry of
Friendly Societies.

This 15th day of January, 1895.

E. W. B.

G
7
M3
v.29-31

Manchester Geographical
Society, Manchester, Eng.
Journal

PLEASE DO NOT REMOVE
CARDS OR SLIPS FROM THIS POCKET

UNIVERSITY OF TORONTO LIBRARY
