

THE  
GEOLOGICAL MAGAZINE.

NEW SERIES. DECADE V. VOL. I.

No. IX. — SEPTEMBER, 1904.

ORIGINAL ARTICLES.

I.—EMINENT LIVING GEOLOGISTS:

WILFRID HUDLESTON HUDLESTON, J.P., M.A., F.R.S., F.L.S.,  
F.G.S., F.C.S., etc.,

(WITH A PORTRAIT,<sup>1</sup> PLATE XIV.)

GEOLOGY is a science which owes, not only its inception, but its continued existence largely to its non-professional disciples and lovers. In fact, of the two classes existing at the present time, the 'amateur' and the 'professional,' it would by no means be difficult to show that the former gave birth to the latter, and that some of the best living professional geologists have been recruited from the ranks of the amateur class. To a small band of early amateurs we are indebted for the foundation alike of the Geological Society and the Geological Survey in this country.

At the beginning of the last century—indeed, during the first half of it—geological teachers were scarce, and Natural Science had not attained a recognised position in our public schools. But for the early training received from William Smith (known as "the father of English geology") we might never have heard of his distinguished nephew, Professor John Phillips. Nor can we omit to recall the illustrious names of Hutton, Macculloch, Greenough, Conybeare, Fitton, Broderip, Darwin, Godwin-Austen, Fisher, Sorby; with Buckland, Sedgwick, Phillips, Forbes, Morris, Prestwich, Green, Bonney, and Nicholson, among our past University Lecturers; and De la Beche, Griffith, Portlock, Murchison, Ramsay, Jukes, and Geikie, as leaders of Surveys; and Hutton, Lyell, Poulett-Scrope, Huxley, Geikie, and others, among our classical geological writers, most of whom studied geology and palæontology in their early years as amateurs, and several of whom remained so all their lives.

Now, all is changed. Owing to the numerous centres for public instruction and the introduction of Natural Science teaching in our Universities, a large number of fully trained geological students is

<sup>1</sup> The portrait of Mr. Hudleston is reproduced by kind permission of "The Biographical Press Agency," 16, Henrietta Street, Strand, W.C.—ED. GEOL. MAG.

being turned out annually "for home and colonial consumption," and we need no longer rely altogether upon the casual crop of young men having an innate love of the science, which may prompt them to take up geology because they are interested in it. Many, indeed, nowadays may be "called," but possibly not all those "chosen" have a genuine love for the science they affect.

It is pleasant to record the scientific services of one who, while he belongs to the non-professional class of geologists, has yet achieved a very large amount of most excellent work, both in geology and palæontology, and has, by his merit, won for himself the blue ribbon of the science. Wilfrid Hudleston Hudleston (formerly Simpson) was the son of Dr. John Simpson, of Knaresborough, who married Elizabeth Ward, heiress of the Hudlestons of Cumberland, and by letters-patent assumed the name of Hudleston in 1867. Wilfrid, the eldest son, was born at York on June 2nd, 1828, being the descendant of three generations of Yorkshire 'medicine-men.' From 1831 to 1834 his parents resided at Harrogate, where he remembers meeting his first playfellow, Henry Clifton Sorby—afterwards a distinguished geologist, an LL.D., F.R.S., and President (1878–80) of the Geological Society of London—then a schoolboy in the neighbourhood. Young Simpson received his early education at St. Peter's School, York, from which he was transferred to Uppingham School, and subsequently entered St. John's College, Cambridge, where he graduated B.A. in 1850. As a boy and an undergraduate he evinced no special predilection for geology beyond a strange boyish curiosity to know what the earth was made of. In his last term at Cambridge he attended Sedgwick's lectures, and was much impressed with the manner and appearance of that distinguished geologist. On leaving Cambridge he devoted some time to the study of the Law, and was called to the Bar in 1853, but never practised. A considerable portion of the twelve years 1850–1862 was spent in foreign travel in various parts of Europe and North Africa.

Mr. Simpson accompanied Professor Alfred Newton, of Cambridge, and Mr. John Wolley, in the pursuit of Ornithology, to Lapland, spending the Summer of 1855 in that country. He subsequently explored the Eastern Atlas, Algeria, in company with Canon Tristram and Mr. Osbert Salvin. Afterwards, more than twelve months were occupied in travels and collecting in Greece and Turkey. During this time attention was given to the physical and geological features of the various countries visited, but Ornithology occupied a foremost place.

From 1862 to 1867, his long period of distant travel being mostly over, Mr. Simpson began a special course of scientific studies, selecting more particularly Natural History and Chemistry. During this time he studied at Edinburgh under Playfair and Stephenson Macadam, and subsequently for three sessions at the Royal College of Chemistry in London under Hoffmann, Frankland, and Valentine. At that time he was undecided whether to take Chemistry or Geology as his principal subject, when an accident determined his studies in favour of the latter. Mr. Simpson had the good fortune to

meet Marshall Hall at Chamounix in the Summer of 1866, and on their return to England he was speedily introduced to many persons interested in geological science, of whom Professor John Morris may be regarded as the chief. There are still many who can recall the remarkable magnetic attraction of Morris over his pupils and associates, and this was just the kind of influence which Mr. Simpson, now become Mr. Wilfrid Hudleston, required to enlist him as a geological recruit and in due course to make him a "knight of the hammer" for the rest of his life. A close friendship was at once formed, which was only terminated by the death of Morris in 1886. In 1867 Mr. Simpson (a fortnight only before he changed his name to Hudleston) was elected a Fellow of the Geological Society of London, and four years later he became a member of the Geologists' Association.

About this period, 1867-71, Professor Morris was in the habit of extending his geological excursions far into the country, and out of this practice grew the improved excursions of the Geologists' Association, which, under various leading geologists, offered, without exception, the best instruction in geology which could be obtained, "*at the bed-side*"! Mr. Hudleston was not slow to profit by these excursions, and when he became Secretary in 1874 his interest was further enhanced by preparing reports on the various districts visited, some of which attain the dimensions of a respectable memoir. It was not until 1872 that he ventured on publication, and it may be noticed of many of his earlier papers that they have a decided bias towards chemical geology, in which subject he always took a deep interest. His papers on "The Yorkshire Oolites" (1873-8) and "The Corallian Rocks of England" (written in conjunction with Professor J. F. Blake, 1877) soon established his reputation as one of our leading geologists.

In 1881 Mr. Hudleston was elected President of the Geologists' Association, in which body he had already served the office of Secretary for three years, from 1874 to 1877, during which time, besides the duties of his office, he organised the excursions, prepared the reports, and carefully recorded the scientific work accomplished, earning for himself (said Mr. Carruthers) "the lasting gratitude of the Association" (see Annual Report, 1877, vol. v, p. 75). The Reports of Excursions directed by him are full of original observations, notably those relating to the Vale of Wardour (1881) and the West Riding of Yorkshire (1882). The cordial relations which have always existed between Mr. Hudleston and the Geologists' Association were further evinced in March, 1892, when an illuminated address of congratulation on his recent election to the chair of the Geological Society, signed by a numerous body of members, was presented to him by Professor Blake, then President of the Association.

Mr. Hudleston resided for many years in Cheyne Walk, Chelsea, but in 1883 he removed to Oatlands Park, Surrey. This rustication, however, interfered with his scientific engagements, and he again took up his residence in town, at 8, Stanhope Gardens, South

Kensington. In 1890 he married Miss Rose Benson, second daughter of the late William Heywood Benson, Esq., of Littlethorpe, near Ripon.

On the death of his old friend, Professor Morris, in 1886, Mr. Hudleston succeeded him as one of the Editors of the *GEOLOGICAL MAGAZINE*, to which, since 1879, he has been a frequent contributor.

He is a keen student of recent and fossil mollusca, and was one of the founders of the Malacological Society.

In 1886 accompanied by his friends Dr. Henry Woodward, F.R.S., and Mr. C. E. Robinson, Memb. Inst. C.E., Mr. Hudleston made some experimental dredgings, with the aid of a Brixham trawler and her crew, along the English Channel and in and near Torbay, for the purpose of studying marine mollusca and observing their living habitats; and in the following year he engaged a Grimsby steam-trawler and her crew, and, accompanied by Mr. C. E. Robinson and the late lamented Martin F. Woodward, of the Royal College of Science (second son of Dr. Henry Woodward), he spent three weeks in a dredging cruise in the English Channel to the west of Portsmouth and along the French coast.

In 1886 Mr. Hudleston became one of the Secretaries of the Geological Society of London, an office which he continued to hold until 1890. Following Sir Archibald Geikie, D.Sc., LL.D., F.R.S., Mr. Hudleston was in 1892 elected to fill the office of President, and during the two years in which he occupied the chair he delivered two important Addresses, dealing with the recent work of the Geological Society, which he passed critically in review, taking the papers on Tertiary and Secondary formations in 1893 and those on the Palæozoic and Fundamental rocks in 1894.

Three years later, in 1897, Mr. Hudleston was awarded the highest honour which the Council could bestow, the Wollaston Gold Medal of the Geological Society, in recognition of his valuable contributions to our knowledge, treating of chemical, mineralogical, palæontological, and stratigraphical geology. Special reference was made to his "Monograph on the Inferior Oolite Gasteropoda," which contained no less than 514 quarto pages of letterpress and 44 quarto plates of fossils. The labour involved in collecting, cleaning, and developing the Oolitic Gasteropoda procured for this work, all of which are now arranged in his private Museum in Stanhope Gardens, occupied Mr. Hudleston, with the co-operation of A. H. Bloomfield, Henry Keeping, B. Reynolds, Peter Cullen, and others, over a period of twenty years, fresh excavations having occasionally been made in quest of new species or to obtain better examples of those already known. In addition to this, some private collections, including those of Mr. S. S. Buckman and Mr. Darrel Stephens, were acquired by purchase. The Gasteropoda alone number many thousand specimens, carefully labelled and arranged, the 'types' being all specially marked. It is not too much to say that this was in all respects a model of what a monograph should be. No previous author had taken such pains to verify in the field the horizons from which the

fossils had been obtained, nor studied more fully the Continental types figured from equivalent strata.

Early in January, 1895, Mr. Hudleston, accompanied by his wife and his friend Professor J. F. Blake, F.G.S., left London for Bombay, where they arrived towards the end of the month. After leaving Professor Blake duly installed as organizing Curator of the Museum at Baroda, to which he had just been appointed, Mr. Hudleston continued his journey towards the north-west frontier of India. The geological results of this expedition are embodied in the second part of his paper "Notes on Indian Geology," read before the Geologists' Association during the presidency of the late General C. A. McMahon, December, 1895 (see *Proc. Geol. Assoc.*, xiv, pt. 6, February, 1896), who himself contributed an appendix on some of the rock-specimens collected. After making a rush for Simla, which is by no means an agreeable place in February, Mr. and Mrs. Hudleston proceeded across the Punjab to the banks of the Jhelum. Here they had an opportunity of ascending Mt. Tilla, the eastern extremity of the Salt Range, and thence transferred their base of operations to Rawal Pindi, whence Jamrood, Abbotabad, Murree, and finally Srinagar itself were visited.

Mr. Hudleston has been invited to preside over or take part in the Councils and Committees of numerous scientific Societies. He was elected President of the Devonshire Association for the Advancement of Science, Literature, and Art, of the Yorkshire Naturalists' Union, and of the Malton Field Naturalists' Society; and has for some years past acted as a Vice-President of the Dorset Natural History Field Club. He has been a member of the Council of the Royal Geographical Society, and was President of the Geological Section of the British Association at Bristol in 1898.

Quite recently Mr. Hudleston achieved an excellent piece of field geology by investigating the structure of Creetchbarrow-in-Purbeck (see *GEOL. MAG.*, 1902, pp. 241-256, and 1903, pp. 149-154, 197-203), which affords an object-lesson for younger hammerers to take pattern by.

The accompanying list of Mr. Hudleston's more important papers will best attest the energy and ability of their author, and the pleasure which he still continues to take in all the scientific questions of the day.

Of these 58 memoirs and papers, extending over a period of 32 years, the last appeared so recently as July of the present year (see *GEOLOGICAL MAGAZINE*, No. 481, pp. 337-382), and deals with "the 'Tanganyika problem,'" and is a most valuable contribution to, as well as a criticism of, Mr. J. E. S. Moore's recently published work on this subject. Indeed, we have the testimony of Professor Cornet himself upon this point. In the first place Mr. Hudleston enters upon a critical examination of the peculiarly marine-looking gasteropod shells which are thought by Mr. Moore to be homœomorphic with certain shells from beds of the Inferior Oolite of Western Europe, and are thus inferentially regarded as descendants of those forms. Mr. Hudleston

finds that the evidence of an ancestral connection between certain of these halolimnic genera (namely, *Typhobia*, *Bathanalia*, *Limno-trochus*, *Chytra*, *Paramelania*, *Bythoceras*, *Tanganyicia*, *Spekia*, and *Nassopsis*) is not nearly so strong as was anticipated from the inferences already drawn by Mr. Moore; nevertheless, a fairly good *prima facie* case for the *originally marine* origin of these exceptional organisms has been made out by Mr. Moore, but the supposed connection, in long ages past, of Lake Tanganyika with an arm of the Jurassic sea is held to be highly improbable, if not wholly impossible. In the second place Mr. Hudleston has collected together much of the scattered evidence as to the geological history of this vast Lake-area, some of which had escaped Mr. Moore's notice, especially the works of Professor Cornet of Mons, M. Barrat, and Mr. Molyneux, etc.

From a general consideration of the case it is apparent that the great longitudinal faults, folds, furrows, or "graben," as they are named, in which Tanganyika and the other lakes lie, are *not older than the Tertiary period*, and cannot therefore have formed a refuge in Secondary times for the remnant of an old Jurassic *marine* fauna in its hollows. Indeed, it seems probable that a *large portion* of the elevated interior region (composed of Archæan, Granitoid, and other ancient rocks) may have been a land-area from Triassic times or even earlier.

A magistrate and a landed proprietor in Dorsetshire and the West Riding of Yorkshire, Mr. Hudleston is a keen sportsman, loving both fishing and shooting, and divides his time between his country house at West Holme, near Wareham, Dorset, and his town residence, and still enjoys the meetings of the Geological, the Geographical, and other Societies, in the work of which he feels the same enthusiasm as of old.

LIST OF GEOLOGICAL PAPERS, ETC., BY WILFRID H. HUDLESTON.

1872. (With Mr. F. G. H. Price) "Excavations on the Site of the New Law Courts": Proc. Geol. Assoc., vol. iii, p. 43.
- 1873-8. "The Yorkshire Oolites": Proc. Geol. Assoc., vol. iii, p. 283; vol. iv, p. 353; vol. v, p. 407.
1874. Reports of Excursions to Oxford and Northamptonshire: Proc. Geol. Assoc., vol. iv, pp. 91 and 123.
1875. Reports of Excursions to the Isle of Thanet, to Charnwood Forest, and to East Yorkshire: Proc. Geol. Assoc., vol. iv, pp. 254, 307, and 326.
1875. Appendix. [On the Occurrence of Phosphates in Cambrian Rocks.] Quart. Journ. Geol. Soc., vol. xxxi, p. 376.
1876. Reports of Excursions to the Medway, to Reading, and to Swindon-Faringdon: Proc. Geol. Assoc., vol. iv, pp. 503, 519, 543.
1877. (With the Rev. J. F. Blake) "The Coralline Rocks of England": Quart. Journ. Geol. Soc., vol. xxxiii, p. 260.
1877. (With Mr. Davey) Report of an Excursion to Wantage: Proc. Geol. Assoc., vol. v, p. 137.
1877. Appendix. [Chemical Composition of some Lizard Rocks.] Quart. Journ. Geol. Soc., vol. xxxiii, p. 924.
1878. Report of an Excursion to Chipping Norton: Proc. Geol. Assoc., vol. v, p. 378.
1878. "Gneiss Rocks of the North-West Highlands": Proc. Geol. Assoc., vol. vi, p. 47.
1879. Review of Daubrée's "Géologie expérimentale": GEOL. MAG., Dec. II, Vol. VI, p. 421.



1879. Review of Sterry Hunt's Chemical and Geological Essays : GEOL. MAG., Dec. II, Vol. VI, p. 554.
1880. Reports of Excursions to Oxford and Aylesbury : Proc. Geol. Assoc., vol. vi, pp. 338 and 344.
- 1880-1. "Corallian Gasteropoda of Yorkshire" : GEOL. MAG., Dec. II, Vol. VII, p. 241 ; Vol. VIII, p. 119.
1881. Report of an Excursion to Salisbury, Stonehenge, etc. : Proc. Geol. Assoc., vol. vii, p. 134.
1881. "On the Geology of the Vale of Wardour" : Proc. Geol. Assoc., vol. vii, p. 161.
1881. Review of Wallace's "Island Life" : GEOL. MAG., Dec. II, Vol. VIII, p. 84.
1881. "Gasteropoda of the Portland Rocks" : GEOL. MAG., Dec. II, Vol. VIII, p. 385.
1881. Notes on the Geology of Keswick, and Report of an Excursion to the Lake District : Proc. Geol. Assoc., vol. vii, pp. 213 and 236.
1881. Presidential Address on "Deep Sea Investigation" : Proc. Geol. Assoc., vol. vii, p. 245.
- 1882-5. "Gasteropoda of the Oxfordian and Lower Oolites of Yorkshire" : GEOL. MAG., Dec. II, Vol. IX, pp. 145, 193, and 245 ; Dec. III, Vol. II, pp. 49, 121, 151, 201, and 252.
1882. Review of King and Rowney's work on the so-called *Eozoon Canadense* : GEOL. MAG., Dec. II, Vol. IX, p. 231.
1882. Report of an Excursion to the Isle of Purbeck : Proc. Geol. Assoc., vol. vii, p. 377.
1882. Report of an Excursion to the West Riding of Yorkshire : Proc. Geol. Assoc., vol. vii, p. 420, and Proc. Yorks. Geol. Soc., vol. for 1882, p. 113.
1882. "First Impressions of Assynt" : GEOL. MAG., Dec. II, Vol. IX, p. 390.
1882. Presidential Address on "The Geology of Palestine" : Proc. Geol. Assoc., vol. viii, p. 1, and Proc. Yorks. Geol. Soc., vol. for 1883, p. 174.
1883. "Notes on the Diamond Rock of South Africa" : Proc. Geol. Assoc., vol. viii, p. 65.
1883. "On a recent Hypothesis with respect to the Diamond Rock of S. Africa" : Min. Mag., vol. v, p. 199.
1883. "On a Collection of Fossils and Rock-specimens from West Australia" : Quart. Journ. Geol. Soc., vol. xxxix, p. 582.
1883. Review of Barrois' "Geology of the Asturias, etc." : GEOL. MAG., Dec. II, Vol. X, p. 273.
1884. Review of Sterry Hunt's "Geological History of the Serpentes" : GEOL. MAG., Dec. III, Vol. I, p. 276.
1884. "Mollusca from South Australia" : GEOL. MAG., Dec. III, Vol. I, p. 339.
1884. Presidential Address to the Malton Field Naturalists' Society ; Malton, 1885.
1885. "Further Notes on the Geology of Palestine" : Proc. Geol. Assoc., vol. ix, p. 77. On p. 101 of this volume the analogy between the Jordan Valley fissure and the East African fissure lakes, such as L. Baringo, is suggested.
1885. (With Mr. H. B. Woodward) Report of an Excursion to Sherborne and Bridport : Proc. Geol. Assoc., vol. ix, p. 187.
- 1886-7. "On a Recent Section through Walton Common," and further notice : Quart. Journ. Geol. Soc., vol. xlii, p. 147, and vol. xliii, p. 443.
- 1887-96. Monograph of the Gasteropoda of the Inferior Oolite : Palæontographical Society.
1887. Report of an Excursion to Aylesbury : Proc. Geol. Assoc., vol. x, p. 166.
1889. Report of an Excursion to Weymouth : Proc. Geol. Assoc., vol. xi, p. 49.
1889. "Geological History of Iron Ores" (being the Presidential Address delivered to the Yorkshire Naturalists' Union at Sheffield in November, 1888) : Proc. Geol. Assoc., vol. xi, p. 104.
1889. Presidential Address to the Devonshire Association (Tavistock) : Trans. Dev. Assoc., vol. xxi, p. 25, and GEOL. MAG., Dec. III, Vol. VI, pp. 500 and 558.
1890. "Mollusca from South Australia" : GEOL. MAG., Dec. III, Vol. VII, p. 241.
1892. (With Mr. E. Wilson) "A Catalogue of British Jurassic Gasteropoda" : Dulau & Co.

- 1893-4. Two Presidential Addresses to the Geological Society of London on "Some Recent Work of the Society": *Quart. Journ. Geol. Soc.*, vol. xlix, *Proc.*, p. 65, and vol. l, *Proc.*, p. 58.
1895. "Notes on Indian Geology, including a Visit to Kashmir": *Proc. Geol. Assoc.*, vol. xiv, p. 226.
1896. (With Mr. Monckton) Report of an Excursion to Swanage, Corfe Castle, Kimeridge, etc.: *Proc. Geol. Assoc.*, vol. xiv, p. 312.
1897. Review of Dr. C. Irons' "Life and Work of Dr. Croll": *GEOL. MAG.*, Dec. IV, Vol. IV, p. 71.
1898. Address to the Geological Section of the British Association at Bristol: Report (*Trans. Sect. C*), p. 852, and *GEOL. MAG.*, Dec. IV, Vol. V, p. 458.
1899. "On the Eastern Margin of the North Atlantic Basin": *GEOL. MAG.*, Dec. IV, Vol. VI, pp. 97 and 145.
1901. (With others) "A Day in West Purbeck": *Proc. Dorset Field Club*, vol. xxii, p. liv.
1902. (With General C. A. McMahon) "Fossils from the Hindu Khoosh": *GEOL. MAG.*, Dec. IV, Vol. IX, pp. 3 and 49.
1902. "Crechbarrow; an Essay in Purbeck Geology": *Proc. Dorset Field Club*, vol. xxiii, p. 146. See also *GEOL. MAG.*, Dec. IV, Vol. IX, p. 241, and Vol. X, pp. 149, 197.
1902. Review of Bertrand's "Panama" (a memoir published in 1899): *GEOL. MAG.*, Dec. IV, Vol. IX, p. 419.
1903. "Chesil Beach": *Proc. Dorset Field Club*, vol. xxiv, p. 1.
1903. Review of Tempest Anderson's "Volcanic Studies": *GEOL. MAG.*, Dec. IV, Vol. X, p. 160.
1904. Review of Messrs. Freshfield & Garwood's "Round Kanchenjunga": *GEOL. MAG.*, Dec. V, Vol. I, p. 74.
1904. "On the Origin of the Marine (Halolimnic) Fauna of Lake Tanganyika": *Trans. Victoria Inst.* for 1904, and as a Supplement in the July number of the *GEOL. MAG.*, Dec. V, Vol. I.

Mr. Hudleston is also the author of a considerable number of reviews and notices, some of which have appeared in the *Annals and Magazine of Natural History*, and others in the *GEOLOGICAL MAGAZINE*, for the most part anonymously.

## II.—NOTE ON A PALÆOZOIC CYPRIDINA FROM CANADA.

By Professor T. RUPERT JONES, F.R.S., F.G.S.

IN the *Annals and Magazine of Natural History*, ser. vii, vol. i (1898), pp. 333-334, pl. xxvii, a numerous series of fossil Ostracoda, with bivalved carapaces, having more or less resemblance to those of *Cypridina*, were described and figured. The specimens selected had been collected by various observers in different regions; and comprised two from the Tertiary of France, two from the Cretaceous of Belgium, one from the Permian of Durham, seven from the Carboniferous of Britain, three from the Devonian of Devon, three from the Upper Silurian and two from the Lower Silurian (Ordovician) of distant regions. References were made to several allied Palæozoic forms; and one other species from the Carboniferous of North America (Ulrich) and two from the Upper Silurian of Scania (Moberg) ought to have been mentioned.

We have now to notice another old Cypridinal form (the internal cast of a left valve), probably of Ordovician age. It has come to hand from Colonel C. C. Grant, of Hamilton, Ontario, Canada, who exposed it in breaking up some blocks of limestone, probably belonging to the Trenton series, from a 'glacial drift' at Wenoma, on the shore of Lake Ontario, not far from Hamilton.