

THE  
GEOLOGICAL MAGAZINE

NEW SERIES. DECADE V. VOL. X.

No. VI.—JUNE, 1913.

ORIGINAL ARTICLES.

I.—EMINENT LIVING GEOLOGISTS.

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(WITH A PORTRAIT, PLATE IX.)

THE name of Geikie has become as familiar to present-day geologists as those of Murchison, of Sedgwick, or of Lyell were to our immediate predecessors.

Notices and portraits of his elder brother, Sir Archibald Geikie, K.C.B., the President of the Royal Society, have already appeared in the GEOLOGICAL MAGAZINE (see Vol. for 1890, Pl. II, pp. 49–51, and 1907, Pl. I, pp. 1–2); it is high time to present that of the younger brother, Professor James Geikie, who occupies the leading place in our science and in geography in Edinburgh and its University, and is known everywhere also by his published works, especially by his contributions to Glacial Geology.

James Geikie was born in Edinburgh August 23, 1839, and after being educated at the High School and the University of his native city, he entered the Geological Survey in 1861, and became a District Surveyor in 1869.

“In those early days,” writes James Geikie, “when I joined the Geological Survey in Scotland, the Survey maps showed only the ‘solid geology’; the loose superficial deposits known generally as ‘drift’ were entirely ignored. It was then decided that the ‘drift’ should henceforth be mapped, and thus my earliest years on the Survey were spent in re-surveying ground which had already been mapped so far as the solid geology was concerned, my work being confined to the insertion on the field-maps of the so-called ‘drift’ and peat. From the first, therefore, I became interested in our ‘superficial formations’, more especially in the Boulder-clay and the gravels and sands associated with it. My interest in these deposits, however, dates much further back—in fact, to my school days; so that I did not come to the Survey quite a greenhorn so far as the drifts were concerned.

“Later on, while mapping in the Southern Uplands, the peat-bogs, with their remains of trees, arrested my attention, and seemed to suggest that the explanation of the phenomena then in vogue was insufficient. Accordingly my holidays for a few years were spent in the Highlands and Outer Hebrides, for the purpose of increasing my

knowledge, not only of peat, but of 'superficial formations' generally. Eventually I reached the conclusion that the phenomena of the peat bore witness to a succession of climatic changes, and my views were communicated to the Royal Society of Edinburgh in a paper 'On the Buried Forests and Peat-mosses of Scotland, and the changes of climate which they indicate'<sup>1</sup> (1866).

"I have, since then, considerably extended my acquaintance with the peat-bogs of Scotland and other lands, but have found no reason to change or modify the general conclusions I arrived at so long ago—conclusions which have been of late years strongly supported by Dr. Lewis, whose researches into the botanical history of the peat-mosses seem to me to mark a distinct advance in our knowledge of Pleistocene geology."

Dr. James Geikie's survey work in succeeding years lay chiefly in the Lowlands, and the bordering tracts of the Southern Uplands and Highlands. He had thus to map considerable areas of Silurian, Old Red Sandstone, and Carboniferous, together with large tracts of the associated igneous rocks. This 'solid geology' was sufficiently engrossing, but the glacial phenomena had certainly the greater fascination for him, and most of his holidays were devoted to the study of these phenomena either in this country or on the Continent. Having arrived at certain conclusions as to the climatic changes of Pleistocene times, he broached these views in the *GEOLOGICAL MAGAZINE* (1871-2) in a series of papers "On Changes of Climate during the Glacial Epoch". These papers formed the germ of James Geikie's *Great Ice Age*, issued in 1874, a second edition of which appeared three years later. His *Prehistoric Europe*, published in 1882, was really a supplement to that edition, while the third edition of the *Great Ice Age* (1894) embodied the further results obtained by assiduous study of the work done by others, and by the devotion of his holidays to research in this country and abroad.

Having been appointed (1882) to the Chair of Geology at Edinburgh, many new interests claimed his attention. His pupils having complained that the textbooks of geology then available were either too meagre or too elaborate for their purpose, Professor Geikie was induced to prepare an 'intermediate' textbook (*Outlines of Geology*) which was issued in 1884, a fourth edition being called for in 1903. He also set himself the task of improving the teaching of geography in schools. The kind of geography taught at that time and the textbooks in common use were dry and forbidding, and one had no difficulty in proving that such was the case. But James Geikie was only one of a number of ardent reformers, who in 1884 united to form a Scottish Geographical Society, which has succeeded beyond their utmost expectations, and has played no small part in effecting a complete revision of the mediaeval system of teaching geography in the Scottish schools, and in getting lectureships on the subject established in the universities. Dr. James Geikie was elected president in 1904, but after holding office for six years his constantly increasing work at the University compelled him to resign. On his retirement

<sup>1</sup> See *GEOL. MAG.*, 1867, pp. 20-3, and *Roy. Soc. Edinb.*, vol. xxiv, pt. ii, pp. 363-84.

the Council awarded him the gold medal of the Society, and invited him to have his portrait painted for the Society's hall. Professor James Geikie has for many years acted as Honorary Editor of the Society's organ, the *Scottish Geographical Magazine*, one of the best scientific journals extant.

His long connexion with the Royal Scottish Geographical Society induced him frequently to bring before his associates the importance of geology to all serious students of geographical science, and he summed up much of what he had advanced, in lectures and papers on the subject, in *Earth Sculpture or the Origin of Land Forms* (1898; last edition, 1909). Dr. Geikie has now in the press another similar work dealing with the borderland of geology and geography, but treating more especially of mountains. Meanwhile his interest in the history of the Ice Age has not abated. A few months ago he delivered a course of lectures in the University (under the 'Munro Foundation') on the "Antiquity of Man in Europe", in which the subject was discussed mainly from the geological point of view.

As a teacher Professor Geikie has of course endeavoured to give as wide a view of the stony science as one man can be expected to do. In the early 'eighties' he had to do all the work of his department single-handed, lecturing, demonstrating minerals, rocks, and fossils in the laboratory, as well as conducting field excursions. By and by, however, the department was strengthened by the appointment of able lecturers and assistants, and is now probably as well equipped as any similar school in the kingdom.

Students of applied science are, as might be expected, more keenly interested in practical work than in palæontological research or historical geology. From the first, therefore, Dr. Geikie endeavoured to meet their special requirements by devoting the summer term to the study of structural and field geology, and in 1898 he issued a textbook on the subject, which has gone through three editions (the last appearing in 1912), so that the book has apparently met a 'felt want'. Some years ago he began to form a lending and consulting 'class library' for the use of his students, which has now grown to respectable dimensions, thanks largely to generous contributions of geological literature from his brother, Sir Archibald Geikie. It contains upwards of 5,000 volumes, and many thousands of 'separates' from the scientific journals of this and other countries, besides a large collection of geological maps. This library (with the consent of his brother) has been presented to the University.

While busy enough with his duties as a teacher, Professor Geikie yet found time to take part in the administration of the University, having acted since 1891 as Convener of the Science Degrees Committee, and subsequently, after a Faculty of Science had been instituted by the Royal Commission in 1894, his colleagues did him the honour to elect him their Dean, an official position which he still holds. Since James Geikie joined the University in 1882 great changes have taken place. Not only have several new Chairs in the Faculty of Science been founded, but numerous additional lectureships have been instituted, and the whole system of teaching has been in a measure revolutionized. More especially is this noticeable in practical work—

the provision for which is constantly being increased by the enlargement of old laboratories and the building of new ones.

As a relief from professional work Professor Geikie has indulged, as most folk do, in hobbies. One of these has been the study of foreign literature—not wholly geological, as the issue of a volume of translations of Heine's Songs and Lyrics may serve to show. But not much idle time outside his professional duties has been allowed him, for he has been twice elected a President of a section of the British Association, that of Geography in Edinburgh and of Geology at Newcastle; while the United States carried him off to America to deliver a course of lectures at the Lowell Institute in Boston.

Professor James Geikie received the Brisbane Medal of the Royal Society of Edinburgh and also the Murchison Medal of the Geological Society of London in 1889. In presenting the latter Dr. W. T. Blanford, then President of the Geological Society, said: "The Council has awarded the Murchison Medal to Professor James Geikie in acknowledgment of his important contributions to the geology of North Britain, and especially of his investigation of glacial phenomena. His *Great Ice Age* contained a full, careful, and admirably written summary of the observations made up to 1874, and the interest excited by the work was proved by a second edition being required in 1877. Professor Geikie has besides published numerous papers, not the least important of which were two that appeared in the Society's Quarterly Journal containing his observations 'On the Glacial Phenomena of the Long Island or Outer Hebrides'."

A third edition of his *Great Ice Age* (largely rewritten) was published in 1894, and although so long a period had elapsed since the second edition appeared it speaks highly for the author's merits and charm as a writer that the book had lost none of its interest with geologists, nor with the reading public in general.

One of the most important advances made in glacial geology is afforded by the various evidences which have been brought to light which tend to establish the conclusion that prehistoric man was living and resident in Europe probably before the Great Ice Age, and certainly during the several mild interglacial periods which occurred prior to the final removal of the intense cold and the great permanent snow-fields of the Northern Hemisphere. In a valuable and exhaustive notice of Dr. James Geikie's work at the time (see *GEOL. MAG.*, 1895, pp. 29–38) Dr. Hinde observes: "Opinions may differ respecting some of the generalizations of the author, but all will agree on the value and importance of having the evidence on this subject stated in so clear and impartial a manner."

The warmest personal regard is entertained for Professor James Geikie, not only by his many friends and fellow-workers, but by the still larger number of those students who have come under the influence of his teaching and his writings during the past thirty years, and he will always be remembered as having added new impulse both to geography and geology, especially in the University of Edinburgh, where his name and services are not likely soon to be forgotten.

## LIST OF SCIENTIFIC PUBLICATIONS BY PROFESSOR JAMES GEIKIE, F.R.S., ETC.

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1870. "On the Age of the Stratified Deposits, with Mammalian Remains, at Crofthead, near Glasgow": *ibid.*, Vol. VII, pp. 53-7, illus.
1871. "Carboniferous Formation of Scotland," remarks on Mr. Croll's letter: Trans. Geol. Soc. Glasgow, vol. iv, pp. 78-80; GEOL. MAG., Vol. VII, 1870, p. 298.  
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1875. *Geology.* (Chambers' Elementary Science Manuals.) pp. 96, illus., 8vo, London.
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## II.—NOTES ON NEW OR IMPERFECTLY KNOWN CHALK POLYZOA.

By R. M. BRYDONE, F.G.S.

(Continued from the May Number, p. 199.)

(PLATE VIII.)

**A**VICULARIA of what I have called the *Leueuri*-type are not confined to *Membranipora*. There are at least two species provided with them which come nearer to *Semieschara*.

*SEMIESCHARA LABIATULA*, sp. nov. (Pl. VIII, Figs. 1-4.)

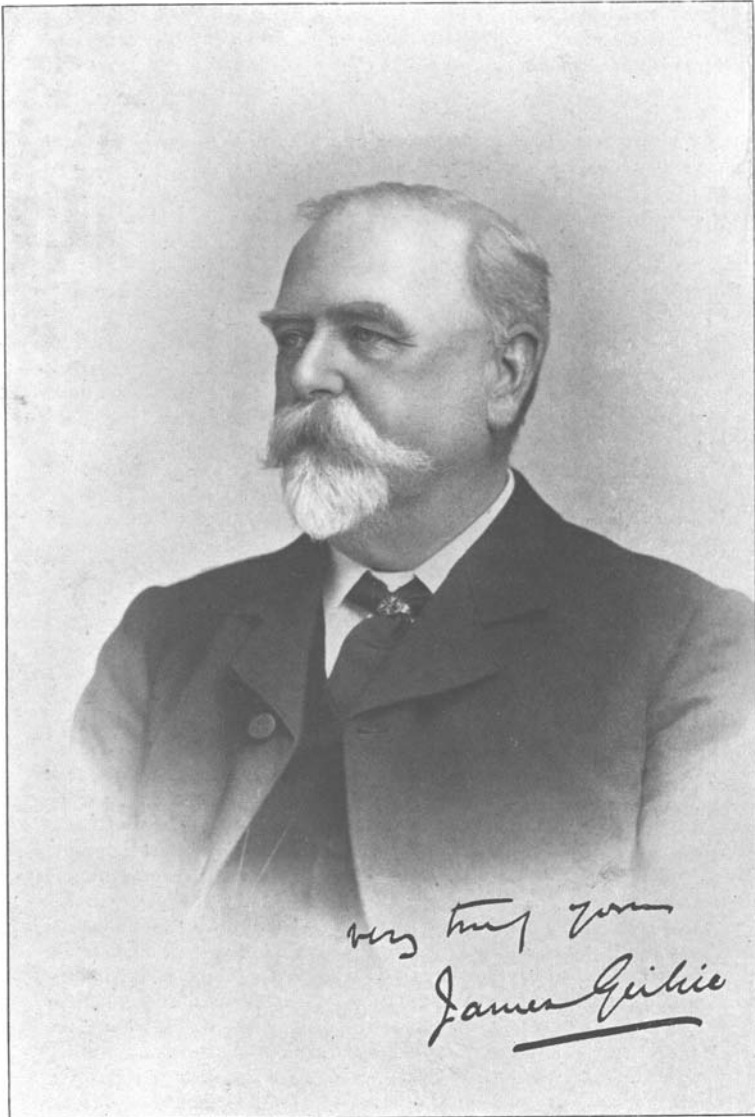
*Zoarium* always adherent.

*Zoecia* subpyriform, with separate side walls which are broad and pass gradually down into the front wall; apertures large and subtriangular, with the apex flattened owing to the development of a slight internal front wall, fairly straight sides with a tendency to bulge inwards towards the top and a lower lip always more or less convex with an upturned tip which catches the light and is very useful for rapid recognition; these convexities are most marked in the later forms and may be so pronounced as to make the aperture definitely trifoliate (Fig. 4).

*Oecia* abundant, narrow helmet-shaped swellings of the foot of the succeeding zoecium.

*Avicularia* abundant and typical; aperture broadly elliptical, but with a distinct tendency to assimilate itself in general outline to the zoecial aperture (especially in the lower lip, which may be strongly convex), the lower section nearly or quite equal in size to the upper; the infold of the side wall sudden, with a concave edge; avicularia of a modified form looking as if a small zoecium had been set into the aperture of a normal avicularium occur very sparingly (Fig. 2).





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