

NOTICES OF MEMOIRS.

I.—BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE. Sixty-fourth Annual Meeting, held at Oxford, August 9th to 14th, 1894.

LIST OF PAPERS READ IN SECTION (C), GEOLOGY.

L. FLETCHER, M.A., F.R.S., F.G.S., President.

The President's Address.

*Prof. A. H. Green.*—Some Points of Special Interest in the Geology of the Neighbourhood of Oxford.

*E. A. Walford.*—Report of the Committee on the Stonesfield "Slate."

*E. A. Walford.*—On the Terraced Hill Slopes of North Oxfordshire.

*Prof. W. Boyd-Dawkins.*—The Probable Range of the Coal-measures under the Newer Rocks of Oxfordshire and the Adjoining Counties.

*Prof. W. Boyd-Dawkins.*—On a Deposit of Iron Ore in the Boring at Shakespeare's Cliff, Dover.

*J. Logan-Lobley.*—On the Cause of Earthquakes.

*Dr. Tempest Anderson.*—On certain Volcanic Subsidences in the North of Iceland.

Joint Discussion with Section H, on the Plateau Gravels, opened by Mr. Whitaker and Prof. T. Rupert Jones.

*Sir Archibald Geikie.*—On some Traces of Two Rivers of Tertiary Time in the Inner Hebrides.

*H. A. Miers.*—On a New Method of Measuring Crystals, and its Application to the Measurement of the Octahedral Angles of Potash-Alum and Ammonia-Alum.

*Prof. T. G. Bonney.*—A Comparison of the Pebbles in the Trias of Budleigh Salterton and of Cannock Chase.

*Howard Fox.*—On a Soda-felspar Rock at Dinas Head, North Coast of Cornwall.

*O. W. Jeffs.*—Report of the Committee on Geological Photographs.

*Prof. T. R. Jones.*—Report of the Committee on Palæozoic Phyllopora.

*M. Laurie.*—Report of the Committee on the Eurypterid-bearing Deposits of the Pentlands.

*Dr. R. H. Traquair.*—Preliminary Note on a New Fossil Fish from the Upper Old Red Sandstone of Elginshire.

*Dr. H. Hicks.*—The Homes and Migrations of the Earliest Known Forms of Animal Life, as Indicated by Recent Researches.

*Montagu Browne.*—On some Vertebrate Remains from the Rhætic of Britain (Third Contribution).

*Osmund W. Jeffs.*—On some Forms of Saurian Footprints from the Cheshire Trias.

*P. F. Kendall.*—Report of the Committee on Erratic Blocks.

*Dugald Bell.*—Report of the Committee on the High-level Shell-bearing Deposits of Clava, etc.

*Dr. H. Hicks.*—On some Lacustrine Deposits of the Glacial Period in Middlesex.

*Prof. J. F. Blake.*—Sporadic Glaciation in the Harlech Mountains.

*Prof. T. G. Bonney.*—On the Probable Temperature of the Glacial Period.

- E. P. Culverwell*.—An Examination of Croll's and Ball's Theory of Ice Ages and Genial Ages.
- Prof. J. F. Blake*.—On the Mechanics of an Ice Sheet.
- Rev. E. Jones*.—Report of the Committee on the Elbolton Cave.
- Rev. E. Jones*.—Report of the Committee on the Calf Hole Cave.
- Prof. W. Boyd-Dawkins*.—On the Permian Strata of the North of the Isle of Man.
- Prof. W. Boyd-Dawkins*.—The Carboniferous Limestone, Triassic Sandstone, and Salt-bearing Marls of the North of the Isle of Man.
- Sir Henry Howorth*.—Strictures on the Current Method of Geological Classification and Nomenclature, with Proposals for its Revision.
- Montgomerie Bell*.—The Pleistocene Gravel at Wolvercote, Oxford.
- R. Bruce Foote*.—Prehistoric Man in the Old Alluvium of the Sabar Mati River in Guzerat.
- Prof. W. A. Herdman*.—Report of Committee on the Marine Zoology of the Irish Sea.
- C. Davison*.—Report of the Committee on Earth Tremors.
- Dr. H. J. Johnston-Lavis*.—Report of the Committee on the Volcanic Phenomena of Vesuvius.
- Prof. W. J. Sollas*.—Report of the Committee on the Investigation of a Coral Reef.
- Prof. W. Hennessy*.—On the Shape of the Banks of Small Channels in Tidal Estuaries.
- C. E. de Rance*.—Report of the Committee on Underground Waters.
- W. W. Watts*.—On a Keuper Sandstone cemented by Barium Sulphate, from the Peakstones Rock, Alton, Staffordshire.

Titles of Papers bearing on Geology, read in other Sections:—

- J. W. Thomas*.—On the Chemistry of Coal Formation.
- T. Johnson*.—Chalk-forming and Chalk-destroying Algæ.
- Prof. Osborn*.—On Certain Principles of Progressively Adaptive Variation observed in Fossil Species.
- W. P. Pycraft*.—The wing of *Archæopteryx* viewed in the light of that of some Modern Birds.
- Dr. Scott*.—The Structure of Fossil Plants in its bearing on Modern Botanical Questions.
- A. C. Seward*.—A Contribution to the Geological History of Cycads.
- H. Stopes*.—The Evolution of Stone Implements.

## II.—ON THE GEOLOGY OF THE PLATEAU IMPLEMENTS IN KENT.

By Professor T. RUPERT JONES, F.R.S., F.G.S.<sup>1</sup>

THIS subject having been fully treated of by Prof. J. Prestwich, the requisite references to his various memoirs elucidating the general geology of the local drift-deposits, the geological stages of their formation, and the peculiar flint-implements of the plateau are given. He has shown that certain superficial soils on the North Downs between Sevenoaks and Rochester contain numerous rudely worked flints, discovered by Mr. B. Harrison; and that these were derived from a gravel, of very great antiquity, originally formed on

<sup>1</sup> Read before Sections C and H, British Association, Oxford.

the side of the old Wealden Hill-range or mountain, which once rose about 3000 feet above where Crowborough and other hills in Sussex now are. Man existed at the time of these gravels, and used the flints for tools. These gravels and the implements left in them were removed by natural agencies, such as rain, rivers, sea, frost, and ice, and distributed by torrential streams on the Chalk slopes (now part of the North Downs) at a lower level on the flanks of the range.

These rude old flint implements have an ochreous colouring, due to ferruginous gravel, whence they came; and are now found on the plateau, sometimes with limited patches of some of the ochreous flint gravel, together with Tertiary pebbles, less-worn flints, and fragments of Lower Greensand, on the red "clay-with-flints" covering the Chalk. It is shown how desirable systematic excavations, to prove the extent and thickness of the implementiferous soil, would be.

Prof. Prestwich's history of the origin of the ancient Wealden Dome, Island, and Hill-ranges, and of the gradual destruction of those uplands, in the course of untold ages, with the resulting formation and removal of successive geological groups of strata, such as the Thanet Sands, Woolwich and Reading Beds, London Clay, Lenham Beds, and the old ferruginous gravel with its rude implements above mentioned, are noticed in detail.

The Diestian or Lenham Beds were found in the Early Pliocene period; and the denudation of Holmesdale probably began directly afterwards, at about the time of the Red or the Chillesford Crag in Late Pliocene, or in post-Pliocene times; and the old ferruginous gravel had not only been formed, but washed away to a lower level before that time.

The ultimate denudation of the valley cutting off the Chalk from the Weald being subsequent to the formation and removal of that gravel, the latter must have been pre-Glacial in age.

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REVIEWS.

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I.—(1) LES PREUVES DE L'EXISTENCE D'ORGANISMES DANS LE TERRAIN PRÉ-CAMBRIEN, PREMIÈRE NOTE SUR LES RADIOLAIRES PRÉ-CAMBRIENS. Par M. L. CAYEUX. Bulletin de la Société Géologique de France, 3<sup>e</sup> s., tome xxii. pp. 197–228, pl. xi., année 1894.

(2) SUR LA PRÉSENCE DE RESTES DE FORAMINIFÈRES DANS LES TERRAINS PRÉ-CAMBRIENS DE BRETAGNE. Note de M. L. CAYEUX, présentée par M. FOUQUÉ. Comptes Rendus de l'Académie des Sciences. Tome cxviii. No. 25 (18 Juin, 1894), pp. 1433–1435.

- (1) Proofs of the existence of Radiolarians in Pre-Cambrian rocks. By M. L. Cayeux.  
(2) Remains of Foraminifera in the Pre-Cambrian of Brittany. By M. L. Cayeux.

**A**BOUT two years since Dr. Charles Barrois announced, in a brief note to the "Comptes Rendus," the discovery of Radiolaria in Pre-Cambrian rocks of the horizon of the mineral schists and phyllites of St. Lô, in the north of Brittany. The further description