

From the inseparable association with the igneous core there can be no doubt that this peculiar agglomerate or breccia is due to æriform explosions by which the pre-existing crust was broken up while the volcanic energy ceased without any appearance of the uprising lava.

NOTICES OF MEMOIRS.

I.—BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.
Seventy-first Annual Meeting, held at Glasgow, Sept. 11–18, 1901.

LIST OF PAPERS READ IN SECTION C (GEOLOGY).

JOHN HORNE, F.R.S., President.

President's Address. (See p. 452.)

W. Gunn.—Recent Discoveries in Arran Geology.

G. Barrow.—On Variations in a certain Zone of the Eastern Highland Schists.

P. Macnair.—On the Crystalline Schists of the Southern Highlands, their Physical Structure, and its probable manner of Development.

Professor J. Geikie, F.R.S., and Dr. J. S. Flett.—The Granite of Tulloch Burn, Ayrshire.

Dr. J. S. Flett.—On Crystals Dredged from the Clyde near Helensburgh, with analyses by Dr. W. Pollard.

H. B. Woodward, F.R.S.—Note on a Phosphatic Layer at the Base of the Inferior Oolite in Skye. (See p. 519.)

———— Further Note on the Westleton Beds.

Professor W. W. Watts.—Report of the Committee for the Collection and Preservation of Geological Photographs.

Sir A. Geikie, D.C.L., F.R.S.—Time-intervals in the Volcanic History of the Inner Hebrides.

A. Harker.—The Sequence of the Tertiary Igneous Rocks in Skye. (See p. 506.)

A. M'Henry and J. R. Kilroe.—On the Relation of the Old Red Sandstone of N.W. Ireland to the adjacent Metamorphic Rocks, and on its similarity to the Torridon Rocks of Sutherland.

J. R. Kilroe and A. M'Henry.—On the Relation of the Silurian and Ordovician Rocks of the North-West of Ireland to the great Metamorphic Series.

G. H. Kinahan.—Notes on the Irish Primary Rocks with their associated Granitic and Metamorphic Rocks.

———— Some Laccolites in the Irish Hills.

Dr. R. H. Traquair, F.R.S.—The Geological Distribution of Fishes in the Carboniferous Rocks of Scotland.

———— On the Geological Distribution of Fishes in the Old Red Sandstone of Scotland.

fissure itself. Possibly both of these channels of escape were in use, detached vents appearing at the east end, and a more continuous discharge from the fissure further west. After the earliest explosions had thrown out a large amount of granitic and Silurian detritus, andesitic lava rose in the fissure, and, solidifying there, enclosed a great deal of the loose fragmentary material that fell back into the chasm." ("Ancient Volcanoes of Great Britain," vol. ii, p. 423.)

- Miss C. A. Raisin, D.Sc.*—Perim Island, and its Relation to the Area of the Red Sea.
- B. L. Jack, LL.D.*—The Artesian Water Supply in Queensland.
- B. N. Peach, F.R.S.*—The Cambrian Fossils of the N.W. Highlands.
- Professor W. J. Sollas, F.R.S.*—On a New Method in the Investigation of Fossil Remains. With illustrations, *Monograptus, Ophiura, Palæospondylus*.
- R. Kidston, F.R.S.E.*—Notes on some Fossil Plants from Berwickshire.
- Dr. R. F. Scharff.*—Report of the Committee for studying Life-zones in the British Carboniferous Rocks.
- J. R. Kilroe.*—Geology regarded in its Economic Applications to Agriculture by means of Soil Maps.
- A. M. Bell.*—Plants and Coleoptera of Pleistocene Age from Wolvercote, Oxfordshire.
- Vaughan Cornish, D.Sc.*—Report of the Committee on Terrestrial Surface Waves and Wave-like Surfaces.
- Dr. R. F. Scharff.*—Report of the Committee to Explore Irish Caves.
- Professor P. F. Kendall and H. B. Muff.*—Evidences of Ancient Glacier-dammed Lakes in the Cheviots. (See p. 513.)
- Professor P. F. Kendall.*—Report of the Committee on the Distribution of Erratic Blocks.
- A. Smith Woodward, LL.D., F.R.S.*—Report of the Committee for considering the best methods for the Registration of all Type Specimens of Fossils in the British Isles.
- W. Barlow.*—Report of the Committee upon the present state of our knowledge of the Structure of Crystals.
- J. G. Goodchild.*—On the Scottish Ores of Copper in their Geological relations.
- A revised list of the Minerals known to occur in Scotland.
- W. Mackie, M.D.*—The occurrence of Barium Sulphate and Calcium Fluoride as cementing substances in the Elgin Trias.
- On the Pebble Band of the Elgin Trias and the Wind-worn Pebbles.
- On the occurrence of Covellite in association with Malachite in the Sandstone of Kingsteps, Nairn.
- J. M. Maclaren.*—On the Source of the Alluvial Gold of the Kildonan Field, Sutherlandshire.
- Field Notes on the influence of Organic Matter on the deposit of Gold in Veins.
- W. H. Wheeler.*—On the Sources of the Warp in the Humber.
- G. Barrow.*—On the Alterations of the Lias Shale by the Whin Dyke of Great Ayton in Yorkshire.
- E. H. Cunningham Craig.*—On Cairngorms.
- W. Ackroyd.*—On the Circulation of Salt, and its Geological Bearings.
- J. Rhodes.*—Notes on the occurrence of Phosphatic Nodules and Phosphate-bearing Rocks in the Upper Carboniferous Limestone (Yoredale) Series of the West Riding of Yorkshire and the Westmoreland border.
- Note on a Silicified Plant Seam beneath the Millstone Grit of Swarth Fell, West Riding of Yorkshire. (See p. 520.)

- A. Smith Woodward, LL.D., F.R.S.*—On the Bone-beds of Pikermi, Attica, and on similar Deposits in Northern Eubœa. (See p. 481.)
- H. J. L. Beadnell.*—The Fayum Depression. A preliminary notice of the Geology of a district in Egypt containing a new Palæogene Vertebrate Fauna.
- Captain A. R. Derryhouse.*—Report of the Committee on the Movements of Underground Waters of N.W. Yorkshire.
- Professor E. Hull, F.R.S.*—Notes on the Physical History of the Norwegian Fjords.
- H. W. Monckton.*—On the Origin of the Gravel-Flats of Surrey and Berkshire. (See p. 510.)
- A. Somervail.*—On the Occurrence of Diorite associated with Granite at Assouan, Upper Egypt.
- James Stirling.*—On some Hornblende Porphyrites of Victoria.
- Malcolm Laurie.*—Note on some Arthropods from the Upper Silurian.
- F. P. Mennell.*—The Copper-bearing Rocks of S. Australia. (p. 520.)
- H. Bolton.*—Report of the Committee on the Excavation of the Ossiferous Caves at Uphill, near Weston-super-Mare.

SECTION A (MATHEMATICAL AND PHYSICAL SCIENCE).

- Report of the Committee on Underground Temperature.
- Report of the Seismological Committee.
- F. N. Denison.*—The Seismograph as a Sensitive Barometer.
- Professor J. Milne, F.R.S.*—On Meteorological Phenomena in relation to Changes in the Vertical.

SECTION B (CHEMISTRY).

- W. Ackroyd.*—Inverse Relation of Chlorine to Rainfall.
- The Distribution of Chlorine in Yorkshire.
- Professor A. Michael.*—On the Genesis of Matter.
- Dr. E. F. Armstrong.*—The Equilibrium Law as applied to Salt Separation and to the formation of Oceanic Salt Deposits.

SECTION D (ZOOLOGY).

- Coral Reefs of the Indian Region. (Report.)
- J. Stanley Gardiner.*—The Coral Islands of the Maldives.
- Dr. Francisco P. Moreno.*—Exhibition of Photographs of Fossils in the La Plata Museum.

SECTION E (GEOGRAPHY).

- Vaughan Cornish, D.Sc.*—Report of Committee on Terrestrial Surface Waves.
- H. N. Dickson.*—The Mean Temperature of the Atmosphere and the Causes of Glacial Periods.
- Dr. R. Bell, F.R.S.*—The Topography and Physical Features of Northern Ontario.
- B. T. Günther.*—Report of the Committee on Changes of the Land-level of the Phlegræan Fields.

SECTION F (ECONOMIC SCIENCE AND STATISTICS).

- R. W. Dron.*—Some Notes on the Output of Coal from the Scottish Coalfields.

SECTION G (ENGINEERING).

- P. Bunau Varilla*.—The Panama Canal.
J. Dillon.—Recording Soundings by Photography.
Vaughan Cornish.—Size of Waves observed at Sea.

SECTION H (ANTHROPOLOGY).

- Miss Nina Layard*.—Note on a Human Skull found in peat, in the bed of the River Orwell, Ipswich.
W. Allen Sturge, M.D..—On the Chronology of the Stone Age of Man, with especial reference to his coexistence with an Ice Age.
G. Coffey.—Naturally Chipped Flints for comparison with certain forms of alleged artificial chipping.
Ebenezer Duncan, M.D., and T. H. Bryce, M.A., M.D..—Remains of Prehistoric Man in the Island of Arran.
Miss Nina Layard.—An Early Palæolithic Flint Hatchet with alleged Thong-marks.
F. D. Longe.—A piece of Yew from the Forest Bed on the East Coast of England, alleged to have been cut by man.
G. Coffey.—Exhibit of Manufactured Objects from Irish Caves.

SECTION K (BOTANY).

- Dr. H. Conwentz*.—The Past History of the Yew in Great Britain and Ireland.
W. N. Niven.—On the Distribution of certain Forest Trees in Scotland, as shown by the investigation of Post-Glacial deposits.
A. C. Seward, F.R.S., and Sybille O. Ford.—The Anatomy of *Todea*, with notes on the Geological History of the Osmundaceæ.
E. N. Arber.—On the Clarke Collection of Fossil Plants from New South Wales.
Professor H. Potonié.—Die Silur- und Culm-Flora des Harzes.
A. C. Seward, F.R.S..—A Chapter of Plant-evolution: Jurassic Floras.
——— The Structure and Origin of Jet.

II.—NOTE ON A PHOSPHATIC LAYER AT THE BASE OF THE INFERIOR OOLITE IN SKYE. By HORACE B. WOODWARD, F.R.S., of the Geological Survey.¹

AT the southern end of the great cliffs of Ben Tianavaig, south of Portree, in Skye, the basement beds of the Inferior Oolite, which contain large dogger-like masses of calcareous sandstone, rest in a hollow of the Upper Lias Shales, owing to local and to a certain extent contemporaneous erosion. Lining this hollow there is an irregular and nodular band, two or three inches thick, of dark brown oolitic and phosphatic rock; a fact of interest, as instances of local erosion are often attended by the accumulation of phosphatic matter in beds, nodules, and derived fossils.

Mr. George Barrow, who made a rough analysis of the rock, estimated the amount of phosphate of lime at about 50 per cent.; and Mr. Teall, who examined a section under the microscope, noted,

¹ Read before the British Association, Section C (Geology), Glasgow, Sept., 1901, and communicated by permission of the Director of the Geological Survey.

in addition to the oolite grains, fragments of molluscan shells and echinoderms, and foraminifera, in a finely granular matrix formed of calcite. He observed that the central portions of some of the oolite grains were formed of a nearly isotropic brown substance in which the typical concentric structure of the oolite grains was well preserved. This substance was no doubt phosphatic.

III.—NOTE ON THE DISCOVERY OF A SILICIFIED PLANT SEAM BENEATH THE MILLSTONE GRIT OF SWARTH FELL, WEST RIDING OF YORKSHIRE. By JOHN RHODES, of the Geological Survey.¹

BY kind permission of the British Association Committee on Carboniferous Zones I am enabled to record the discovery of a silicified plant seam beneath the Millstone Grit at Swarth Fell, and two miles north-west of Hawes Junction.

The exact geological position of the overlying strata is doubtful, but apparently they occupy the horizon of the grindstone or ganister of the district.

At this particular place, however, the grindstone or ganister is absent, and its place is taken by flaggy silicious limestones with marine shells and by a bed of highly silicious grit with plant remains, the latter resting more or less directly on the silicified plant seam.

Chert occurs, probably as lenticles in the uneven surface of the seam, and contains a mass of detached silicious sponge spicules, apparently rod-like bodies, which may belong to the anchoring ropes of hexactinellid sponges. In the same chert are included fragments of silicified plant remains beautifully preserved.

In the plant seam included pebbles of silicious grit occur, which contain a few spicules similar to those in the chert, and also plant remains. The plant seam rests on a layer of silicified shale containing a few fragmentary sponge spicules, mostly rod-like forms, one piece belonging to an hexactinellid sponge. The beds below are more or less rotted clay shales with ironstone nodules.

I am indebted to Dr. G. J. Hinde for notes on the sponge remains directly associated with the plant seam. The plants have not been determined, but have been placed in the hands of R. Kidston, Esq., F.R.S.E., F.G.S., Stirling.

IV.—THE COPPER-BEARING ROCKS OF SOUTH AUSTRALIA. By F. P. MENNELL.¹

THE author drew attention to the fact that the copper ores of Yorke's Peninsula in South Australia were the first metallic minerals worked on the Australian continent. They occurred in rocks of Archæan age, which at Moonta and Wallaroo had been subjected to crushing and shearing to such an extent that they presented but few traces of their original structures, except in the case of a diorite at Wallaroo, which was of a typically plutonic character. Most of the rocks were mylonites, and in some instances

¹ Read before the British Association, Section C (Geology), Glasgow, Sept., 1901.

they had been reduced to a compact flinty type in which none of the minerals could be recognized with certainty. Where the original constituents had survived they were of a fragmentary character. Oligoclase seemed to have best resisted the crushing, and orthoclase occasionally remained in lenticles, but the brittle quartz had been invariably reduced to powder. Mr. Menzell thought that the economic aspect of the examination was of considerable importance, for the mines had been shut down several times when the ore had thinned out owing to doubts as to its permanence. From the character of the rocks it was, however, obvious that they occurred in a true 'fissure lode,' and no doubts need be felt as to the continuance of the ore to the limit of workable depths.

V.—THE GEOLOGIC DISTRIBUTION OF *POLLICIPES* AND *SCALPELLUM*.¹

By F. A. BATHER, D.Sc., F.G.S.

IN a valuable memoir on the "Hudson River Beds near Albany, and their taxonomic equivalents," published as Bulletin of the New York State Museum, No. 42, April, 1901, Dr. Rudolph Ruedemann describes a number of variously shaped valves found in the Upper and Lower Utica Shale of Green Island and Mechanicsville, N.Y. (p. 578, pl. ii). These he believes to "find their homologues in parts of the capitula of the pedunculate cirriped genera *Scalpellum* and *Pollicipes*, notably of the latter. On this account the various valves have been united under the caption *Pollicipes siluricus*, in full consciousness of the enormous gap existing between the appearance of this Lower Siluric type and the next Upper Triassic (Rhætic) representatives of these genera." Confirmation of Dr. Ruedemann's ascription may be derived from the fact that "the enormous gap" does not exist. Early in 1892 Dr. C. W. S. Aurivillius² published the descriptions of *Pollicipes signatus* from bed *e* (= Lower Ludlow), *P. validus* from bed *c* (= Wenlock Shale), *Scalpellum sulcatum*, *S. varium*, *S. granulatum*, *S. strobiloides*, *S. procerum*, *S. cylindricum*, and *S. fragile*, all from bed *c*, of the island of Gotland. The species of *Scalpellum* are founded on peduncles, *Pollicipes validus* is represented by a broken scutum only, but *P. signatus* is based on an almost perfect specimen. The occurrence of more than one species of both these genera in the Silurian lends significance to the diversity of form presented by Dr. Ruedemann's specimens. The ornament on his fig. 18 most nearly resembles that of *P. signatus*, while the rostrum, fig. 22, is also not unlike that species. Figs. 16, 17, and 19 may belong to more than one other species, while 24 (with which presumably 25 is to be associated) may belong to a *Scalpellum*, as Dr. Ruedemann seems to hint. In the circumstances it is specially regrettable that Dr. Ruedemann has selected no one of these specimens as the holotype of *Pollicipes siluricus*. If he does not do so soon, confusion is pretty certain to arise.

¹ Reprinted from *Science*, July 19th, 1901, p. 112 (n.s., vol. xiv, No. 342).

² Bihang Sveska Vet.-Akad. Handl., xviii, Afd. iv, No. 3.

Figs. 13, 14, and 15 are referred to *Turrilepas* (?) *filosus*, n.sp. A recent examination of the plates of that genus suggests to me that the note of interrogation is fully justified.

Aurivillius considered that *Pollicipes signatus* showed a closer approach to the Balanidæ than any other of the Lepadidæ, but he too, in ignorance of the Devonian *Protobalanus*, Whitf., discoursed needlessly about the gap in the distribution. Now that the range of the Lepadidæ has been extended to the Ordovician, we may look confidently for further discoveries. We may also hope that the time has now come when even the textbooks may awake to the fact that the genera *Pollicipes* and *Scalpellum* existed in Palæozoic times.

My apology for insisting on this is not merely that both Dr. Aurivillius and Professor Lindström, who supplied him with the material, have unhappily passed away, but that I had the good fortune to be the discoverer of the beautiful specimen of *Pollicipes signatus*, when developing a specimen of *Gissocrinus verrucosus* from the *Pterygotus* bed of Wisby Waterfall, in May, 1891. The very fragile specimen was subsequently licked into shape (no metaphor is intended) by Mr. G. Liljevall, to whom the excellent drawing of it is due.

VI.—THE CAUCASIAN MUSEUM, TIFLIS, is publishing a complete Catalogue of its Collections, in both the Russian and German languages, the title in the latter tongue being: "Die Sammlungen des Kaukasischen Museums im Vereine mit Special Gelehrten bearbeitet und herausgegeben von Dr. Gustav Radde, Direktor, etc." The catalogue is in the form of quarto volumes, in boards, measuring 31 × 23 cm. Volume III, which has been sent to us for review, deals with the geological collections, and is by Professor N. I. Lebedev. It consists of xii + 322 pp. and 8 plates. The material is arranged under the heads of the several collections, which are classified quite roughly, apparently following the localities in the order in which they were visited. Among the collections that of Abich from Daghestan is one of the most famous; this is accompanied by a descriptive catalogue which is in greater detail than the present one and will be published *in extenso* in *Mittheilungen des Kaukasischen Museums*. There are also donations by successive chiefs of the Office of Mines; the collections of F. Bayern, chiefly of value for the exactness of the localities given, and worked over by Arzruni, Valentin, and Lebedev; other collections that have afforded material for the writings of these geologists, of Simonovitsch, and others. The preceding are all local, but there are also collections serviceable for comparison, especially those from the Crimea, Bessarabia, and Transcasian, as well as a fine series from various horizons and localities in Western Europe, partly purchased and partly the gift of Mr. J. de Morgan. The present catalogue does not profess to be much more than a rough list, and, as is only natural in a work produced under such disadvantageous conditions as regards literature and the help of specialists, the determinations are clearly lacking

in precision. The work will nevertheless be useful to two classes of students; those who are investigating the geology and physical history of the Caucasus, and specialists in petrology or palæontology who desire to see all the material available for their researches. In his readiness to enter into relations with specialists Dr. Radde pursues an enlightened and liberal policy, so that readers of the catalogue need not imagine that because the specimens are in Tiflis it is no use to trouble about them. The collotype plates illustrating this volume afford a sample of the treasures within; two are of rock-sections, one of undescribed species of Ammonites, and two of species of *Cardium*, *Congerina*, *Dreissenia*, *Rissoa*, *Neritina*, and *Natica*; one of the figures is labelled "*Cardium apscheronicum*, n.sp.," but we can find no description.

VII.—GEOLOGY OF DEVONSHIRE.—The main part of No. 3 of the Proceedings of the Geologists' Association of London is devoted to an account of the excursion made by the members to the Start, Prawle, and Bolt districts during Easter this year. The report is written by W. A. E. Ussher, who gives in his introductory remarks, as well as in his report, a good deal of interesting matter which will be much appreciated by Devonians especially. In the report are incorporated many notes by A. R. Hunt. The result enabled those who enjoyed the excursion to realize the geological difficulties of the region, and served to whet their appetites for the long-expected memoir upon it.

VIII.—ON A NEW FOSSIL LIZARD FROM THE BEDS OF THE LOWER CHALK FORMATION IN THE ISLAND OF LESINA [Coast of Dalmatia]; by A. KORNHUBER.—"Ueber eine neue Fossile Eidechse aus den Schichten der unteren Kreideformation auf der Insel Lesina." (Verhandlungen der k.k. geol. Reichsanstalt, 1901.)—In this paper the author describes another of the remarkable reptilian skeletons from the thinly bedded Lower Cretaceous limestones of the island of Lesina. In this instance the skeleton is that of a lizard about 1.4 metres long, apparently in its general structure related to the Varanidæ, but in its dentition approaching the Mosasauridæ. The specimen is made the type of a new genus, *Opetiosaurus*, the specific name being *O. Bucchichi*.

IX.—SHORTER NOTICES.—GEORGIA BAUXITE.—The most important article in the *American Geologist* for July is T. L. Watson's account of the Bauxite deposits of the Coosa Valley region of Georgia and Alabama. Discovered in 1887, these fields now provide the entire home consumption of the United States. After a sketch of the geology of the area and the geological position of the mineral, the author deals with the associated minerals, chemical composition, origin, and age of the deposits. This latter is apparently the close of the Eocene period.

BEACH STRUCTURE.—Another article in the same Journal of considerable interest is H. L. Fairchild's "Beach Structure in Medina Sandstone," which is illustrated by five plates of reproductions from photographs. The author describes the various

appearances due to abrupt change of material, oblique bedding, ripples, wave-lines, ridges, and troughs, and has come to the conclusion that this 1,075 feet of arenaceous shale is a typical sandy beach deposit.

CHILI AND ARGENTINA.—The long dispute over the boundary-line between these two countries is further illustrated by Charles Rabot in *La Géographie*, No. 4, 1901. As the frontier line involves the watershed, the arbitration at present proceeding is of vital importance to both countries. Rabot gives some excellent reproductions from photographic views of the glacial phenomena of the district, and a particularly clear map showing the differences between the claims of the two countries.

PROFESSOR C. E. BEECHER gives an account in the *Yale Scientific Monthly* for June, 1901, of the mounting of the complete skeleton of the dinosaur *Claosaurus annectens*. This is the first complete skeleton of a dinosaur yet set up, and came from the Laramie beds. It belonged to the Marsh Collection, is 29 feet in length, and is placed in the Yale University Museum. A plate accompanies the notice.

“MARYLAND AND ITS NATURAL RESOURCES” is the title of a pamphlet which has been prepared by W. Bullock Clarke as the official publication of the Maryland Commissioners at the Pan-American Exposition.

INDIAN TERTIARY BELEMNITES.—The announcement is made in the Report of the work carried on by the Geological Survey of India, 1900–1901, that Dr. F. Noetling has found great numbers of true Belemnites in Lower Eocene beds near Jhirrak, in Sind.

THE TYPHOON, LUZON.—The typhoon which swept Luzon on the 8th September, 1900, forms the subject of a memoir by Padre José Coronas, S.J., which was issued by the Observatorio di Manila, 1900. Beyond generalities, however, it has little geological interest.

WOODWARDIAN MUSEUM, CAMBRIDGE.—The additions made last year comprised, among other things, the collections of the late C. J. A. Meÿer, the greater part of a skeleton of *Lutra vulgaris* from the peat of Barwell, and part of the S. S. Buckman Collection of Inferior Oolite Ammonites. Mr. Reed has been at work on the British and Foreign Palæozoic fossils, Mr. Woods on the Cretaceous fossils, and Mr. Asher on the fossil plants. The identification of figured specimens continues to make satisfactory progress, and we hope a revised catalogue of types will soon be attempted.

PROFESSOR J. M. CLARKE, State Palæontologist of New York, announces in the 54th Annual Report of the New York State Museum that a catalogue of the type fossils used throughout the history of the “Palæontology of New York” is in hand. Specimens of type fossils, as they are identified and can be replaced by duplicates, are removed to a fireproof building, in accordance with the vote of the Regents in 1882. It would be a good plan to have casts made of them, for inclusion in the general collection.

MESSRS. C. DAVIES SHERBORN AND B. B. WOODWARD are issuing a series of papers on the dates of publication of various French Voyages which appeared between 1800 and 1900. The papers will be found in the *Annals and Mag. Nat. Hist.* for April, August, and October, and contain many notes on geological papers which have heretofore presented difficulties as to date.

NEW FORAMINIFERA.—R. J. Schubert has a paper on some Foraminifera from the Upper Chalk of East Galicia, in the *Jahrb. k.k. geol. Reichs.*, I (4), 1901. The chief novelty is a curious form to which he gives the name of *Karrerria cretacea*. J. Grzybowski writes on the Foraminifera of the *Inoceramus* beds of Gorlice. His paper appears in the *Bull. Internat. Ac. Sci. Cracovie* for April, 1901. Two plates, chiefly devoted to arenaceous forms, are given.

FROM THE REPORT OF PROGRESS OF THE MANCHESTER MUSEUM we gather that the Geological Department has been enriched by the Barnes Collection of Carboniferous invertebrates, and some selections from the Jukes-Browne Collection. Fossil plants have received a good deal of attention, the types and figured specimens of Oolitic species, which were examined by Mr. Seward, having been labelled and displayed. Mr. R. D. Darbishire has presented the Museum with a specimen of the recent *Pleurotomaria adansoniana* from Barbados, an important and valuable acquisition to any collection.

NEW JERSEY GEOLOGY.—The annual report of the State Geologist of the Geological Survey of New Jersey for 1900 contains an administrative report; Report on the Palæozoic Formations, by Stuart Weller, consisting of Hardiston Quartzite, Kittatinny and Trenton Limestones, and Hudson River Beds; Report on the Portland Cement Industry, by H. B. Kümmel; Artesian Wells in New Jersey, by Lewis Woolman; Mineralogical Notes, by A. C. Chester; Chlorine in the Natural Waters of the State, by W. S. Myers; and the Mining Industry, by H. B. Kümmel.

PORTUGUESE GEOLOGY.—Paul Choffat has published in the *Bull. Soc. Belge Geol.*, xv, May, 1901, an important paper on the "Limite entre le Jurassique et le Crétacique en Portugal." From a careful study of the different exposures and the fossils contained in the beds, he comes to the conclusion that the limit between the two systems in Portugal must be regarded as only a conventional one. He finds that both the fauna and flora show an almost imperceptible passage between the two formations in certain places.

CORRESPONDENCE.

FOSSILS AND GARNETS.

SIR,—If your correspondent "Verbum Sap." had signed his own name I would have endeavoured to explain to him my reasons for writing the paragraph which he quotes, though I knew that the "traditions of the elders" might be cited against me by dealers