

further towards Bangor fragments of the still higher Bangor volcanic series helped to make up the Cambrian shingle-beach.

3. "Description and Correlation of the Bournemouth Beds.—Part II. Lower or Freshwater Series." By J. S. Gardner, Esq.

This was in continuation of a former paper by the author (Q.J.G.S. vol. xxxv. p. 209). The beds described are exposed east and west of Bournemouth and near Poole harbour, over a distance of about four miles. The author referred them to the Middle Bagshot, and stated that they are distinguished from the Lower Bagshot by the absence of the extensive pipe-clay deposits and the presence of brick-earths, and from the overlying beds by the absence of flints. They reach their extreme limit in the western area of the London basin, and are represented by the lignitic beds 19-24 of Prof. Prestwich's section. Lignites can be traced partly across the bay. The cliffs present an oblique section across a delta divisible roughly into four masses, one of which, from its confused bedding and want of fossils, is supposed to have been formed by the silting up of the main channel. The total thickness of the series was estimated at 600 to 700 feet. The inferences drawn by the author were as follows:—

1. From the beds cut through showing a steep side to the west, that the river flowed from that direction;
2. From the absence of boulders or coarse sediment, that the area was flat;
3. From the absence of lignite, that there were catchment basins;
4. From the absence of flint and the quartzose nature of the beds, that no chalk escarpments were cut through, and that the deposits came from a granitic area;
5. From the presence of wood bored by *Teredo*, that the beds belong to the lower part of the river in proximity to tidal water.

The flora was stated to be confined to local patches of clay. Those at the western end of the section are very rich, and distinguished from the rest by absence of palms and rarity of ferns. The beds near Bournemouth are still richer and very distinct; those east of Bournemouth are characterized by *Eucalypti*, Aroids, and *Aracariæ*; and those at the western end of the section by abundant Polypodiaceæ. It is remarkable that nearly every patch contains a flora almost peculiar to it; but the flora as a whole seems to pass upward to the Oligocene, but not down to the Lower Bagshot.

#### CORRESPONDENCE.

##### "KAMMPLATTEN" IN THE IRONSTONE OF BOROUGH LEE.

SIR,—I have now no doubt that the pectinated object from the Ironstone of Borough Lee, which I at one time supposed might possibly be a tooth, and in a recent Number of your MAGAZINE (January, 1881) I described under the name of *Euctenius elegans*, belongs in reality to the same category as the "Kammplatten," which Prof. Anton Fritsch, of Prag, has recently described and figured as appertaining to the cloacal region of certain fossil Amphibia, e.g. *Ophiderpeton pectinatum* (Fritsch, Fauna der Gaskohle und der Kalksteine der Permformation Böhmens, Bd. 1, Heft 2,

Tafel xx.). My attention has been directed to this fact by a newspaper report of a paper, recently read before the Geological Society of Glasgow, by Mr. John Young, in which he identified, as one of these "Kammlatten," an apparently allied relic from the Airdrie district, and which, judging from that report, must either be the same as Barkas's "*Ctenoptychius unilaterialis*, or closely related to it. The two specimens, from which I drew up my description of "*Euctenius*," have no elongated process or "handle," but in other respects there is an obvious general resemblance.

I may take this opportunity of mentioning that within the last few days I have obtained from the same ironstone a portion of a small Labyrinthodont mandible, set with teeth which have the same general configuration and markings as those of Messrs. Hancock and Atthey's *Batrachiderpeton*.

R. H. TRAQUAIR.

#### THE HUTTON COLLECTION OF FOSSIL PLANTS.

SIR,—It has only within the last few days come to my knowledge (indeed only to-day authoritatively), that the Hutton Collection of Fossil Plants, at present deposited in the Museum of the Natural History Society of Northumberland and Durham at Newcastle, had been named by the Curator, Mr. Richard Howse, prior to the compiling by myself of a Catalogue of the Collection, published in 1878 by the North of England Institute of Mining and Mechanical Engineers. The labels on the specimens, referred to in the Catalogue, were therefore Mr. Howse's, and not, as I until now imagined, either William Hutton's original ones or mere copies of them.

Moreover, an unsigned MS. List of the specimens in the Collection, agreeing with the labels, with which I was furnished by the Mining Institute, and which was used freely by me in drawing up the Catalogue, must now be regarded as the result of much time and labour spent by Mr. Howse in identifying and naming the whole of the Hutton Collection.

I trust you will allow me space in your MAGAZINE to hereby redress an injustice of which I was unaware at the time of its commission.

G. A. LEBOUR.

COLLEGE OF PHYSICAL SCIENCE,  
NEWCASTLE-UPON-TYNE, May 18, 1881.

#### SUBSIDENCE AND ELEVATION.

SIR,—Mr. Starkie Gardner, in his paper on the above subject, in the June Number of your MAGAZINE, says (p. 245):—"The records of the Palæozoic rocks point to a comparative uniformity in the earth's surface in remote times, there being neither evidence of *great depths in the sea*, nor of mountainous elevations of the land."

The latest calculation of the average depth of the sea is a little over two miles. The area of land being, roughly speaking, about one-third of that of the oceans, it follows that if the solid part of the earth were a perfect spheroid, having neither depression nor elevation, it would be covered by an universal ocean nearly one and a half miles deep. Is there, therefore, any meaning in saying that there ever was a time when great depths of the sea did not exist?