2. *On the OCCURRENCE of COPPER in TENNESSEE, U.S.*

By W. BRAY, Esq.

[Communicated by the President.]

[Abstract.]

THE gneiss and mica-schist of Eastern Tennessee strike south-west and north-east (about 47° E. of N.), and dip to the south-east (at angles of about 25°), running parallel to and forming an outer range of the Alleghany Mountains. Veins of copper and iron ores, with occasional quartz veins, lie in the schists, dipping parallel with them, and consisting of porous oxide of iron at top, with iron pyrites and carbonate and sulphuret of copper lower down. The veins are described as being sometimes 45 feet wide, and traceable for upwards of 70 miles; but they are worked chiefly in the extreme south-east corner of Tennessee, in the township of Duckton, in the county of Polk, a district ceded by the Indians to the States about four years ago.

3. *Notice of the DISCOVERY of a REPTILIAN SKULL in the COAL of PICTOU.* By J. W. DAWSON, Esq., F.G.S.

THE reptilian specimen described by Prof. Owen (*Quart. Journ. Geol. Soc.* No. 38. p. 207. pl. 9) is the upper part of a head found by me in 1851, at the Albion Mines, in a heap of rubbish extracted from a band of carbonaceous clay iron-stone and coarse coal, occurring in the main coal-seam, about 5 feet below its roof, and known to the miners as the "*holeing-stone*." This band is marked No. 5 in the detailed section of the Albion main coal given by Mr. Poole and myself in the Geological Society's Journal, vol. x. p. 47. It varies in thickness in different parts of the mine, from 2 inches to about 18 inches; and it contains much coprolitic matter, and a few scales, teeth, and spines of fishes, as well as minute *Spirorbis*-like shells, similar to those found in the Joggins coal-measures attached to plants*. None of these fossils, however, are by any means abundant; and the vegetable remains contained in the "*holeing-stone*" have in general been reduced to the state of homogeneous coal, or of mineral charcoal. There can be little doubt that this remarkable band indicates a somewhat protracted submergence of the area of coal then accumulating under the waters of a lake or lagoon.

As stated in a note which accompanied the specimen, when forwarded to the Geological Society in 1852, the matrix split in such a manner as to leave the upper part of the skull adhering to the larger portion of the block, while the palate bones and teeth came away in fragments. Believing at the time that the fossil had belonged to a fish allied to *Holoptychius*, and that it was interesting chiefly as an illustration of the exceptional fact of the occurrence of

* *Quart. Journ. Geol. Soc.* vol. x. p. 39.

remains of large fishes in a coal-seam, I forwarded to the Geological Society only the upper and more entire part of the specimen, retaining the remainder in my own cabinet. Since, however, the specimen has proved to be of so much greater interest than I had anticipated, I now beg leave to present to the Society the remaining portions, in the hope that they may enable Prof. Owen more fully to make out the character and affinities of the animal to which they belonged.

I shall also take the earliest opportunity to examine such portions of the "holeing-stone" as may now be exposed at the mines, in the hope that I may be rewarded by further discoveries. I may remark, however, that I have at various times examined considerable quantities of this material, without finding any fossils except the remains of small fishes already mentioned; nor am I aware that other remains of large animals have been discovered in it, with the exception of a smooth and nearly cylindrical hollow bone, apparently a part of a large spine*, now, I believe, in the collection of Henry Poole, Esq.†

Additional Remarks on the SKULL of the BAPHETES PLANICEPS, OW.
By Professor OWEN, F.R.S., F.G.S.

Since the communication of the notice of the portion of cranium of the Labyrinthodont Reptile above-named (Quarterly Journal of the Geol. Soc. May 1854), I have been favoured with the view of some other fragments of the same cranium, including parts of the interior or under-surface, with several teeth buried in the coal-matrix, and exposed at the fractured surfaces.

In the ordinary Labyrinthodont Reptiles of the European Trias, one or two teeth at the fore-part of the jaws have the form and proportions of large canines, the rest are smaller and more slender pointed teeth.

One of the present fragments includes the fore-part of the right maxillary and premaxillary bones, and shows a single large lanianiform tooth descending from the fore-part of the maxillary into the substance of the subjacent matrix: in front of the tooth is one of the smaller, pointed, serial teeth: of which teeth other fragments show other examples, the base of the teeth being anchylosed to shallow sockets in the bone.

So much, therefore, of the dental system of the *Baphetes*, as is here exhibited, accords in the general characters of shape and relative size, of disposition and mode of fixation to the jaw, with the dentition of the Labyrinthodonts.

* This bone was exhibited at the Meeting of the British Association at Liverpool, when it was regarded as probably belonging to a very large fish. Since the reading of this paper Mr. Dawson has sent word that on further search he has met with a fragment of a spine like that found by Mr. Poole, and numerous scales of apparently large ganoid fishes in the rubbish-heap of the coal-seam referred to.
—ED. Q. J. G. S.

† Late of the Albion Mines; now of Alvaston, Derbyshire.