

NOTICES OF MEMOIRS, ETC.

I. — THE GEOLOGICAL SURVEY OF ENGLAND AND IMPORTANT
COAL-DEVELOPMENTS IN NORTH STAFFORDSHIRE.

LAST week the important announcement was made that the Dilhorne seam of coal had been recovered at the Klondyke pit No. 7, near Draycott Cross, Cheadle. For years sinking operations have been conducted with the object of winning what was known to be one of the most valuable seams of coal in the district, and considerable sums of money have been spent in the quest. It had always been held by old miners that although the Dilhorne seam did exist at Dilhorne, it did not exist in or about Cheadle proper. But from the inspection which was made of the Cheadle district about two years ago by Mr. George Barrow, F.G.S., of the Geological Survey, he came to the conclusion that the Dilhorne seam did exist at Cheadle, and that there was an area of some four square miles of it waiting to be worked.¹ This conclusion was borne out by Mr. Stobbs, the County Council lecturer in mining, from his examination of the fossils found in the strata overlying the coal-seams. In addition to these assurances, Mr. James Lockett, Chairman of the Cheadle Park Colliery Company, who has undertaken the researches that have at last proved successful, had the advantage of the observations which were made by his son, Mr. William Lockett, of the sections of strata which were penetrated by a borehole on the estate of the Cheadle Park Colliery, as well as in the Foxdale shaft and the Major Barn sinking, to assure him in his own conviction that the Dilhorne seam would be eventually won at the Draycott Colliery. Mr. Lockett commenced sinking from the Four-foot seam at the Draycott pit on January 1st this year. The difficult work of sinking through the water-bearing strata which lay beneath that seam has since been carried out efficiently, until on the 16th inst. the Dilhorne seam was reached, lying at a depth of 74 yards below the Four-foot seam and 150 yards from the surface, the seam at this point being about 5 ft. 1 in. thick and clean and bright. It is understood to be Mr. Lockett's intention to proceed with the opening out of the seam without delay, and it is expected that there will be an output from the Draycott Colliery within three years of a thousand tons a day. The land leased by Mr. Lockett amounts to 710 acres, owned partly by Sir Thomas Pilkington, Mr. F. Bolton, Oakamoor, and Mr. F. Mather, Betley, and if Mr. Barrow is right in his estimate there should be in the four square miles which comprise the Cheadle district a quantity of coal, taking the Four-foot and the Dilborne seams together, of from 20 to 25 million tons. In addition to this, there are two seams below the Dilhorne seam which have not yet been tapped. First, there is the 'cobble' vein, which is 2 feet thick, and then there is the Woodhead seam, 2 ft. 10 in. in thickness.

¹ [See "The Geology of the Cheadle Coalfield," by George Barrow, F.G.S., Mem. Geol. Survey, 1903, pp. 27, 28.—*EDIT. GEOL. MAG.*]

An encouraging feature about the new recovery is there is every indication of the seam being worked practically free from water. The coal is valuable for household purposes, and will be put upon all the principal markets, the pitbank being situated close beside the Cheadle Railway, to which sidings have already been laid down, and the colliery premises thus placed into communication within a very few miles of the North Staffordshire Railway Company's main line between Crewe and Derby.—*Colliery Guardian*, May 27, 1904.

II.—ON THE OSSIFEROUS CAVE-DEPOSITS OF CYPRUS. By DOROTHY M. A. BATE.¹

PREVIOUS to 1901 no systematic search of the cave-deposits of Cyprus appears to have been attempted. The geology was studied by M. Albert Gaudry, who published an elaborate work in 1862 with a geological map, and Drs. Unger and Kotschy in 1865 also gave a geological map of the island, differing somewhat from their predecessor.

As long ago as 1700 the Dutch traveller Corneille le Brun (Van Bruyn) published an account of his wanderings in Cyprus and the Levant, and mentions having visited a bed of bones, supposed to be those of saints, not far from the Monastery of Haghios Chrysostomos. A drawing of one of these bones is given, which Dr. Forsyth Major has since shown to be that of *Hippopotamus minutus*.²

The author started in 1901 in expectation of discovering an extinct fauna in this ossiferous breccia, and this expectation was amply fulfilled, for no fewer than twelve ossiferous caves were found, five at Cape Pyla in the south-east and seven on the southern slopes of the Kerynia Hills in the north of the island.

Two caves (mentioned by General di Cesnola in 1877, at Cape Pyla, as containing *human* fossilised bones) were first visited by the author. The rock is here composed of Miocene (probably Helvetian) limestone, weathered to a very great extent, and full of marine shells and corals, as well as numerous Echinoids (*Clypeaster portentosus*), also met with in the Miocene limestones of Malta.

Here a number of caves were discovered in the cliffs, five of which yielded remains of *Hippopotamus minutus*.

The author then describes these caves in detail. The caves explored at Cape Pyla were: (1) The Red Cliff Cave; (2) the Great Anonymous Cave; (3) the Small Anonymous Cave; (4) Haghios Jannos; (5) Haghios Saronda. This is the cave to which formerly pilgrimages were made and candles burned in honour of the sacred remains of saints.

The cave-deposits of the Kerynia Hills are of uncertain geological age, no fossils having been obtained from the limestone rock of which they are chiefly composed. Professor Gaudry concludes that the rock is of Cretaceous age, and, therefore, the oldest sedimentary deposit in the island. The seven caves discovered were all on the

¹ Being the abstract of a paper read before the Royal Society, June 9th, 1904. Communicated by Dr. H. Woodward, F.R.S., F.G.S.

² Proc. Zool. Soc., June, 1902.

southern side of the range, between the Aghirdhir Pass and the village of Kythraea, in a low broken line of cliffs parallel with the main ridge. These are called the Kerynia caves, and are named—(1) Coutzaventis; (2) Haghios Chrysostomos; (3) Anoyero Spelios; (4) Dikomo Mandra; (5) Haghios Elias; (6) the Elephant Deposit; (7) the Western Cave.

Most of these caves have, by reason of long atmospheric erosion, partially or wholly disappeared, leaving the stalagmitic flooring containing mammalian remains unprotected and exposed often at a considerable distance from the face of the cliffs. But although many of them are now almost obliterated by the falling in of the roof and walls, the author points out that wherever this has happened the limits of the floor are sharply defined by the hard ossiferous deposit and the stalagmitic floor. In close proximity are caves still preserved containing precisely similar deposits.

The fauna of the caves is comparatively scanty, the only other important extinct form besides the dwarf elephant and hippopotamus being a new species of Genet (*Genetta plesictoides*), described in the Proceedings of the Zoological Society.

III.—FURTHER NOTE ON THE REMAINS OF *ELEPHAS CYPRIOTES*,
BATE, FROM A CAVE-DEPOSIT IN CYPRUS. By DOROTHY M. A.
BATE.¹

THIS paper is a continuation of one already published² “On the Discovery of a Pigmy Elephant in the Pleistocene of Cyprus,” and enters into a detailed description of the teeth of this small proboscidean whose remains are now in the British Museum of Natural History.

The collection includes incisors, milk molars, and permanent molars. Several of the latter still retain their position in the jaws, and in some instances the teeth of both sides of the same individual were found.

The permanent incisor tusks of two forms, presumably belonging to males and females, were found. They differ from the same teeth of the Maltese dwarf elephants in being considerably compressed laterally. The largest specimen measures 29·7 cm. along the outside of the curve, with a maximum diameter of 3·7 cm.

Of the upper cheek teeth the third and fourth of the milk series, as well as the three permanent molars, are described in detail. There was a small third milk molar (mm. 2) implanted by a single root, but no specimen was collected.

Of the lower series, the third and fourth milk molars and the three permanent teeth were represented by numerous examples and are fully described.

An almost entire left ramus of one young individual and the symphyseal portion of another are also described. The only limb bone obtained was the distal portion of a femur.

¹ Being the abstract of a paper read before the Royal Society, June 9th, 1904. Communicated by Dr. H. Woodward, F.R.S., F.G.S.

² Read before the Royal Society, May 7th, 1903; see *GEOL. MAG.*, 1903, p. 241.

A corrected ridge formula for the molars of *E. cypristes* is furnished, which, exclusive of talons, will stand as follows:—

$$\begin{array}{cccc} 5 & 7-8 & 7-8 & 8-9 & 11-12 \\ \div, \overline{\quad}, \overline{\quad}, \overline{\quad}, \overline{\quad} \\ 5 & 7-8 & 7-8 & 8-9 & 11-12 \end{array}$$

Dr. Leith Adams gives *E. melitensis* as follows:—

$$\begin{array}{cccc} 3 & 5 & 8-9 & 8-9 & 10 & 12 \\ \overline{\quad}, \overline{\quad}, \overline{\quad}, \overline{\quad}, \overline{\quad} \\ 3 & 5 & 8-9 & 8-9 & 10 & 12 \end{array}$$

There appears to be a strong resemblance between the teeth of *E. cypristes* and those of the Maltese and Sicilian pigmy forms, more especially *E. melitensis*, but the marked lateral compression of the tusks in *E. cypristes*, which is a constant character in all the specimens so far obtained, would in itself be almost sufficient to distinguish this species from the other pigmy elephants of the Mediterranean region. There seems to be good evidence that *E. cypristes* was isolated and subsequently differentiated at an earlier period than the other small Mediterranean species in Malta and Sicily, the zoological evidence giving considerable support to the belief that Cyprus became an island at an earlier period, an idea which is further strengthened by the fact that the whole island is surrounded by deep water, and is not connected with the neighbouring lands by submerged banks, as is the case with the Maltese Islands.

The Maltese pigmy species have been considered most closely allied to *E. antiquus* and *E. africanus*. On the other hand, it seems probable that *E. cypristes*, which shows no affinity to the African species, is connected rather with *E. antiquus* and *E. meridionalis*.

It may be remarked that the remains of *E. cypristes* and of *Hippopotamus minutus*, with which it is associated, vary but little in size, whereas in the dwarf species of elephants and hippopotami from Malta and Sicily a considerable variation in size is observable, so much so indeed that molars may be seen intermediate in size connecting *H. melitensis* (= *minutus*), *H. pentlandi*, and *H. amphibius*.

REPORTS AND PROCEEDINGS.

GEOLOGICAL SOCIETY OF LONDON.

I.—April 27th, 1904.—J. E. Marr, Sc.D., F.R.S., President, in the Chair. The following communications were read:—

1. "On a New Species of *Eoscorpis* from the Upper Carboniferous Rocks of Lancashire." By Walter Baldwin, Esq., F.G.S., and William Henry Sutcliffe, Esq., F.G.S.

The specimen described was found in an ironstone nodule occurring on a fairly well marked horizon, about 135 feet above the Royley Mine (or Arley Mine) coal-seam, at Sparth Bottoms, about half a mile south-west of Rochdale Town Hall. The nodules occur in a band of blue shale, in which are well-preserved remains of *Carbonicola acuta*, ferns *Calamaria*, *Prestwichia rotundata*, and *Bellinurus bellulus*.