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ORIGINAL ARTICLES.

I.—NOTE ON A MOUNTED SKELETON OF *OPHTHALMOSAURUS ICENICUS*,
SEELEY.

By C. W. ANDREWS, D.Sc., F.R.S. (British Museum, Natural History).

(PLATE V.)

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ONE of the most important additions recently made to the Gallery of Fossil Reptilia at the Natural History Museum, is a mounted skeleton of the highly specialized Ichthyosaur known as *Ophthalmosaurus icenicus*, Seeley. This reptile presents many peculiarities, for the most part indicating a very high degree of adaptation for life in the open sea and for rapid movement through the water, probably sometimes at considerable depths. In fact, *Ophthalmosaurus* may be regarded as representing among the Reptilia the swiftly swimming toothed-whales among the Mammalia, and it is interesting to note that the similar mode of life in the two cases has produced in some respects similar modifications. Thus the front paddles are enlarged, the hind ones reduced; in whales the latter have disappeared altogether. Again, there was a large caudal fin, vertical in this case, and the head was elongated, the snout sharp, and the neck so short as to be practically non-existent. The enlargement of the fore-paddles is brought about by the presence of a very large pisiform bone, which together with the radius and ulna articulates with the humerus, thus forming a very broad base for the expanded terminal portion of the paddle. Another striking peculiarity is the great reduction of the dentition, the teeth in the adult being very small and confined to the front of the jaws. *Baptanodon*, an American form very closely allied to, if not identical with, *Ophthalmosaurus*, was for a long time regarded as toothless. This reduced dentition, so unlike what is usually found in members of the group, must indicate some considerable change in the nature of the food, but what this was is unknown.

This specimen has been mounted with great skill and neatness by Mr. L. T. Parsons, so that any portion can be removed for examination without much difficulty. It is made up almost entirely from portions of three individuals: the mandible and skull, except the occipital region belong to one (R. 3702); the occiput, the sclerotic rings, the vertebral column nearly to the bend of the tail, the ribs, shoulder-girdle with the fore-paddles, and the femora to a second (R. 3893); while the remainder of the caudal region was supplied by a third

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(R. 4124). The pelvis and some ribs have been modelled from other specimens. All the material employed was collected with his usual skill and care by Mr. A. N. Leeds, F.G.S., from brick-pits in the Oxford Clay in the neighbourhood of Peterborough, whence he also obtained the fine skeletons of *Cryptocleidus* and *Peloneustes* exhibited in the same gallery.

As usual when a skeleton is mounted in this way, it gives a very different impression from that derived from the examination of the separate bones, or even from the crushed specimens by which the Ichthyosauria are usually represented. One of the most remarkable features is the manner in which the long anterior ribs, borne on the vertebræ behind the axis, are crowded back, so as to pass within the scapulæ. That this arrangement actually occurred is shown in some of the crushed Liassic specimens, especially in the remarkably well-preserved examples from Holzmaden. There were about fifty pairs of ribs in all. The caudal fin must have been very large, the deflected portion of the vertebral column running down in the ventral lobe consisting of about fifty vertebræ; it is possible that as mounted this terminal portion of the vertebral column is bent down a little too sharply, the angle between it and the rest of the backbone being rather more obtuse.

The length of the skeleton as mounted is 13 ft. 6 in. (412 cm.), of which the head occupies 3 ft. 2 in. (96.5 cm.).

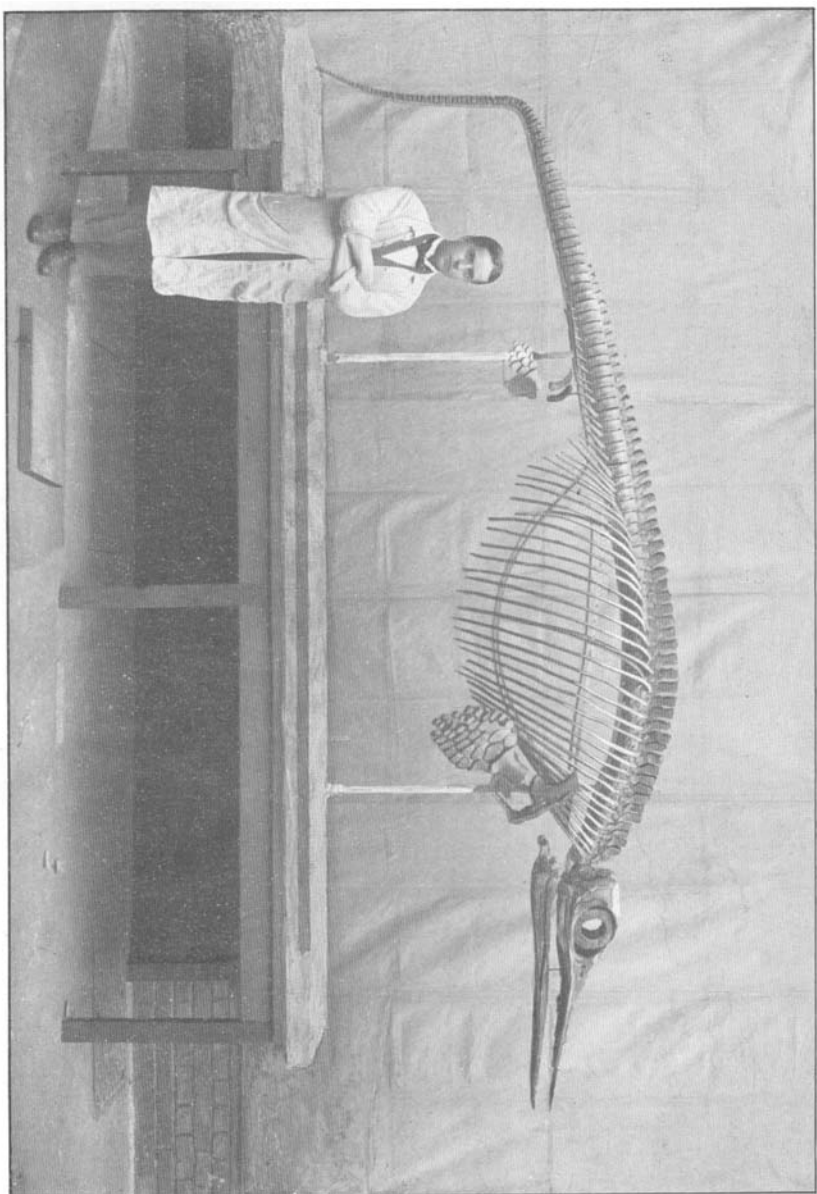
II.—A DEEP BORE AT SEASCALE IN CUMBERLAND.

By Professor J. W. GREGORY, F.R.S., M.I.M.M., D.Sc.

DURING the years 1906 to 1909 a bore was sunk at Seascale on the coast of Cumberland, 9 miles south-eastward from St. Bees, in the hope of reaching a continuation of the Coal-measures which, south of Whitehaven, end against the Trias. This bore reached the depth of 3,200 feet, and it was then still in the Red Sandstone Series, which it entered beneath 20 feet of drift. Owing to the kindness of Mr. Forster Brown, I received a copy of the bore section, and from Mr. Fleming Smith, of Cleator Moor, manager of Vivian's Boring and Exploration Company, Ltd., who carried out the boring, further information regarding the bore, two samples of the core, and a copy of the journal for the lowest 180 feet. As the bore record is of especial geological interest, I am indebted to Mr. Forster Brown for permission to publish it.

SECTION OF BOREHOLE AT SEASCALE.

	Thickness.		Depth.	
	ft.	in.	ft.	in.
Surface	20	5	20	5
Sandstone	584	0	604	5
Red Shale	5	0	609	5
Sandstone	1,463	6	2,072	11
Red Shale joints	3	0	2,075	11
Sandstone	37	0	2,112	11
Red Shale joints	2	0	2,114	11
Sandstone	13	6	2,128	5
Red Shale partings	4	0	2,132	5
Sandstone	6	0	2,138	5
Red Shale joints	6	0	2,144	5



L. T. Hensons, Photo.

Skeleton of *OPITHALMOSAURUS ICENICUS*, Seeley.

Oxford Clay, nr. Peterborough.

(Length 13 feet 6 inches.)

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