Notice of some extinct CETACEANS.

BY JOSEPH LEIDY, M. D.

HOPLOCETUS OBESUS.

Prof. F. S. Holmes, of Charleston, S. C., has recently submitted to my inspection a remarkable tooth and the fragment of another, which I recognize as having belonged to an extinct genus of Cetaceans, characterized under the name of *Hoplocetus* by Gervais, from similar teeth derived from the miocene and pliocene formations of France. The tooth, indeed, bears a near resemblance to that of *H. crassidens*, represented in figure 10, plate xx, of Gervais' Paléontologie Francaise, both in form and size, but is more curved, in this respect resembling more the tooth of that represented in fig. 11 of the same plate. Prof. Holmes' specimens were obtained from the post pliocene formation of Ashley River, in the vicinity of Charleston, S. C.

The more complete tooth has the end of the fang and a good portion of the crown broken away. The latter was worn away, leaving on the summit a broad, flat, discoidal surface. The enamel, where it remains, forms a band encircling about one-third of the crown, about three lines in depth, and one-fourth of a line thick. It appears to have been rugose longitudinally. The fang, a striking character in the teeth referred to *Hoplocetus*, is fusiform, remarkably robust, and large in proportion to the crown. It is straight at the bottom two-thirds, but curved towards the crown, so that this appears to be obliquely implanted upon it. The interior of the fang is pervaded by a narrow pulp cavity of irregular diameter, from the existence at its sides of nodosities. The part constituting the technical neck of the tooth is feebly constricted. The measurements of the specimen are as follows :

Length in present condition in a straight line	44 lines.
Estimated length of fang restored	52 "
Greater diameter of fang	19 "
Lesser " "	16½ "
Estimated diameter of crown at base	8 "

The fang of this tooth appears to consist of an axis of dentine about equal in diameter to the crown, and its great accession of bulk appears to be due to the cemental layer.

The second specimen consists of the fragment of a tooth devoid of crown. The tooth has been of little greater bulk than the preceding, as the diameter of the remaining portion of the fang is 20½ lines.

Almost immediately after the reception of the above specimens, quite unexpectedly and purely coincidentally, I received, among some other cetaceous remains, another tooth, referable to *Hoplocetus*, from my friend, Prof. Wyman of Cambridge. This specimen was derived from the miocene formation in the vicinity of Richmond, Va. The tooth is much larger and straighter throughout than the better preserved of the two preceding specimens, and may perhaps belong to a different species,—a conjecture which is favored in the fact that the tooth was also derived from a different geological formation.

The crown is worn off in a blunt manner or somewhat convex disk, about 9 lines in diameter, and is encircled by a more or less worn and broken band of longitudinally rugose enamel, varying in depth from three to five lines, and one-third of a line in thickness. The fang is broken at its end, and exhibits a long conical pulp cavity, large enough to introduce the end of the middle finger for an inch or more. The fang in shape is fusiform, exceedingly robust, straight, and somewhat quadrate. As in the other specimens, it is composed of a dentinal axis near the diameter of the crown, enveloped in a huge accumulation of cementum. The length of the specimen in a straight line, in its present condition, is 55 lines. The fang in a restored

condition is estimated to have been 5 inches long. The diameter of the fang is 20 and 21½ lines.

In the large proportion of cementum to the dentinal axis of the teeth of *Hoplocetus* they bear such a resemblance to the fragments found in the Red Crag of England, and referred by Prof. Owen to a genus under the name of *Balænodon*, as to render it probable the former is the same as the latter.

The relations of *Hoplocetus* or *Balænodon*, other than that they were toothed cetaceans, are unknown.

DELPHINUS OCCIDUUS.

An extinct species is indicated by a fossil derived from the upper miocene formation of Half-moon Bay, California, submitted to my examination by Prof. J. D. Whitney. The specimen consists of an intermediate portion of the upper jaw, devoid of teeth, and encrusted with selenite. It measures along the more perfect lateral border 5 inches, and in this extent is occupied with 19 closely set, circular alveoli, rather over 2 lines in diameter. At the back of the fragment the jaw has measured a little more than 2 inches wide. From this position it gradually tapers for half its length, and then proceeds with parallel sides to the fore end, where it is 10½ lines wide. The palate behind is nearly plane or slightly convex; at its fore part it presents a deep median groove, closed by the apposition of the maxillaries, and this groove is separated only by a narrow ridge from the alveoli. The sides of the maxillaries are slightly concave longitudinally, convex transversely. The intermaxillaries are broken away, leaving a wide, angular gutter between the remains of the maxillaries.

Remarks on a jaw fragment of MEGALOSAURUS.

BY JOSEPH LEIDY, M. D.

A fossil worthy of notice in the Museum of the Academy consists of the fragment of a jaw, apparently of the Megalosaurus, which, if it does not belong to a different species from *M. Bucklandi*, indicates an individual larger than any one of those referred to by Buckland, Cuvier, Owen, etc. The fossil was purchased in England, and was presented to the Academy by Dr. Thomas B. Wilson. It is labelled, "Fragment d'une machoire de Megalosaurus trouvé dans le lias à Boué (or Boues). L'animal est extremement rare ici. Il avait 45 pied de longeur." In another hand it is marked "Jura Mts."

The fragment contains two mutilated teeth, visible throughout their length from the inner part of the jaw being broken away. The matrix adhering to the fossil consists of an oolite composed of a homogeneous clay-colored basis, with imbedded granules, of a rounded form, brown and shining.

The teeth are inserted into the jaw about two-thirds their length, and more than three-fourths the depth of the bone. They have measured 5½ and 6 inches in length. The breadth at the base of the enamelled crown of the best preserved tooth is 14¾ lines, which is nearly the fourth of an inch greater than in the largest tooth represented in any of Prof. Owen's figures in his Monograph of the Fossil Reptiles of the Wealden Formation. A tooth apparently nearly as large in an American ally, is one referred to *Dinodon horridus*, and represented in fig. 21, pl. 9, of my memoir on the Extinct Vertebrata of the Judith River, published in the eleventh volume of the Transactions of the American Philosophical Society. The reconstructed outline of this figure is, however, too large, rendered so by the too distant removal of the apex of the tooth from the other fragment. The breadth of this specimen really did not exceed an inch.

The longest tooth of the fossil under inspection, for the most part broken away, exhibits a mould of the large interior pulp cavity. This mould, from the bottom of the latter to its broken end in the position of the crown, is 5¼