ON A NEW EXTINCT GENUS OF SIRENIA, FROM SOUTH CAROLINA.

BY E. D. COPE.

Mr. Gabriel Manigault, the accomplished director of the Museum of the University of South Carolina, at Charleston, has placed in my hands for determination an interesting fossil of that region. It is the greater part of the right premaxillary bone of a large sirenian mammal, containing the large incisor tooth or tusk characteristic of the genus *Halitherium*. It, however, exhibits the peculiarity of possessing, exterior to this tusk, a second large tooth, which is probably also an incisor. This character distinguishes the form generically from other members of the order. In *Prorastomus* Owen, there are an inferior incisor and a canine not of sirenian type, but probably no superior incisors, or if present, they are minute and conic. I propose that the genus be named *Dioplotherium*. The only form with which it is necessary to compare it is *Hemicaulodon* Cope,[1] the number of whose incisor teeth is unknown. The one from which the genus is known, has a dense external sheath of cementum, which is wanting from the present genus.

The color of the specimen indicates that it belongs to the blue-gray marl of the Carolinian (Heilprin) miocene of our Atlantic region. It has, however, been exposed to the action of the water of a later sea, as it carries the bases of several *Balani*.

The premaxillary bone differs from that of the *Halitherium minor* Cuv. (*H. serresi* Gerv.) and *H. capgrandi* Lart., in the much shorter symphysis. The nareal border is also shorter, judging from the position of the maxillary suture, which is further anterior than in the species named. The nareal border is rounded and thickened, so as to overhang its lateral face at the maxillary suture. The alveolus of the second incisor is large, and is in close proximity to that of the first. Its posterior wall is lost. Its fundus reaches to the maxillopremaxillary suture, but as its anterior wall is entirely premaxillary, the tooth is probably an incisor, and not a canine.

The anterior incisor is a tusk of flattened form, with a slight taper from base to apex, and a narrow diamond-shaped section.

[1] Proceedings Amer. Philos. Soc., 1869, p. 190.

Two end-sides of the diamond which present anteriorly, are shorter and more divergent than the posterior two. The latter encloses a wedge-shaped space, with an obtuse apex. Thus the posterior edge of the tooth is narrow and rounded. Of the anterior lateral angles the external is the more prominent. The tusk is gently curved outwards, and the posterior lateral face is also concave in anteroposterior section. The pulp cavity enters the crown for two-fifths of its length. The latter is composed of uniform dentine, and there are no traces of cementum or enamel. There are transverse bands of several delicate rugæ each, separated by considerable spaces. I count eleven from apex to base. The tooth is also obsoletely longitudinally striate, but cannot be called sulcate on the external face. On the internal face the longitudinal concave face is divided into a narrower and wider portion by a longitudinal ridge which marks the middle of the shaft. The triturating surface is narrow, and presents obliquely backwards. The projection of the crown beyond the alveolar border is not more than one-fourth the total length of the tooth.

The second incisor tooth is lost. Its alveolus shows that its form was less compressed than that of the first. While its size is considerable, it is evidently less developed than the first. Its anterior border slightly overlaps the posterior narrow edge of the anterior tooth.

Measurements.			M.
Vertical depth of premaxillary at septum between I. 1, and I. 2,			·128
Length of ditto at middle of side,			·118
Length of symphysis,			·126
Length of first incisor,			·176
Diameters do. at base	anteroposterior,		·050
	transverse	anteriorly,	·027
		posteriorly,	·011
Diameters do. at ·02 m. from apex,	anteroposterior,		·037
	transverse	anteriorly,	·020
		posteriorly,	·007
Projection of do. beyond alveolus (about),			·053
Transverse diameter of alveolus of I. 2, anteriorly,			·025

This species may be called *Dioplotherium manigaulti*, in honor of Mr. Manigault, to whom the University of South Carolina owes the present admirable condition of its Museum. The typical

specimen was found in or on the Wando River, northeast of the city of Charleston.

This genus furnishes a first step in tracing backwards the phylogeny of the *Sirenia*. These animals doubtless present the same phenomenon as that witnessed in the series of the Rhinoceroses, Ruminants, and some others, viz., a gradual reduction in number, and final extinction of the superior incisor teeth. In *Rhytina* the extinction is complete; in *Halicore* one remains. *Dioplotherium* with two, forms the passage to the primitive types, not yet known, which possessed three. They are considerably specialized in the present genus, and a reduction of size is to be looked for in the first ancestral genera of the *Sirenia*.

From the proportions of the parts preserved, the *Dioplotherium manigaulti* was rather larger than a dugong.

A portion of a Sirenian pelvis said to have been procured from the same locality, Wando River, was given me by Mr. Jacob Geismar. It resembles considerably that of *Halitherium*. A portion of the ischium and pelvis is broken away, so that it is not easy to determine positively whether there is an obturator foramen or not. Their bases are, however, united for a considerable distance beyond the acetabulum, and form a wide plate. The ilium is a stout rod, expanding a little towards the crest, which is broken away. The sacral articular surface is in two planes, one the inner side, the other the posterior edge of the bone, and are strongly impressed. The section of the shaft is subtriangular. The acetabulum is small, has raised edges, and an irregular *fossa ligamenti teris* notching its superior border.

Measurements.

Length from acetabulum to sacral face, exclusive,		·052
Width acetabulum,		·027
Diameter shaft ilium,	anteroposterior,	·018
	transverse,	·015