

**Article XXXI. — THE GREAT CRETACEOUS FISH  
PORTHEUS MOLOSSUS COPE.**

By HENRY FAIRFIELD OSBORN.

PLATE X.

The noble specimen, of which a preliminary description is here given, adds another to the many services which Mr. Charles H. Sternberg has rendered to vertebrate palæontology. It was secured by him in the year 1900, near Elkada, Logan County, Kansas. Originally the specimen had been probably entirely complete, but portions of the skeleton, especially the ribs and spines, were injured and partly removed by previous explorers.

The fish was purchased by the Museum in 1901, mounted, and partly restored under the direction of the writer and of Mr. Adam Hermann, with the able assistance of Mr. A. E. Anderson, who made a special study of the details of the skeleton. He is not, however responsible for the restoration.

*Measurements.*

Total length from tip of tail to a point directly above premaxillaries, 15 ft. 8 in. = 4775 mm.

Length of skull, tip of premaxillaries to posterior edge of operculum, 2 ft. 2 in. = 660 mm.

Spread of tail, 3 ft. 9 $\frac{3}{4}$  in. = 1.106 mm.

The principal new features brought out by this skeleton are the complete vertebral column and caudal fin, and the relations of the anterior ribs.

In the restoration of the skeleton reproduced in the photograph (Plate X), reference is made especially to the figures of Crook and Stewart and to the descriptions of Hay.

In the pen composition drawing reproduced herewith (Fig. 1) reference has been made to the admirable figures of the skull by Stewart and Crook.

The pelvic fins were loaned from the private collection of

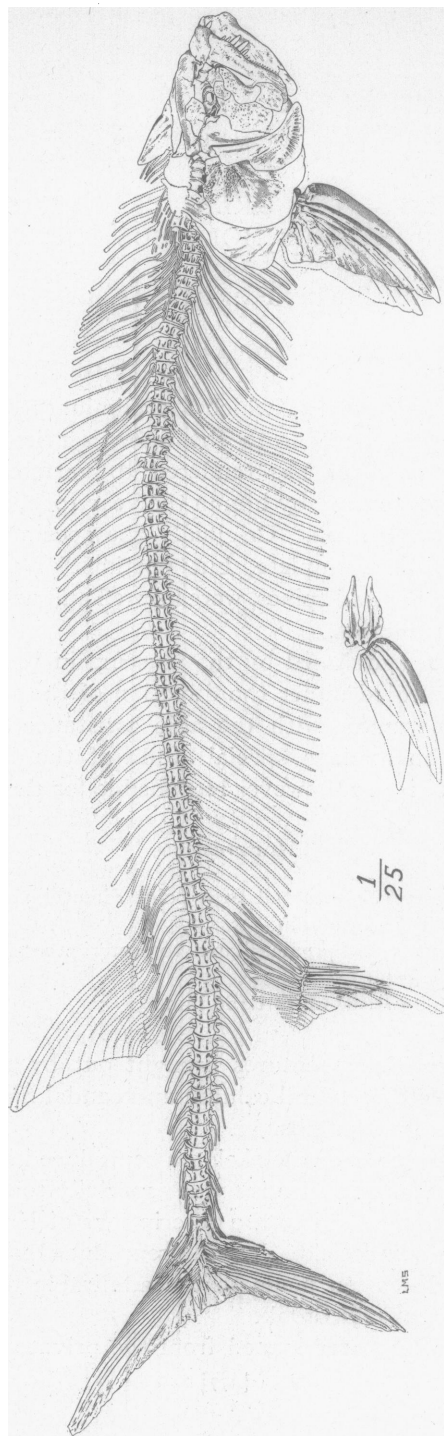


Fig. 1. Preliminary and partial restoration of *Porthetus molossus* Cope. The elements of the skull are partly restored after O. P. Hay and Alban Stewart.

Dr. O. P. Hay for the purpose of modelling and drawing, and are represented in detail in Fig. 4.

This specimen adds little to our knowledge of the skull.

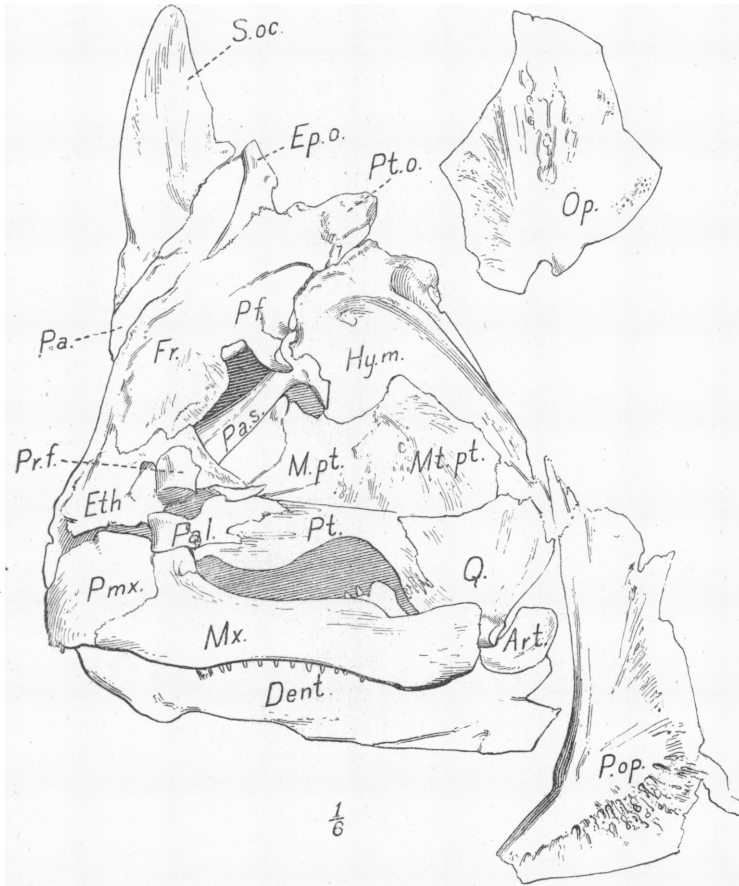


Fig. 2. Principal elements of the skull of *Portheus*, as revealed in a crushed specimen. (Amer. Mus. Coll.).

The total number of vertebræ is eighty-three. On the third vertebra (V. 3) the most anterior parapophysis and rib-articulation appear. The rib-bearing parapophyses become longer and more pointed as we pass back from V. 3 to V. 52.

V. 52 is the last vertebra in which there is a distinct rib-articulation on the centrum. V. 53 and V. 54 apparently

bore the most anterior hæmapophyses. It is also possible that these processes represent elongated parapophyses behind which two ribs were fastened, as in the Tarpon.

The anterior interhæmal of the anal fin appears to lie between the hæmal spines of V. 55 and V. 56.

In the caudal region V. 80 and V. 81 are consolidated. V. 83 passes into the tail.

The right pectoral fin shows a very broad anterior ray, three distinctly defined intermediate rays, and two or more succeeding rays not so clearly defined.

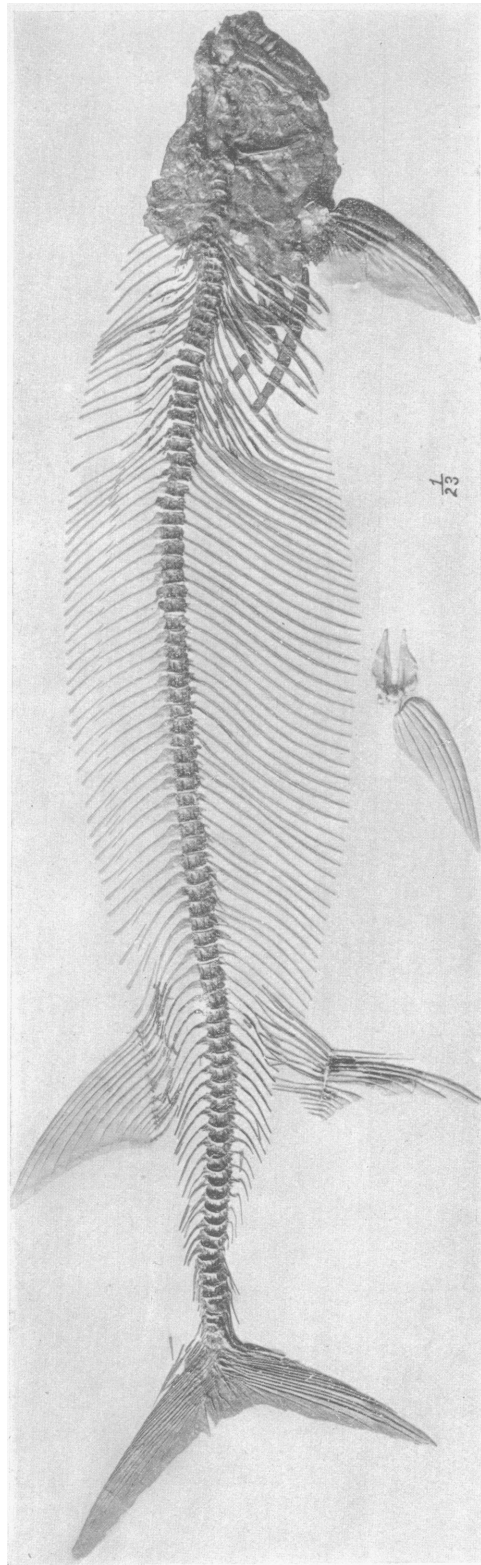
The pelvic fins (Fig. 4) similarly show a broad anterior ray, three or four well-defined intermediate rays, and two or three succeeding rays. The dorsal aspect of the pelvic girdle is exhibited in the restoration.

The anal fin is attached at a point below ten vertebræ, namely, V. 55-65, by ten interhæmal rays, below which ten more or less complete anal fin rays are preserved.

The beautifully preserved caudal fin exhibits fifteen dorsal rays, four short intermediate rays which fringe out rapidly, and fifteen to sixteen ventral rays. It is thus remarkably symmetrical.



Fig. 3. Right pectoral fin of the *Porthetus molossus* figured on Plate X.



MOUNTED SPECIMEN OF *PORTHEUS MOLOSSUS* COPE. THE LIGHTER PORTIONS ARE RESTORED.

The position of the dorsal, pelvic, and anal fins, and the form of the dorsal and anal fins, are conjectural.



The position of the dorsal fin immediately above the anal fin is indicated by the presence of portions of eight inter-neurals which lie above vertebræ 56-63; these interneurals appear to connect with the partly cleft neural spines. This, however, is not conclusive evidence of the presence of the dorsal fin at this point.

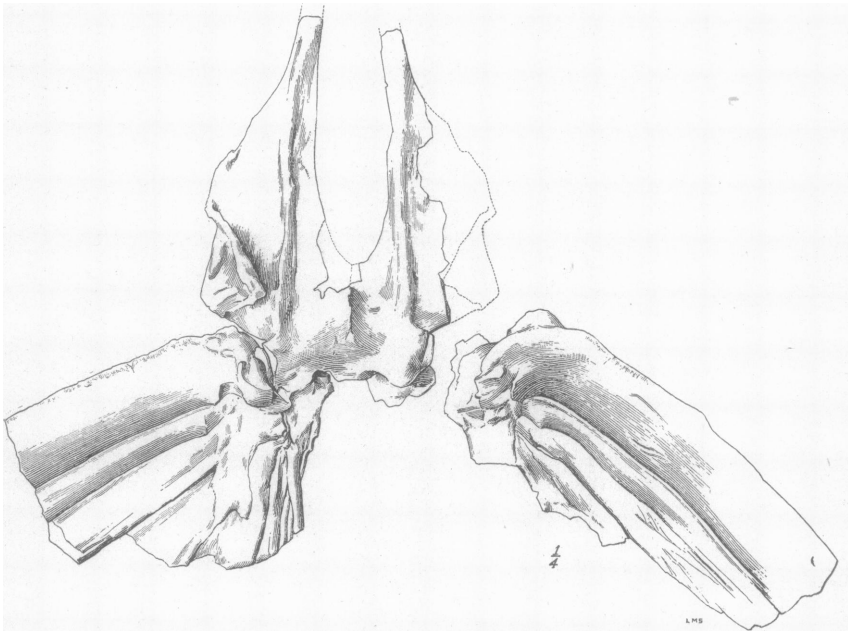


Fig. 4. 'Pelvis' and pelvic fins (in part) of a specimen of *Porthus molossus* loaned by Dr. O. P. Hay.

The most anterior hæmapophysis is found either on V. 53 or on V. 55. The hæmapophyses are placed on the anterior portions of the centra.

The sixteen anterior neural spines are cleft superiorly; between or just in front of them are fitted the wedge bases of the interneurals.

