

The astragalus is 55<sup>mm</sup> in width; and 50<sup>mm</sup> in fore and aft diameter.

A first phalanx of the hind foot is 90<sup>mm</sup> in length.

These specimens would indicate an animal ten or twelve feet in length.

These remains are from the same horizon and localities as those above described.

*Caelurus gracilis*, sp. nov.

The smallest Dinosaur found in these deposits is a very diminutive carnivore, apparently belonging to the genus *Caelurus*. It was not more than one-half the size of the western species, and its proportions were extremely slender. The bones are very light and hollow, the metapodials being much elongated, and their walls extremely thin. An ungual phalanx of the manus measures about 25<sup>mm</sup> in length; and 14<sup>mm</sup> in vertical diameter at the base.

This animal could not have been more than five or six feet in length. The known remains are from the same horizon as those above described.

All the specimens described in the present article were found by Mr. J. B. Hatcher, of the U. S. Geological Survey, and the writer's able field assistant in paleontology.

The fossils here described, and others from the same horizon, seem to prove conclusively that the Potomac formation in its typical localities in Maryland is of Jurassic age, and lacustrine origin. There is evidence that some of the supposed northern extensions of this formation, even if of the same age, are of marine, or estuary origin.

Yale College, New Haven, Conn., Dec. 23, 1887.

ART. VII.—Notice of a New Fossil Sirenian, from California; by O. C. MARSH.

IN exploring a Tertiary deposit in California a few years since, the writer obtained several teeth of a large mammal, very distinct from anything hitherto discovered in this country. Other specimens were subsequently secured, and with them, a number of vertebræ, apparently pertaining to the same animal which is described below. The associated vertebrate fossils were a large edentate (*Morotherium*), a mastodon, a camel, and one or more extinct species of the horse, all indicating the Pliocene age of the strata in which they were entombed.

*Desmostylus hesperus*, gen. et sp. nov.

The remains known of the present species indicate an animal about fifteen feet (M. 4·5) in length, and of robust proportions. The most characteristic parts preserved are the molar teeth, which are composed of a number of vertical columns, closely pressed together, and in adult animals, firmly united at their bases. These columns are thickly invested with enamel, which is rugose externally. Inside the enamel, is a body of dentine, in which there is a central cavity.

In immature teeth, the columns are nearly round, and loosely united, but as they increase in size, they press together, and become more or less polygonal in cross section. Before being worn, they have their summits smooth and convex, but after some use, the center of each column presents a rounded elevation, well shown in the figures below. This is due to the harder material forming the walls of the central cavity. As this apex is removed by further wear, the cavity is reached, and this central opening increases in size as the tooth is shortened by attrition.

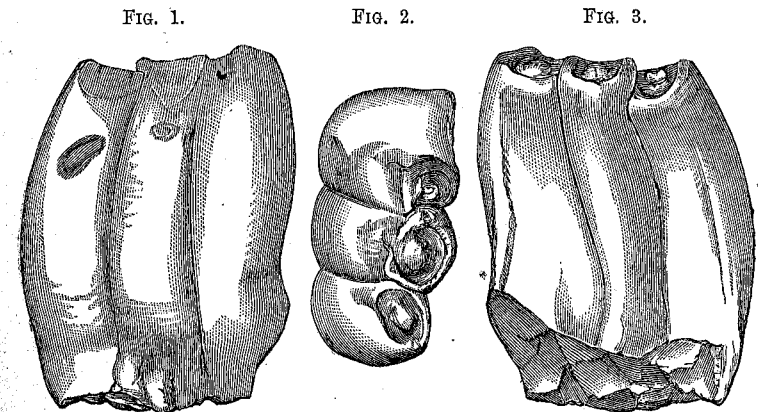


FIGURE 1. Part of tooth of *Desmostylus hesperus*, Marsh; end view.  
FIGURE 2. The same specimen; seen from above.  
FIGURE 3. The same specimen; inner surface.  
All the figures are natural size.

The specimen figured is apparently the posterior portion of a molar tooth. The three columns shown are much smaller than the average, not half as large as some others found with them, and probably belonging to the same individual. The number of columns in a single tooth is uncertain, but there are

indications of at least twelve or fifteen, and perhaps more. There were both upper and lower molar teeth of similar structure, but the rest of the dentition is unknown.

One of the best preserved specimens found with these teeth is a lumbar vertebra, which is noticeable for the extreme flatness of its articular surfaces. The sides of the centrum meet below, forming an obtuse median keel. The centrum of this vertebra has a length of 89<sup>mm</sup>; the vertical diameter of the anterior face is 90<sup>mm</sup>, and its transverse diameter 107<sup>mm</sup>.

The known remains of this animal are from Alameda Co., California, and are preserved in the museum of Yale College: The type specimen was found by Dr. L. G. Yates.

The nearest affinities of this peculiar Sirenian are probably with *Metaxytherium* of Christol, from the Tertiary of Europe, and its nearest living allies may, perhaps, be found in the genus *Halicore*.

Yale College, New Haven, Conn., Dec. 23, 1887.

