

Pinos, near Monterey. It is found mostly in masses of *Fucus* attached to rocks between tide-marks, and it is often found at low tide at a considerable distance from any water, kept damp by the masses of algæ. Sometimes a dozen of them can be shaken from a bunch of algæ attached to a dry rock. It is, like the species of *Xiphister*, very active, moving over stones or sand, and showing less anxiety about the presence of its native element than any other fish known to us. The very numerous typical examples are all of nearly the same size as the one measured below. It probably does not attain so great a size as *Apodichthys flavidus*.

We have little doubt that Professor Gill is right in uniting *flavidus* Girard, *virescens* Ayres, and *sanguineus* Gill as one species. Whether *inornatus* Gill is different or not we do not know. At any rate, its number of fin-rays (D. XC, A. 38) will separate it from *A. fucorum*.

Table of measurements.

	<i>A. fucorum.</i>	<i>A. flavidus.</i>
Extreme length, in inches .....	4.35	8.90
Length to base of caudal = 100 .....	4.10	8.50
Body, greatest depth .....	9.5	11
Head:		
Length .....	10	11
Distance from snout to nape .....	8	6
Dorsal, distance from snout .....	13	11.5
Anal:		
Distance from snout .....	68	60
Height of spine .....	2	4
Length of pectoral .....	2	4
Dorsal rays .....	83	93
Anal rays .....	35	40

MONTEREY, CAL., April 7, 1880.

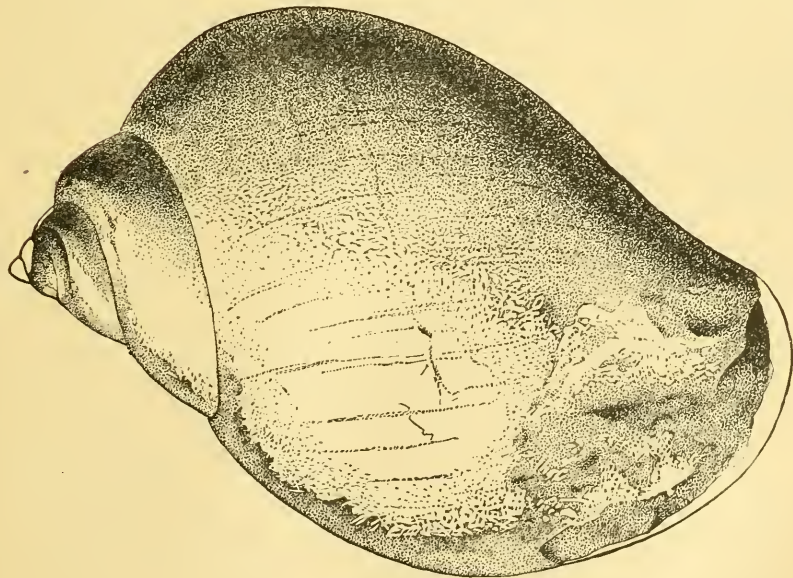
**DESCRIPTION OF A VERY LARGE FOSSIL GASTEROPOD FROM THE STATE OF PUEBLA, MEXICO.**

**By C. A. WHITE.**

The United States National Museum has received from Mr. H. B. Acton, through the Hon. J. W. Foster, United States minister to Mexico, the very interesting fossil shell which is described in the following paragraphs. Mr. Acton says, in a letter accompanying the specimen, that it was obtained from the strata upon which are located the Zapotitlan Salt Works, which works are about six miles southwestward from the town of Tehuacan, in the State of Puebla, Mexico, and about 115 miles inland from the Gulf coast. He gives the elevation of that locality as 6,500 feet above the level of the sea.

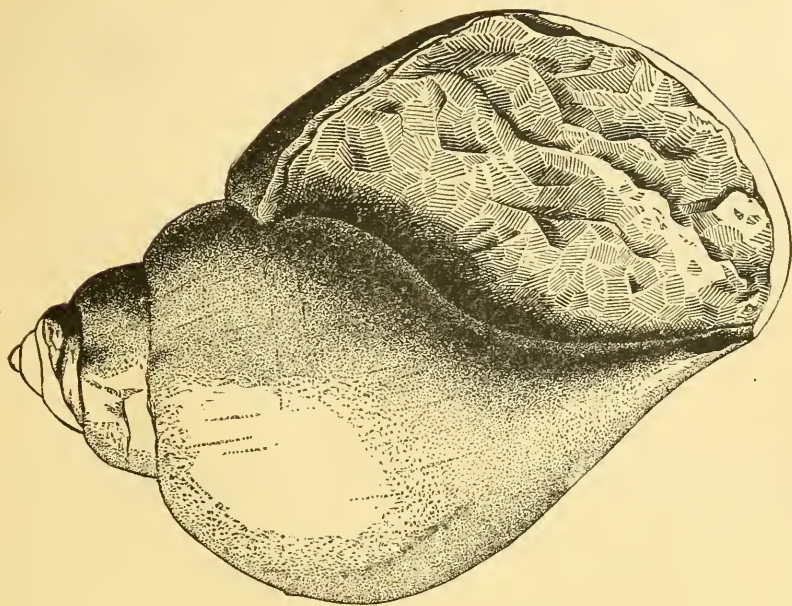
Only one example of this species has been received, and it is accompanied with examples of no other species. Fragments of the imbedding rock, which is a dense bluish limestone, have been carefully examined, and although they were found to contain numerous fragments of

No. 1.



$\frac{1}{2}$

No. 2.



TYLOSTOMA PRINCEPS.



fossil shells, not any of them were sufficiently well preserved to indicate even their generic relations. No satisfactory information has been obtained concerning any geological observations that may have been made in that region, which might convey a knowledge of the geological age of the strata of the locality from which the fossil in question was obtained, and I am therefore under the necessity of relying wholly upon the testimony afforded by the fossil itself. The genus to which I have referred it has hitherto been known only in rocks of Cretaceous age; and there appears to be no good reason to doubt that the strata from which this Mexican shell was obtained belong also to that period.

### Genus TYLOSTOMA Sharpe.

#### TYLOSTOMA PRINCEPS (sp. nov.).

(Plate II, figs. 1 and 2.)

Shell very large, general form rhombic-ovate, inflated; spire moderately extended; volutions five or six, convex, having an ill-defined narrow shoudering at the distal or upper portion, adjacent to the suture; umbilicus none, suture impressed; aperture ovate-semilunate, large, its length equal to more than two-thirds the full length of the shell; outer lip forming an approximately regular curve from near the suture to the anterior portion of the aperture, which, although broad, is somewhat produced; margin of the outer lip only slightly sinuate; inner lip bearing a broad, moderately thin callus, its outline somewhat strongly sinuate and its margin narrowly flexed along its anterior portion.

Surface marked by the ordinary lines of growth.

Length from the apex to the front margin of the aperture, 220 millimeters; greatest breadth, 160 millimeters; length of aperture, 150 millimeters. (Museum, No. 8864.)

This is much the largest fossil gasteropod that has ever been found in North American Mesozoic strata; and it is excelled in size by only comparatively few of its class that have since existed.

It has much the general aspect of a *Lunatia*, but it is referred without much hesitation to the genus *Tylostoma* Sharpe. This last-named genus is regarded by some malacologists as having affinities with the Tectibranchiata, near *Pterodonta*; but I agree with Stoliezka and Zittel in referring it to the Pectinibranchiata, and placing it near *Lunatia* in the Naticidæ. It is true that all the characteristics of *Tylostoma*, as enumerated by Sharpe and characteristic of most if not all the species which have been referred to that genus, are not clearly observable upon the only example of this species that has been discovered; but being plainly without an umbilicus, or any umbilical perforation, in connection with its other characteristics, it cannot be referred to any other recognized genus of the Naticidæ. The condition of our example is not such as to show clearly whether or not the outer lip was thickened at the time of the death of the mollusk.

The varices or alternate swellings, characteristic of *Tylostoma*, are present, but not so conspicuous upon this example as they are upon some species of the genus, especially upon *T. mutabilis* Gabb, another Mexican Cretaceous form; but they are quite as conspicuous as they are shown to be in the published figures of Sharpe's type species, *T. torrubia*. These varices or swellings are more apparent in our example by an apical than by a lateral view of it, but their presence is indicated in fig. 2 upon the ultimate and penultimate whorls.

Although size cannot generally be relied upon as a specific character, the extraordinary dimensions of this shell separate it clearly from any other known form with which it might be otherwise in danger of being confounded. The only fossil species which resemble it, or even approximately approach it in size, are the *Natica pedernalis* and *N. pre-grandis* of Roemer, from the Cretaceous of Texas; but both these species evidently belong to a group that is now generally referred to *Lunatia*, or *Euspira*; and the largest known examples of either of these forms have scarcely more than half the dimensions of the example here described.

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**DESCRIPTION OF TWO NEW SPECIES OF SEBASTICHTHYS (SEBASTICHTHYS ENTOMELAS AND SEBASTICHTHYS RHODOCHLORIS), FROM MONTEREY BAY, CALIFORNIA.**

By **DAVID S. JORDAN** and **CHARLES H. GILBERT**.

*Sebastichthys entomelas* sp. nov.

Allied to *S. ovalis* (Ayres).

Body oblong, rather elongate, the back regularly but not strongly arched, contracted to a rather slender caudal peduncle. Head moderate, the profile less steep than in related species, but the tip of the snout blunter than in *ovalis*. Mouth small, the short maxillary extending to below the middle of the eye. Lower jaw projecting, its tip entering the profile, but considerably less protruding than in *ovalis*. Palatine teeth few.

Preorbital very narrow, without spine. Eye rather large, about 4 in length of head, less than the interorbital space, which is strongly convex, especially in its middle part.

Nasal spines minute. Preocular spine broad, triangular, rather prominent, more conspicuous than in *melaneps*, but much less so than in *ovalis*. Supraocular ridge little developed, its spine minute, sharp, concealed by the scales. Postocular spine present, minute, similarly concealed. No tympanic spine. Occipital ridges scarcely developed, concealed by the scales, without distinct spine at tip. In *ovalis* all these spines, though small, are distinct. In *flavidus* there is no trace of any spines on the cranium, and the ridges are little developed.

Preopercular spines rather small, directed backwards, the two lower obsolete. Opercular spines small, two suprascapular spines. Scales on