primary spines, was an interesting discovery. The existence of a new species of *Salenia* (*Salenia hastigera*) in the tropical Pacific has increased the number of living species of that genus to four, and we now have a fair knowledge of a type which has played an important part in the Echinoidal fauna of the Jurassic and Cretaceous periods. The singular structure of the apical system of the genus, consisting of large plates soldered together, and recalling the condition of the apical system in embryonic Echini, has led to important systematic comparisons.

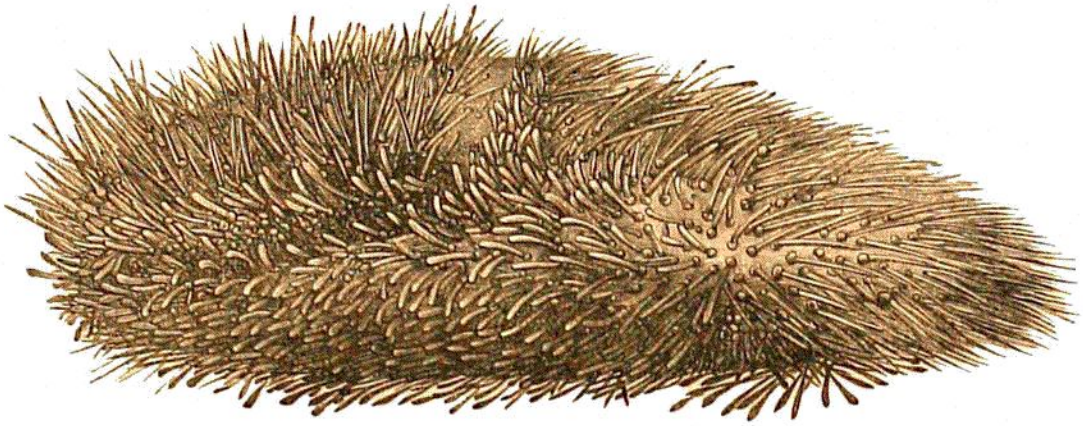

FIG. 81.—*Aërope rostrata*, Wyv. Thoms. Seen in profile; natural size.

"A number of specimens of *Cœlopleurus maillardi* were collected; their examination has thrown new light on the nature of the cap which tips the spines of the Arbaciadæ. In this genus it becomes developed to an extraordinary extent, four or five times the length of the spine proper. The immense triangular and curved spines thus formed probably served to raise the test as it were, on stilts, and enabled the sea-urchin to move with con-

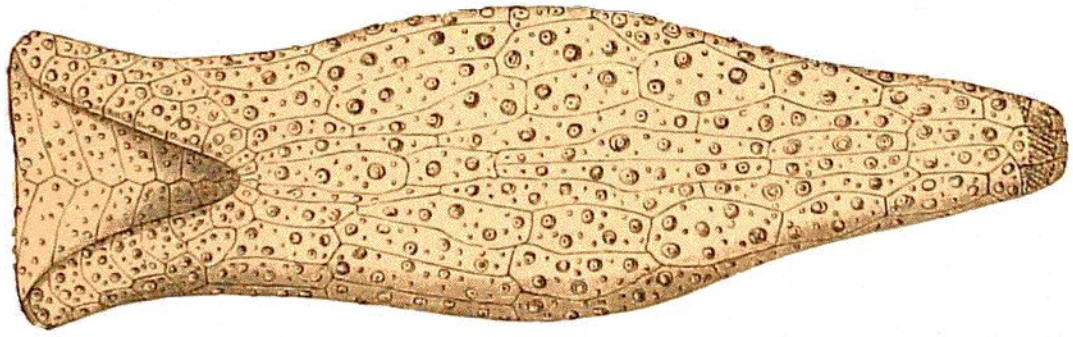

FIG. 82.—*Pourtalesia phiale*, Wyv. Thoms. Seen from the actinal side (denuded); four times the natural size.

siderable rapidity. We find in several of the species of Echinothuridæ another form of development of the tip of the primary spines. In *Phormosoma hoplacantha*, for instance, the radioles of the actinal surface are tipped with broad conical shoes, which must give to these soft-tested Echini a sufficient number of points of support to raise them above the ground. This species is probably the largest sea-urchin known; it must have measured no less than 312 mm. in diameter when fully expanded. The Echinothuridæ, to which *Phormosoma* belongs, all have a more or less flexible test, made up