

In the Challenger the different species of Pourtalesia, of Echinothuriæ, of *Hemias-ter*, of *Schizaster*, of *Goniocidaris*, of *Cidaris*, came up in numbers from certain localities.

My own experience has been identical, not only while collecting near the shores the masses of *Strongylocentrotus dröbachiensis*, of *Arbacia*, of *Echinarachnius*, of *Mellita*, of *Clypeaster*, of *Encope*, of *Rhynchopygus*, of *Moira*, and in deep waters, of *Asthenosoma*, *Salenia*, *Aspidodiadema*, *Paleopneustes*, and more particularly the species of *Cidaris*, which, certainly if we had characterised our beds from such species as *Cidaris tribuloides*, *Dorocidaris papillata*, *Dorocidaris blakii*, or *Porocidaris*, would give to a bed a very different facies based upon very local distribution and occurrence in great numbers at different localities. The same is true of the dredgings of Starfishes, Ophiurans, and Holothurians.

I have figured on Plate. XL. figs. 1–25, the differently shaped spines which occur on specimens of *G. tubaria*. They have been selected to show the modifications of a simple tapering spine (Pl. XL. fig. 19), with slight nodes so as to form on the one side the spiny, slightly cupuliform primary spines (Pl. XL. fig. 1), and on the other the short, cupuliform spines (Pl. XL. fig. 18) characteristic of the abactinal part of the test, and the elongate, slightly spinose, and but little cupuliform spines (Pl. XL. fig. 16) which give the extremes of the forms of spines found in *Goniocidaris tubaria*. At the same time, the intermediate forms showing the passage between these three extreme types give an excellent idea of the great variation of the radioles in the genus *Goniocidaris*, and of the impossibility of drawing reliable specific characters from the shape of the radioles alone, even when taking carefully into account the ornamentation of the spines themselves, the nature of which is frequently obliterated by the important changes in outline which characterise the primary spines. This of course applies not only to this genus but in general also to the species of the family Cidaridæ.

Station 161. April 1, 1874. Off entrance to Port Philip; 38 fathoms; sand.

Station 162. April 2, 1874. Off East Moncoeur Island, Bass Straits; 38 to 40 fathoms; sand.

SALENIDÆ.

Sub-family *Salenidæ*, Agassiz, 1838, Mon. Ech. Salénies (*emend.*).

Salenia.

Salenia, Gray, 1825, Ann. Phil.

Tertiary *Salenia* are now known from France and from Australia, and also from Sindh.¹

¹ Cotteau, Rev. and Mag. Zool., Mai. 1860.