

Station 78. July 10, 1873. Lat. 37° 24' N., long. 25° 13' W.; 1000 fathoms; globigerina ooze.

Station 70. June 26, 1873. Lat. 38° 25' N., long. 35° 50' W.; 1675 fathoms; globigerina ooze.

Station 73. June 30, 1873. Lat. 38° 30' N., long. 31° 14' W.; 1000 fathoms; bottom temperature, 3°·7 C; globigerina ooze.

ARBACIADÆ.

Family Arbaciadæ, Gray, 1855, Proc. Zool. Soc. London.

Arbacia.

Arbacia, Gray, 1835, Proc. Zool. Soc. London.

With the exception of *Arbacia nigra*, the Challenger collected but few specimens of the genus *Arbacia*, so that no material sufficient to undertake a renewed critical examination of the group was obtained. I have already alluded to some of the objections against the view taken by Troschel¹ of the synonymy of several of the species. The specimens of *Arbacia* collected by the Challenger at Valparaiso are undoubtedly the common *Arbacia nigra*; the specimens of *Arbacia dufresnii* collected at Nightingale Island and other localities may, when compared with the specimens of *Arbacia dufresnii* collected in the Straits of Magellan by Dr Cunningham, show how far Troschel is justified in considering *Arbacia alternans* as a distinct species from *Arbacia dufresnii*.

Dr Studer, in his list of Echinids from Kerguelen Island, also distinguishes this species from *A. dufresnii*. Troschel's description is exceedingly minute, but as it is based upon three specimens (one of which is not normal) these differences may after all be only individual differences. I have already, in the Revision of the Echini and the "Hassler" Echini, called attention to the great variability of the characters of the species of this family drawn from the test, such as the number of tubercles, both primary, secondary, and miliary, the ornamentation of the plates of the test, and the outline.

Mr Bell² has, in a recent number of the Proceedings of the Zoological Society, called attention to the variation in the number of anal plates, and to the tendency these plates show occasionally, in having less than four plates, to retain the conditions of many young Echinids in their youngest stages of having but a single plate covering the anal system; or, when having more than four plates, to pass into the normal condition of all other regular Echinids of having a large number of plates covering the anal system. This variation is, however, by no means so common as he would have us infer from his statistics. The

¹ Wieg. Archiv, 1873, Die Familien der Echinocidariden.

² F. J. Bell, Note on the Number of Anal Plates in *Echinocidaris*, Proc. Zool. Soc. London, May 1879.