

*Asterionella*, Hassall.

The genus *Asterionella*, instituted by Hassall in 1855, is characterised by the following features: (1) Its frustules are grouped in a stellate manner, and (2) when viewed in profile they are constantly inflated at the base, and sometimes also at their superior extremities.

Up to the present time all the species included in this genus have been freshwater forms, with the exception of the *Asterionella bleakeleyii* of W. Smith and the *Asterionella frauenfeldii* of Grunow, the latter of which was afterwards ascribed to the genus *Thalassiothrix*. Among the collections procured by the Challenger, however, two different types, which were gathered on the surface of the Antarctic Ocean near the ice-barrier of the South Pole, must be ascribed to the *Asterionellæ*, but it is to be borne in mind that, as numerous frustules of *Eunotia arcus*, W. Sm.,<sup>1</sup> were found in the same collection, it is unquestionable that in many cases terrestrial Diatoms which vegetate on the glaciers of the Antarctic, and which represent the last traces of the icebergs that have been melted by coming into contact with warmer water, float upon the surface of the waters in these localities. Moreover, since it has been clearly proved that the other species of the genus *Eunotia* do not vegetate except at an elevation of several hundred feet above the level of the sea, it is manifest that it is impossible here to decide whether the *Asterionellæ*, which have now to be recorded, should be regarded as terrestrial forms, or whether they must be viewed as being strictly marine.

Although these new forms cannot be identified with *Asterionella bleakeleyii* of W. Smith, which was till recently the only marine species that had been observed, it may here be remarked that I have observed other marine *Asterionellæ* at the island of Lesina in Dalmatia—a region which is exceedingly favourable for research in this department of marine biology. In this locality, by means of small nets, there was found on the surface of the sea, and floating among many other organic forms, an *Asterionella* which could be readily distinguished by the linear form of the frustules; these were at the same time provided with a swelling at the inferior extremity, and were radiately disposed so as to present a stellate appearance. This form, too, was remarkable from the fact that the series did not form a solitary star with only a few radii, but presented, on the contrary, a long chain of very numerous frustules, which were disposed in such a manner as to form several spiral turns, so that the name *Asterionella spiralis*, which has been applied to the species, is exceedingly characteristic.

*Asterionella glacialis*, n. sp. (Plate XIV. fig. 1.)

Frustula a basi inflata exiliter linearia; valvis inferius rotundato-inflatis, et binis lineolis notatis. In mari Antartico.

<sup>1</sup> Synopsis of the British Diatomaceæ, vol. i. p. 15, pl. ii. fig. 15. This Diatom is equivalent to *Navicula arcus*, Ehrenb., Inf., pl. xxi. fig. 10, *Cymbella* (?) *arcus*, Hass., Alg., C. 6, and to *Ceratoneis arcus*, Kg., Bac., pl. vi. fig. 10.