

According to Arnott, the difference between *Gephyria* and *Eupleuria* consists in the fact that in the latter the zonal side is formed of rings of short septa while the margins are beaded, whereas in the former the connecting zone is sublamellate and finely striated on the surface.¹ Since, however, it is true that the shape and structure of the two types are essentially identical, they must be regarded as being generically equivalent, although the *Eupleuriæ* may be considered as a distinct section of the *Gephyriæ*.

Gephyria gigantea, Grev. (Plate XV. fig. 10.)

This figure represents a magnificent Gephyrian valve from the neighbourhood of Kerguelen Island, where numerous interesting Diatoms have been found. It reminds the observer of *Gephyria gigantea*, Grev., which is shown on plate xi. figs. 7 and 8 of the Transactions of the Microscopical Society of London, vol. xiv., new series, 1866. Eugenie O'Meara also describes² and figures under the name of *Gephyria dyerana*, in his work on the diatomaceous gatherings made at Kerguelen Island by the Expedition, a form of valve which seems to be identical with that recognised by me from the same spot and very probably from the same collection.

On comparing the three figures above referred to as well as the descriptions given by O'Meara and Greville, no difference is apparent except the circumstance recorded by the former, that the valves are flat in the centre and arched at the extremities. This, however, cannot by itself be regarded as a good foundation on which to establish a new species, so that the form shown on our Plate XV. fig. 10 must be regarded as identical with that described and figured by O'Meara. Moreover, as no distinction is apparent between the latter and the Grevillean type, the designation adopted by the last-named author should be selected on account of its priority.

Gephyria, n. sp. (?) (Plate XXV. fig. 19.)

We have here a representation of the superior valve of a very small Gephyrian frustule, marked by transversely disposed costules which alternate on the two sides. The two halves of the valve are separated by an undulating central line.

It is indeed true that similar characteristics are seen on the valve of *Eupleuria*, and particularly on the superior valve—a circumstance which goes to justify the reunion of the two genera *Gephyria* and *Eupleuria* into one—but since the two valves of the genus are constantly dissimilar, and since, in the present case, the characteristics of the connecting zone are unknown, it may in the meantime be indicated as probably a new species of *Gephyria*, although its true specific or non-specific value can be determined only when its characters are more fully known. This frustule was gathered at the port of Tahiti.

¹ *Quart. Journ. Micr. Sci.*, vol. viii. p. 20.

² *Journ. Linn. Soc. Lond.* (Botany), vol. xv. p. 59, pl. i. fig. 10.