

This superb Diatom, from the South Atlantic, has a diameter of 186 μ . Although at first sight it seems to be identical with *Eupodiscus argus*, Ehrenb.,¹ I found, on comparing it with the type of that species shown in the Typenplatten of Möller, and with other specimens in my possession, that it could not be confounded with the latter. Thus the figure here given—which is correct in every way except that the punctation of the margin is somewhat larger and thicker in the original, a character which could not be exactly drawn without confusing the areolæ—shows that these areolæ are never stellate, but irregularly circular. The three submarginal processes divide the perimeter of the valve irregularly. The double structure, consisting of areolæ and granules, observable in the valve, as well as in that of *Eupodiscus argus*—a peculiarity which is also met with in the species of other genera—seems to point to the existence in the cell walls of two strata, of which one may sometimes become detached from the other, as if the more finely granulated layer served as a lining for the other.

Actinoptychus, Ehrenb.

This genus was instituted by Ehrenberg in 1838, and was defined as follows:²—“Frustules disciform, cellulose, disc divided into equal triangular compartments by lines or internal septa.”

The term *septa* here employed is unfortunate, as it is used for those lines of division which, in an almost diaphragm-like manner, cross the lumen of the diatomaceous cell, e.g., in *Striatella*, *Rhabdonema*, &c.; but in the present genus the lines of division are but indications of the alternate depression and elevation of the compartments, and are not *septa* in the usual sense.

Although the general aspect of the genus *Actinoptychus* is similar to that of *Omphalopelta* (Ehrenb.), Cstr., the latter is readily distinguished by the possession, in each of the triangular compartments, of an intramarginal denticule or spine.

Smith, in his Synopsis of the British Diatomaceæ, has, on the other hand, confounded the genus *Actinoptychus* with that of *Actinocyclus*—an error which resulted from his having regarded as an *Actinocyclus* a species which was wrongly classed in this genus by Kützing, instead of being grouped with the species of *Actinoptychus*.

Actinoptychus raëanus, n. sp. (Plate VII. fig. 4.)

Forma rotunda, granulata, cellulosa; sex dissepimentis triangularibus distincta, cellulis (areolis) subquadratis, denticuli grandiusculi plures intramarginales irregulariter distributi; umbilicus definitus hyalinus. Fossilis in deposito S^{mo} Monicæ in California.

Among the excellent preparations of Diatoms made from the Challenger collections by

¹ Smith, Synop. Brit. Diat., vol. i. p. 24, pl. iv. fig. 39; Rabenhorst, Flora Europæa Algarum, sect. i. p. 319, &c.

² Pritchard, *op. cit.*, p. 839. Various species of this genus are figured in Ehrenberg's *Mikrogeologie*.