

*Cyclotella fimbriata*, n. sp. (Plate XVII. fig. 16.)

Valvis discoidalibus; area grandiuscula umbilicali bullato-rugosa, a qua striæ dense radiantur, ad marginem fimbriam simulantur. In Oceano Pacifico.

This Diatom was found in a sounding made in the Pacific Ocean at lat. 35° 41' N., and long. 157° 42' E., at a depth of 2300 fathoms. It is a small but elegant little disc, adorned with very delicate radiating striæ which diverge from the perimeter of a large umbilical arch, which is rugged rather than granulated. The radiating striæ form, near the margin, a series of very small arches or elegant fimbriæ—a circumstance which has suggested the specific name of this new and interesting Diatom.

*Actinocyclus*, Ehrenb.

This genus was established by Ehrenberg and has been defined in the following manner:—"Frustules simple, disciform, disc minutely and densely punctated or cellulose, generally divided by radiating single or double dotted lines and having a small circular hyaline intramarginal pseudo-nodule."

In the review of the genus given by Pritchard in his History of the Infusoria (p. 833), the confusion which has been observed in connection with it is ascribed partly to Kützing, who included a few species of *Actinoptychus*, and partly to Smith, who, in his classic Synopsis of the British Diatomaceæ, named the genus *Eupodiscus*, a circumstance which led both Gregory and Roper into error. The real ground of the confusion introduced by Kützing, however, consisted not so much in the fact of his having embraced some of the *Actinopychi*, as in the circumstance of his having falsified the definition given by Ehrenberg, and in having replaced it by a new and substantially different definition, which ran as follows:—"Actinoptychus: Individua solitaria, libera; lorica bivalvis disciformis cellulosa; cellulæ radiis septisque internis radiantibus pluribus interruptæ."

It is manifest that Ehrenberg regarded the condition of the punctated or cellulose disc with its intramarginal pseudo-nodule as the chief and essential characteristic, inasmuch as he makes use of the word *generally* in speaking of the more or less punctated radiating lines, while Kützing notes merely the "cellulæ radiis pluribus lævibus interruptæ" without making the slightest mention of the pseudo-nodule. It cannot, however, be denied that the pseudo-nodule constitutes a morphological factor of sufficient importance to be of generic significance, so that it is necessary either to regard, like Ehrenberg, that structure as an essential characteristic of the genus *Actinocyclus*, or to institute a new genus to embrace those cellulated discs which only present radiating lines with interruptions. In the latter case such lines should not be the means of detaching such discoidal forms from the genus *Coscinodiscus*, of which Kützing has given the following definition:—"Individua solitaria, libera, lorica bivalvis silicea in latere secundario disciformis cribrata, sepimentis interioribus radiantibus nullis."