

Actinocyclus complanatus, n. sp. (Plate IV. fig. 9.)

Valvæ cellulis fasciculatim medio, prope marginem decussatim ordinatis, hinc in punctulorum lineis transeuntes; ad marginem raræ denticulorum lineæ distribuuntur; pseudonodulum intramarginale evidens. In mari Japonico.

This Diatom, which was collected in the Sea of Japan, corresponds in most of its characters to *Actinocyclus fasciculatus*. Its form is discoidal, and the cellules, which are equally distributed over the entire surface of the valve, are disposed in a fasciculate manner. Its centre, however, is not specially differentiated, and the lines which radiated from that region in *Actinocyclus fasciculatus* are here absent. In this respect, therefore, the frustule does not correspond to the definition of the genus as given by Ehrenberg,¹ but the presence of a well-defined submarginal pseudo-nodule clearly indicates its true generic determination.

The specific name that has been given has reference to the entire absence of salient or other differential characteristics at the centre of the valve.

Actinocyclus umbonatus, n. sp. (Plate IV. fig. 4.)

Valvæ umbonatae, cellulosa; cellulæ rarius in centro, reliquum fasciculatim ordinatae; zona marginalis dense lineata; pseudonodulum submarginale cylindricum lateraliter extensum. In mari Antartico.

This beautiful discoid umbonate Diatom was procured in the Antarctic Ocean. It presents alternate radiating shades as in *Podosira maculata*, W. Sm.,² these being due to the distribution of the cellules in fasciculate parallel lines. Near the margin of the oblique surface of the Diatom a small subulate cylindrical structure projects. This was observed in many cases; it always presented the same appearance, and from its oblique direction it can only be the homologue of the pseudo-nodule, its position in the strongly umbonate valve preventing it from appearing round as in other species of the genus. It is important to note that the pseudo-nodule may assume this remarkable appearance, constituting a well-marked process-like elevation on the surface of the valve.

Actinocyclus oliveranus, O'Me. (Plate IV. fig. 7.)

We have here represented one of the commonest and most characteristic forms that occur in the Antarctic Ocean. It consists of a very small irregularly punctated disc which possesses a pseudo-nodule near its margin. I had named the organism *Actinocyclus antarcticus*, but on comparing Part iv. of the Diatoms, edited by T. P. Cleve and T. D. Möller, the same frustule was repeatedly observed by me in preparation 207 made from a sounding taken between Patagonia and the Sandwich Islands, and it has already been designated *Actinocyclus oliveranus*, by the well-known Irish microscopist,

¹ Pritchard, *op. cit.*, p. 833.

² Smith, *Synop. Brit. Diat.*, vol. ii. p. 54, pl. xlix. fig. 328.