

being ornamented with punctiform granules which proceed from a smooth umbilical areola, cover the entire surface of the valve, and towards the circumference assume the appearance of very delicate continuous striæ. But in *Actinocyclus pruinus* (Plate IV. fig. 2) a number of radiating lines of small points pass to the circumference, and these divide the surface of the valve into a series of segments which are ornamented with puncta more or less crowded, and disposed in an irregular manner. Around the circumference of the present frustule a number of salient denticules also occur, and the pseudo-nodule is very distinct and removed from the margin.

The specific name that has been applied is intended to recall the peculiar character of the punctation.

This Diatom was, like the preceding, collected in the Sea of Japan.

*Actinocyclus pellucidus*, n. sp. (Plate XXIX. fig 13.)

Valva vix perspicuo lineolarum circulo cincta, interius detegens coronam signorum duplo rariorem; pseudonodulum submarginale distinctissimum. Ad Japonem in mari interno.

This is without doubt the most singular form among the new species of this genus which were collected by the Challenger. The excessive minuteness and transparency of the valve render it almost invisible, and its discovery is entirely due to the use of a superior homogeneous immersion lens by Zeiss. The submarginal pseudo-nodule is distinctly elevated. The margin of the disc is surrounded by very minute striæ, and somewhat nearer the centre a corona of small linear dots which are sparsely, but approximately regularly disseminated, seem to correspond to the extremities of the inconspicuous lines that radiate from the centre. No other ornamentation of any kind could be detected. In a Canada balsam preparation, the delicacy of the details cannot be made out even by the best objective, and it is only by the use of monochromatic illumination that they can be detected with certainty.

The specific name has reference to the transparency of the organism, which was collected in an inland sea at Japan.

*Actinocyclus pumilus*, n. sp. (Plate XII. fig. 2.)

Forma minima; punctulis minimis et inordinatis; centro et margine nodulis vel denticulis signato, processu marginali. Ad meridiem insulæ Heard in mari Antartico.

A confused and very delicate granulation ornaments this very minute disc. There is a central nodule, and the margin of the valve is decorated by a number of salient points. There is also present an exceedingly minute but distinct marginal process.

This interesting form, which has been named from its small size, was obtained in the vicinity of Heard Island in the Antarctic Ocean.