

parts connected with these fragments may be explained by the long cylindrical forms of the frustules.

The following are the essential characteristics of the genus *Ethmodiscus*:—(1.) The extremely delicate granulation or striation of the frustule; (2.) the discoidal form and notable convexity of the valves; (3.) the great development of the connecting zone, which may sometimes cause the axial line to exceed the length of the transverse diameter; (4.) the presence of small points arranged in a quadrate manner on that zone; and (5.) the frequent occurrence of distinct elevated granules, which rise upon the valves in a coronal or radial manner.

The following new species are included in this genus:—

***Ethmodiscus punctiger*, n. sp.** (Plate III. fig. 1.)

Valvis convexissimis, finissime radiato-punctulatis, denticulorum corona marginali decoratis, et ad marginem granulorum ordine signatis. Diametrum = 143  $\mu$ . Prope Yedo, in mari Japonico.

This large and beautiful disc comes from a very interesting collection of pelagic Diatoms made in the Bay of Yedo. It possesses a very convex form, and is ornamented with delicate radiating punctated striæ. It has a submarginal corona of distinct points or denticles, and its border is marked by a row of very small granules.

***Ethmodiscus convexus*, n. sp.** (Plate III. fig. 9.)

Valvis admodum convexis subinconspicue punctulatis; denticulis medio raris, ad marginem dense ordinatis. Diametrum = 123  $\mu$ . In mari Arafura.

This beautiful species was found in the Arafura Sea. Its disc is markedly convex, bears an almost invisible striation, and is ornamented with very minute denticles, while near its periphery a circle of similar denticles is also found. This species cannot be confounded with any *Coscinodiscus* on account of the extreme delicacy of its ornamentation and the decided convexity of its valves, which is equal in extent to two-thirds of their radius. The specific name has reference to the form of the valves.

***Ethmodiscus radiatus*, n. sp.** (Plate XII. fig. 9.)

Forma grandiuscula finissime striolata; zona lata marginali inordinate granulata, a qua granulorum radii plus minus ad centrum pergunt; media superficies nonnullis granulis sparsa; distinctiorum granulorum corona marginali. In mari Arafura.

This species is also from the Arafura Sea. It is of discoidal form and bears extremely delicate striæ. It exhibits, towards the margin, a large belt of small granules confusedly disposed, and from this belt there run towards the centre several straight rows of granules.