Coscinodiscus, Ehrenb.

Among the numerous different forms of Diatoms which have hitherto been recorded, those possessing discoidal outlines are without doubt the most elegant in appearance, but they are at the same time the most rarely met with. Thus among freshwater forms they are typified by the genus *Cyclotella* and a few *Melosiræ*, while in marine collections from the sea-shore or from the washings of sea-weeds they are only found in rare cases. To Ehrenberg is due the credit of having first directed the attention of naturalists, geologists, and microscopists to the so-called Infusorial Earths, tripoli and other siliceous deposits formed by the accumulation of myriads of the siliceous remains of Diatoms that lived in bygone geological eras. Many of these deposits manifestly represent the bottoms of ancient seas which have been elevated by subterranean forces, and the examination of the organisms which they contain has revealed many new diatomaceous forms, among which discoidal frustules more beautiful and elegant than any before known, occur in great numbers. The principal type of these discoidal forms is to be found in *Coscinodiscus*, Ehrenb., a genus which has been defined by Pritchard (History of the Infusoria, p. 827) in the following manner:—"Frustules single, discoid; disc cellular or dotted, without processes, defined border, internal septa, or division into radiating compartments." Hence in brief any simple cellular or punctated disc is called a *Coscinodiscus*, while the character of this cellulation or punctation —whether strongly marked or minute, whether increasing from the margin to the centre or conversely, whether regular or without order, whether in linear or curvilinear arrangement, whether radiating or excentric, or forming a rosette or umbilicus—constitutes the differential characteristic of many species.

That the extension of research in this department of marine biology should result in the continued increase of the number of species of this important genus is not to be wondered at, and the collection procured by the Challenger Expedition is a large and interesting one. Three magnificent new species which were brought home by this Expedition have been already described by the well-known Irish microscopist, Rev. E. O'Meara, M.A., and to the first of these the name of *Coscinodiscus craspedodiscus*, O'Me.,[1] has been given on account of its very great size (Plate III. fig. 5). It may readily be seen with the naked eye, presenting the appearance of a hoop or ring, one millimetre in diameter. Its hoop-like form is due to the circumstance that the outline is somewhat convex and strongly siliceous, with large hexagonal areolæ, while the central part is very thin and so transparent that an accurately adjusted illumination is required to reveal its sculpturing and to discover the form of its smooth central areola. The second has been named *Coscinodiscus*

[1] This interesting Diatom has been defined as follows: "Diameter 0·022", centre large, free from areolation. Areoles radiate, at the margin large, hexagonal, thence somewhat compressed, decreasing in size towards the centre, and somewhat elongated. Towards the centre some of the radiate lines of areoles are somewhat shorter than others, in consequence of which the free centre has somewhat of a star-like appearance."—*Quart. Journ. Micr. Sci.*, vol. xvii. p. 561