B. Jurassic Radiolaria from Italy, also found in jasper, which are closely related to the forms from Germany and Switzerland described by Dr. Rüst, were made known so long ago as 1880 by Dante Pantanelli in his treatise I Diaspri della Toscana e i loro Fossili (Rome, 1880, 33 pp. 60 figs.). Pantanelli believes, however, that this jasper is for the most part of Eocene origin; but from his description, and especially from the morphological character of the forms which he figures, it appears very probable "that these Tuscan jaspers from Galestro, like those of the Swiss conglomerates, are found in a secondary locality and belong to the Jurassic period" (Rüst, L. N. 51, p. 3). Unfortunately the figures of Pantanelli are so small and incomplete that a reliable determination of the species is hardly possible; for example, the lattice-work is only given in ten of the sixty figures. Among the 32 recorded species 15 are SPUMELLARIA (6 Sphæroidea and 9 Discoidea) and 17 NASSELLARIA (4 Stephoidea and 13 Cyrtoidea); many of which seem to be identical with the forms more accurately described by Dr. Rüst (compare p. 1762).

C. From the Lias of the Alps and more particularly "from the lower Liassic beds of the Schafberg near Salzburg," Dr. Emil von Dunikowski in 1882 described 18 species of fossil Radiolaria (L. N. 44, pp. 22–34, Taf. iv.–vi.); most of these are Sphæroidea and Discoidea and appear to have been more or less altered by petrological changes; their spongy structure is probably secondary.

D. Cretaceous Radiolaria have been hitherto described only in very small numbers; quite recently Dr. Rüst has found a larger number chiefly in flints from the English chalk, but they have not yet been published. In 1876 Zittel described 6 very well-preserved species from the upper chalk of North Germany (L. N. 29, pp. 76–96, Taf. ii.); among them were 1 Sphæroidea, 1 Discoidea, 1 Dictyocha, and 3 Cyrtoidea.

E. Triassic Radiolaria have recently been discovered by Dr. Rüst in chert, but have not yet been described.

244. *Palæozoic Radiolaria.*—The number of Radiolaria which are known from the Palæozoic or Primary formations is much less than from either the Mesozoic or Cainozoic periods. Here, however, the investigations of recent times have yielded important information; a few species, at all events, of Polycystina (mostly Sphæroidea) are now known from various Palæozoic formations, and not only from the Permian ("Zechstein") and the Coal-measures, but also from the older Devonian and Silurian systems. Even in the still older Cambrian rocks a few fossil Radiolaria have been found. All these Palæozoic Radiolaria are Polycystina of very simple form and primitive structure, mostly simple SPUMELLARIA (latticed spheres, ellipsoids, lenses, &c.), but partly also simple NASSELLARIA.

The important discoveries which have recently been made by Dr. Rüst regarding the occurrence of Radiolaria in all the Palæozoic formations have not yet been published. From conversations with this estimable palæontologist I have learned, however, that he has pursued his fruitful investigation of the Mesozoic quartzites (§ 243), and has met with no less success in the case of similar Palæozoic structures. Although the number of species hitherto discovered is relatively small, the important conclusion appears to be warranted that they extend as far as the Silurian and Cambrian systems. All these very ancient SPUMELLARIA (Sphæroidea) and NASSELLARIA (Cyrtoidea)