outer capsule-membrane is elevated in the form of a short cylindrical tube or "apertural ring" (collare paraboscidis), the external margin of which bends inwards, and at the base of the ring passes over into the delicate internal capsule membrane. Upon this apertural ring is situated a longer or shorter "apertural cone" (paraboscis), which is a tubular, cylindrical or conical, prolongation of the membrane, open externally.

The peculiar capsule-openings of the PHÆODARIA were first discovered and carefully described by Hertwig in 1879 (L. N. 33, pp. 95, 107). He found in all the six genera which he examined *three* openings, a main-opening at the basal pole of the main axis and two accessory openings, one on either side of the apical pole; hence he named the whole group "TRIPYLEA." This name, however, is not applicable to the numerous PHÆODARIA mentioned above, which have only a main opening without any accessory openings, nor to those genera in which the number of the latter is variable. I have, therefore, replaced Hertwig's designation by the term "CANNOPYLEA," which has reference to the peculiar tubular form of the opening. This I find much more developed in many PHÆODARIA than Hertwig has represented, and I must also, in certain particulars, dissent from his delineation of the minute structure, although this is in the main remarkably accurate.

61. *The Nucleus.*—The nucleus, enclosed in the central capsule of all Radiolaria, behaves in every respect like a true cell-nucleus, and thus lies at the base of the now universal opinion, that the whole Radiolarian organism, in spite of its varied development and remarkable variations, is unicellular and remains throughout life a true individual cell. This important theory is not invalidated by the fact that the nucleus undergoes peculiar modifications in many groups, and in certain groups presents appearances seldom or never seen elsewhere.

62. *Uninuclear and Multinuclear Radioloria* (*Monocaryotic and Polycaryotic*).—All Radiolaria present two different conditions in respect of the behaviour of the nucleus, since in their young stages they are uninuclear (*monocaryotic*), and in later stages multinuclear (*polycaryotic*). This is readily explained by the fact that each individual Radiolarian is developed from a simple unicellular swarm-spore, and that afterwards, before the formation of swarm-spores, the single nucleus divides into many small nuclei. Thus in the Radiolaria the nucleus is pre-eminently the *organ of reproduction and inheritance.* The division of the originally single nucleus into many small nuclei may take place, however, at very different periods, so that the Radiolaria may be divided in this respect into precocious and serotinous.

63. *Serotinous and Precocious Radiolaria.*—In the great majority of the Radiolaria the division of the nucleus takes place only at a late period, a short time or even immediately before the process of spore formation; it then breaks up rapidly into numerous small nuclei (always more than one hundred, sometimes many thousands), and each of these