

A. The radial structure of the endoplasm was first described in my Monograph (1862, p. 74), though R. Hertwig (1879, p. 112) was the first to indicate its typical significance in the case of the PERIPYLEA, and to demonstrate its causal relation with the radial currents in the central capsule of this legion. More recent investigations have led me to the conviction that this phenomenon is more widespread, and often more strongly developed, than was formerly imagined, and that it is probably one of the typical characters of all SPUMELLARIA (at least of the Monozoa).

B. The centripetal cones of *Physematium*, which have hitherto been known only in these colossal Thalassosphærida, were fully described in my Monograph under the name "conical centripetal cell-groups"; by their first discoverer, A. Schneider (L. N. 13), they were termed "nests," and compared with the "nests" (central capsules) of the Polycyttaria. In the *Physematium mülleri* of the Mediterranean (hitherto only observed by Schneider and myself at Messina) it appeared as though each centripetal cone were composed of a group of from three to nine (usually four or five) slender wedge-shaped cells, whose common centripetal apex was produced into a radial thread of sarcode (L. N. 16, p. 258, Taf. iii. fig. 7). Since then (1866) I have observed at Lanzerote, in the Canary Islands, a nearly related form, which I take to be *Physematium atlanticum*, Meyen. In this, however, the "centripetal cell-groups" were wanting, and the whole cortical layer of the endoplasm was cleft into numerous radial portions, each enclosing a nucleus (probably the mother-cells of flagellate spores, see p. 35).

C. The radial fibres of the medullary endoplasm which cling to an extracted nucleus have been observed by Hertwig in certain Sphæroidea (*Diplosphæra*, *Arachnosphæra*) (L. N. 33, p. 40).

78. *The Endoplasm of the Actipylea.*—The intracapsular protoplasm of the ACANTHARIA or ACTIPYLEA is often distinguished by a partial or complete radial arrangement like that of the PERIPYLEA, but differing in the number, size, form, and distribution of the radial portions into which the endoplasm is differentiated. For since the pores of the capsule membrane are distributed at equal distances all over the surface in the SPUMELLARIA, whilst in the ACANTHARIA they are arranged in definite groups, and since the number and arrangement of the pores has a direct influence upon the internal currents of the endoplasm, it follows that the radial structure in the latter legion must be very different from that in the former. In addition to this there must not be forgotten the important influence which the early centrogenous formation of the skeletal rods exercises upon the disposition and growth of the intracapsular structures. Hence the endoplasm of the ACANTHARIA does not separate into innumerable thin, closely packed radial wedges or cortical radial rods, but into a small number of large pyramidal portions between which run the radially disposed heterogeneous portions of the contents of the capsule, viz., the radial bars of acanthin and the peculiar intracapsular "axial threads." As a direct consequence of the regular disposition of these heterogeneous radial portions, which is often characteristic of the various families of the ACANTHARIA, a corresponding differentiation of the endoplasm is brought about; it divides into a number of conical or pyramidal portions (radial pyramids), whose bases rest upon the capsule-membrane and whose apices are directed towards the centre of