

pseudopodia ; but in many species (and probably more or less in all ACANTHARIA) there is recognisable a certain regularity in the disposition of the numerous pseudopodia and of the pores by which they radiate from the capsule. Sometimes these pores are disposed in a regular network of ramified lines, whilst the meshes of this network are devoid of pores ; in other cases they form regular tufts or bushes between the radial spines. Probably in no ACANTHARIA are the pores of the capsule membrane so numerous and so equally distributed throughout as in the SPUMELLARIA ; we may therefore call the former ACTIPYLEA (in opposition to the latter as PERIPYLEA).

*The Nucleus* of the ACANTHARIA is constantly excentric, whilst it is originally constantly central in the SPUMELLARIA. This excentric position is a necessary consequence of the centrogenous development of the radial spines. Probably connected with this peculiarity is the other, that the nucleus assumes a peculiar, complicated structure, and that in the greater number of ACANTHARIA it becomes cleft very early, and that this cleavage is effected by a peculiar kind of gemmation, first detected and very accurately described by R. Hertwig (compare his *Organismus d. Radiol.*, 1879, pp. 10-24). However, in the young ACANTHARIA the nucleus is constantly simple, and in a certain number of species its cleavage takes place late (as in the greater number of SPUMELLARIA).

*The Endoplasm*, or the intracapsular sarcode, exhibits in the greater number of ACANTHARIA a more or less distinct radial arrangement ; but this is often concealed by the different enclosed products of the endoplasm—oil-globules, vacuoles, red or different coloured pigment-granules, crystals, &c. Often it encloses a variable number of “yellow cells” (becoming green by mineral acids) to be considered as symbiotic xanthellæ.

*The Calymma* or the jelly-veil, including the central capsule, in the ACANTHARIA is more or less voluminous, and commonly envelops the skeleton perfectly. In its surface is sometimes developed a peculiar network of “supporting fibres.” A very peculiar product are the remarkable “Myophrisca” of the *Acanthometra*, which are wanting in the *Acanthophracta* ; they were first detected by Johannes Müller, and figured as “Cilien-Kränze,” afterwards explained by Hertwig as “contractile Fäden,” similar to muscular fibrillæ (compare below).

*The Matrix*, placed between the calymma and central capsule, in the majority of the ACANTHARIA is a rather thin layer of granular exoplasm.

*The Pseudopodia* arising from it are not so numerous as in the SPUMELLARIA, and not so equally disposed over the whole surface. Also their tendency to ramify, anastomose, and form networks seems to be much less developed. Commonly they are simple or little ramified. In many cases (and perhaps everywhere) there may be distinguished two different kinds of pseudopodia :—(1) Axopodia, or permanent pseudopodia (with axial filaments?), piercing the wall of the central capsule, and arising from the central mass of endoplasm ; and (2) Collopodia, or variable pseudopodia (without axial filaments), arising outside the capsule from the matrix of extracapsular sarcode or from the