

after death by liquefaction of the sarcode (L. N. 12, p. 6). This mistake is, however, easy to understand, since in living Radiolaria the calymma is usually invisible on account of its perfect transparency, whilst in dead specimens it is usually quite distinct on account of the dust clinging to its adhesive surface. I myself believed that the formation of the voluminous hyaline jelly-veil was only partially due to liquefaction after death, but that it was to some extent present in the living organism and that it might vanish and subsequently reappear by means of imbibition (L. N. 16, pp. 109, 110). R. Hertwig was the first to demonstrate, in 1879, that the jelly-veil is constantly present in living Radiolaria, that it forms the basis of the extracapsular malacoma and surrounds the central capsule as a second protective sheath (L. N. 33, p. 114).

83. *The Structure of the Calymma.*—The extracapsular jelly-veil appears structureless in most Radiolaria, inasmuch as it represents a homogeneous pellucid excretion of the exoplasm and contains neither fibres nor other formed structures. In some groups, however, definite structural characters become secondarily developed. The most common and striking of these is the formation of alveoles, which takes place in the extracapsulum (see § 86). In consequence of this the calymma assumes a remarkable frothy consistency and appears to be composed of large, clear, thin-walled vesicles; this is especially the case in the Collodaria (Colloidea, Pls. 1, 3, and Beloidea, Pls. 2, 4), and in many large PHÆODARIA, especially among the Phæocystina (Phæodinida and Cannorrhaphida, Pl. 101, and Aulacanthida, Pls. 102–104). More rarely the calymma is not permeated by vacuoles, but there appear in it fine striæ parallel to the surface as though it were composed of thin concentric laminæ like an onion; perhaps these are the expressions of a different quantity of water in the various layers. In the calymma of many Radiolaria thin, straight, radial lines are to be seen, which are probably pseudopodia, and not to be attributed to any structural modification, or they may be slender canals which serve for the exit of the pseudopodia. On the outer surface of the calymma of different Radiolaria, and especially in the ACANTHARIA, a peculiar network of fibres is to be found, composed of polygonal meshes, like elastic fibres, probably due to a local thickening of the jelly. These polygonal meshes are often very regularly distributed between the radial spines of the Acanthometra, and stand in a definite relation to them. The fibres which form the meshes are often rather strong, resembling elastic fibres, as above-mentioned, and either simple or composed of bundles of very fine fibrillæ (L. N. 33, p. 15, Taf. i. fig. 1, Taf. ii. fig. 4).

84. *The Consistency of the Calymma.*—The gelatinous material of which the calymma of the Radiolaria consists is a pellucid mass, rich in water and usually quite hyaline and structureless; its consistency is very variable. In the majority of the Radiolaria it may perhaps be about equal to that of the jelly which composes the umbrella of most Medusæ; but as in these latter it may vary between very wide extremes, constituting on the one hand a very soft jelly-mantle, offering but little