

(pp. 89–127); for supplementary observations see R. Hertwig (1879, L. N. 33, p. 117) and Bütschli (1882, L. N. 41, pp. 437–445).

B. The *Astropodia*, or free radiating pseudopodia, are in many Radiolaria more or less clearly distinguishable from the collopodia, which form the sarcoplegma within the calymma; how far these distinctions depend upon a permanent differentiation (especially in the ACANTHARIA and PHÆODARIA) needs further investigation.

C. The *sarcodc-flagellum* (perhaps better termed *axoflagellum*) was first described in my Monograph (1862, p. 115) in the case of various *Discoidea* (Taf. xxviii. figs. 5, 8; Taf. xxx. fig. 1). Hertwig has given a substantially similar account of the organ in some other *Discoidea* (L. N. 33, p. 67, Taf. vi. figs. 10, 11); probably this peculiar structure is confined to the order *Discoidea* among the SPUMELLARIA, but is widely distributed within its limits. The axoflagellum is a thick cylindrical thread of sarcodc, finely striated and pointed towards its free end. It always lies in the equatorial plane of the discoidal body, and always unpaired in one of its axes; in the triradiate *Discoidea* it is in the axis of the unpaired principal arm and opposite to it (Pl. 43, fig. 15). In the Ommatodiscida (p. 500, Pl. 48, figs. 8, 19, 20) the axoflagellum probably passes out through the peculiar marginal ostium of the shell. Perhaps it is always connected with the central nucleus by intracapsular axial fibres, and is to be regarded as a specially differentiated bundle of pseudopodia (or axopodia?).

95A. *The Myxopodia and Axopodia.*—The two forms of pseudopodia which we distinguish as myxopodia and axopodia differ markedly from each other both morphologically and physiologically. The *myxopodia*, or ordinary free pseudopodia, which are found in large numbers in all Radiolaria, and constitute their most important peripheral organs, are simple homogeneous exoplasmic threads, which arise from the sarcodictyum or extracalymmar sarcodc network, and radiate freely into the water; here they may branch and combine by anastomosis to form a changeable network, but they never contain an axial thread. The *axopodia*, on the other hand, are differentiated pseudopodia, which consist of a firm radial thread, and a soft covering of exoplasm; they penetrate the whole calymma in a radial direction and project freely from its surface, and generally (if not always) they are produced inwards to the middle of the central capsule, perforating its membrane; their proximal end is lost in a dark central heap of granules. Such axopodia are at present known with certainty only in the ACANTHARIA, where they are widely, and perhaps universally, distributed. Their development in this legion probably stands in direct causal relation to the peculiar structure of the central capsule and the centrogenous formation of the skeleton. Since the radial skeletal rods of the *Acanthometra* possess originally a thin coating of protoplasm, it may be said that the centrogenous axopodia of this group became differentiated in two ways, the firm axial threads of one section remaining very thin and covered by protoplasm, whilst those of the other section became metamorphosed into radial bars of acanthin. This hypothesis acquires more probability from the regular distribution and arrangement of the axopodia in the ACANTHARIA; they usually stand at fixed intervals