

surface of the central capsule; at the apical portion of the latter the sarcomatrix is often so thin that it can only be recognised by the aid of reagents; it separates the membrane of the central capsule from the surrounding calymma. The pseudopodia, which penetrate the latter and by loose anastomoses form a wide-meshed sarcoplegma within it, are usually not very numerous. The greater part of them radiate in a bunch downwards from the basal disc of the sarcomatrix, and a smaller number arise from the thinner envelope which covers the remainder of the central capsule (Pl. 51, fig. 13; Pl. 65, fig. 1; Pl. 81, fig. 16). On the outer surface of the calymma the collopodia, which have passed through it, unite to form the sarcodictyum, and through the silicification of this the primary lattice-shell arises in the great majority of the NASSELLARIA. From the surface of the sarcodictyum arise the astropodia, or free pseudopodia which radiate outwards into the water. Their number in most MONOPYLEA is relatively small, but their length appears to be very great.

100. *The Exoplasm of the Cannopylea.*—The extracapsular protoplasm of the PHÆODARIA or CANNOPYLEA is much better developed as regards volume than in the other three legions, and is connected with the intracapsular sarcode by only a few apertures in the capsule-membrane. In most PHÆODARIA three of these are present, the astropyle or main-opening at the oral pole of the main axis, and the two lateral parapylæ or accessory openings on either side of the aboral pole (§ 60). In several families the latter appear to be wanting, whilst in others their number is increased; these families have not yet, however, been observed during life. The protoplasm projects both from the oral main-opening and from the two aboral accessory openings in the form of a thick cylindrical rod; the tube into which each opening is produced in many PHÆODARIA (longer in the case of the astropyle, shorter in the parapylæ) being regarded as an excretion from this protoplasmic cylinder. The sarcode threads within the tube appear like a bundle of fibrils, either quite hyaline or finely striated. After issuing from the mouth of the aperture they pass over into a thick sarcomatrix, which surrounds the central capsule entirely and separates it from the enclosing calymma. In the neighbourhood of the basal astropyle the sarcomatrix is usually swollen into a thick lenticular disc, which is in direct contact with the peculiar phæodium of this legion (§ 89). The pseudopodia, which radiate from the sarcomatrix, and form by anastomosis a wide-meshed sarcoplegma within the calymma, are usually not very numerous in the PHÆODARIA, but are very strong. Sometimes two stronger bundles of collopodia may be distinguished at the two poles of the main axis, an oral bundle (in the direction of the proboscis of the astropyle) and an aboral bundle (at the opposite pole between the parapylæ). The collopodia of the sarcoplegma unite at the surface of the calymma into a regular or irregular sarcodictyum, which, in most PHÆODARIA produces by the secretion of a peculiar silicate the primary lattice-shell.