

the vacuoles or "albumen globules" of *Thalassicolla nucleata* and other Thalassicollida, as well as in the central capsule of *Cœlographis* and some other PHÆODARIA (Pl. 127, figs. 4-7). All these large crystals are probably to be regarded as excretory products.

75A. *The Intracapsular Concrements*.—Concretions, either mineral or organic, of varying form and constitution, are to be found in the endoplasm of Radiolaria belonging to very different families. They are most abundant and multiform in *Thalassicolla nucleata*, being usually circular or elliptical discs, which are concentrically laminated and highly refractive, resembling starch-grains. Among them twin forms may frequently be observed, as though the concrements were in process of division (see note A). Similar amyloid concretions are to be seen in the central capsule of different SPUMELLARIA and NASSELLARIA, e.g., in *Cephalospyris triangulata* (Pl. 96, fig. 28). Violin-shaped, highly refractive concrements have been observed in the central capsule of numerous SPUMELLARIA, NASSELLARIA, and ACANTHARIA, e.g., *Thalassosphæra*, *Spongosphæra*, *Plegmosphæra*, *Cyrtocalpis*, *Peripyramis*, *Botryocella*, &c. (see note B). The chemical constitution of these concrements is insufficiently known.

A. The amyloid concretions of *Thalassicolla nucleata* have been described in detail in my Monograph (pp. 80, 250, Taf. iii. figs. 2, 3), and by R. Hertwig in the *Histologie der Radiolarien* (1876, p. 47, Taf. iii. figs. 9-13).

B. The violin-shaped concretions of *Thalassosphæra bifurca* have been figured in my Monograph (pp. 80, 261, Taf. xii. fig. 1).

76. *The Intracapsular Xanthellæ*.—The xanthellæ, zooxanthellæ, or symbiotic "yellow cells" are found within the central capsule only in the ACANTHARIA, whilst in other Radiolaria they only occur in the extracapsulum. They are most frequent in the *Acanthometra*, rarer in the *Acanthophracta*, but even in the former they are often wanting. Their number is very variable, but usually small, from ten to thirty in one capsule. They lie for the most part immediately below the capsule membrane, in the cortical layer of the endoplasm. The form of the yellow cells is either spherical or ellipsoidal, often also spheroidal or even lentiform. The diameter varies from 0.01 to 0.03 mm. They possess a distinct membrane and an excentric nucleus, and contain numerous yellow pigment-granules in the endoplasm. This yellow pigment dissolves in mineral acids to form a green fluid, and in other respects also behaves somewhat differently from the yellow pigment in the extracapsular yellow cells of the SPUMELLARIA and NASSELLARIA. In both cases, however, the xanthellæ are not integral portions of the organism, but unicellular algæ, living as parasites or symbiontes in the body.

A. The yellow cells in the central capsule of the ACANTHARIA were first observed by Joh. Müller (L. N. 12, pp. 14, 47). In my Monograph I described them at greater length, and indicated their differences from the extracapsular yellow cells of other Radiolaria (L. N. 16, pp. 77, 86). Since then, R. Hertwig has demonstrated their cellular nature (L. N. 33, pp. 12, 113), and still more recently