

of nutriment. In the latter respect they are of special importance in the process of spore-formation, each flagellate spore usually containing a fat-granule.

74. *The Intracapsular Pigment-Bodies.*—In the majority of Radiolaria when observed alive, the central capsule is coloured, only in the minority is it colourless. The colour is never diffuse, but always due to the formation of definite pigment-granules or vesicles, which are sometimes distributed evenly throughout the endoplasm, sometimes aggregated in the central or peripheral regions. Their form may be either spherical, irregularly rounded, or polyhedral. They vary much in dimensions, but in most cases are immeasurably small, and appear under a high magnifying power as fine dust; occasionally, however, their diameter may amount to from 0·001 to 0·005 or more. The chemical constitution of the intracapsular pigment is unknown in most Radiolaria, and is probably very various. In many instances the pigment-granules consist of fat, in others not. The commonest colours are yellow, red, and brown; violet and blue are rare, and green still rarer. Sometimes a definite tone of colour prevails throughout a whole group, and may then be attributed to inheritance, *e.g.*, red is found in most Sphæroidea, and blue in the Polycyttaria (see note A). One colour is almost always constant in the members of the same species. True pigment-cells, belonging to the Radiolarian organism, do not occur within the central capsule. The peculiar yellow cells which are found in the central capsule of many ACANTHARIA are symbiotic xanthellæ (see § 76).

A. The number of Radiolaria whose pigment has been examined in the living state, is too small to allow of any general conclusions being drawn. Regarding the different colours known, see my Monograph, L. N. 16, p. 76.

75. *The Intracapsular Crystals.*—The crystals found in the central capsule of many Radiolaria may be divided into two groups, of very different significance; small crystals, which are very widely distributed, and large crystals, which occur in only a few genera. The *small crystals* may also be termed “spore-crystals,” since each swarm-spore often contains such a crystal. They are rod-like or spindle-shaped, and consist of an organic substance which probably serves as a reserve of nutriment for the developing spores. Such spore-crystals have been observed in numerous SPUMELLARIA and ACANTHARIA belonging to various families, and are probably present throughout the two legions which make up the Porulosa. On the other hand, they have not been noticed in the Osculosa (NASSELLARIA and PHÆODARIA), the few swarm-spores belonging to these groups which have been observed not exhibiting any crystals. The *large crystals*, which occur in small numbers in the endoplasm, have hitherto only been observed in a few species of SPUMELLARIA, belonging to the Polycyttaria. They were first noticed in the common *Collosphæra hualeyi*, and regarded as celestin. They are also found in the central capsule of many other Collosphærida, *e.g.*, *Buccinosphæra* (Pl. 5, figs. 11, 12). Crystal-masses, crystal-sheaves, or spherical masses of radiating acicular crystals are enclosed in