

numerous, small, spherical granules, which are either distributed evenly in the endoplasm (as an emulsion) or enclosed in the vacuoles; the latter, in particular, is the case in most PHÆODARIA, perhaps generally. In this group each vacuole contains as a rule a single dark, shining fat-granule, and sometimes also an irregular bunch composed of from two to five or more granules. In addition to these small fat-granules (*granula adiposa*) which are always present, the central capsule of many Radiolaria contains also larger fat-globules (*globuli adiposi*). These appear to be generally wanting in the PHÆODARIA, and are on the whole rare in the ACANTHARIA; whilst, on the contrary, they are very common in the NASSELLARIA and SPUMELLARIA. The Polycyttaria or social Radiolaria are as a rule distinguished by the possession of a single large central oil-globule, which lies in the centre of the central capsule, and is on an average about one-third of it in diameter (Pl. 3, figs. 4, 5). This is absent, however, in those young capsules of the Polycyttaria in which the primary nucleus is centrally situated (Pl. 3, fig. 12). Those species of Polycyttaria whose central capsule reaches a considerable size, often enclose numerous oil-globules, and in *Collophidium* (species of *Collozoum* with an elongated cylindrical capsule, Pl. 3, figs. 1, 3) the axis of each capsule is occupied by a row of numerous oil-globules. In the monozootic SPUMELLARIA, in which the nucleus is always centrally situated, the large oil-globules are, of course, excentric, being in apposition to the inner surface of the capsule-membrane (Pl. 1, fig. 3; Pl. 2, figs. 2, 5). In the Discoidea the oil-globules, which are often present in large numbers, form elegant concentric rings around the central nucleus, and in those species with segmented arms, there are one or more transverse rows in each segment (Pl. 43, fig. 15). In the NASSELLARIA the number and distribution of the oil-globules are dependent upon the form of the central capsule. When this is simple, without lobes, and ovoid or conical, they generally lie in its aboral half above the podoconus (Pl. 51, figs. 5, 13; Pl. 97, fig. 1). When, on the contrary, the basal portion of the capsule sends out three or four dependent processes (as in the majority of the Cyrtoida), a large globule may generally be seen in the swollen distal part of each conical or ovoid lobe (Pl. 53, fig. 19; Pl. 60, figs. 4-7). In many Stephoidea and Spyroidea, whose central capsule is separated into two lateral portions by the constriction corresponding to the sagittal ring, each of these contains either a single large globule or a group of small ones (Pl. 90, figs. 7, 10). These oil-globules are usually colourless and highly refractive; rarely they are yellow or brown, sometimes rose-coloured, or an intense blood-red (e.g., in *Thalassophysa sanguinolenta*) or even orange (in *Physematium mülleri*). In many SPUMELLARIA, and particularly in the Polycyttaria, an albuminous substratum may be recognised in them, which is sometimes disposed in layers, and after extraction of the fat presents the appearance of a laminated sphere. The physiological significance of the oil-globules is twofold; in the first place they tend to diminish the specific gravity of the organism; in the second they may be utilised as a reserve store