

the parapylæ often exhibit here, when observed from the face, a distinct radial striation (compare Hertwig, *loc. cit.*, p. 98, Taf. x. figs. 6–14). Perhaps the radiate shape of the operculum is only produced by radial folds of the endocapsa placed beyond it, and these folds may be in turn the product of the radial fibrillæ, which are prominent beyond the astropyle. On the other hand, these fibrillæ may be compared to the muscular fibrillæ or “myophane filaments” in the ectosarc of the Infusoria, and may perhaps effect by their contraction a dilatation of the openings of the capsule.

The nucleus of the PHÆODARIA is always very large, usually about half or two-thirds as broad as the central capsule, and placed either in its centre, or sometimes nearer to one pole of the main axis, which is common to the capsule and its nucleus. Therefore the diameter of the latter is usually half or even two-thirds of that of the capsule, and may be in the majority 0·05 to 0·15, often 0·2 to 0·3, rarely more than 0·4 or less than 0·01 mm. The form of the nucleus is rarely spherical, usually spheroidal, and it is more depressed in the direction of the main axis than the capsule itself. In my Monograph, where I gave the first description of it, I called it “Binnenbläschen.” The membrane of the vesicular nucleus is thin but rather firm, and contains a rather clear, finely granulated substance, in which numerous nucleoli are usually scattered. (Compare Pl. 101, figs. 1–10; Pl. 102–104; Pl. 123; Pl. 127, &c.; the nucleus is marked by *n*, the nucleoli by *l*.)

The nucleoli are very different in respect to their form, size, number and arrangement. Since these differences are very great even in different specimens of a single species (as, *e.g.*, in the common cosmopolitan *Aulacantha scolymantha*, *Aulosphæra trigonopa*, *Cœlodendrum ramosissimum*, &c.), it is probable that they represent different stages of development and multiplication, and that the smallest fragments of the nucleoli, or the final results of their repeated division, become the nuclei of the flagellate spores, which are developed in the PHÆODARIA just as in the other Radiolaria. In the majority of nuclei examined, the number of the enclosed nucleoli proved to be very great, fifty to eighty or more, often some hundreds, the greater their number the smaller their size. Their form is usually irregular, roundish, or even amœboid—probably the result of amœbiform motions (Pl. 101, fig. 1). Sometimes the nucleoli were regularly spherical, equidistant, and connected apparently by a delicate network (Pl. 101, fig. 2). (Compare Pl. 102–104, 111, 123, and also Taf. x. of Hertwig, *loc. cit.*.)

The calymma, or the extracapsular jelly-veil, is in the PHÆODARIA always well developed and usually much larger than the enclosed central capsule. The entire volume of the calymma may be three to six times as great as that of the capsule in the majority of this legion; but in the large Aulacanthida, Aulosphærida, Cœlodendrida, Cœlographida, &c., the volume of the former is twenty to fifty times as great as that of the latter, or even more. The jelly substance is rather firm and consistent, clear, structureless, and becomes more or less intensely stained by carmine. In the