

Family LXXI. PHÆODINIDA, Haeckel (Pl. 101, figs. 1, 2).

Phæodinida, Haeckel, 1879, Sitzungsab. med.-nat. Gesellsch. Jena, Dec. 12, p. 4.

Definition.—PHÆODARIA without skeleton. Central capsule with one to three (or more) openings, placed in the centre of the spherical naked calymma.

The family Phæodinida is the simplest and most primitive of the PHÆODARIA, and differs from all the other families of this legion in the complete absence of a skeleton. It bears, therefore, the same relation to the latter as the Thalassicollida do to the other SPUMELLARIA. The soft body is only composed of the central capsule with the nucleus, and the calymma with the phæodium.

Of course it is quite possible that the skeletonless PHÆODARIA, which we regard here as the ancestral family of that legion, may be either members of other families which have lost their skeleton accidentally, or young PHÆODARIA which have not yet developed a skeleton. But in some preparations of the Challenger certain large, well-preserved PHÆODARIA, without any trace of skeleton, are not rare; and since I myself have observed a complete living *Phæodina*, I have no doubt that they are independent, primordial forms (like *Actissa*, *Thalassicolla*, *Cystidium*, *Nassella*, &c.). Probably also two skeletonless PHÆODARIA belong to this family which are figured by R. Hertwig, in 1879, in his *Organismus d. Radiol.* (Taf. x. fig. 1, 11); this author, however, supposed that they had lost their original skeleton.

The three species of Phæodinida which are described in the sequel represent two different genera, *Phæodina* and *Phæocolla*, already distinguished in my first note on the PHÆODARIA (Sitzungsab. med.-nat. Gesellsch. Jena, 1879, Dec. 12, p. 4). *Phæodina* is a true TRIPYLEA, and has the usual three openings which occur in the majority of PHÆODARIA, a large astropyle or main-opening on the oral pole of the main axis, and a pair of lateral accessory openings, or parapylæ, on the aboral pole. *Phæocolla*, however, has only a single opening, the astropyle, and agrees therefore with those PHÆODARIA which possess no parapylæ (Challengerida, Medusettida, Castanellida, &c.).

The complete body is in all observed Phæodinida a small jelly sphere of 1 to 3 mm. in diameter, with a transparent cortical layer and an opaque dark central part. This latter is the phæodium, in which the central capsule is hidden, surrounded on all sides by the gelatinous spherical calymma; the smooth surface of the latter is spherical.

The *central capsule* of the Phæodinida (Pl. 101, figs. 1, 2), is either spherical or spheroidal, somewhat lenticular, slightly depressed in the direction of the main axis. Its diameter is between 0.15 and 0.25. Its double membrane exhibits the same structure as in the other PHÆODARIA. The thick, double-contoured outer membrane is separated from the thin and delicate inner membrane by a clear space, filled up by jelly or by a fluid; the two are connected in *Phæocolla* (fig. 1) only at the astropyle, in *Phæodina* (fig. 2),