in the two phæocapsæ, which are composed of the two galeæ (*g*), and the two rhinocannæ arising from them (Pl. 127, figs. 4–9). A part of the phæodella is usually thrown out by the mouth of the latter (*m*).

The characteristic colour of the phæodium exhibits numerous different tints between green, brown, and black. It seems to be in the majority blackish-brown or greenish-brown, very often olive, more rarely almost quite green or red-brown. Usually the colour is so dark, intense and opaque, that the parts enclosed by the phæodium, mainly the oral hemisphere of the central capsule and the astropyle, are completely hidden in it. The chemical composition of the phæodium demands further accurate researches; unfortunately I have not been able to make out its true nature, since numerous different experiments furnished no certain general results.

The phæodella, or the pigment-corpuscles, which compose the phæodium, aggregated in hundreds, and in the bigger species in thousands, are usually spherical, sometimes somewhat ellipsoidal, at other times spheroidal or lenticular; but usually numerous smaller, irregular, roundish particles are intermingled between the larger and more regular corpuscles, and often the main mass forms a very fine black powder. The size of the phæodella is very variable, not only in the different species, but also in one and the same individual. The larger phæodella have a diameter of 0·01 to 0·02, the smaller of 0·004 to 0·008 mm.; but there also occur very big forms of 0·04 to 0·05 mm., or even more, and very small ones of 0·001 mm. or less. Usually the phæodium appears as an aggregate of numerous larger and smaller phæodella, which are very different in size as well as in the intensity and tint of their colour, and are irregularly crowded in a black, powder-like substance.

The morphological nature of the phæodella is also difficult to make out. I have already pointed out in my first description of *Aulacantha*, *Thalassoplancta* and *Cœlodendrum* (1862, *loc. cit.*), that a great part of these pigment-corpuscles are true cells, composed of a nucleus and protoplasm, which contains granules of pigment, and is enveloped by a membrane. Dr. John Murray, who had during the Challenger voyage the opportunity of examining numerous different living PHÆODARIA, and staining them by carmine, also asserts that a great part of those dark corpuscles are "large black-brown pigment-cells" (1876, *loc. cit.*, p. 536). Numerous preparations of the Challenger collection, well preserved in glycerine, and stained by carmine, contain PHÆODARIA belonging to different families, the phæodium of which contains numerous such "pigment-cells," with a dark red nucleus, and so similar are these cells, that every histologist should recognise them. But in strange contrast to this is the fact, that in numerous other mountings, prepared in the same manner, not a single cell of this kind is found in the phæodium, and that the latter is composed only of irregular pigment-granules. In many PHÆODARIA belonging to different families I, like Hertwig, could not find a single true nucleated cell in the phæodium.