

pores in these circles is very variable, commonly from three to nine, sometimes twelve to fifteen or more; their form is usually irregularly ovate (Pl. 115, figs. 7, 9). The bridges between the pores usually bear numerous siliceous threads or bristles, which are curved downwards or upwards (Pl. 115, figs. 4-6). Sometimes the spines are entirely covered with similar bristles or cilia (Pl. 117, figs. 2-5), more rarely with regular verticils of lateral branches (Pl. 117, fig. 6).

The distal ends of the radial spines are simple in *Haeckeliana* (Pl. 114), whilst in the other Circoporida they are usually (or perhaps constantly) either forked or armed with a verticil of terminal branches. When the spines are simply forked, their two terminal branches lie in certain meridional planes (Pl. 117, fig. 5). The same is probably the case when they bear three divergent branches (Pl. 115, figs. 1, 2), or four crossed branches (Pl. 117, figs. 4, 6). The larger species usually bear a corona of five curved branches disposed around the distal apex of each spine (Pl. 116, fig. 3; Pl. 117, figs. 1, 2). Sometimes the formation of these coronas is twice or more often repeated, so that the spines appear verticillate.

The *central capsule* of the Circoporida (Pl. 115, fig. 8; Pl. 117, fig. 6) is usually about half as large as the enclosing shell, and lies excentrically in that half of its cavity which is remote from the shell-mouth (Pl. 115, fig. 8). The other half (near the mouth) is filled up by the cap-shaped, dark phæodium. The proboscis, or the central tubule of the astropyle, is hidden in the axis of the blackish phæodium, and is directed towards the mouth of the shell; it is often S-shaped, more or less curved. The circular radiate operculum of the astropyle, placed on the base of the proboscis, exhibits numerous branched radial ribs, and closes the main-opening like the lid of a tea-kettle (Pl. 115, fig. 3). The number of the parapylæ, or the accessory openings of the capsule, which in the majority of PHÆODARIA is two, seems to be usually increased in the Circoporida. In *Circoporus* the capsule seems to possess six and in *Circospathis* nine secondary openings, and therefore there is some probability that each circle of pores on the base of a radial spine corresponds to a secondary opening of the capsule. In *Haeckeliana*, however (Pl. 114), I could observe no parapylæ at all. These accessory openings are always very small in the Circoporida, and may be easily overlooked. Futhermore, the number of observations respecting this difficult point is too small, and their certainty not satisfactory; it requires therefore further accurate examination, as also does the whole central capsule of the Circoporida.

The numerous and remarkable characters of shape and structure, which we have described above as occurring in the Circoporida, are also found in the following closely allied family, the Tuscarorida; all the species are inhabitants of great depths. Perhaps it may therefore be more convenient to separate these two families from the other PHÆOGROMIA as a peculiar order, under the name PHÆOCALPIA.