

roundish or polygonal dimples in *Haeckeliana* (Pl. 114, figs. 1-6). In the *Circogonida*, however, the surface is panelled, with regular or irregular polygonal plates, often separated by high prominent crests (Pl. 115, figs. 4-9, &c.). Numerous simple thin needles of silica lie tangentially disposed and irregularly scattered in the porcellanous or cement-like substance of the thick shell-wall. Under a strong lens this substance appears finely punctate, being probably pierced by numerous very fine pores. The surface of the shell is therefore minutely roughened, and often appears quite black under the microscope, by the adhesion of innumerable fine air-bubbles. In all *Circoporida*, as well as in the *Tuscarorida*, the porcellanous shell has not the perfect transparency of the purely siliceous shells of other *Radiolaria*; its refractive power is somewhat different from the latter; it becomes deeply stained by carmine and browned by fire, and seems therefore to consist of a peculiar carbonic silicate.

The shell in all *Circoporida* exhibits a simple, excentric mouth, which corresponds to the main osculum of the central capsule. The excentric position of this shell-mouth has no influence on the regular form of the shell. The mouth is either circular or polygonal, usually about as large as a basal circle of pores. It is always armed with prominent conical or pyramidal teeth, the number of which is variable and seems to depend partly upon the number of the shell-faces or the radial spines. *Circoporus* has usually four cruciate teeth (Pl. 115, fig. 1; Pl. 117, figs. 4, 5). *Circorrhagma* exhibits a pentagonal mouth with five teeth (Pl. 117, fig. 2). *Circogonia* possesses a hexagonal mouth with six teeth (Pl. 115, fig. 8; Pl. 117, fig. 1). *Circospathis* has no constant number; some species have five teeth (Pl. 115, fig. 4), others four (Pl. 115, fig. 10), others nine (Pl. 117, fig. 3a). *Circostephanus* is also variable; one species exhibits eight teeth (Pl. 116, fig. 3a), another ten, another twelve. In *Haeckeliana* (Pl. 114, fig. 3) the teeth are smaller and more numerous. Usually the teeth arise vertically from the surface of the shell and are spinulate; more rarely their points are directed towards the centre of the mouth. Sometimes numerous thin needles arise between the teeth (Pl. 115, fig. 10).

The radial spines of the *Circoporida* are tubular, usually cylindrical and conical at the thickened base, more rarely prismatic or slenderly pyramidal, with three or more edges; sometimes the edges are spirally wound around the axis (Pl. 115, fig. 6). In the majority of species their length is about equal to the diameter of the shell; often they are somewhat shorter, more rarely longer. Their tubular structure is always the same as in the *Tuscarorida*; the wall of the tube is thick, and in the axis of its cavity lies an axial cord or funicle, which is connected with the wall by numerous horizontal, simple, or branched threads (Pl. 115, figs. 6, 7). The axial funicle itself is either a simple thread of silica, or a strand, composed of three to fifteen or more filaments, which are closely twisted like a rope around the axis of the spine, and arise separately from the bridges between the pores of the basal circle (Pl. 115, figs. 7, 9). The number of