

sents the regular octahedron, with eight congruent triangular faces and six corners. It has the same form as the well-known antheridia of *Chara* (Gener. Morphol., vol. i. p. 412). *Circogonia* (Pl. 115, figs. 8-10; Pl. 117, fig. 1) exhibits twelve radial spines, opposite in pairs in six equidistant diameters. The surface of the shell is divided into twenty equal and equilateral triangles, and agrees therefore with the regular icosahedron. The same form appears also in some forms of *Aulosphæra*, and in several *Astrosphærida* (Gener. Morphol., vol. i. p. 411). *Circorrhagma* (Pl. 117, fig. 2) possesses a regular shell with twelve equal pentagonal faces and twenty equidistant corners, from which arise twenty regularly disposed radial spines. It represents therefore the regular "pentagonal dodecahedron," the same remarkable form which is found in some *Astrosphærida*, and in the pollen-grains of some plants, e.g., *Bucholzia maritima*, *Fumaria spicata*, *Polygonum amphibium*, &c. (Gener. Morphol., vol. i. p. 412, Taf. ii. fig. 18).

The three genera of *Circoporida* mentioned therefore represent three different forms of regular polyhedrons, in the exact mathematical sense, viz., *Circoporus*, the regular octahedron, *Circogonia*, the regular icosahedron, and *Circorrhagma*, the regular dodecahedron. In each of these three regular forms all the faces, edges, and corners are equal. The remaining three genera of *Circoporida* represent, however, three forms of subregular or irregular endospherical polyhedra, which are not perfectly regular. *Circospathis* (Pl. 115, figs. 4-7; Pl. 117, fig. 3) is a rather common form, and constantly possesses nine symmetrically disposed radial spines; the shell is either spherical or polyhedral, with fourteen triangular faces and thirty edges; the nine spines lie in three meridional planes, which are crossed at equal angles (three equidistant spines in each plane). We call this remarkable form the tetradecahedron; it appears also in some *Astrosphærida* (e.g., in *Haliomma echinaster*, figured in my Monograph, Taf. xxiv. fig. 1). *Circostephanus* (Pl. 116, fig. 3) exhibits a subregular polyhedral shell with a variable number of triangular faces and of radial spines (twenty-four to forty or more). *Circostephanus sexagenarius* possesses sixty triangular equilateral faces, which are disposed in twelve pentagonal groups (each with five faces), so that the shell seems to be derived from a regular pentagonal dodecahedron, the twelve regular faces of which are divided each into five congruent triangles. From its corners arise thirty-two radial spines (twelve from the central points of the pentagons, twenty from the meeting corners of every three pentagons). In other cases the number of faces and radial spines seems to be larger and their arrangement more irregular. The same may be said of *Haeckeliana*, in which the dimpled shell is constantly spherical, and possesses a variable number of radial spines, from sixteen to fifty-five (usually between thirty and forty).

The structure of the shell in the *Circoporida* is the same as in the *Tuscarorida*, of a peculiar porcellanous nature. The shell-wall is very thick, more or less opaque, and in direct light whitish or yellowish. Its surface is dimpled, with numerous small, circular,