

116. *The Sphæroid Skeletons or Lattice-Spheres.*—The “lattice-spheres” or sphæroid skeletons are the simplest and most primitive forms of lattice-shells, and are widely distributed in the three legions SPUMELLARIA, ACANTHARIA, and PHÆODARIA, whilst they are entirely wanting in the NASSELLARIA. The round lattice-shell is either a true sphere in the geometrical sense, or an endospherical polyhedron, *i.e.*, a polyhedron, all whose angles lie in the surface of a sphere (§ 25). In general, *primary* and *secondary* lattice-spheres may be distinguished, of which the former are secreted on the outer surface of the primary, the latter on that of the secondary calymma (§ 85). Furthermore, *simple* and *compound* lattice-spheres may be distinguished, the latter of which consist of two or more concentric lattice-spheres firmly united by radial bars; in such cases the innermost lattice-sphere is always to be regarded as the oldest or primary, all the succeeding ones as secondary, and the outermost as the youngest (§ 129). The simple lattice-spheres are usually to be regarded as primary; they may, however, occasionally be secondary, in which case the primary shell, originally enclosed, has been lost by degeneration (as, for example, in the case of the Aulosphærida and some Sphærellaria).

117. *The Lattice-Spheres of the Spumellaria.*—The lattice-spheres or Sphæroid skeletons of the SPUMELLARIA exhibit in spite of their simple type of structure, an extraordinary variety in the formation of the lattice-work and radial apophyses, so that in the systematic portion of this work no less than one hundred and seven genera and six hundred and fifty species are distinguished; these are united in one suborder, the Sphæroidea (pp. 50–284, Pls. 5–8, 11–30). It may be divided into two main divisions, the *Monosphærida* with a single primary lattice-sphere (Pls. 12–14, 21, 26, 27), and *Pliosphærida* (or Sphæroidea concentrica) whose skeleton consists of two or more concentric lattice-spheres united by radial bars. The latter are subdivided into Dyosphærida with two concentric lattice-spheres (Pls. 16, 19, 20, 22, 28); Triosphærida, with three spheres (Pls. 17, 24, 29); Tetrasphærida, with four (Pls. 23, 30); Polysphærida, with five or more (Pls. 15, 23); and Spongosphærida, with spongy lattice-spheres (Pls. 18, 25). A special group is made up of the simple lattice-spheres of the social Collosphærida (or Sphæroidea polyzoa) (Pls. 5–8); these are usually more or less irregular, and characterised by the development of peculiar tubular processes; the latter are generally wanting in the Sphæroidea monozoa, whose lattice-shell is very regularly formed. This distinction is interesting and important, inasmuch as the regular lattice-spheres are explained by the independent development of the free-swimming Monozoa, whilst the irregular spheres are due to the mutual dependence of the social Polyzoa.

118. *The Lattice-Spheres of the Acantharia.*—The lattice-shells or Sphæroid skeletons of the ACANTHARIA are immediately distinguishable from those of all other Radiolaria by their centrogenous development and the central union of the radial spines by which they are supported; the only exception is furnished by the remarkable genus *Cenocapsa*