central capsule, are very different in size and dictyosis from all the others which lie outside, and are separated by wider interspaces (compare Pls. **17, 24, 29–32, 40,** &c.). In these cases it appears better to regard the two inner as inner and outer medullary shells, and all the others as cortical shells. The character of the dictyosis in the intracapsular and extracapsular shells is often so different that I have made it the basis of separation of *Thecosphæra* and *Rhodosphæra* among the Liosphærida (p. 60), of Elatommatida and Diplosphærida among the Astrosphærida (p. 208), &c.

B.—R. Hertwig (1879, L. N. 33, pp. 40, 123) separates the true (simultaneously formed) "cortical shells" (*e.g.*, of *Actinomma*, *Cromyomma*) from the arachnoid "siliceous networks" (*e.g.*, of *Diplosphæra* and *Arachnosphæra*) which are formed by the successive union of tangential apophyses of the radial spines. Whether this principle is right in theory or not, it cannot be carried out practically. Compare also Pl. **25**, fig. 4.

130. *Dictyosis or Lattice Formation of the Skeleton.*—In the great majority of Radiolaria the dictyosis or formation of lattice-work, and especially the formation of a variously-shaped "lattice-shell," plays such an important part that the whole class has long been popularly known in Germany by the name "lattice animalcules" ("Gitterthierchen" or "Gitterlinge") (*Protista dictyota*). The old name Polycystina also (1838), although referring only to the SPUMELLARIA and NASSELLARIA, is derived from the lattice-work of the siliceous skeleton. The extremely various forms in which this is manifested furnish the means of distinguishing species. The specific conformation of the skeletal lattice-work is usually caused by the special disposition of the sarcodictyum (§ 94), whose exoplasmatic threads become silicified or (in the ACANTHARIA) converted into bars of acanthin. In many cases, however, the form of the lattice is mainly dependent upon the situation and form of the radial spines or of special processes from them. With respect to their origin, two varieties of lattice may be distinguished—simultaneous and successive. *Simultaneous dictyosis* occurs especially in the simple lattice-shells of the Sphærellaria and PHÆODARIA, where, at a given moment ("dictyotic moment") the *whole* lattice of the shell is excreted on the surface of the calymma. *Successive dictyosis*, on the other hand, is found more particularly in the lattice-shells of the ACANTHARIA (and in the concentric cortical shells of many Sphærellaria), which develop from separate lattice-plates formed by the apophyses of the radial spines, and hence not at the same moment. The lattice-shells of the Cyrtellaria, which gradually grow out from a sagittal ring or a basal tripod, arise by successive dictyosis.

131. *Dictyosis of the Spumellaria.*—Siliceous lattice-structures are wanting in the first section of the SPUMELLARIA, the Collodaria, but in the second section, Sphærellaria, they are developed in extraordinary variety of details. In spite of this extreme richness in different forms, the lattice-shells of the SPUMELLARIA may all be derived from one and the same primitive ground-form, a simple lattice-sphere with regular hexagonal meshes (*Phormosphæra*, p. 61, Pl. **12**, figs. 9–11; *Heliosphæra*, Pl. **28**, figs. 1–3, &c.).