

(Pl. 133, fig. 11), in which the radial spines are absent, not primitively, however, but in consequence of degeneration; for the twenty cross-shaped perspinal pores, originally due to the twenty radial spines, are still present. In the most nearly allied genera, *Porocapsa* (Pl. 133, fig. 7) and *Cannocapsa* (Pl. 133, fig. 8), the proximal part of the twenty radial spines is still present, while their distal portion has degenerated; hence in this case they do not stand in direct communication with the spherical shell. On the other hand, this primitive connection persists in the genera *Astrocapsa* (Pl. 133, figs. 9, 10), and *Sphærocapsa* (Pl. 135, figs. 6-10). The five genera just mentioned form the peculiar family Sphærocapsida (pp. 795-802); the spherical shell is in these cases composed of very numerous small plates disposed like a pavement, each plate or aglet being perforated by a pore canal; in addition to which there are twenty larger (perspinal) pores (or twenty cross-shaped groups each of four aspinal pores) at those important points where primitively the twenty radial spines penetrate the calymma. This peculiar porous "pavement shell" has probably been developed (independently of the twenty radial spines) upon the calymma of the *Acanthonida* (*Acanthonia*, p. 749) by the action of the sarcodictyum; it has, therefore, quite a different morphological significance from the spherical lattice-shell of the Dorataspida, which is composed of tangential apophyses of the twenty Acanthonid spines (pp. 802-847, Pls. 134-138). Each radial spine here forms either two opposite or four crossed transverse processes, and since their branches spread over the surface of the spherical calymma and are united suturally at their extremities, the peculiar lattice-sphere of the Dorataspida arises. This extensive family is again divided into two subfamilies:—the Diporaspida (Pls. 137, 138) possess always only two opposite apophyses, and form by the union of their branches two opposite primary apertures or aspinal meshes. The Tessaraspida, on the other hand (Pls. 135, 138), have always four crossed transverse processes, and form by their union four primary aspinal meshes. From the Diporaspida are probably to be derived the Phractopeltida (p. 847, Pl. 133, figs. 1-6), the only ACANTHARIA which possess a double lattice-sphere; their double concentric spherical shell may be compared with that of the Dyosphærida.

119. *The Lattice-Spheres of the Phæodaria.*—The lattice-spheres or Sphæroid skeletons of the PHÆODARIA, which are generally developed quite regularly, though occasionally in a modified form, fall in the order Phæosphæria into two groups of very different structure, each of which includes two families. The first group (*Phæosphæria inarticulata*) contains the families Orosphærida (Pls. 106, 107) and Sagosphærida (Pl. 108); the lattice-work of the former consists of irregular polygonal meshes and very coarse, partially hollow trabeculæ; in the latter, on the other hand, it consists of triangular meshes and very slender filiform trabeculæ; in both families the whole sphæroid skeleton forms a single unsegmented piece as in most Sphæroidea. In the second group of