

The substance of the siliceous or silicated shell-wall is, in the majority of PHÆODARIA, homogeneous and structureless, as in the SPUMELLARIA and NASSELLARIA; but sometimes it acquires a peculiar structure. The thickened wall of the hollow tubes in the Orosphærida and in several Aulacanthida (Pl. 105, figs. 6–10) becomes distinctly stratified, concentric strata being disposed one over the other. A very remarkable structure, differing from that in all other Radiolaria, is found in the porcellanous shell of the Circoporida (Pl. 114–117), and Tuscarorida (Pl. 100). The thickened wall of the opaque shell is here composed of a peculiar silicated cement, which encloses numerous very thin and irregularly scattered needles (Pl. 115, figs. 6–9; Pl. 116, fig. 3). Dry fragments of these shells, observed by a strong lens, appear finely punctulate, and probably air, entering into these fine porules of the cement, causes the white colour and the calcareous or porcellanous appearance of the opaque dry shell. Its surface is smooth in the Tuscarorida (Pl. 100), panelled in the Circoporida (Pl. 114–117).

The hollow or solid spines, which arise from the shell of the PHÆODARIA, exhibit an extraordinary variety and elegance in the production of different branches, bristles, hairs, secondary spine, and thorns, hooks, anchor-threads, pencils, spathillæ, &c. These appendages are developed similarly to those of many SPUMELLARIA, but exhibit a far greater variety and richness in form. They are organs partly for protection, partly for retention of food. They are much more interesting than in other Radiolaria.

Synopsis of the Orders and Families of PHÆODARIA.

<p>I. Order PHÆOCYSTINA. Skeleton absent or incomplete, composed of numerous single scattered pieces, without connection. Central capsule placed in the centre of the calymma.</p>	<p>Skeleton completely absent, 1. PHÆODINIDA.</p> <p>Skeleton composed of numerous scattered pieces, not of radial tubes, 2. CANNORRHAPHIDA.</p> <p>Skeleton composed of numerous hollow radial tubes, the proximal ends of which are in contact with the central capsule, 3. AULACANTHIDA.</p>
<p>II. Order PHÆOSPHERIA. Skeleton a simple or double lattice-shell, not bivalved, without a peculiar shell-mouth (shell usually spherical, rarely of a modified form, always without peristome). Central capsule placed in the centre of the shell-cavity.</p>	<p>Shell composed of a simple, non-articulated lattice-plate, without astral septa in the nodal points. {</p> <p style="margin-left: 2em;">Network very robust and coarse, with irregular polygonal meshes; bars very thick, partly hollow, 4. OROSPHÆRIDA.</p> <p style="margin-left: 2em;">Network very delicate and fragile, with subregular, triangular meshes; rods very thin, filiform, always solid, 5. SAGOSPHERIDA.</p> <p>Shell articulated, with astral septa, without a simple central shell, 6. AULOSPHÆRIDA.</p> <p>Shell composed of numerous hollow, tangential cylindrical tubes, which are separated by astral septa in the nodal points. {</p> <p style="margin-left: 2em;">Shell double, composed of two concentric shells; the outer articulated, the inner simple, 7. CANNOSPHERIDA.</p>