

Synopsis of the Families of Sphæroidea.

Surface of the spherical shell smooth, rough, or thorny, but not armed with radial spines.	A. Liosphærida monozoa. Single cells (each with shell) living solitary.	Spherical shell commonly quite regular, simple, or composed of two or more concentric spheres, .	5. LIOSPHERIDA.
			B. Liosphærida polyzoa. Aggregated cells (each with shell) living in colonies.
Surface of the spherical shell armed with two, four, or six radial main spines, opposite in pairs in one, two, or three dimensive axes (always solitary).	Two radial main-spines, opposite in one axis of the shell, .		7. STYLOSPHERIDA.
	Four radial main-spines, opposite in pairs in two dimensive axes, perpendicular one to another, . . .		8. STAUROSPHERIDA.
	Six radial main-spines, opposite in pairs in three dimensive axes (perpendicular one to another), . . .		9. CUBOSPHERIDA.
Surface of the spherical shell covered with numerous (commonly irregularly disposed) radial spines, often also twelve to twenty, more or less regularly disposed, . . .			10. ASTROSPHERIDA.

Family V. LIOSPHERIDA, Haeckel, 1881.

Liosphærida, Haeckel, 1881, Prodrömus, p. 449.

Definition.—Sphæroidea without radial spines on the surface of the spherical shell; living solitary (not associated in colonies).

The family Liosphærida comprises all those solitary Sphæroidea in which the surface of the spherical shell is not armed with radial spines. Nearly the half of this large group is formed by the Ethmosphærida, in which the carapace is a quite simple, spherical lattice-shell; this subfamily is probably the common ancestral group from which all other Sphæroidea, or even all Sphærellaria, can be derived in a phylogenetical as well as in a morphological sense. The central capsule in this first subfamily is constantly enclosed by the fenestrated shell, and separated from it by the jelly-veil. The shell is therefore an extracapsular or medullary shell.

To these simple Ethmosphærida all other subfamilies can be opposed as "Liosphærida concentrica," as their carapace is composed of two or more concentric lattice-shells; two in the Carposphærida, three in the Thecosphærida, four in the Cromyosphærida, five or more in the Caryosphærida. In all these four subfamilies the concentric shells are simple (not spongy) fenestrated shells. In a sixth subfamily, in the Plegmosphærida, the shell is wholly or partially composed of spongy wicker-work, with or without a latticed medullary shell in the centre.

The internal radial beams, in the "Liosphærida composita" connecting the concentric spheres, exhibit in their number and disposition similar important differences, such as the external radial spines in the Astrosphærida. The following eight