

both shells are extracapsular or cortical shells, therefore the inner shell of the latter corresponds to the outer of the former. The inner spherical shell of all Diplosphærida is composed of very delicate beams and large pores, which are either regular hexagonal or irregular polygonal (never roundish). From its surface arise a variable number (twenty to thirty) of stout long radial spines, which are invariably longer than the shell diameter (often two to three times as long or more), and of three-sided prismatic form, the three edges either smooth or serrate, often with three rows of lateral branches (commonly three to five branches in each row); the latter are invariably of the same form, concavely curved towards the spine, and decrease in size towards the distal end. From the three edges of each main spine in all Diplosphærida, at equal distances from the centre, arise six very thin, thread-like lateral branches (a pair from each edge) and connect the spine in a tangential direction with all neighbouring spines. In this manner the polyhedral outer shell is formed, the meshes of which therefore are always very large and triangular. Sometimes each of these primary triangular meshes becomes filled up with a secondary network, either of regular quadrangular or of irregular polygonal secondary meshes. Besides the constant twenty to thirty large main spines, in the majority of Diplosphærida bristle-shaped radial by-spines arise, either from the inner shell (*Diplosphæra*) or from the outer (*Drymosphæra*), or from both (*Astrosphæra*). They are absent only in *Leptosphæra*. Commonly the by-spines are simple, rarely forked or branched. The central capsule in the Diplosphærida is usually enclosed in the inner shell; often it completely fills up the latter, or drives out a cæcal protuberance through each mesh; but these processes rarely unite outside. The average size of the Diplosphærida, which are all pelagic organisms, is much larger than that of the other Haliommida.

Subgenus 1. *Leptosphærella*, Haeckel.

Definition.—Radial spines simple, without lateral branches.

1. *Leptosphæra hexagonalis*, n. sp. (Pl. 19, fig. 2).

Inner shell with regular, hexagonal meshes, and very thin, thread-like bars; outer shell twice as broad, with simple triangular meshes. Radial spines with three smooth edges. (Fig. 2 represents the central capsule with numerous club-shaped saccules, prominent externally through the meshes; in the centre a large simple spherical nucleus, one-third as broad as the capsule. The skeleton of this species is identical with that of *Diplosphæra hexagonalis*, Pl. 19, fig. 3, but has no by-spines.)

Dimensions.—Diameter of the outer shell 0·3, of the inner 0·15.

Habitat.—Cosmopolitan; Mediterranean (Corfu), North Atlantic (Canary Islands), Tropical Pacific, surface.