

whilst, on the contrary, the polyzootic colonial SPUMELLARIA (or Polycyttaria) are uninuclear only in the young state (Pl. 3, fig. 12), and speedily present numerous small homogeneous nuclei, which have arisen by precocious division of a single nucleus; these are usually spherical and 0.008 to 0.012 mm. in diameter. The serotinous nucleus of the monozootic SPUMELLARIA, in many divisions of this large legion, and especially in the simply constituted Sphæroidea, is a homogeneous sphere of nuclein, lying in the middle of the central capsule. In many other cases it assumes the form of a spherical vesicle ("Binnen-Bläschen"), whose fluid or semi-fluid contents are enclosed by a more or less firm membrane. This vesicle often contains a single central spherical *nucleolus* (Pl. 1, figs. 1*l*, 4*l*), but sometimes a variable number of small excentric nucleoli (Pl. 1, figs. 1*a*, 2*a*). The nuclear membrane is often somewhat thick, presenting a double contour, and in such cases may even exhibit a fine radial striation, the expression of minute pores (Pl. 1, fig. 2*a*). In the colossal nuclei (as much as 1 to 2 mm. in diameter) of certain large Thalassicollida the nucleolus presents a very remarkable form, becoming stellate by the protrusion of processes, which may again branch in a dendritic fashion (as in the common *Thalassicolla nucleata*), or it may develop into a very long cylindrical thread, which is disposed in serpentine coils, and in *Thalassophysa pelagica* passes into the different cæcal processes of the stellate nucleus. In many Sphæroidea, whose skeleton is composed of numerous concentric lattice spheres, the small central spherical nucleus lies at first within the innermost of these (the medullary shell); but afterwards it grows through the meshes of the lattice-work, and the radiating club-shaped processes thus formed (Pl. 11, fig. 5) unite with each other outside the medullary shell, and form an external nuclear sphere which completely encloses the latter. In the Polysphærida (with several concentric lattice-shells) and in the Spongosphærida (with spongy lattice-spheres), this process may be several times repeated, so that eventually the central spherical nucleus attains considerable dimensions, and encloses two or more concentric lattice-shells with their radial connecting rods. The nuclear membrane is in these cases usually penetrated by radial bars, which connect the outermost of the enclosed shells with the remaining cortical shells which surround the central capsule. The same remarkable arrangement is also very common among the Discoidea. The small spherical primary nucleus is in such instances immediately surrounded by the innermost earliest developed lattice-shell, around which the concentric rings are subsequently deposited; it then grows out through the meshes, and the processes fuse outside the ring to form a homogeneous lentiform nucleus (Pl. 43, fig. 15). The same process recurs in certain Prunoidea and Larcoidea, whilst in other SPUMELLARIA of these groups (*e.g.*, Pylonida) the lobate processes of the nucleus remain free.

Both the simple serotinous nucleus of the monozootic SPUMELLARIA, and the numerous precocious nuclei of the Polycyttaria, were first described in my Monograph in 1862, the former as the "endocyst" ("Binnen-Bläschen"), the latter as "spherical transparent vesicles" ("Kugelige