production of radial, conical, or cylindrical tubules. These occur as well on the inside as on the outside of the shell, and the tubules are now more conical, now more cylindrical; their wall either solid or pierced by pores (Pls. 5–8). The tubules are commonly very irregular in form, size, and disposition; distinguished, however, by a number of hereditary peculiarities, which are sufficient for the distinction of genera. Similar tubules occur also in some genera of solitary Ethmosphærida (*Coscinomma*, *Ethmosphæra*, *Conosphæra*, &c., Pl. 12); but the tubules are here much more regular and not so highly developed.

Besides the tubules of the fenestrated shells, in some genera of Collosphærida the surface is armed with irregular thorns, rarely with more regular radial spines. But these spines obtain constantly the character of accessory by-spines, and remain short and thin. In this family typical radial spines never occur in a regular and characteristic disposition, corresponding to dimensive axes, as is the case in nearly all solitary Sphæroidea, only excepting the Liosphærida. Commonly these spines or thorns serve as protective arms for the shell-meshes, surrounding them often in the form of coronels. Often the lattice-plate of the irregular roundish shell is tubercular, elevated into irregular protuberances, bearing on the top a short spine or thorn (Pl. 8).

The *Central Capsule* of the Collosphærida is always a regular sphere, as in all other Sphæroidea; it is constantly placed within the lattice-shell, and commonly much smaller than it, separated from it by a thick jelly-veil. A remarkable difference from the solitary Sphæroidea is shown in the early division of the nucleus. Commonly the central capsule of the Collosphærida contains in its centre a large oil-globule, surrounded by very numerous small nuclei. R. Hertwig estimated this difference as so important, that he separated the social "Sphærozoea" and the solitary "Peripylea" as two different orders. As already shown above (p. 7, 24), we cannot support this separation, and are now convinced that this difference in the development of the spores—just as in the Collodaria—is the consequence of an adaptation to social life.

The common jelly-body, in which the numerous central capsules and their enveloping shells are united, exhibits in the Collosphærida quite the same characters as in the other social Radiolaria, the Collozoida and Sphærozoida. The jelly-body is very voluminous, commonly spherical, often cylindrical, of considerable size; constantly containing numerous large alveoles. Often each shell is enclosed in a separate alveole with rather solid wall (Pl. 6, fig. 2). Sometimes in the dead colonies all shells are united in the central part of the jelly-body, whilst its peripheral part is composed of a stratum of large alveoles (Pl. 8, fig. 11); at other times no alveoles are visible (Pl. 7, fig. 11). In many living colonies I found a very large spherical alveole with thick wall in the centre of the spherical colony, surrounded by many strata of delicate thin-walled alveoles (Pl. 5, fig. 1). In this case often the inner younger capsules were naked,