

for the separation of subfamilies. The form of the medullary shells is commonly quite spherical (as also in the above mentioned *Sphæroidea*); sometimes it is a little compressed in the same direction as the enclosing lenticular phacoid shell. The diameter of the latter is commonly three to four times as large as the diameter of the medullary shell; if this be double (in the *Thecodiscida*) then the diameter of the outer medullary shell is commonly three to four times as large as that of the inner. The radial beams connecting the two seem to be very variable in number and disposition (compare Pl. 31, fig. 8; Pl. 32, figs. 3, 4a, 7, 8a; Pl. 33, figs. 2, 3; Pl. 35, figs. 4, 8, 9, &c.).

The Radial Beams, which connect the medullary shell with the cortical or "phacoid shell," and which pierce the membrane of the lenticular central capsule, are commonly aggregated into two polar bunches around the shortened axis of the disk (compare Pl. 31, fig. 8; Pl. 32, figs. 3, 8; Pl. 33, figs. 2, 3, &c.). Their number seems to be usually between ten and thirty. More rarely piercing radial beams lie also in the equatorial plane, and then commonly as inner prolongations of the outer marginal spines; so we find two opposite in one axis, in *Heliostylus* (Pl. 34, figs. 1, 2), or four opposite in pairs in two crossed axes, in *Phacostaurus* (Pl. 31, figs. 1, 2, 7). Often the thickness of the beams increases from the centre towards the periphery.

The Phacoid Shell, or the lenticular extracapsular cortical shell, exhibits in the *Phacodiscida* quite the same general character as in the *Cenodiscida*, above described (p. 410). Commonly the equatorial diameter of the lens is twice to three times as large as the vertical diameter or the shortened "main axis." The convexity of both opposite faces is either quite even to the sharp margin (Pl. 31, fig. 2; Pl. 33, figs. 2, 5), or the central part of the lens is more strongly vaulted, and often the margin is thickened or truncated (Pl. 31, fig. 10; Pl. 35, fig. 7). The surface of the lens is commonly smooth, but sometimes also covered with bristle-shaped radial spines (Pl. 34, figs. 3, 5; Pl. 32, figs. 2, 3); rarely these spines are prolonged and branched (Pl. 35, figs. 3, 5). The pores of the phacoid shell are usually quite regular, circular, and regularly arranged, either in more concentric or in more radial rows; the latter are sometimes separated by radial crests arising towards the margin (Pl. 35, fig. 6). If the wall of the phacoid shell be much thickened, the pores in its central part are shorter and cylindrical, in its marginal part longer and conical (Pl. 31, fig. 7; Pl. 32, fig. 1).

The Margin of the Lens of the *Phacodiscida* is very polymorphic, and serves mainly for the separation of genera. In the first subfamily, *Sethodiscida*, it is either quite simple (Pl. 35, figs. 6-8) or surrounded by a thin solid equatorial girdle, the basal part of which is often radially striped (Pl. 32, figs. 7, 8). In the second subfamily, *Heliosestrida*, we find on the margin a small number of radial spines in the equatorial plane regularly disposed, either two opposite in one axis (Pl. 31, figs. 9-12) or four opposite in pairs in two crossed axes (Pl. 31, figs. 1-8), or eight opposite in pairs in four axes, crossed at angles of 45° (Pl. 34, figs. 3, 6); in the latter case we can sometimes distinguish