

The *Cenodiscida* (Pl. 48, figs. 1-3) open the series of the *Discoidea* as their simplest forms; a discoidal or lenticular simple lattice-shell encloses a central capsule of the same form, and is separated from it by the calymma or jelly-veil. The common ancestral form of this family is *Cenodiscus*, without radial marginal spines; it can be derived from *Cenosphaera* in the most simple way, by flattening in one axis. If on the equatorial margin of the lens a peculiar solid girdle be developed, we obtain *Zonodiscus*; in all other genera of the *Cenodiscida* radial spines are developed on the margin. As the simple lenticular cortical shell of *Cenodiscus*, in which the central capsule is enclosed, is most characteristic not only of this family, but also of the two following families, we call it the phacoid shell (that is, a lenticular extracapsular or cortical lattice-shell).

The *Phacodiscida* (Pls. 31-35), the second family, have the same extracapsular "phacoid shell" as the *Cenodiscida*, but differ from these by the possession of one or two intracapsular concentric medullary shells, which are connected with the former by radial beams, perforating the lenticular central capsule. The radial beams are commonly numerous, and arranged in two opposite bunches around the shortened main axis. But often also besides these occur other longer radial beams, situated in the equatorial plane; the number of these is commonly four, and they form a regular rectangular cross, lying opposite in pairs in two equatorial diameters, perpendicular one to another. In the simplest genera of this family (the *Sethodiscida*) the equatorial margin of the phacoid shell is simple or surrounded by a solid smooth girdle; in all other genera are developed on the margin solid radial spines lying in the equatorial plane, either regularly disposed in a somewhat constant number (two to eight, *Heliosestrida*), or irregularly disposed, in a larger and more variable number (ten to twenty or more, *Heliodiscida*).

The *Coccodiscida* (Pls. 36-38) form a third family of the *Discoidea*, directly associated with the *Phacodiscida*; both have the same characteristic extracapsular "phacoid shell," which is connected by radial beams with a simple or double, intracapsular medullary shell. But whilst in the foregoing family the equatorial margin of the phacoid shell is simple or only armed with radial spines, in the *Coccodiscida* it is surrounded by peculiar concentric chambered girdles, or rings, which resemble those of the following family, the *Porodiscida*. Each of these "chambered girdles" is composed of a circular ring in the equatorial plane, a variable number of radial beams dividing it into incomplete chambers, and two porous cover-plates or "sieve-plates," covering the upper and lower face of the disk. These sieve-plates may be regarded as incomplete lenticular cortical shells, which are only developed in the peripheral part of the disk, whilst their central part is represented by the only complete cortical shell, the "phacoid shell." The number of these concentric chamber-girdles amounts to from one to ten or more. The margin of the disk is either simple (*Lithocyclida*) or armed with radial spines (*Stylocyclida*), or provided with two to five chambered radial arms (*Astracturida*); the structure of the arms is the same as that of the girdles.