the enclosed central capsule. In the spherical Dorataspida, their ancestral family, all twenty radial spines are of equal size, whilst here in the Belonaspida two opposite spines are larger than the eighteen others. These two larger or principal spines are both equatorial spines, placed in the longitudinal or major axis of the ellipsoid, or the "hydrotomical axis" (compare above, p. 719). The two other equatorial spines are constantly smaller, and lie in the transverse or minor axis of the ellipsoid, or the "geotomical axis." The geometrical proportion of these two determining axes of the ellipsoidal shell is very variable (even in one and the same species), commonly 4 : 3 or 3 : 2, rarely 2 : 1, often only 5 : 4 or 6 : 5. All meridian planes, passing through the principal spines (or the longitudinal axis of the shell) are elliptical, and of equal size. All transverse planes, perpendicular to that axis, are circular; the largest of these circular parallel planes is the geotomical plane, which passes through the smaller equatorial spines and the spineless axis.

In the spherical Dorataspida the internal length of the radial spines (or the distance between the shell and the centre) is equal in all twenty spines. In the ellipsoidal Belonaspida this internal length is different, and commonly exhibits four different degrees; in the two principal spines it is of first rank, in the eight tropical spines of second rank, in the four (hydrotomical) polar spines of third rank, and in the six spines (four geotomical polar spines and two transverse equatorial spines) of fourth rank. These differences of the internal length become more important the more the hydrotomical axis is prolonged. Regarding all other qualities (in form, disposition, and mode of junction at the centre) the ellipsoidal Belonaspida do not differ from their ancestral group, the spherical Dorataspida (compare above, p. 802). In both families the pyramidal central bases of the twenty spines are commonly supported one upon another with their triangular neighbouring faces; but sometimes also here (particularly in *Phatnaspis*) the central bases are perfectly grown together. In this case also the sutures of the meeting branches of the apophyses are obliterated, whilst usually they remain open. Such forms, with spines and plates perfectly grown together, form a single piece of acanthin, and were formerly separated by me as a peculiar genus *Haliommatidium* (Monogr. d. Radiol., 1862, p. 419). But as I now find this concrescence to be an accidental and inconstant peculiarity of some species, it no longer seems to me to be of generic importance.

The apophyses of the twenty radial spines, the branches of which compose the ellipsoidal lattice-shell, exhibit in all Belonaspida the same appearance as in the Diporaspida (and especially the Ceriaspida) among the spherical Dorataspida. Everywhere each radial spine gives off only two opposite primary apophyses, the fork-branches of which unite together and form a plate or shield with two aspinal pores (as in *Dorataspis*). Commonly the shell exhibits only these forty parmal pores, the other meshes between them being sutural pores. Only in one genus, *Phatnaspis* (Pl. 136,