

are quite different. Whilst in the Tholonida the axes of the domes are dimensive axes, and these are separated by annular constrictions lying in diagonal planes, in the Zonarida we find the contrary; the axes of the domes are here diagonal axes, and these are separated by annular constrictions lying in dimensive planes. However, this definition agrees absolutely only in the four-chambered *Zonarium* and in the eight-chambered *Zonidium*, whilst in the six chambered *Zoniscus* only four domes are disposed according to this law, two others, however, in the same manner as in the Tholonida. Therefore this genus is intermediate between both families.

*The Cortical Shell* of the Zonarida is in all cases completely latticed and of regular lentelliptical fundamental form, as in the nearly allied Larnacida and Tholonida. The three dimensive axes are constantly of different sizes, each with two equal poles; commonly (as in the human body) the principal or longitudinal axis is the longest, the sagittal (or dorso-ventral) axis the shortest; the transverse (or lateral) axis being intermediate between them. Of the three dimensive planes the lateral plane is the largest (determined by the principal and transverse axes); the smallest is the equatorial plane (crossed by the transverse and sagittal axes); the sagittal plane (determined by the sagittal and principal axes) being intermediate between them.

The annular constrictions of the cortical shell which produce the dome-shaped protuberances are different in number in the three known genera—two, three, or four. To each constriction often (but not always) corresponds an internal latticed septum, which connects the cortical with the medullary shell. The number of the cupolas is always double the number of the annular constrictions by which they are separated, therefore four, six, or eight.

In all known Zonarida the sagittal septum is quite constant, derived from the original axial rod, which lies in the principal axis. By ramification of this axial beam and reticular connection with the sagittal girdle arises the sagittal septum, which we found first in *Octopyle*, halving the four gates of *Tetrapyle*. Whilst this sagittal septum (between right and left halves of the body) is common to all three known genera of this family, the number and shape of the other annular constrictions are different. In *Zonarium* (Pl. 50, fig. 9) we find only one transverse constriction (in the equatorial plane), in *Zoniscus* (figs. 10, 11) two parallel transverse constrictions (parallel to the equatorial plane, on both sides of it). *Zonidium* (fig. 12) is a combination of both foregoing genera; it has three parallel transverse constrictions (one in the equatorial plane, and one on each side of it).

*The Latticed Domes* (cupolas or chambers) of the cortical shell exhibit correspondingly a different number and disposition in the three known genera. In *Zonarium* are found only four crossed chambers, separated by the sagittal and transverse septa; the axes of the four crossed domes are diagonal axes, whilst in the similar *Staurotholus* they are dimensive axes (principal and transverse axes). In *Zonidium* we find eight domes, each cupola of *Zonarium* being halved by a diagonal septum. *Zoniscus* is intermediate