

If we imagine that each "wing" (or open half-girdle) of the Pylonida becomes closed by a lattice-work, and so transformed into a hemispherical or roundish cupola, we obtain the characteristic shell of the Tholonida. Indeed every girdle of the former corresponds to a pair of opposite domes of the latter. The axis of each pair of domes is one of the three dimensive axes.

The primordial chamber of the Tholonida (or the central chamber, around which all cupolas are regularly disposed) is either a simple lentelliptical lattice-shell, like *Cenolarcus*, or it is a trizonal shell (with an enclosed concentric medullary shell), like *Larnacilla*. As in both cases the building and the disposition of the cupolas around it are quite the same, we can suppose that the whole family of Tholonida may have been derived originally from *Larnacilla* (or *Trizonium*), and that the Cenotholida (with a simple central chamber) are sprung from the Coccotholida (with a *Larnacilla*-shaped central chamber) by reduction and loss of the original medullary shell.

The family Tholonida can be divided into three subfamilies according to the disposition of the cupola-pairs in one, two, or three dimensive axes. In the Cubotholida lie two cupolas on the poles of the transverse axis of the central chamber (corresponding to *Amphipyle*); in the Staurotholida we find four cupolas crosswise disposed, on the poles of the transverse and principal axes (corresponding to *Tetrapyle*); in the Cubotholida are at least six cupolas, on the poles of all three dimensive axes (corresponding to *Tholonium*). In all three cases the number of cupolas may be augmented by the secondary apposition of other chambers or domes in the same disposition. Sometimes also the whole cortical shell becomes enclosed by an external veil or mantle of delicate network. The lentelliptical (or often nearly cubical) central chamber becomes often reduced, so that its sides are incompletely latticed or widely opened; in some Cubotholida only the twelve edges of the eight cornered cubical central chamber remain; its six sides are quite open and only over-vaulted by the six hemispherical cupolas. From the opposite points of the latter (in the deep annular constrictions between them) often arise radial spines, and these lie commonly in diagonal planes, separating the dome-pairs.

A similar dome-building or a composition of the polythalamous shell by pairs of cupolas we find also in the next (fifth) family, the Zonarida. But here the true cause of the peculiar dome-structure is quite different, not an apposition of new chambers, but the constriction of a cortical shell-like *Larnacalpis* by two or more annular constrictions. These constrictions lie in dimensive planes (or in planes parallel to these), and therefore the cupolas are (all or partly) in diagonal planes, a condition quite opposite to that found in the Tholonida. One of the annular constrictions is constantly in the sagittal plane (separating the right and left halves of the shell). The number of the constrictions in the few genera is two, three, and four, and therefore the number of the cupolas four, six, or eight. As this cortical shell constantly encloses a trizonal medullary shell (or *Larnacilla*-shell), we cannot doubt that the Zonarida must be derived from the Larnacida.