

To understand clearly this peculiar constitution of the Pylonida-shell by a system of alternating girdles, developing one after the other, it is indispensable to pay careful attention to the three different elliptical dimensive planes, which characterise all *Larcoidea*, and to the three different dimensive axes, which bisect those planes. The girdle which first develops around the simple primordial shell or central chamber is the transverse girdle, lying in the equatorial plane; then comes, secondly, the lateral girdle, lying in the lateral plane; and thirdly follows the sagittal girdle, lying in the sagittal or median plane. The three simplest genera of the Pylonida—*Monozonium*, *Dizonium*, *Trizonium*—represent these three different stages, with one, two, or three girdles. These three genera constitute the first subfamily, Haplozonaria (with one single system of girdles); all three girdles lie in the surface of a simple lentelliptical cortical shell.

From this first subfamily the other two subfamilies of Pylonida must be derived, by repetition of the same characteristic process of growth. In the Diplozonaria a second system of girdles has been developed, constituting a second (outer) cortical shell of lentelliptical form, concentric with the first. Also in this second system the transverse girdle is first developed, secondly the lateral girdle, thirdly the sagittal girdle. The three genera *Amphipyle*, *Tetrapyle* (with *Octopyle*), and *Pylonium* represent these three different stages of growth.

Commonly the growth of the Pylonida stops with the completion of the second system; but sometimes the same process is once repeated and a third system of girdles is formed, constituting a third lentelliptical shell; in this case also the succession of the three latticed girdles is the same; firstly the (third) transverse girdle is formed, secondly the (third) lateral girdle, and thirdly the (third) sagittal girdle. Each of these three girdles of the third system encloses concentrically the corresponding girdles of the second and first system. The three corresponding genera of this third subfamily (Triplozonaria) are *Amphipyloium*, *Tetrapyloium*, and *Pylozonium*. But in general this highest number of girdles (nine) is very seldom reached; commonly the growth of the Pylonida stops with five girdles (*Tetrapyle* and *Octopyle*). More than nine girdles I have never observed, though there remains the possibility of the apposition of a fourth system owing to the peculiar imperfect character of the growth itself.

The central or primordial chamber of the shell, with which in all Pylonida the shell-building commences, is a quite simple, very small fenestrated shell. Commonly one sees on the surface only five to ten small pores (three to four on the diameter). Its form seems to be sometimes spherical, sometimes elongated, ellipsoidal or probably lentelliptical. It may be originally a small *Cenolarcus*. This simple central chamber, the true "medullary shell" of the small Haplozonaria, is quite different from the medullary shell of the larger Diplozonaria; and particularly of the well-known *Tetrapyle*. The former observers, J. Müller as well as R. Hertwig, have described in these forms also the medullary shell as a simple spherical or oblong body. But a careful