

ascending (like *Helix*). Therefore in these latter the geometrical fundamental form of the shell is asymmetrical or "dysdipleural," whereas in the Lithelida bilateral-symmetrical or "eudipleural." The lentelliptical or nearly spherical shell may be divided by a median section into two symmetrical halves; the right half is the mirror image of the left half.

When in 1862 I founded the family Lithelida in my Monograph (p. 515), I knew only one genus, *Lithelius*, with two species. The rich material of the Challenger collection contains a great number of similar spirally constructed Larcoida, so that at the present time we may distinguish at least six genera. These belong to two different subfamilies, which may possibly be afterwards better separated as families. The first subfamily, Spiremida, possess a simple, spherical or subspherical, medullary shell; the second subfamily, Larcospirida, possess a trizonal or *Larnacilla*-shaped medullary shell. No doubt these latter must be derived from Pylonida, as we observe all stages of development starting from a simple *Trizonium*; but perhaps also the Spiremida have the same origin, their simple, spherical or subspherical, medullary shell being derived from a trizonal or *Larnacilla*-shaped medullary shell by reduction.

The general appearance in both subfamilies of the Lithelida is quite the same, and it requires a careful study of the medullary shell to distinguish certainly the Spiremida from the Larcospirida. This distinction is often not easy, particularly in the larger forms; the shell is often very opaque and difficult to understand. Only in one position, if the spiral axis be parallel to the axis of the eye of the observer, and the spiral plane be therefore fully seen in the optical plane of the microscope, the spiral line (or the axial section of the latticed spiral lamella) is distinctly observed; in all other positions the figure of the spiral is more or less indistinct, and the whole microscopical image often quite intricate and confused. The sufficient study of this family requires therefore the contemplation of the shell from different sides, and is the more difficult, as the variability of the Lithelida—as of the Pylonida—is extraordinarily great.

The description which I gave of *Lithelius* (1862) in my Monograph is in some points erroneous, and was afterwards (1879) corrected by R. Hertwig, who explained particularly the near relation of it to *Tetrapyle*. Indeed the intermediate forms between the Lithelida and the Pylonida are so numerous and so evident in all stages of development, that the derivation of the former (at least of the Larcospirida) from the latter is quite clear. The analogy between the structure of the Lithelida and the calcareous (foraminiferous) Alveolinida is not so complete as I supposed it to be in my Monograph (1862); particularly the formation of the small chambers between the turnings of the spiral lamella is much more complete in the Alveolinida than in the Lithelida.

The cortical shell of all Lithelida has the same geometrical fundamental form as *Nautilus* or as the nautiloid Polythalamia (*Polystomella*, *Nummulites*, &c.); therefore the shell is dipleural, being divided by the median plane into two symmetrical lateral halves.