

Family XI. ELLIPSIDA, Haeckel, 1882 (Pls. 13, 14, 39).

Definition.—Prunoida with simple ellipsoidal shell, without equatorial stricture (without enclosed medullary shell); network a simple lattice lamella, not spongy. Central capsule ellipsoidal or cylindrical, without annular equatorial constriction.

The family Ellipsida comprises the simplest forms of Prunoida, and probably represents the ancestral forms of this whole suborder. The fenestrated shell, which encloses the ellipsoidal central capsule, is a perfectly simple "cortical shell" of the same form, without enclosed "medullary shell." Its form is commonly a regular monaxial ellipsoid; sometimes a little modified by unequal growth of the two poles of the main axis. Two opposite large spines are often developed at these poles, or it may be that instead of these, two hollow fenestrated tubes are present.

The ellipsoidal fenestrated shell exhibits in the regular Ellipsida all the characters of a geometric ellipsoid; one main axis surpasses in length all other possible axes. All sections going through this main axis are "meridian sections," with elliptical periphery; all sections perpendicular to the main axis are "transverse sections," with circular periphery. The largest of these is the equatorial section, which divides the main axis into halves. The diameter of this equatorial plane is the "minor axis" of the ellipsoid.

The proportion of the two axes of the ellipsoidal shell, of the major vertical or main axis and the minor horizontal or equatorial axis, is commonly between 6 : 5 and 3 : 2. In the former case it approaches the spherical shell, from which it is derived; in the latter case it becomes almost fusiform or cylindrical. The network of silex, constituting the shell, is constantly a simple latticed lamella, never composed of concentric shells (as in the Druppulida) or spongy (as in the Spongurida). The network is often very regular and elegant, in other cases irregular.

The simplest genus among the Ellipsida, and probably the common ancestral form of the whole subfamily, is the genus *Cenellipsis*, possessing a simple ellipsoidal shell without any appendages. It is derived from *Cenosphaera* (the simple spherical shell) by the prolongation of one axis. *Cenellipsis* passes over into *Ellipsoidium* by the production of radial spines on the surface (corresponding to *Heliosphaera*). *Axellipsis* is a peculiar genus differing from *Cenellipsis* in an axial rod, which corresponds to the minor or equatorial axis. In all other genera of the subfamily both poles of the main axis are distinguished by peculiar polar prolongations, either hollow fenestrated tubes (as in *Pipettella*) or strong solid spines. Both polar spines are of equal size and similar form in *Ellipsioxiphus*, unequal in *Ellipsostylus*. From the latter is derived *Lithapium*, by reduction and loss of one spine (so that only one remains); *Lithomespilus*, by production of a bunch of several spines at one pole. In the three latter genera both poles of the main axis are unequal, in all others equal.