room for doubt. In a few species of *Miliolina* the exterior is punctate or pitted (*Miliolina rupertiana*, Pl. VII. figs. 7–12, and in certain fossils, *e.g.*, *Miliolina saxorum*); but thin sections of the test show conclusively that the perforate appearance is due to superficial depressions of uniform depth, only penetrating about half the thickness of the shell-wall. Similar punctations may be observed in the genera *Peneroplis* and *Orbiculina* (Pl. XIII. fig. 23, and Pl. XIV. fig. 13), sometimes occurring on the exterior and sometimes on the interior surface of the test, but their superficial character has been fully demonstrated by Dr. Carpenter.[1]

The inter-relationship of the various generic types of the *Miliolidæ* is easily traced. The sub-family NUBECULARINÆ comprises only a few simple and very variable forms, which in some respects stand apart from the rest of the group. The test of *Squamulina* consists of a single adherent chamber, with an aperture on the convex surface; whilst the polythalamous *Nubecularia* is connected with *Peneroplis* by its more regular spiral forms, and with *Miliolina* by its least regular free varieties.

But for the remainder of the Family, the genus *Cornuspira*, the test of which consists of a non-septate tube coiled in one plane, may be taken as the starting-point. A shell like that of *Cornuspira*, with constrictions at two opposite points of each convolution, that is to say, with each convolution divided into two segments, is the type of the genus *Spiroloculina*, and from this the other strictly Milioline genera differ chiefly in such particulars as the mutual disposition of the segments, their obliquity and degree of curvature, and the extent to which they overlap each other. The genus *Fabularia*, morphologically speaking, is a Biloculine *Miliola* with labyrinthic chambers.

The HAUERININÆ constitute a group of dimorphous forms connecting the MILIOLININÆ with the PENEROPLIDINÆ. The sub-family is best represented by the genus *Hauerina*, which, except in its very early growth, may be described as a *Cornuspira* or *Spiroloculina* with more than two segments in each convolution; and the closely allied *Planispirina* is essentially a *Hauerina* with the chamber-walls spreading over the lateral faces of the test in Nummuline fashion.

The genus *Peneroplis*, like *Cornuspira*, is spiral from the commencement, and each convolution is divided into many segments. The spire is either nautiloid or explanate, and the later chambers often diverge in a straight, linear series. *Orbiculina* resembles the spiral *Peneroplides*, but has its chambers subdivided into chamberlets, and in this particular forms the connecting link with *Orbitolites*. The simpler varieties of *Orbitolites* begin spirally, the more complex usually commence with a large primordial chamber; but both almost immediately assume a cyclical plan of growth, and the mature shell consists of a large number of annular chambers, each divided into numerous chamberlets. *Alveolina* has a spiral test, more or less elongated on the axis of convolution, and the chambers subdivided into chamberlets. From a morphological point of view it is an

[1] *Phil. Trans.*, 1856, p. 551; *ibid.*, 1858, p. 4.