

*marginalis*; if checked in its second, as an *Orbitolites duplex*; and if checked in its third, as the earlier (fossil) form of *Orbitolites complanata*.

*Second*, that all these ancestral types are still living; and that, so far as we know the external conditions of their existence, they are precisely the same as those of the completed form.

*Third*, that the absence of any distinguishable differentiation in the parts of the sarcodic body of even the most "complex" Orbitolines, seems to make their physiological relation to their "environment" precisely the same as that still held by the whole series of ancestral forms.

In considering the genetic relations of these several forms, and the circumstances under which one has given origin to another, it is requisite to keep the distinction clearly and constantly before the mind, between *growth* and *development*;—the former consisting



FIG. 6.—Diagrammatic representation of the sarcodic body of *Miliola*.

a, Primordial segment.  
1-6, Successive segments, marked off by constrictions at intervals.

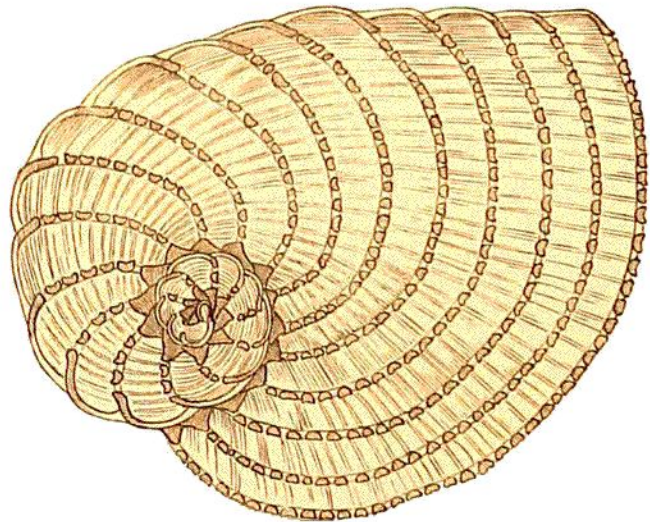


FIG. 7.—Shell of *Peneroplis*, showing its successive septa traversed by pores at regular intervals.

in the extension of the original fabric on the *same* plan, by the multiplication of *similar* parts; whilst the latter involves a *change* of plan, of which *dissimilarity* (consisting in the supersession of the original homogeneousness by heterogeneousness) is the essential feature. Thus, a *Cornuspira* that begins its life in the form of a conical tube coiled into a nautiloid spire, may expand itself, as it grows, into a flattened tube, rapidly increasing in the breadth of its mouth, without any greater change than we see in an *Amæba*, which, at one time an almost spherical lump of protoplasm, quickly flattens itself out into a disk with pseudopodial extensions. But if, instead of flattening itself out, the body of a *Cornuspira* should undergo constriction at intervals, as in fig. 6, and should form at each constriction a partial septum across its tube, we recognise a new departure that constitutes an advance in development; whilst as long as further additions are made upon this new (Spiroloculine) plan, the process is one of growth only. When,