

which they are distinguished. In the comparatively brief descriptions which follow, I have made free use of the material ready to my hands in Dr. Carpenter's Report—indeed it would have been difficult to avoid doing so; and I must refer the reader interested in the subject, either as a histological study or in its philosophical bearings, to the fuller elucidation he will find in the pages of that work.

The genus *Orbitolites* is characterised by a test of discoidal form, and generally of comparatively large dimensions, composed of chamberlets arranged either principally or entirely in concentric rings, and with an aperture consisting of marginal pores. It exhibits a certain amount of variety in the contour and disposition of the earlier chambers, which in some species are arranged in a flat spire, and in others assume the annular form from the commencement; but under no circumstances do the spiral segments constitute more than a very small proportion of the test, and they are always evolute and non-embracing. In this respect the genus differs from *Orbiculina*, which, though it sometimes puts on a small number of cyclical chambers, is essentially a spiral type, the earlier segments being always so far nautiloid and embracing as to cause a well-marked thickening of the central portion of the shell.

The terms made use of by Dr. Carpenter in his account of the structural features of the genus have been for the most part adopted in the following pages, and the subjoined woodcut with the accompanying explanation, also borrowed from his Report, will serve to illustrate their application. The figure, however, is primarily intended to demonstrate the nature of the successive modifications which lead from the simpler to the more complex types of structure, and which furnish the basis of distinction between the species.

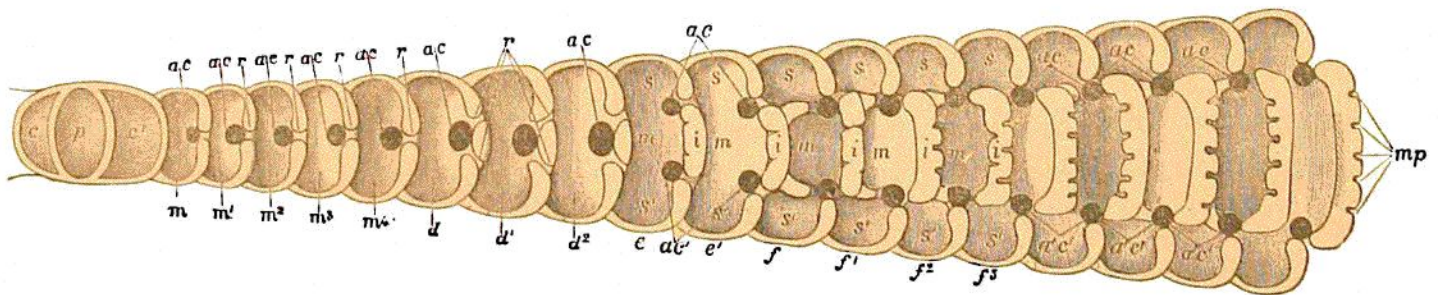


FIG. 6.—Diagrammatic representation of the progressive development of the Simple type of *Orbitolites* into the most Complex (after Carpenter).

*p*, primordial chamber; *c, c'*, circumambient chamber; *m, m<sup>1</sup>, m<sup>2</sup>, m<sup>3</sup>, m<sup>4</sup>*, chambers of successive zones of *Orbitolites marginalis*, each having its single annular canal, *ac*, and its radial stolon-passage, *r*; *d, d<sup>1</sup>, d<sup>2</sup>*, chambers of successive zones of *Orbitolites duplex*, each having its single annular canal *ac*, and its double radial stolon-passage *r*; *e, e'*, chambers of intermediate (fossil) form of *Orbitolites complanata*, each having a pair of annular canals *ac, ac'*, with an interposed septum *i, i'*, and having its superficial portions, *s, s'*, still in continuity with the median columns *m, m*; *f, f<sup>1</sup>, f<sup>2</sup>, f<sup>3</sup>*, chambers of the typical form of *Orbitolites complanata*, each having its double annular canal, its median columnar portion *m*, separated from that of the next annulus by the interposed septum *i, i'*, traversed by oblique pores, which appear as marginal pores, *mp*, at the edge of the disk; but the superficial chamberlets, *s, s'*, and *s, s'*, alternating in position with the median, and each of them communicating with the annular canals of two zones, as shown at *ac, ac'*

The geographical distribution of the genus extends over a very wide area. The typical *Orbitolites complanata*, in company with the more closely related forms, has its