arrangement of concentric annuli crossed by straight radiating lines (compare Pl. I. fig. 1 with Pl. VI. fig. 4), their thickness does not exceed that of the smallest specimens of *Orbitolites marginalis*, with which this type corresponds in the simplicity of its structure (indicated by the singleness of the row of pores along its margin), but from which it is obviously differentiated by the shape of its chamberlets, indicated by its surface-markings.

The disks of this species, which are usually remarkable for their flatness and regularity, seem to attain a diameter of at least 0·6 inch ; but specimens of that size are seldom or never brought up entire, their extreme tenuity, and the slight adhesion of their successive annuli to each other, rendering them extremely fragile. Their thickness does not exceed $\frac{1}{300}$th of an inch. The inner margin of each shelly annulus is slightly grooved, as shown in Pl. I. fig. 4 ; and the two edges of this groove embrace the thin edge of the preceding annulus, as shown in sectional view at *a*, *a*, fig. 3. In all but the central portion of these disks (Pl. I. fig. 1), the annuli are complete and of nearly uniform breadth : but the inner portion of the disk shows a marked excentricity, the "nucleus" being considerably out of centre, and the first-formed zones being developed from one side of it only ; so that it is not until after repeated additions, that the *cyclical* plan of growth characteristic of the Orbitoline type comes to be established. When the cavity of the disk is laid open, either by grinding or by the action of dilute acid on its thin superficial lamellæ, or even when an unaltered specimen mounted in Canada balsam is viewed by transmitted light, the radiating lines with which the surface is marked are seen to correspond with internal partitions (Pl. I. fig. 2, and Pl. II. fig. 5), which divide each flattened annular chamber into a multitude of narrow chamberlets. This division, however, is not complete ; for the radial partitions do not extend to the outer margin of the annulus, so that a sort of gallery is left, into which every one of the chamberlets opens at its outer end. The septum which forms the peripheral wall of this gallery is perforated by pores at regular intervals ; and each of these opens into a chamberlet of the next annulus,—those of the outermost annulus opening along the margin of the disk (Pl. I. fig. 5). It is characteristic of this species that the pores are more or less elongated in the plane of the disk, instead of being either circular or vertically-oval, as they are in other *Orbitolites*. Similar pores are seen on the internal (fig. 4) as well as the external margin of any zone that has been detached by fracture ; and it is obvious that they constitute the channels of communication between the central and peripheral portions of the cavitary system ; whilst the annular galleries, seen in transverse section at *b*, *b*, *b*, fig. 3, maintain the like continuity between the different portions of each zone. Thus, whatever may be the number of these concentric annuli, a perfectly free communication exists throughout ; the departure shown in this species from the general plan of structure already described, having reference only to the shape of the chamberlets, and their relation to the undivided gallery. And it is at once seen that this departure marks out *Orbitolites tenuissima* as an earlier and less specialised form ; since if the chambers of a *Peneroplis*