

## PLATE III.

Structure of Calcareous Disks of *Orbitolites marginalis* (figs. 1-7), and *Orbitolites duplex* (figs. 8-14), as seen by reflected light.

### *Orbitolites marginalis.*

Fig. 1. Surface of disk. Magnified 16 diameters.

Fig. 2. Inner portion of the same, showing its excentric "nucleus" and the orbicoline arrangement of its earlier zones of chamberlets. Magnified 64 diameters.

Fig. 3. Peripheral portion of the same, viewed somewhat obliquely, so as to show at *a* the columnar arrangement of the margin. Magnified 64 diameters.

Fig. 4. Marginal view of two disks, *a* thin, *b* thick; showing the marginal pores elongated vertically, some of those in *b* being traversed by shelly bridges, which do not, however, completely divide them. Magnified 64 diameters.

Fig. 5. Interior view of a portion of an annulus separated by fracture from that which it enclosed; showing the vertically-elongated radial passages opening into its chamberlets. Magnified 64 diameters.

Fig. 6. Vertical section, taken in radial direction, of peripheral portion of disk, showing the single annular canal of each annulus, and the arcuate direction of the chamberlets. Magnified 64 diameters.

Fig. 7. Peripheral portion of disk, of which the upper surface has been ground away, so as to lay open the columnar chamberlets, the walls of whose last annulus form the fluted margin *a*. Magnified 64 diameters.

### *Orbitolites duplex.*

Fig. 8. Surface of disk. Magnified 16 diameters.

Fig. 9. Horizontal section of a disk, taken beneath the plane of the annular canals, showing at *a* the openings into the lower series of columnar chamberlets, crossed by the annular septa; and at *b* the deeper plane from which the median stratum has been entirely removed. Magnified 50 diameters.

Fig. 10. Peripheral portion of the surface. Magnified 50 diameters.

Fig. 11. Horizontal section through the median stratum traversed by the annular canals, which are separated by the successive septa  $s^1-s^0$ ; on the convex sides of these septa are seen the large passages leading obliquely downwards into the columnar chamberlets (*see* fig. 9) of their own lower series, while on the concave sides of the septa are seen the small radial passages that pass from each annular canal into the columnar chamberlets of the next annulus. Magnified 50 diameters.

Fig. 12. Portion of disk laid open by removal of its upper surface, showing upper series of columnar chamberlets, with the pore in every one, which is the opening of the oblique radial passage from the annular canal of the preceding annulus. Magnified 50 diameters.

Fig. 13. Margin of disk, showing the marginal pores arranged in two series, generally alternating in position, and separated by elevated ridges. Magnified 64 diameters.

Fig. 14. Central portion of disk, showing small "nucleus" and imperfect annulation of first-formed zones. Magnified 64 diameters.