PLATE I.

Structure of Calcareous Disk of *Orbitolites tenuissima*.

Fig. 1.—Surface of young disk, showing its excentric spiroloculine "nucleus," giving origin to successive zones of orbiculine chamberlets, which gradually increase in breadth with the opening-out of the spire, until they extend completely round the "nucleus"; after which the successive additions are made on the cyclical plan, as concentric annuli. Magnified 25 diameters.

Fig. 2.—A portion of three peripheral annuli, enlarged to 64 diameters, and partially laid open by the removal of the superficial lamella, so as to show the two annular septa *aa*, *bb*, the chamberlets *c*, separated by radial partitions, and the annular gallery *d*, into which all the chamberlets open at their peripheral extremities.

Fig. 3.—Vertical section of three annuli of the disk, taken in the radial direction, so as to traverse the chamberlets lengthways; *a*, *a*, junctions of two annuli with the annuli external to them; *b*, *b*, *b*, annular galleries traversing the septa between the chamberlets. At *a*, *a* are seen the openings through which the sarcodic cords that occupy the annular galleries send radial extensions into the chamberlets of the succeeding annuli. Magnified 64 diameters.

Fig. 4.—Internal aspect of a small portion of an annulus detached by fracture; showing the entrances to the chamberlets of that annulus through the septal plane. Magnified 64 diameters.

Fig. 5.—External or peripheral aspect of a portion of a marginal annulus, showing the passages through its septal plane, as marginal pores elongated in the plane of the disk. Magnified 64 diameters.

Fig. 6.—Portion of a disk, whose remainder, with the "nucleus," has been lost by injury previously to the formation of the last two annuli, which have extended themselves along the fractured margin, and into the nuclear space. Magnified 15 diameters.

Fig. 7.—Incipient production of an entirely new disk, with regularly concentric annuli, from a fragment of the peripheral portion of an old one. Magnified 15 diameters.