

Orbitolites duplex, Carpenter [*macropora*, Ehrenberg, sp.?] (Pl. XVI. fig. 7).

Orbitolites macropora (?), Lamarck, 1816, Hist. Nat. Anim. s. Vert., vol. ii. p. 197, No. 5 (*vide* Carpenter).

Orbitolites macropora (?), Goldfuss, 1826, Petrefacta Germaniæ, &c., vol. i. p. 41, pl. xii. fig. 8, *a. b.*
Amphisorus hemprichii, Ehrenberg, 1839, Abhandl. d. k. Akad. Wiss. Berlin (for 1838), p. 134,
pl. iii. fig. 3.

"*Orbitolites, duplex type*," Carpenter, 1856, Phil. Trans., p. 120, pl. v. fig. 10; pl. ix. fig. 10.

Orbitolites complanata, var. *macropora*, Parker and Jones, 1860, Ann. and Mag. Nat. Hist.,
ser. 3, vol. v. p. 289;—vol. vi. p. 38, No. 35.

„ *duplex*, Carpenter, 1883, Report on the Genus *Orbitolites*, Zool. Chall. Exp., part
xxi. p. 25, pl. iii. figs. 8-14; pl. iv. figs. 6-10; pl. v. figs. 1-13.

The forms distinguished by Dr. Carpenter, in his recent Challenger Report, under the name *Orbitolites duplex*, though referred to in his earlier accounts of the genus, had not previously been separated in a specific sense from *Orbitolites complanata*. They nevertheless appear to exemplify well differentiated and tolerably constant structural peculiarities, equally removed from those of *Orbitolites marginalis* on the one hand, and *Orbitolites complanata* on the other. They represent in fact an intermediate stage somewhat more complex than the former, but not attaining the full development of the latter type.

The shell of *Orbitolites duplex*, like those of its congeners, takes the form of a circular disk, with flat or very slightly concave surfaces. The diameter never exceeds about $\frac{1}{3}$ rd inch (8.4 mm.) and the maximum thickness, at or near the margin, about $\frac{1}{80}$ th inch (0.3 mm.). The central portion or nucleus presents intermediate characters. It consists of a primordial chamber surrounded by a circumambient chamber, and this is followed by two or three incomplete circlets, after which the cyclical mode of growth commences immediately without the interposition of any distinct series of spiral segments. Both the septal walls and the secondary septa are thicker, in proportion to the size of the cavities they enclose, than those of *Orbitolites marginalis*, and the concentric annuli are in consequence less distinctly marked on the exterior. On the lateral faces of the test the chamberlets appear in the shape of circular spots, each bounded by its own wall; and those of the adjacent annuli alternate more or less regularly with each other. The peripheral face is marked by a double row of pores, which serve collectively as the aperture of the test. The pores of the two rows are generally but not invariably placed alternately.

The double row of external orifices marks the chief distinctive feature of the test, and indicates the point in which the internal structure differs from that of the simple type. The disk of *Orbitolites marginalis*, as already stated, consists of a single tier of chamberlets, each circlet of which has its own annular gallery into which all the constituent chamberlets open freely, and from which a single series of radial passages are given off connecting it with the succeeding annulus. The test of *Orbitolites duplex*, on the other hand, is