

Sub-family 2. *Trochammininæ*.*Thurammia*, H. B. Brady.*Lituola*, pars, Carpenter [1875].*Thurammia*, Brady [1879], Bütschli, Carpenter, Uhlig, Haeusler.

Test (typically) free; consisting of a single round, ovate, compressed, or irregularly-shaped chamber, sometimes enveloping one of smaller size. Surface beset with numerous perforated nipple-like protuberances. Walls thin, arenaceous, rarely chitino-arenaceous.

The genus *Thurammia* takes the place in arenaceous series that *Orbulina* occupies amongst the hyaline Foraminifera. As a generic group it presents a considerable range of characters, both in the contour and the minute structure of the investment. In its normal or typical form the test is nearly spherical, the walls being usually very thin; and it has nipple-like orifices scattered over the surface, which are probably homologous with the larger set of pores in the *Orbulinæ*.

In the living condition *Thurammia* is very widely distributed. It is found in all the great ocean basins, preferring as a rule the deeper areas. Out of twenty-six recorded localities, eighteen have depths set down at more than 1000 fathoms, and six at more than 2000 fathoms.

No fossil representatives of the type were known, until the late publication by Dr. V. Uhlig of a brief paper on Jurassic Foraminifera,¹ in which certain Rhizopods closely resembling the living varieties of *Thurammia* were described, from specimens found in beds of Upper Jurassic age at Olomutschan near Brünn in Austria, and from similar formations in Wurtemberg. Some of these, which Dr. Uhlig has been good enough to send to me for identification, appear to have all the characters of the genus, if not of the actual species, exemplified by the living forms. Still more recently Dr. R. Haeusler of Brugg has obtained well-characterised examples of the type from the Jurassic formations of Switzerland, a fact which he has kindly enabled me to verify by the examination of numerous specimens.

Thurammia papillata, H. B. Brady (Pl. XXXVI. figs. 7-18)."Orbuline *Lituola*," Carpenter, 1875, *The Microscope*, 5th ed., p. 533, fig. 273, *g. h.**Thurammia papillata*, Brady, 1879, *Quart. Journ. Micr. Sci.*, vol. xix., N. S., p. 45, pl. v. figs. 4-8." " " Carpenter, 1881, *The Microscope*, 6th ed., p. 561, fig. 320, *g. h.*" " " Haeusler, 1883, *Ann. and Mag. Nat. Hist.*, ser. 5, vol. xi. p. 262, pl. viii.

Test typically free, and consisting of a single spherical chamber, the surface of which is studded with irregularly disposed perforated papillæ; rarely adherent; not

¹ Ueber einige oberjurassische Foraminiferen mit agglutinirender Schale. *Neues Jahrb. für Min., &c.*, 1882, vol. p. 152.