

Order II. LITHISTIDA, O. Schmidt.

Tetractinellida provided with a consistent skeleton by the zygois of modified spicules or desmas.

Suborder I. HOPLOPHORA.

Lithistida provided with special ectosomal spicules, and usually with some form of microsclere.

Demus I. TRIÆNOSA.

Hoplophora in which the ectosomal spicules are some form of triæne, and in which microscleres (spirasters, amphiasters, or microrabds) are invariably present.

Family I. TETRACLADIDÆ (Zittel).

Triænosa in which the desma is tetracrepid.

Genus 1. *Theonella*, Gray.

Tetracladidæ with a large single oscule, the external opening of an axial cloaca, or with numerous oscules dispersed on the interior surface of a cup-shaped sponge; pores in sieves, generally distributed over the exterior. The ectosomal megasclere is a phyllotriæne; discotriænes are absent. The microsclere is a microstrongyle.

Theonella swinhoei, Gray (Pls. XXIX., XXX.).

Theonella swinhoei, Gray, Proc. Zool. Soc. Lond., pp. 565, 566, woodcut, 1868.

" " Carter, Ann. and Mag. Nat. Hist., ser. 4, vol. xii. p. 437, 1873.

" " Zittel, Abhandl. d. k. baier. Akad. d. Wiss., Bd. i. pp. 103, 151, pl. i. fig. 9, 1878.

" " Carter, Ann. and Mag. Nat. Hist., ser. 5, vol. vi. p. 147, 1884.

Sponge (Pl. XXIX. figs. 1-3).—Simple, erect, attached, more or less cylindrical, with a smooth surface, raised into unequal irregular bosses and high, sinuous, longitudinal and transverse, anastomosing ridges. The single circular oscule is situated in the centre of the rounded summit, surrounded by a smooth wrinkled membrane. It leads into a cylindrical cloaca, which extends axially through nearly the whole length of the sponge, and is lined by a network of collenchyma, limited by a smooth shining concentrically ridged or plicated membrane, fenestrated by a multitude of small oval apertures, and perforated by larger openings, which lead into the main branches of the cloaca.