

*Scleritoderma flabelliformis*, n. sp. (Pl. XXXV. figs. 26–50).

*Sponge* (Pl. XXXV. figs. 26–28).—Small, irregularly flabelliform, margin rounded, sinuous, lobate, usually pedicellate, attached by an expanded incrusting base. Oscules numerous, small, the open ends of monticular or short tubular elevations, proceeding from the front and usually concave face of the sponge. Pores on the opposite face, the open ends of little tubular elevations, similar to, but slightly smaller than those bearing the oscules, arranged in sinuous rows, or scattered singly.

*Spicules*.—I. Megascleres. 1. *Desmas* (Pl. XXXV. figs. 43–49), presenting the various irregular forms characteristic of the monocrepid desmas. When elongated chiefly in one direction they may attain a length of 0·4 to 0·5 mm., when quadriradiate a single branched cladus may measure 0·24 mm. in length, the average breadth of the epirabd is about 0·039 mm.

The young desma (Pl. XXXV. figs. 34–41) in its earliest observed stage is a cylindrical strongyle with an eroded surface; it is 0·0774 mm. long by 0·015 mm. wide, and presents an axial rod traceable for 0·045 mm. The crepidial axis of the adult desma is traceable for a distance of from 0·032 to 0·045 mm.

II. Microscleres. 2. *Microstrongyle* (Pl. XXXV. figs. 29–33), a thin membrane invests the sponge, and is accompanied by a layer of microstrongyles one or two deep, lying parallel to the surface in various directions, and so close together as to form a kind of felt. These spicules are fusiform or cylindrical, with rounded, or slightly and spherically enlarged ends, straight, simply curved, or irregularly bent, with a roughened or minutely granulated surface; about 0·08 to 0·09 by 0·013 mm.

3. *Sigmaspire*, of the usual form, varying from less to a little more than a single revolution, 0·01 mm. in length.

*Colour*.—In the dried state the surface has a faint yellowish-brown tint.

*Habitat*.—Station 192, off the Ki Islands, south of Papua, September 26, 1874; lat. 5° 49' 15" S., long. 132° 14' 15" E.; depth, 140 fathoms; bottom, blue mud. Trawled.

*Remarks*.—Of this sponge five specimens were trawled. The smallest, which is the most perfectly flabelliform, is 19 mm. high, 12 mm. broad, and 3 mm. thick; the largest two measure respectively 42 mm. by 23 mm., and 20 mm. by 34 mm. in height and breadth; though usually pedicelled, the sponge is sometimes in its most irregular and incurved form, attached by the convex side of the folded plate.

The successive stages in the development of the desma are to be readily followed, owing to the abundance of young forms; they are illustrated in Pl. XXXV. figs. 34–42. A description of the development of the monocrepid desma generally is given in the Introduction.