

vasiform specimen measures 113 mm. in diameter across the brim, and 113 mm. in height; the central cavity is 75 mm. deep.

*Habitat.*—Japan, Misaki, at the entrance of the Bay of Tokio (Carter). Island of Enoshima, Bay of Sagami, Japan; depth, 30 to 60 fathoms (Döderlein).

*Discodermia dissoluta*, O. Schmidt.

*Discodermia dissoluta*, O. Schmidt, Spong. Meerb. Mexico, p. 87, pl. v. fig. 2, 1880.

*Sponge.*—Branching, branches cylindrical, but flattened on the side bearing the oscules. Oscules several, confined to one side of the sponge, situated near the ends or in the middle of the branches, or in the angle between them; small, surrounded by a smooth membrane, which is slightly depressed below the general level of the sponge, and forms the roof to a widely extending, shallow cloaca, into which numerous small ex-current canals open. Pores simple, small, 0·019 to 0·1 mm. in diameter, generally distributed. Consistence soft, like that of a Renierid sponge.

*Spicules.*—I. Megascleres. 1. *Desmas*, precisely similar to those of *Theonella swinhoei* when immature, at a stage immediately preceding the appearance of syzygial tubercles. The epactines are united by plate-like extensions between the angles they make about their origin. They terminate in flattened plate-like ends, or in two or more flattened cladi, without giving rise to tubercles; zygotis is of the loosest description, produced by the abutment against each other of the ends of the desmas.

Here and there desmas are met with in which the epactines are cylindrical, and provided with syzygial tubercles. The crepidial axis is variable in length, frequently 0·06 mm., the length of the epactine varies from about 0·08 to 0·16 mm. 2. *Disco-triæne*, cladome disciform or cyathiform, margin usually entire, seldom presenting a rhabdal sinus; 0·26 mm. in diameter, when cyathiform the depth of the cup 0·065 mm., rhabdome conical, strongylate, 0·118 by 0·0118 mm. The axial fibres of the cladome 0·02 mm. long. 3. *Oxea*, 0·8 by 0·1 mm., frequently tornotate, or strongylate.

II. Microscleres. 4. *Microxea*, fusiform, surface roughened, very variable in size, up to 0·05 by 0·004 mm. 5. *Microstrongyle*, bacillar, surface roughened, 0·0118 to 0·016 mm. long.

*Colour.*—Dark greyish-white. Size, the length of the largest specimen, which is not complete, is 78 mm., diameter of the stem 15 mm., the branches are 10 mm. thick from the oscular to the opposite surface, and 18 mm. wide.

*Habitat.*—Barbados; depth, 56 fathoms.

*Remarks.*—No one by merely looking at this sponge and handling it would suspect its Lithistid nature. So far from being of stony hardness, it is almost as soft as a bath sponge. This is due to the general absence of zygotis, the desmas having apparently