

membrane, the diverticula of which all project outwards against the smooth distended outer skin. On the inner side of the larger diverticula, a delicate network extends, while outside of the reticularis, between it and the reticulate dermal membrane, there is the external trabecular network.

The external layer of the dermal membrane is supported by smooth simple, hypodermal oxyptacts, with four tangential rays, intersecting parallel to the surface and somewhat curved, while the proximal ray, at right angles to the latter, is inserted radially in the parenchyma. Long slim spicules project radially on all sides for a greater or less distance from the sponge body. They are either simply pointed at both ends, and thus in part to be described as incipient uncinates, or exhibit on the freely projecting portion minute teeth or spines directed obliquely outwards, and on the outer end a slight club-shaped toothed swelling with a narrow terminal point, while the internal proximal portion remains smooth. Both in the external skin and in the parenchyma there are numerous amphidiscs of the same form and size as those in the adult *Poliopogon amadou*. On the lining of the gastral central cavity similar forms occur, which have been overlooked in the figure (Pl. L. fig. 2). At the inferior pole, opposite the oscular opening, the anchor forms above mentioned occur, in part buried in the parenchyma, in part more or less protruded. They resemble those of the adult but are of much smaller size. It is striking that the parenchyma is wholly destitute of the *small hexacts* and of the *pinuli* on the external and internal sides of the bounding surface.

2. *Poliopogon gigas*, n. sp. (Pls. XLVII., XLVIII.).

An immense sponge form, which turned out to be a *Poliopogon*, was trawled between the Raoul and Macaulay Islands, to the north of New Zealand, (Station 170, lat. 29° 45' S., long. 178° 11' W.) at a depth of 630 fathoms, from a volcanic ground. The roundish cubical mass has a diameter of 50 to 70 cm. The lower wholly torn surface still exhibits the remains of bundles of spicules, which have undoubtedly formed, along with others now lost, a thick broad basal tuft. The lateral rounded external surface is tolerably smooth, without projecting bundles of spicules or isolated radial prostalia, and covered by an incompletely preserved fine quadratic dermal lattice-work. The upper much injured terminal surface bears a median hemispherical depression, from 15 to 20 cm. in breadth and the same in depth, representing the gastral cavity (Pl. XLVII.). The marginal fringe of the oscular aperture is unfortunately not preserved.

The spicules of the parenchyma, which is penetrated by lacunæ and canals of varying width, essentially resemble those of *Poliopogon amadou*. Here too we find smooth oxyptacts of variable size, with long straight or slightly curved rays. The original disposition of these pentacts seems to have been not so much in the parenchyma, as in the external or internal limiting membrane or in the walls of the larger canals. Small