

The skeletal elements of the gastral membrane and lining of the efferent canals agree in many respects with those of the dermal area. The hypogastral *pentacts* are, however, wanting, being either replaced by diacts or not at all. The autogastral pentact pinules generally resemble the dermals in form and length; they are, however, throughout more delicate and slim (Pl. XXVII. fig. 22). They are at once thickest and strongest near the margins of the openings, and are seen to be more widely separated and more weakly developed the further the canals are traced inwards.

The long narrow diact marginalia in several layers, form a not very high, cuff-like projecting marginal fringe. From the middle portion, which is distinguished by four cruciate protuberances with axial canals, a smooth, gradually narrowing, terminally pointed proximal ray extends inwards, while, in the opposite direction, an equally long, or still longer distal ray, projects freely outwards in the same axis. The basal portion of the latter is smooth, but the larger portion, on to the freely projecting terminal point, is furnished with pointed, distally-directed lateral teeth, gradually decreasing in size.

In the basal pad, strong short spicules occur, with from six to two thick, cylindrical rays, whose terminal portions are frequently somewhat thickened, and always covered with radially disposed, pointed, conical teeth. Of the apparently smooth basal spicules which form a simple, untwisted tuft, but few are present, and these all broken.

3. *Hyalonema divergens*, n. sp. (Pl. XXVIII. figs. 1-11).

This species of *Hyalonema* was dredged in Mid-Pacific, to the east of Maldon Island (Station 271), lat. $0^{\circ} 33' S.$, long $151^{\circ} 34' W.$, from a depth of 2425 fathoms, on a Globigerina ooze ground. In shape it resembles an inverted bell, with a slightly widened terminal portion; it possesses a length of 8 cm. and a maximum breadth of 6.5 cm. (Pl. XXVIII. fig. 1). The superior margin of the transversely truncated terminal surface bears a delicate spicule-fringe. The terminal surface itself is formed by a transversely stretched net, that is, by a typical sieve-plate. From the somewhat pointed lower end a straight basal tuft projects. It is composed of parallel basal spicules, which are, for the most part, broken somewhat short, and sometimes attain the thickness of almost a millimetre.

The only specimen procured is somewhat compressed, and in some places rubbed away, so that it is impossible to make any definite statements as to the characters of the lateral surface. Only here and there does a patch of uninjured skin persist. At the inferior extremity of the body, where the long, strong spicules of the root-tuft freely project, the often mentioned thick basal pad is seen. There is no trace of encrusting *Palythoa*, but the general state of preservation makes it impossible to say with certainty that the *Palythoa* were absent during the life of the sponge.

The delicate net of the terminal sieve-membrane is raised from the marginal portion