

slender umbel rays, which vary considerably in length in different amphidiscs, and are often markedly divergent (Pl. XLII. fig. 3). The smaller and smallest amphidiscs, varying from 0.04 to 0.02 mm. in length, bear short, approximately or perfectly hemispherical terminal umbels, with eight, twelve, or more slender umbel rays (Pl. XLII. figs. 4 and 5).

The firm skin which lines the long cylindrical gastral cavity is supported by strong smooth hypogastral pentacts, which entirely resemble the already described hypodermalia. The bushy autogastral pentacts are also exactly similar to the autoderms. I did not find here the largest form of amphidisc, with broad paddle-like or lancet-shaped umbel rays, but the medium-sized and small forms were present in abundance, as in the skin. On the internal surface of the numerous large ramified efferent ducts, which occur in the gastral walls, hypocanalicular oxypentacts with canalicular pentact pinuli occur, but the latter are different from the autodermal and autogastral forms in this, that their four, sometimes smooth, sometimes spinose basal rays are on an average longer, and the freely projecting ray less thickly beset with lateral curved spines (Pl. XLII. figs. 8, 9, 12, 13). The further the efferent canal system is followed towards the chamber parenchyma, the less conspicuous, the more slender and sparse do the pinules become, and the weaker is the development of the spines on the freely projecting ray (Pl. XLII. fig. 11) until they finally disappear just before the orifices of the chambers.

The spicules, which project radially in long tufts from the lateral surface, are diacts or uncinates, either smooth or covered with barbs. The long bundles, projecting at the lower end consist of spicules, which are smooth at the upper pointed end, while the lower is beset with spines, bent obliquely upwards and outwards, and usually distinctly disposed in two opposite rows. Somewhat above the extremity the spines disappear, and the spicule ends in an anchor structure, which exhibits two, more or less long, slightly recurved, opposite teeth (Pl. XLII. fig. 7). Three such teeth exceptionally occur. If two anchor teeth are formed, as is usually the case, they lie in the same plane as the biserially alternately disposed barbules of the shaft (Pl. XLII. fig. 7).

2. *Pheronema carpenteri* (Wyville Thomson) (Pl. XLIII.).

On the "Lightning" Expedition in the north of Scotland, Wyville Thomson found, at a depth of 530 fathoms, some beautiful sponges which he described and figured in a masterly fashion¹ under the title *Holtenia carpenteri*. Of these I obtained for examination some spirit and dried specimens captured by Wyville Thomson himself on the "Lightning" and "Porcupine" Expeditions, and other specimens well-preserved in alcohol, which were dredged by Mr. John Murray on the "Triton" Expedition. On the Challenger Expedition several much torn portions of this Hexactinellid were trawled on

¹ *Phil. Trans.*, 1859, p. 701.