

angle always becomes more obtuse, and on the rim the bent spicules are placed nearly peripherally. Above these spicules there are straight, long, needle-shaped spicules, which are arranged not very regularly in eight rows placed longitudinally with regard to the polyp; near the edge these are very long and form far projecting bundles, which on the tentacles being folded stand up far above the polyp. Hence the polyps have a great resemblance to those of *Ceratoisis*, only in the latter the spicules which project above the polyps stand between the bases of the tentacles, while in *Acanthogorgia* they stand at the bases themselves. The axis is horny, fibrous, in the more slender branches it is often flattened and soft, so that the branches by the upright growth of the colony hang downwards.

The following species were collected during the voyage of the Challenger:—

1. *Acanthogorgia longiflora*, n. sp. (Pl. XXII. fig. 1; Pl. XXV. fig. 4).

The colony is sparsely branched in one plane. In the only specimen (in which the base is wanting) there arises a short stem, 1 mm. in diameter. At a height of 4 mm. this divides into two tendril-like, diverging branches. These branches are 0.4 mm. thick at the base and bend away from one another in an arching manner. They attain a length of 100 mm. Each gives off on one side simple rod-like twigs, 45 mm. in length, the first pair are at the base of the bifurcation, the next comes off in the middle of the main branches, the next three at long intervals and at nearly right angles. The branches and twigs are thin and soft and bend downwards towards the base.

The cœnenchyma is very thin throughout and everywhere allows the yellowish-brown axis to show through. The polyps arise from the stem and branches at wide intervals from one another in alternating series. The intervals between them are irregular, often two on opposite sides follow close upon one another, while frequently they are 2 to 3 mm. apart. At the apex of the twigs they are more thickly placed, and often two to four are placed together round the stem. The apex of the twig is occupied by a polyp. The polyps are very much elongated, cylindrical, and expanded at the end, they are placed perpendicularly on their support but are frequently bent towards the apex of the branch, like the polyps of a Primnoid. Their length reaches 8 to 10 mm., their diameter 1 mm. Sometimes the lower half is thickened and swollen, so that the form becomes cup-like, whilst a constriction separates the basal part from the expanded tentacular part. When this is the case numerous ova are found present in the basal part. The tentacles appear but slightly retractile, only the apices are bent in, and the remaining portions, armed with spicules, are laid together over the mouth and form an operculum, which is scarcely overtopped by the eight groups of spicules developed on the margin of the polyp. The axis is altogether fibrous, horny, and in the branches and