

spines are cylindrical, generally densely set, and sometimes collected in tufts, as in *Antipathes humilis*. They are frequently unequal on the two sides of the pinnule, being longer on the side occupied by the polyp. In the second type the spines are triangular and compressed. In this case the spines are disposed regularly in quincuncial order around the pinnules, generally, though not always, disposed spirally, and showing no tendency to elongation in the neighbourhood of the polyps. According to Pourtalès' experience those species having triangular spines have polyps with longer tentacles than those in which the spines are cylindrical, and the polyps are usually more regular in shape. "In a very few instances the tentacles are found retracted, as figured by Lacaze Duthiers; in most cases they are simply contracted, and in many species they are probably not retractile at all." Pourtalès was also of opinion that the shape, size, and arrangement of the spines probably afford reliable specific characters. He is indeed the first author who has given us reliable information on these points in the description of new species. Unfortunately Pourtalès was not spared to complete the much needed revision which he contemplated, but the foregoing account of his views on the subject will show that the lines on which he proposed to work are, in the main, those which have been adopted in the present monograph.

Gray in 1868 (49) described a new species of *Cirrhopathes* (*C. filiformis*) from Australia, but as in other species described by this author, the polyps were not observed, and the description is insufficient for specific purposes. The type is in the collection of the British Museum, as well as three or four other specimens of the same species collected more recently.

Duchassaing (54), in his final review of the Zoophytes and Sponges of the Antilles, describes shortly four new species. Two of these, *Arachnopathes columnaris* and *Rhipidipathes tristis*, have since been observed by Pourtalès, who has figured a specimen of the former, and also the arrangement of the spines in both species. The other species described by Duchassaing, viz., *Antipathes taxiformis* and *Antipathes melancholica*, are very imperfectly described; the latter is probably allied to *Antipathes dissecta*, Duchassaing and Michelotti.

Lütken in 1871 (55) described a new form, *Antipathes arctica*, taken from the stomach of a shark captured off the coast of North Greenland. This is the first and only record (with the questionable exception of *Antipathes boscii* already referred to) of the occurrence of any species of Antipathidæ north of the Mediterranean and the southern States of North America. Lütken in a footnote mentions that Sir Wyville Thomson had informed him that specimens referable to this group had been collected during the expeditions for the exploration of the deep water around the British Islands. I am, however, unable to find any reference to them in Sir Wyville Thomson's published works, or in the zoological results of the various expeditions referred to.