

which the present species occurs.) The specimen here referred to is attached by thread to a card, which also contains Gray's type of *Cirrhopathes setacea*, var. *occidentalis*. Both specimens bear a register number, but neither are named, the card simply bearing the inscription, "Madeira, J. Y. Johnson." This evidently cannot refer to the var. *occidentalis*, as that came from Turk's Island, West Indies. The other specimen may have been regarded by Gray as a specimen of his *Cirrhopathes setacea*, but certainly it cannot be the type, as the species was described in 1860, and the specimen in question was only received in 1872. This specimen, which is about 30 cm. long and 2 mm. in diameter at the base, agrees in every respect with the specimens of *Stichopathes gracilis*, here described. As I have no means of ascertaining what form Gray actually did regard as *Cirrhopathes setacea*, and as his description of the type contains no characters not applicable to this species, I have queried *Cirrhopathes setacea* as a probable synonym. His *Cirrhopathes setacea*, var. *occidentalis* evidently, from his description, differs very much from the type, and as I find the specimen to differ from any to which I have had access, I have raised it to the rank of a species, under the name *Stichopathes occidentalis* (Gray).

All the Madeira specimens here described agree in having a relatively slender non-spiral axis, on which the polyps are placed in a single longitudinal row.

The spines vary very much in size, shape, and relative frequency in different portions of the axis, but the arrangement on portions of the same diameter is practically the same in the various specimens referred to. In slender portions of the stem the spines are arranged spirally, and also in longitudinal rows (Pl. XII. fig. 17). They are triangular, compressed, and stand out at right angles to the stem, those in one row being about two lengths apart. Most are simple, and have a sharp apex, but a few are forked at the tip. In somewhat older and thicker portions of the stem (Pl. XII. fig. 18) the arrangement of spines is less regular. A few are simple and irregularly arranged, but the majority form double spines, having two divergent apices united by a common swollen base. This appearance is presumably brought about by the further deposition of horny lamellæ over spines which had already become bifid at the tip, each new layer tending to make the bifid character more pronounced. In still older and thicker portions of the stem (Pl. XII. fig. 19), by a still greater increase in the thickness of the sclerenchyma, the bases of the bifid spines become covered over, and in their place a number of simple spines are to be found arranged in pairs close together, each pair having apparently been derived from a primitively simple spine by the process indicated. The majority of the spines are now simple, but some are short and broad, having the apex divided into a number of processes giving a serrate appearance.

*Habitat.*—Madeira (Brit. Mus.).