

*Synopsis of Species.*

1. Stem long, slender, spiral; spines small, conical, arranged in irregular sinistrorse spirals, . . . . . *pourtalesi*, n. sp.
2. Stem long and slender, sinuous but not spiral, scarcely tapering; spines simple, triangular, with further growth becoming bifid and ultimately double, . . . . . *gracilis* (Gray).
3. Stem slender, not spiral, distinctly tapering; spines numerous, short, triangular, much compressed, directed upwards, and arranged in steep sinistrorse spirals, . . . . . *echinulata*, n. sp.
4. Stems slender, relatively short, several from one base; spines small, arranged in regular verticils, . . . . . *desbonni* (D. & M.).
5. Stem elongate, slender, tapering; spines short, conical, somewhat compressed, arranged in dextrorse spirals on younger portions of the axis, . . . . . *occidentalis* (Gray).
6. Stem slender, scarcely tapering; spines very large, slightly bent upwards, arranged in irregular sinistrorse spirals, . . . . . *filiformis* (Gray).
7. Stem slender, slightly tapering; spines large, distinctly papillose, longer on one side of the axis than on the other, . . . . . *lütkeni*, n. sp.

*Stichopathes pourtalesi*, n. sp.

*Antipathes spiralis*, Pourtalès (*non* Pall.), Bull. Mus. Comp. Zoöl., 1880, p. 114, pl. 3, figs. 5, 25, 26.

*Antipathes Desbonni*, Pourtalès (*non* D. & M.), Bull. Mus. Comp. Zoöl., vol. v. p. 209; Illustr. Cat. Mus. Comp. Zoöl., No. viii., 1874, p. 46.

Stem very slender, wound nearly from the base into spirals, 10 to 20 cm. in diameter. The spirals are either from right to left or the reverse, and sometimes change in the same specimen. Spines short, triangular, compressed, and never in verticils but in quincunx. Longest specimens 3·2 m. long, and only 4 to 5 mm. in diameter at the base. The polyps are alternately large and small, having long digitiform tentacles much longer than has been figured for any other species (*cf.* Pourt., *loc. cit.*, pl. iii. figs. 25 and 26). The figures show the polyps and tentacles as frequently disposed, the larger polyps alone being visible; the smaller ones are seen only in profile view. At other times (probably owing to the action of spirit) the tentacles are much shortened and stiffened, and stand out like those of *Antipathes arborea*, Dana. The cœnenchyma on the back of the stem shows transverse canals more transparent than the rest in the spaces between successive polyps.

In an earlier notice of this species (64, p. 209) Pourtalès speaks of the axis having six rows of spines of which the polyps cover four. (In his later figures of the spines they are shown arranged in an irregular spiral, five or six of a series being visible from one aspect.) The polyps are large and crowded, alternately but not regularly large and small. "Eggs were found in one of the larger, thus rendering it probable that they and the smaller ones are of different sexes" (Pourt., *loc. cit.*, p. 209). The bearings of this point are discussed under Section II. of this Monograph. In the polyps near the base of the stem the tentacles become obsolete, although the mouth is plainly visible.