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A New Species of the Gorgonacean Genus *Muricea*
(Coelenterata: Octocorallia)
from the Caribbean Sea
(Plates 3-7)
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Abstract

A new species of the gorgonacean genus *Muricea* from the deep reefs of Jamaica is described and contrasted with *Muricea laxa* Verrill and *M. pinnata* Bayer. All three species are illustrated by scanning electron stereographs for the first time.

Introduction

Field operations around Jamaica by the late Dr. Thomas F. Goreau and colleagues using self-contained underwater breathing apparatus (SCUBA) at Discovery Bay during the formative years of the Discovery Bay Marine Laboratory of the University of the West Indies (see Bull. Mar. Sci. 23(1-2), 1973) yielded many remarkable reef-dwelling organisms that inhabit depths and areas of the sea floor where dredging is impossible owing to precipitous slopes and rocky substrate. The new species of *Muricea* from Jamaica described in the following pages is one of many novelties obtained by the diving team of Drs. Paul and Roma Chapman, whose knowledge of compressed air diving and attendant hazards permitted collecting at depths rarely reached by even the most professional divers.

Muricea Lamouroux, 1821

Muricea Lamouroux, 1821: 36. —Verrill, 1868: 418. —Kükenthal, 1919: 000; 1924: 141.—Riess, 1929: 383.—Aurivillius, 1931: 102. —Deichmann, 1936: 99.—Bayer, 1956: F210; 1959: 12; 1961: 179; 1981: 930 (in key only).

Type species: Muricea spicifera Lamouroux, 1821, by subsequent designation: Milne Edwards and Haime, 1850: lxxx.

Diagnosis: Holaxonians with purely horny axis loculated weakly if at all; anthocodiae of polyps fully retractile within more or less distinctly projecting calices stiffened by large, fusiform sclerites; anthocodial sclerites numerous, small, spindle shaped, forming at most a weakly differentiated transverse crown or collaret below the tentacles and converging on bases of tentacles; cortex with longitudinal canals surrounding axis and dividing coenenchyme into a thin inner layer or axial sheath and a thicker outer cortex. Sclerites of cortex fusiform, often massive, sculptured on inner surface by crowded, complex tubercles and on outer surface

by simple spines or prickles, and in some species with a few more or less prominent, coarse, prickly projections. Sclerites white, yellowish, or amber colored, less commonly purplish or dull red.

Distribution: Western Atlantic from Cape Hatteras to Brazil, including the Bahamas, Greater and Lesser Antilles, and Caribbean islands, in moderate depths down to 200 m but usually less than 100m; eastern Pacific, from southern California to Peru, including offshore islands, in moderate depths.

Remarks: Eastern Atlantic species attributed to *Muricea* in older literature are attributable to *Muriceides*, *Paramuricea*, and *Villosgorgia* (Paramuriceidae).

Muricea waltonsmithi n. sp.

Plates 3-5

Material: Jamaica, north coast: Discovery Bay, 230 ft. (70 m), coll. Paul and Roma Chapman, by SCUBA, 25 December 1964. One colony, holotype, USNM 55816 (SEM 2222, 2223).

Discovery Bay, 200 ft. (61 m), coll. T. F. Goreau, Eileen Graham and Roma Chapman, 24 December 1964. Four colonies all with part of holdfast, paratypes USNM 55818 (SEM 2220, 2221).

Diagnosis: Slender, very flexible *Muricea* with lateral branching tending to be one-sided; polyps arranged in loose spirals around twigs and branches, calices directed upward, their abaxial wall armed with large, simple spindles one or more of which projects as a strong, smooth spike.

Description: The type is a nearly complete colony 27 cm tall arising from a thin, spreading holdfast about 2.3 cm wide (Plate 3). The main trunk is 3.5 mm in diameter just above the base, not perceptibly flattened, gradually decreasing in girth upward and producing strong secondary branches at wide intervals from one side of the principal stem, suggesting that the colony grew outward from a vertical reef wall, with the subordinate branching proceeding upward. The subordinate branches are progressively thinner, with slender, unbranched terminal twigs only 0.7-0.8 mm in diameter and 60-70 mm long.

Polyps are well spaced in loose spirals around the secondary and subordinate branches but are absent from the trunk and main stem below the fourth secondary branch. They form upwardly directed calices stiffened by large, slender spindles, of which one or a few project as a smooth, glassy spike beyond the apex of the calyx (Plate 4). Small spindles arranged *en chevron* form eight points below the tentacles, which, in turn are filled with even smaller spindles and rodlets that are curved to accommodate the limited spaces they occupy. The anthocodial armature is not organized as a crown and points, as a ring of transversely arranged spindles does not lie beneath the sub-tentacular groups of converging spindles.

The coenenchyme is thin and filled with simple, more or less sinuous spindles, some of which reach a length of 4 mm or more. They are sculptured with numerous smooth, simple prickles on the outer surface, and complex tubercles on the inner surface. Small spindles with very prominent, conical processes occupy the longitudinal tracts between the longitudinal stem canals and form an incomplete axial sheath.

The characteristic features of the fusiform sclerites are adequately shown *in situ* in the stereoscopic views of the calices of holotype (Plate 4) and paratype (Plate 5).

The paratype lot consists of four colonies with all or part of their holdfasts, the largest 60 cm tall, the smallest 24 cm. They agree in all respects (Plate 5) with the holotype.

Etymology: This species is named in memory of the late Dr. F. G. Walton Smith, founding director of the Marine Laboratory, University of Miami (now the Rosenstiel School of Marine

and Atmospheric Science), whose boundless enthusiasm for all things marine launched me on a career in marine biology.

Remarks: The morphological characters of this species agree in some respects with the descriptions of *Muricea laxa* Verrill given by Verrill (1864: 36), Deichmann (1936: 101) and Bayer (1961: 188), especially in regard to calicular spindles with a smooth terminal spike. However, colonies of *M. laxa* are more robustly bushy, with stouter branchlets (Plate 6)(3-4 mm wide in the type according to Deichmann, 1936: 101) in contrast with less than 1 mm in *M. waltonsmithi* (Plates 4, 5), and the large spindles of the cortex are shorter but much stouter. These differences might be attributed to the deep-reef habitat of *M. waltonsmithi*, but records of *M. laxa* in USNM indicate its occurrence as deep as 128 m (and one record from 355 m, possibly suspect). According to Verrill (1864: 36), *M. laxa* is "Light yellow," a color not seen in the specimens of *M. waltonsmithi*.

Muricea pinnata Bayer (1961: 186) also has calicular spindles with a smooth terminal spine (Plate 7), but its branching is more closely pinnate and its colonies are much larger and more robust, with terminal branchlets 2-3 mm in diameter. Colonies 60 cm tall from Jamaica are densely bushy and more closely branched than is *M. waltonsmithi*.

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Explanation of Plates

- Plate 3. *Muricea waltonsmithi* n. sp. Holotype colony, USNM 55816.
- Plate 4. *Muricea waltonsmithi* n. sp. Holotype, USNM 55816. Top, Part of terminal branchlet; Bottom, Detail of calices.
- Plate 5. *Muricea waltonsmithi* n. sp. Paratype, USNM 55816. Top, Part of terminal branchlet; Bottom, Detail of calices.
- Plate 6. *Muricea laxa* Verrill. USNM 84072. Top, Part of terminal branchlet; Bottom, Detail of Calices.
- Plate 7. *Muricea pinnata* Bayer. Holotype, USNM 7148. Top, Part of terminal branchlet; Bottom, Detail of calices.









