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Caryophylliidae (Scleractinia) from the Colombian Caribbean

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Abstract

The family Caryophylliidae comprises the highest diversity of hard corals (Order Scleractinia), represented by more than 300 species around the world. More than 90% are non-symbiotic species (azooxanthellate), whereas less than 30 species are symbiotic (zooxanthellate) or facultative (apozooxanthellate) species. This paper includes 35 species (20 genera) of caryophylliids present in soft and hard bottoms of Colombian seas, which have been mainly collected through INVEMAR expeditions (between 10 and 500 m depth) during the last 10 years. Two new species are described, *Stephanocyathus isabellae* and *Heterocyathus antoniae*, the latter belonging to a genus previously known only from the Indian and Pacific oceans.

Key words: Caryophylliidae; Colombian Caribbean; azooxanthellate coral; biodiversity; taxonomy

Introduction

Taxonomic inventories of azooxanthellate corals in the tropical western Atlantic are relatively well advanced. The majority of campaigns have been carried out in Florida, Gulf of Mexico, Yucatan, Great Antilles, Lesser Antilles, Barbados, and the Leeward Islands (Duerden 1902; Boschma 1953; Almy and Carrión-Torres 1963; Roos 1971; Beltrán-Torres and Carricart-Ganivet 1999; Cairns 1979; 1982; 2000). However, the southern and western Caribbean, including Venezuela, Colombia, Panama, and Nicaragua has been less studied. This information gap is remarkable considering the less survey effort in those areas. For instance, of the 1200 sampling stations where coral specimens have been collected throughout the tropical western Atlantic, only 50 sites were located in the Colombian Caribbean (~3.5%), and only 43 of the 129 azooxanthellate coral species were known from such areas before the year 2000.

The first azooxanthellate coral species recorded for the Colombian Caribbean was *Stephanocyathus nobilis* (Moseley, 1873) [= *Stephanocyathus paliferus* Cairns, 1977], based on one specimen incidentally collected by a shrimp trawling net off La Guajira at 300 m depth (Erhardt 1976). The second record corresponds to *Madracis myriaster* (M. Edwards & Haime, 1849), which was observed by Werding & Erhardt (1977) during a deep Scuba diving exploration (50 m depth) in coral reefs located at the northern Colombian Caribbean (Santa Marta). The most complete revision of deep sea coral species inhabiting the tropical western Atlantic have been published by Cairns (1979), which includes the description of 18 azooxanthellate coral species for Colombian areas, based on the material collected by the R/V Albatross, R/V Oregon, and R/V Pillsbury campaigns. Other records of azooxanthellate corals from Colombian waters have been included in subsequent inventory lists (Prahl & Erhardt 1985; Werding & Sánchez 1989; Díaz *et al.* 2000), as a result of occasional samples from ecological studies on coral reefs or as part of the by-catch fauna collected by industrial fisheries. Prahl & Erhardt (1989) compiled in a list of 25 azooxanthellate coral species the known information for Colombian seas at that time. This number increased up to 43 species after the revision of the shallow water azooxanthellate corals published by Cairns (2000) and an annotated list by Reyes (2000). This knowledge was latter complemented with the description of the transpanamic species *Tethocyathus prahli* Lattig & Cairns, 2000, and the record of nine additional species collected through the Macrofauna I expedition carried out in deep waters, 200 to 500 m depth, along the Colombian Caribbean (Lattig & Reyes 2001)

The family Caryophylliidae Dana, 1846 comprises the highest diversity of azooxanthellate corals, including more than 300 species from the approximately 1314 known scleractinian species around the world (Cairns 1999a; Cairns *et al.* 1999). Approximately 90% of the caryophylliids are non-symbiotic species (azooxanthellate), while less than 30 species are symbiotic (zooxanthellate) or facultative (apozooxanthellate) species (see Cairns *et al.* 1999). Among the known Colombian caryophylliids only two species, *Cladocora arbuscula* (Lesueur, 1821) and *Eusmilia fastigiata* (Pallas, 1766) present the coral/zooxanthellate symbiosis. On the other hand, five species have been described within the family Caryophylliidae based on Colombian material: *Caryophyllia ambrosia caribbeana* Cairns, 1979 (holotype from Rosario Islands), *Caryophyllia*