

Antillogorgia bipinnata (Bipinnate Sea Plume)

Order: Alcyonacea (Sea Fans)

Class: Anthozoa (Corals and Sea Anemones)

Phylum: Cnidaria (Corals, Sea Anemones and Jellyfish)



Fig. 1. Bipinnate sea plume, *Antillogorgia bipinnata*.

[<https://www.researchgate.net/publication/283763434>, downloaded 17 October 2016]

TRAITS. The bipinnate sea plume is a pinnately-branched gorgonian (Williams and Chen, 2012). Pinnules are secondary contralateral (opposite) pairs of branches from the main axis, 25-40mm in length; longer than this they bear lateral pinnules. The stiff flattened pinnules emerge uniplanar at 60° – 70° and are widely spaced at uniform intervals of 4-10mm. Apertures through which the polyps are retracted are small and slit-like in a double row on each side of the pinnule. The bipinnate sea plume is a violet or yellow colonial soft coral 20-60cm in height with violet, colourless or pale yellow spicules (Bayer, 1961) and was previously known as *Pseudopterogorgia bipinnata*.

DISTRIBUTION. In the geographic division of the tropical western Atlantic Ocean, including the Florida Keys, the Bahamas, and the Caribbean.

HABITAT AND ECOLOGY. Primarily inhabits the fore reef slope, at depths of 3-65m (Chiappone et al., 2016). The bipinnate sea plume forms obligate mutualistic association with *Symbiodinium* dinoflagellates. These zooxanthellae provide the primary source of nutrition in the form of photosynthates (products of photosynthesis) while receiving inorganic nutrients and protection from predation. It occasionally filter feeds by extending tentacles to capture particles (Mukherjee, 2008). The bipinnate sea plume is chemically defended, due to its lack of a calcium carbonate skeleton as in other corals (Goh and Chou, 1998).

REPRODUCTION. Males (producing sperm) and females (producing eggs) exist as separate individuals. *Antillogorgia bipinnata* are surface brooders, where the planula larva developed from the fertilized egg (zygote) is retained on the surface of the maternal colony until maturation. After detachment the larvae are fully competent for immediate settlement therefore having a short dispersal distance and time in water. Its breeding period is from November to December (Coelho and Lasker, 2016). The larva lacks zooxanthellae and metamorphoses into a founder polyp after settlement on substrate where these symbiotic microorganisms enter through the mouth and become incorporated into the tissues (Chiappone et al., 2016).

APPLIED BIOLOGY. Many bioactive chemicals of pharmaceutical potential originated from marine life. *Antillogorgia bipinnata* contains bipinnatins which acts as an antitumor compound, acetylcholine inhibitor, and insecticide. Bipinnatins A, B, C and D inhibit P388 murine tumor cell growth and bipinnatin B is the compound used in insecticides (Goh and Chou, 1998). Kallolide A, a metabolite of *A. bipinnata*, possesses anti-inflammatory properties (Mukherjee, 2008).

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