

**NOTE ON *RENOUXIA ANTILLANA* (RHODOPHYTA, RHODOGORGONALES),  
A NEW ADDITION TO THE MARINE FLORA OF THAILAND**

**Lawrence M. Liao<sup>1</sup> and Charatsee Aungtonya<sup>2</sup>**

<sup>1</sup>Marine Biology Section, Department of Biology, University of San Carlos, Cebu City 6000, Philippines

<sup>2</sup>Phuket Marine Biological Center, P.O. Box 60, Phuket 83000, Thailand

**ABSTRACT**

The marine red alga *Renouxia antillana* is reported from Hae Island off the southern coast of Phuket Island, representing a new species record for Thailand and the Indian Ocean (specifically the Andaman Sea). This record extends the distribution range of the alga significantly farther west from its original type locality in the Caribbean Sea.

**Remarks**

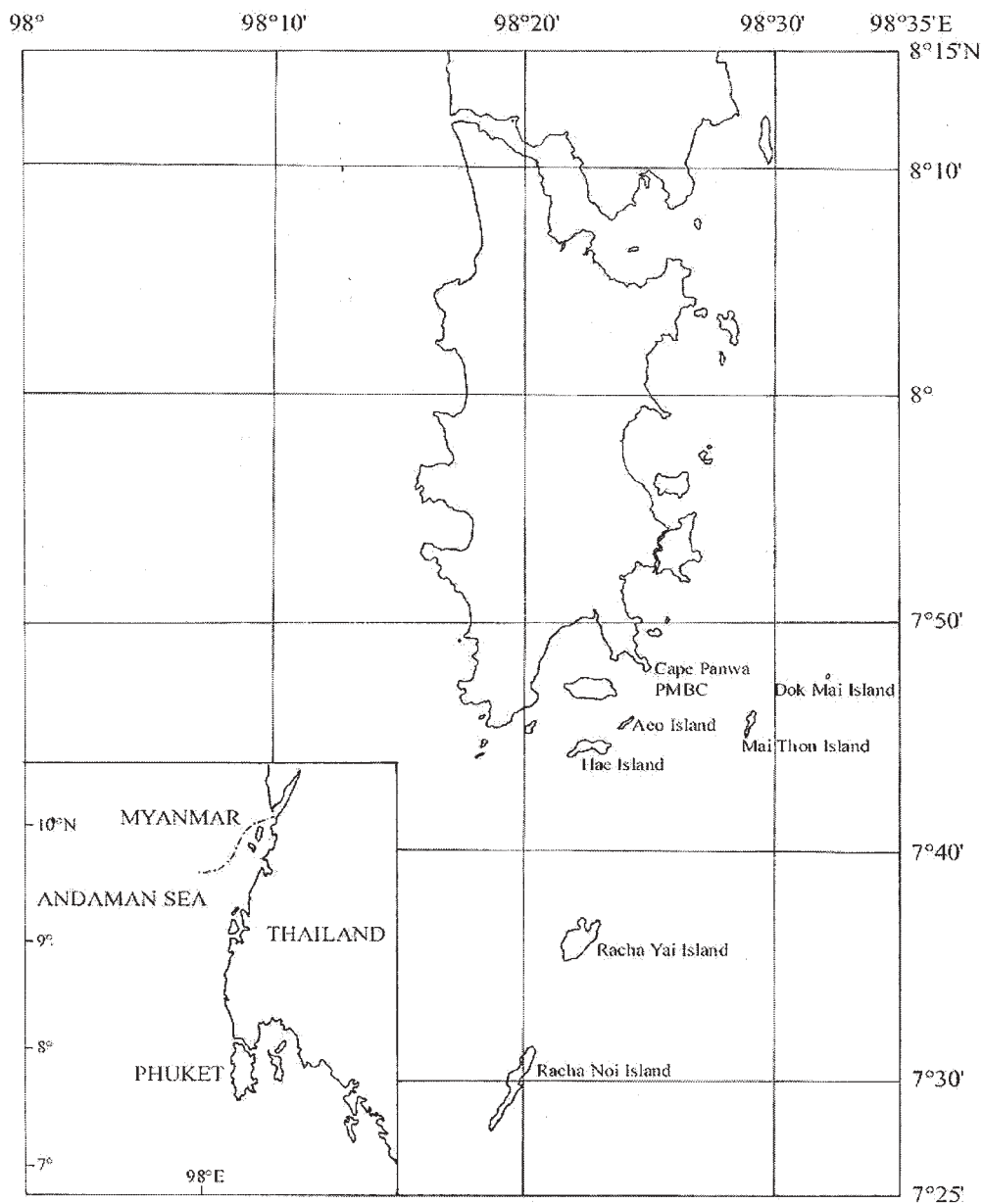
In the continuing process of documenting the marine algae and seagrasses of the Andaman Sea coast of Thailand deposited in the reference collection of the Phuket Marine Biological Center (PMBC), a rare species of marine red alga (Rhodophyta) was encountered. It was intriguing from both morphological and biogeographical standpoints.

During a collecting trip conducted around some islands near Phuket (Fig. 1) in 1997, PMBC biologist U. Satapoomin and visiting researcher L.M. Liao collected what was later identified as the red alga *Renouxia antillana* Fredericq and Norris. This species was first described, based on materials collected from the island of Guadeloupe on the eastern fringes of the Caribbean Sea, by Fredericq and Norris (1995). This alga was previously listed as an unknown and mysterious Caribbean species *etc.* by Littler *et al.* (1989: 166). The same algal species was subsequently collected in eastern Philippines, facing the Pacific Ocean (Kraft *et al.*, 1999), from southern Papua New Guinea (Millar *et al.*, 1999), and from Suva lagoon in Fiji (N'Yeurt, 1998). All of these records represent significant biogeographical and inter-oceanic range extensions halfway around the world into the western Pacific Ocean. The present report extends its biogeographic range farther west into the Indian Ocean, specifically along the Andaman Sea coast of Thailand.

The single plant of *Renouxia antillana* collected from Thailand (Fig. 2) was collected from

approximately 3 m depth in moderately turbid waters (PMBC 13776, Hae Island, 13 May 1997, coll. L.M. Liao and U. Satapoomin). The plant is light-purple in living state, up to 5 cm tall, with few to many irregularly shaped lobes that are whitish at the tips. It is flaccid, gelatinous, lubricious to touch, and appears delicate. One of the distinguishing microscopic features of this plant are the calciferous cells surrounded by calcite husks and which are borne below the assimilatory filaments. Detailed vegetative and reproductive morphology has been documented by Fredericq and Norris (1995).

Another enigmatic algal genus that shares many morphological similarities with *Renouxia* is *Rhodogorgon* Norris and Bucher, with its two species, *R. carriebowensis* and *R. ramosissima*, described by Norris and Bucher (1989) from various localities throughout the Caribbean Sea and recently, from the Bahamas (Littler and Littler, 2000). These beautiful red algae were first illustrated as "mystery alga" by Littler *et al.* (1989: 184), compared superficially to some gorgonian corals (Cnidaria, Anthozoa, Gorgonacea) by Norris and Bucher (1989). Because of their unique vegetative and reproductive morphology, ultrastructural and biochemical features, both *Rhodogorgon* and *Renouxia* have since been recognized as belonging to the distinctly new family, Rhodogorgonaceae Fredericq, Norris and Poeschel in Fredericq and Norris (1995: 129), which in turn is placed under the newly recognized order, Rhodogorgonales Fredericq, Norris and Poeschel



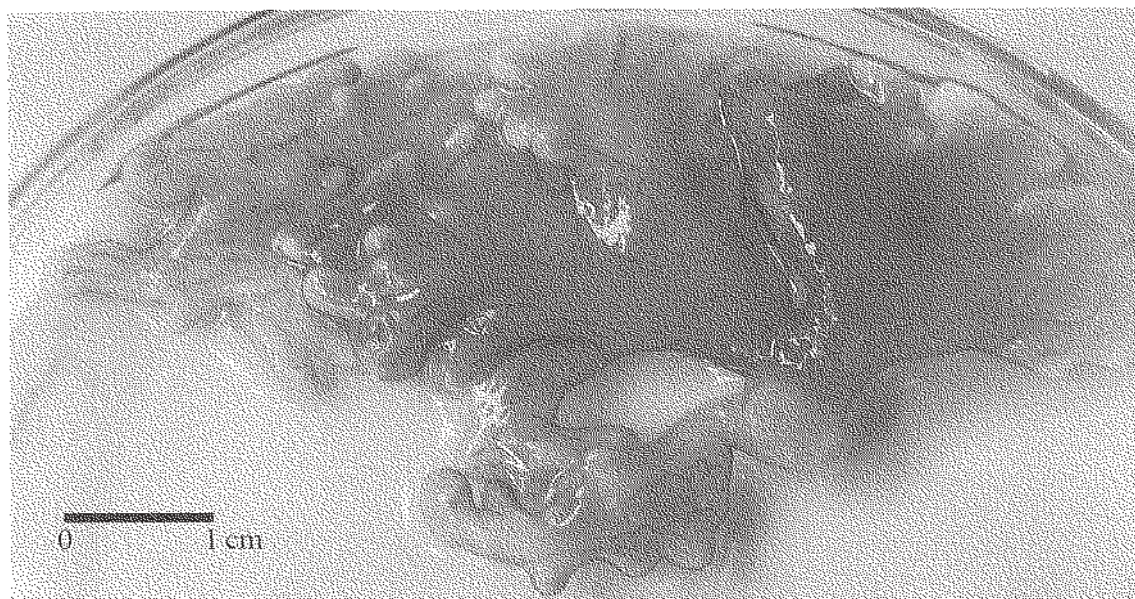
**Figure 1** Phuket and adjacent islands

in Fredericq and Norris (1995: 130).

These gorgonian mimicking red algae may be more widespread than previously recorded. Hypothetically, because they resemble the color

and habit of chemically protected and less palatable animal species such as soft corals, sea anemones and sponges, they can often be mistaken for such organisms and may have eluded many algal

*Note on Renouxia antillana* (Rhodophyta, Rhodogorgonales).



**Figure 2** *Renouxia antillana* Fredericq and Norris (1995), PMBC 13776 from Hae Island.

collectors. Their animal-like habit may also serve to deceive their predators, as shown by Littler and Littler (2000: 185) in *R. ramosissima*.

The phenomenon of marine algae mimicking toxic and venomous marine organisms was probably first documented by Kraft (1972) when he reported a variety of the red alga, *Eucheuma arnoldii* Weber-van Bosse (Rhodophyta, Gigartinales, Solieriaceae) which is often morphologically indistinguishable from certain venomous soft corals (Cnidaria, Anthozoa, Alcyoniidae) in the Philippines. Some of them resemble stony corals (Cnidaria, Anthozoa, Scleractinia) which are often adjacent to them. Another red alga, *Ceratodictyon spongiosum* Zanardini (Rhodophyta, Rhodymeniales, Rhodymeniaceae) grows symbiotically with the haplosclerid marine sponge *Sigmadocta symbiotica* Bergquist and Tizard (Price *et al.*, 1984, Price and Kraft, 1991), and may be afforded some degree of protection against herbivory as a result. The algal filaments grow tightly intertwined among the sponge spicules.

The present report of *Renouxia antillana* from the waters of the Andaman Sea coast of Thailand extends its biogeographic range considerably. Further collections in other tropical localities within the Indian Ocean may reveal that it is a common entity particularly in areas where there is an abundance of their animal mimic models and in areas where environmental conditions are suitable for their growth and development. The same could be said for *Rhodogorgon*. Ogden (1992) reported the first extra-Caribbean record of *Rhodogorgon* when she described the male reproductive morphology of a plant collected from the Philippines. In the same paper, she also presented evidence that *R. carriebowensis* and *R. ramosissima* cannot be maintained as distinct species as the branch length and branching density characters used by Norris and Bucher (1989) are merely a function of the degree of water movement. Subsequently, N'Yeurt *et al.* (1996) reported *R. ramosissima* from the waters of Fiji. It would not be totally unexpected to encounter species of *Rhodogorgon* in Thai waters.

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