

NEW RECORDS OF SEVEN SEAWEEDS FROM THE ST. MARTIN'S ISLAND, BANGLADESH

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Abstract

The present paper deals with seven seaweed taxa, namely, *Blidingia minima* (Kützinger) Kylin, *Bryopsis pennata* Lamouroux, and *Halimeda simulans* Howe from Chlorophyceae; *Dictyopteris plagiogramma* (Montagne) Vickers and *Padina perindusiata* Thivy from Phaeophyceae, and *Galaxaura obtusata* (Ellis & Solander) Lamouroux and *Liagora valida* Harvey from Rhodophyceae have been identified, described, and illustrated as new records for Bangladesh. Of these, *Blidingia* is also a new generic record for Bangladesh.

Introduction

A total of 210 seaweed species have been documented from the Bangladesh coast, with the majority coming from St. Martin's Island (Aziz and Alfasane, 2020, 2023; Aziz *et al.*, 2008, 2015, 2022, 2023; Islam, 1976). Examining some recently collected and preserved samples, the authors revealed the existence of three green, two brown, and two red algae that had not previously been recorded in Bangladesh. These are described and illustrated in this account.

Materials and Methods

The collection of marine algae was conducted several times at the St. Martin's Island, Cox's Bazar district, Bangladesh, during March 2014 and November 2024. After collection, the seaweed samples were placed in containers filled with seawater, stored in an icebox, and transported to the National Professor AKM Nurul Islam Laboratory, Department of Botany, University of Dhaka. Upon arrival, the samples were preserved using a 10% formalin solution. Some of these specimens were later utilized to prepare herbaria.

Results and Discussion

In this study seven seaweed taxa belonging to the classes Chlorophyceae, Phaeophyceae, and Rhodophyceae have been identified and described below.

CHLOROPHYCEAE

Order: Ulvales; Family: Ulvaceae

Genus: *Blidingia* Kylin

1. *Blidingia minima* (Kützinger) Kylin (Fig. 1)

(Anand 1940, P. 15; Taylor 1957, P. 67; Norton 1985; Burrows 1991; Hayward *et al.* 1996; Howson and Picton 1997; Hardy and Guiry 2003)

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Synonym: *Enteromorpha minima* Nägeli ex Kützinger

The plants are small, gregarious, attached, and comprise hollow, branching, or unbranched, fine green tubes ranging up to 5.0 cm. Tube clusters emerge from the elevated center of a small, flattened, disc-shaped holdfast connected to the rock. The blades are 1–9 cm tall, simple or slightly proliferative, yellowish green, and relatively soft. The blades are linear, dilated sharply above the stalk, and their width is 1-2 (-4) mm. The cells are angular, exhibit an irregular arrangement, measure approximately 10 µm in diameter, and contain stellate chloroplasts. The walls are rather thin, and the cells appear nearly cubical in section, with the inner and outer faces having walls that are about equally thick.

Habitat and local distribution: Plants grow on rocks and shells in the upper littoral zone. The alga was collected as free-floating in sheltered water on the eastern coast of the St. Martin's Island.

Collection no.: PHLH 415, 19.11.2024.

Order: Caulerpales; Family: Bryopsidaceae

Genus: *Bryopsis* Lamouroux

2. *Bryopsis pennata* Lamouroux (Fig. 2)

(Taylor 1960, P. 132, Pl. 9, Fig. 12; Pham-Hoàng Ho 1969, P. 471, Fig. 4.78; Joly 1965, P. 51, Pr. V, Fig. 59)

Synonym: *Bryopsis plumosa* var. *pennata* Børgesen

Often found in large tufts, the plants are dark green and occasionally iridescent, held in position by rhizoidal holdfasts. The primary erect filaments are sparingly divided, 6.5 cm in height, and frequently curved at the tips. The distichous branchlets, having a uniform length, give the narrow frond approximately 5-7 mm in width and a linear-lanceolate or oblong shape. The main axes measure approximately 250-350 µm, while the branchlets range from 80-140 µm in diameter.

Habitat and local distribution: Plants were collected from rocks in the intertidal zone on the western coast of the St. Martin's Island.

Collection no.: PHLH 222, 12.03.2014.

Order: Caulerpales; Family: Udotiaceae

Genus: *Halimeda* Lamouroux

3. *Halimeda simulans* Howe (Fig. 3)

(Taylor 1960, P. 180, Pl. 24, Fig. 4)

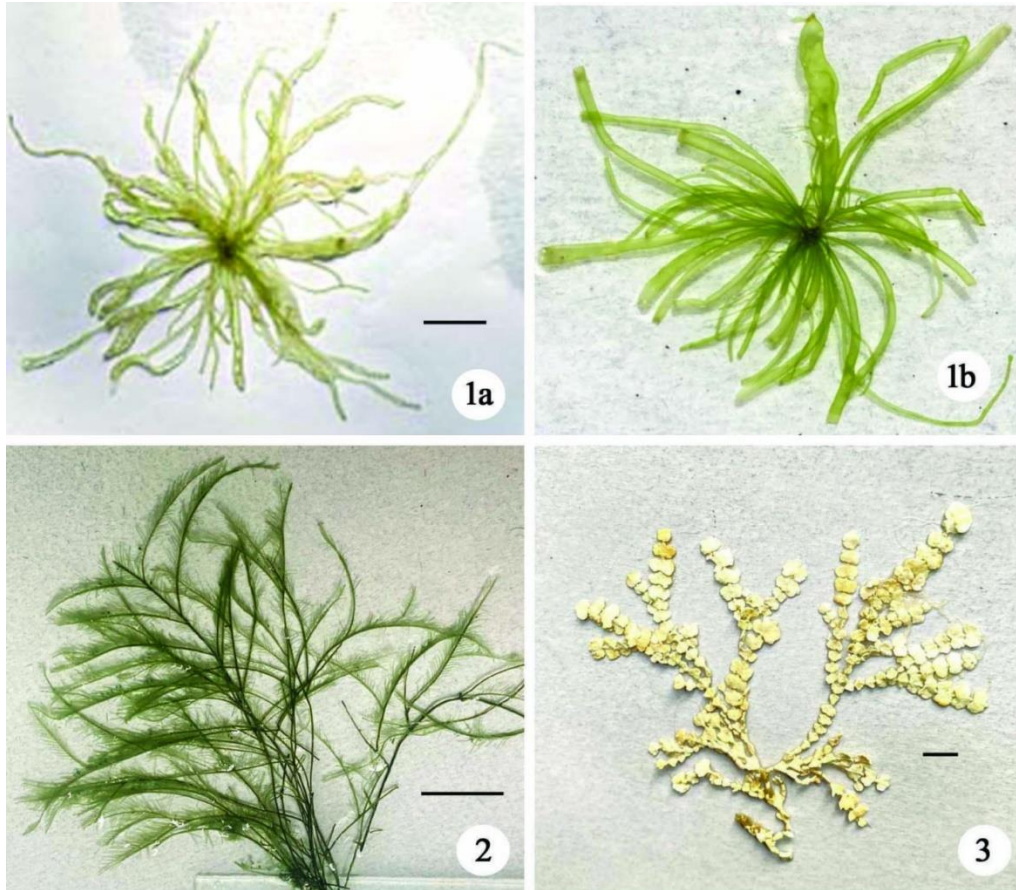
Synonym: *Halimeda incrassata* var. *simulans* (Howe) Børgesen

Plants measuring 1.5 dm in height, exhibiting a green yet well-calcified appearance, are predominantly flabellate and exhibit free branching in a single plane above a very short stalk comprising 1-3 segments. The lower segments are terete to cuneate or ovate, entire or somewhat trilobed, measuring up to 15 mm in width and 10 mm in length, with a somewhat nitent and slightly ribbed texture. The upper segments are more sparingly and elongately branched, broadly oval to reniform, with a straight or concave lower margin and an entire or somewhat crenate upper margin; these upper segments measure 5-12 mm in width and 2-9 mm in length. Subcortical utricles are arranged in 2-3, occasionally 4, series, with the outermost being turbinate to subglobose, ranging from 35-65 µm in diameter, and the innermost being obovoid to clavate, ranging from 45-100 µm in diameter. Surface utricles measure 30-40 (-55) µm in diameter in

surface view and 30-80 μm in length, are turbinate, and are firmly laterally attached, with walls in contact for 0.1-0.3 of their length. Medullary filaments are strongly coherent in a single group at the nodes, possessing thick and colored walls, all interconnected by open pits or short processes.

Habitat and local distribution: Plants grow in sand in sheltered places and are found in moderately shallow water on the south-west coasts of the St. Martin's Island.

Collection no.: PHLH 201, 13.03.2014.



Figs 1-3. 1(a-b) *Blidingia minima* (Kützinger) Kylin, 2. *Bryopsis pennata* Lamouroux, 3. *Halimeda simulans* Howe (Scale = 1 cm).

PHAEOPHYCEAE

Order: Dictyotales; Family: Dictyotaceae

Genus: *Dictyopteris* Lamouroux

4. *Dictyopteris plagiogramma* (Montagne) Vickers
(Taylor 1960, P. 229, Pl. 33, Fig. 2)

(Fig. 4)

Synonyms: *Haliseris plagiogramma* Montagne

Plants erect, to a height of about 2.5 dm, profusely branched, pale and translucent; branching alternate to somewhat irregular, at intervals of 1.2-2.2 cm, sinuses narrow but rounded, segments 3-5 mm broad with a prominent midrib and pinnate veinlets running obliquely to the margin, the membrane otherwise in general one cell in thickness, margin entire, cells not greatly elongated; sori of hairs in irregular rows beside the midribs; sporangia irregularly scattered near the midribs, 85-100 μ m.

Habitat and local distribution: Plants were collected from the lower littoral zone on the western coast of the St. Martin's Island.

Collection no.: PHLH 209, 12.03.2014.

Order: Dictyotales; Family: Dictyotaceae

Genus: *Padina* Adanson

5. *Padina perindusiata* Thivy (Fig. 5)
(Taylor 1960, P. 235, Pl. 75, Fig. 2)

The plants are over 10 cm tall, slightly calcified on both sides, with piliferous lines that alternate on opposite sides and irregularly wide zones that are either fertile (1.5-2.5 mm broad) or sterile (0.75-1.5 mm wide). The blades are bistratose, 100 μ m thick below and 85 μ m in the middle, with 30-45 μ m wide cells and a lower cell layer 0.3-0.45 times deeper than the upper. Sporangial sori are 0.50-0.70 mm wide, either in one continuous line or 2-3 broken lines in the center of each fertile zone, bordered by a noticeable indusium. The sporangia are 160 μ m in diameter.

Habitat and local distribution: Plants were collected from the mid-sublittoral zone on the eastern coast of St. Martin's Island.

Collection no.: PHLH 201, 14.03.2014.

RHODOPHYCEAE

Order: Nemalionales; Family: Chaetangiaceae

Genus: *Galaxaura* Lamouroux

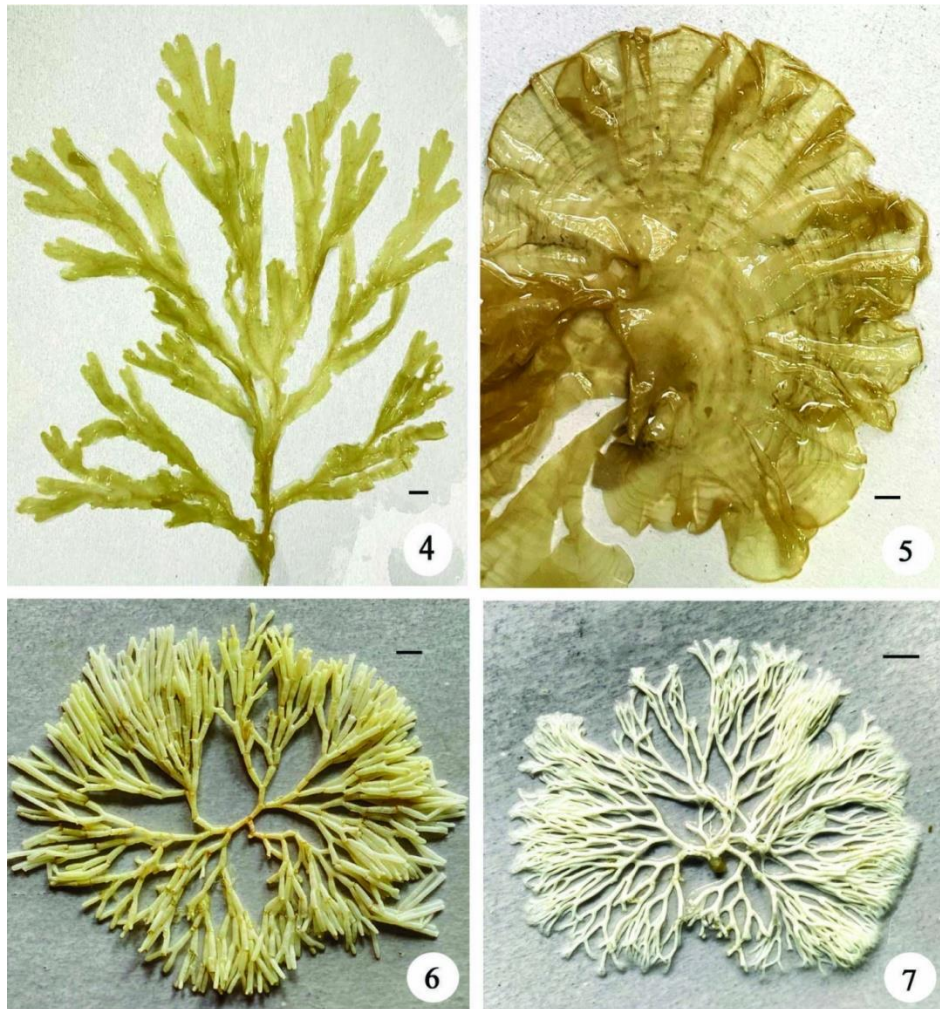
6. *Galaxaura obtusata* (Ellis & Solander) Lamouroux (Fig. 6)
(Taylor 1960, P. 342, Pl. 44, Fig. 4)

Synonym: *Corallina obtusata* Ellis & Solander

Plants of coarse appearance, to about 10 cm tall, copiously branched, the branches 1.5-3.5 mm diam., generally jointed at the forks, the terete segments 1.0-2.5 (4.0) diameters long; smooth, lightly calcified in the cortex, opaque when dry; the cortex in the tetrasporic plants composed of one layer of greatly enlarged cells each outwardly supporting a slender stalk cell which bears 1-2 distal cells closely laterally approximated and polyhedral in surface view, 25-40 μ m diam., forming the epidermis.

Habitat and local distribution: Plants were collected from rocks and old corals in the upper sub-littoral zone on the southern coast of the St. Martin's Island.

Collection no.: PHLH 210, 13.03.2014.



Figs 4-7. 4. *Dictyopteris plagiogramma* (Montagne) Vickers, 5. *Padina perindusiata* Thivy, 6. *Galaxaura obtusata* (Ellis & Solander) Lamouroux, 7. *Liagora valida* Harvey (Scale = 1 cm).

Order: Nemalionales; Family: Helminthocladiaceae

Genus: *Liagora* Lamouroux

7. *Liagora valida* Harvey

(Fig.7)

(Taylor 1960, P. 327, Pl. 43, Fig. 2)

Plants rather small, not over 1 dm diameter, dichotomously and rather closely branched; except at the tips calcification moderate to heavy, the whole body stiff and chalk white; branches about 1 mm diameter, smooth, axial filaments 20-35 μ m diam., with rhizoidal filaments 8 μ m diam., intermixed; assimilators erect, branching 4-5 times, the outer cells oval to pyriform, 10-15 μ m diam., spermatangial clusters platelike, borne on the end cells of the assimilators; carpogenic branches 4-5 cells, somewhat curved; cystocarps visible as minute red spots on the surface of the fertile plants.

Habitat and local distribution: Plants were collected from the mid sub-littoral zone on the western coast of the St. Martin's Island.

Collection no.: PHLH 207, 12.03.2014.

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