

FIELD GUIDE TO COMMON MARINE ALGAE OF SAN SALVADOR ISLAND, BAHAMAS

by
Joseph P. Richardson and Ginger Mitchell

Illustrated by
Ginger Mitchell



BAHAMIAN FIELD STATION

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**BAHAMIAN FIELD STATION
SAN SALVADOR, BAHAMAS
1994**

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INTRODUCTION

This guide is designed primarily for the snorkel diver and beachcomber exploring and studying the variety of beautiful near shore habitats around San Salvador Island, Bahamas. It includes most of the commonly encountered and frequently noticed marine algal taxa, but it is not to be considered a complete listing of all species and varieties present around the island. We hope, however, that it is inclusive enough to be helpful to visiting scientists, marine science students, and folks who like to know names of things they encounter in nature. Since this guide does not attempt to include every species likely to be found on the island, and because distinguishing many species requires microscopic techniques, we did not attempt to construct a dichotomous key for identifications. Besides, we know from our own experience that the most commonly used method of employing an identification guide is to flip pages til you find a picture that looks like your specimen.

The guide is organized into three taxonomic groups: Chlorophyta (green algae), Phaeophyta (brown algae), and Rhodophyta (red algae). We warn you however, that some red algae are more tan or straw colored; some brown algae are more green than brown and many turn green when pressed or dried. Many of these tropical seaweeds have lime or calcium carbonate deposits within them, and thus often lose some of their color and become whiter upon drying. Some green algae even turn brown when dried. We have tried to mention these characteristics in species descriptions because sometimes they help in identification.

Taxonomy, naming and classifying, among algae is constantly being reworked. Family names end in "...acea," and order names end in "...ales." Recent classification changes have been noted (for those who care). We have included family and order names used by Taylor (1960) and more recently by Littler et al. (1989). In some cases, genus and species names have changed recently, and we included both the previous

and currently proposed names. Page references are also given to the descriptions and illustrations from two of the most common and complete Caribbean marine algal books:

Taylor, W.R. 1960. *Marine Algae of the Eastern Tropical and Subtropical Coasts of the Americas*. Univ. Michigan Press, Ann Arbor, Michigan. 870 pp.

Littler, D.S., M.M. Littler, K.E. Bucher, & J.N. Norris. 1989. *Marine Plants of the Caribbean: A Field Guide from Florida to Brazil*. Smithsonian Institution Press. Washington, DC. 272pp.

Taylor's book is a classic, and although technical, it is extremely useful for detailed descriptions, identification keys, illustrations, and species distributions. Littler et al.'s field guide is extremely user-friendly with excellent color photographs and descriptions. It is becoming a classic. For the serious marine phycologist, we recommend both.

We hope you will find this guide useful. More than that, however, we hope it will encourage you to look a little closer at the seaweeds you are likely to encounter around the fore-reefs, back reefs, seagrass beds, sandy and rocky shorelines of San Salvador Island. Algae grow into every conceivable and imaginable growth form. It seems that our Creator really let his imagination go wild when coming up with seaweed varieties. If you can imagine any design or pattern of growth, chances are that there is some sort of seaweed that has it.

We certainly want to acknowledge the help and assistance of a number of people. We are indebted to the Bahamian Field Station and its staff on San Salvador Island, Bahamas, for logistical support of this research. This guide is directly the result of encouragement and assistance from Dr. Donald and Kathy Gerace. We, like many other marine scientists and students, owe a great deal of thanks to the Geraces for not

only operating the Bahamian Field Station, but for managing it in a manner that truly encourages learning, research and scholarship. We also wish to thank many enthusiastic teachers from Georgia who during recent years have been a part of extremely enjoyable graduate courses studying marine ecology at San Salvador Island. We also thank our home institutions, Savannah State College, and Oatland Island Environmental Education Center, Savannah, Georgia, for their encouragement and assistance. And we thank our families: Jackie, Brandi and John, for their patience and understanding. Finally, we both personally thank a unique, creative, encouraging educator and administrator, Dr. Harris Lentini, for her foresight, drive and action.

Joseph P. Richardson and Ginger Mitchell, 1993

CHLOROPHYTA

Udotea flabellum (Ellis & Solander) Lamouroux

"Mermaid's fan" is an appropriate common name for this stiff but flexible, calcified grayish-green alga. It is fan shaped, generally flattened but often rippled or crenulate, and arises from an extensive mass of basal rhizoids and sediment. Individuals are reported to reach 20 cm tall with most of that height due to the fan rather than the short stalk. The blades might be proliferous or branched, and/or the blades might be deeply cleft or split. This is a common member of the soft bottom, sea grass community with *Halimeda* and *Penicillus*.

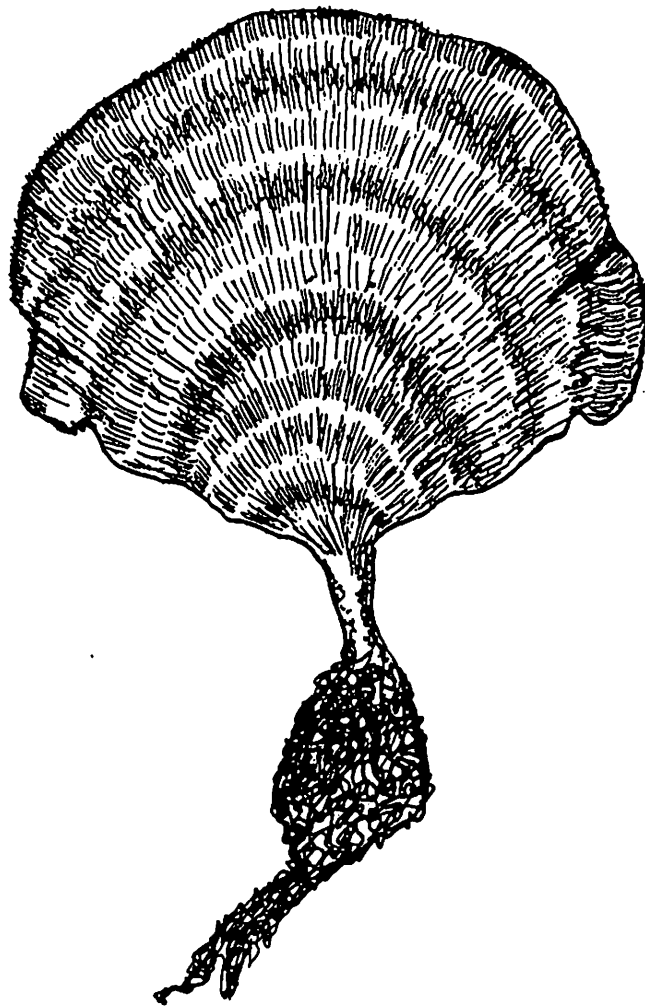
Taylor - p. 168, pl. 20,25

Littler et al. - p. 74

Siphonales, Codiaceae

Caulerpales, Halimedaceae

For a recent detailed treatment and identification key of *Udotea*, see: Littler, D.S. and M.M. Littler, 1990, Systematics of *Udotea* species (Bryopsidales, Chlorophyta) in the tropical western Atlantic, Phycologia 29:206-252.



Udotea flabellum

CHLOROPHYTA

Udotea cyathiformis Decaisne

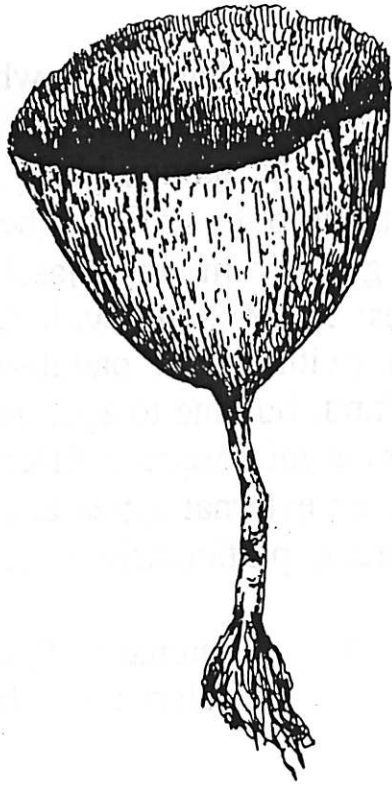
These green, calcified, funnel-shaped plants really look like wine goblets. From a base of tangled rhizoids which penetrate into soft sediment, erect individual stalks (1-2 cm long) grow upward and support a funnel-shaped blade. This cup-like blade is formed by thin, branched, calcified filaments which are closely packed to produce a stiff paper-like texture. Sometimes, the cup-shaped top will be split, but the funnel shape is still evident. This distinct species can be found on soft bottom areas among *Penicillus*, *Halimeda* and sea grasses, such as in front of the Bahamian Field Station.

Taylor - p. 166, pl. 22

Littler et al. - p. 74

Siphonales, Codiaceae

Caulerpales, Halimedaceae



Udotea cyathiformis

CHLOROPHYTA

Avrainvillea spp.

Avrainvillea species have a general shape somewhat similar to *Udotea flabellum*, however in *Avrainvillea* the flat, fan-like blade is soft, spongy, thicker, and felt-like in texture. The spongy blade is also generally dark green, thicker near the attachment to the stalk and becomes thinner toward the outer edges. Individuals grow from very massive masses of rhizoids and sediment. Three species: *A. rawsonii* (with finger-like blades), *A. nigricans* and *A. longicaulis* (with fan or paddle-like blades) probably grow around San Salvador Island, but due to age, condition, environmental conditions, and slight internal microscopic differences, species appear to blend into each other based on external appearance alone. *Avrainvillea* are common in soft bottom areas, particularly in sea grass beds.

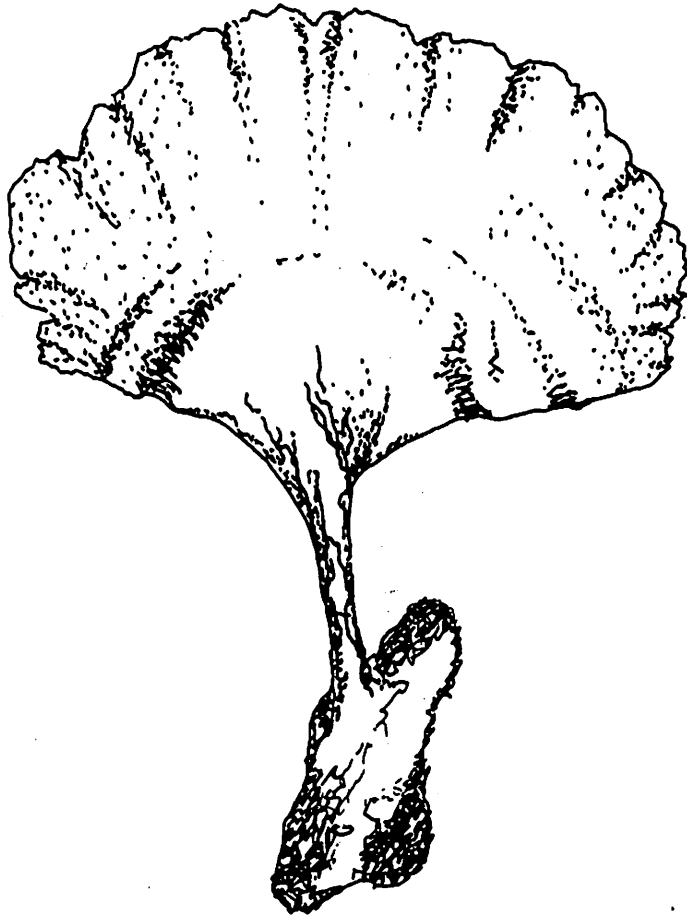
Taylor - pp. 158-162, pl. 19,25

Littler et al. - pp. 68-72

Siphonales, Codiaceae

Caulerpales, Halimedaceae

For a recent detailed treatment and identification key of *Avrainvillea*, see: Littler, D.S. and M.M. Littler, 1992, Systematics of *Avrainvillea* (Bryopsidales, Chlorophyta) in the tropical western Atlantic, Phycologia 31:375-418.



Arcaivillea

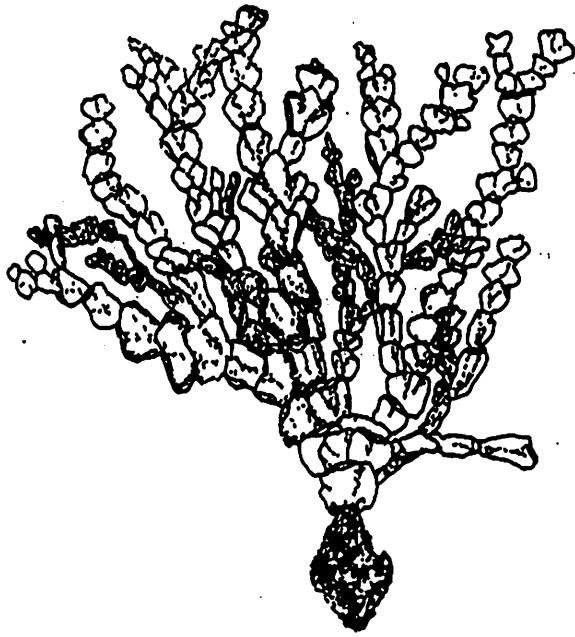
CHLOROPHYTA

Halimeda incrassata (Ellis) Lamouroux

Like other species of *Halimeda*, this plant is characterized by flattened, calcified, rigid segments giving the plant a stiff, bushy, jointed appearance. In this species, the segments are fairly heavily calcified, and although the segment shape varies a great deal, the segments tend toward being tri-lobed. In addition to the general tri-lobed outline, segments are often longitudinally ribbed such that the surface of a segment is less flat and more rippled (usually 3 diverging ridges). As with most other *Halimeda* species, the upright portions emerge from an extensive mass of rhizoids and sediment which anchors the plant in sandy, soft-bottom areas. Typically the lowest (basal) 2-3 segments are fused together and somewhat cylindrical in shape, and from them 2-3 major forks give rise to continued forking branches. Most specimens around San Salvador Island reach 10-15 cm in height. Seagrass and other sandy soft bottom areas, such as in front of the Bahamian Field Station, are the typical habitats.

Taylor - p. 181, pl. 23
Littler et al. - p. 92

Siphonales, Codiaceae
Caulerpales, Halimedaceae



Halimeda incrassata

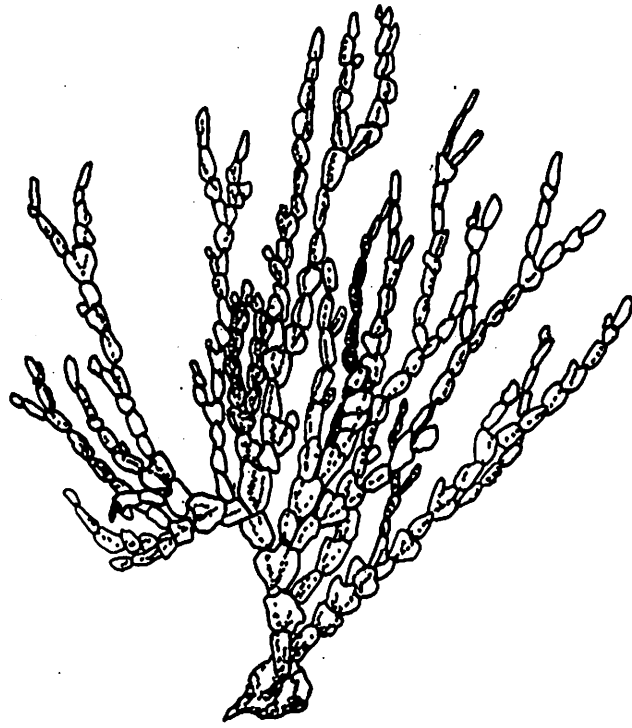
CHLOROPHYTA

Halimeda monile (Ellis & Solander) Lamouroux

Like other species of *Halimeda*, this plant is characterized by flattened (especially in lower segments), calcified, rigid segments giving the plant a stiff, bushy, jointed appearance. In this species, the segments are fairly heavily calcified, and segment shape varies a great deal ranging from flattened and bi- or tri-lobed (especially in lower and mid-plant regions) to cylindrical (particularly in distal, upper, terminal segments). These cylindrical terminal segments are the most obvious characteristic for this species. As with most other *Halimeda* species, the upright portions emerge from an extensive mass of rhizoids and sediment which anchors the plant in sandy, soft-bottom areas. Most specimens around San Salvador Island reach 10-15 cm in height. Seagrass and other sandy soft bottom areas are the typical habitats.

Taylor - p. 182, pl. 23
Littler et al. - p. 92

Siphonales, Codiaceae
Caulerpales, Halimedaceae



Halimeda monile

CHLOROPHYTA

Halimeda tuna (Ellis & Solander) Lamouroux

Like other species of *Halimeda*, this plant is characterized by flattened, calcified segments giving the plant a somewhat stiff, brittle, bushy, jointed appearance. In this species, the segments are light-to-moderately calcified. Segments are flat (except the lowest 2-3 which are slightly more cylindrical and often fused together). The flat segments are rounded and tend toward oval-shaped, but might be slightly fan-shaped. Segments of each branch are all in one plane, and segments may be 1-1.5 cm in diameter. Upon drying, the segments are slightly glossy. Plants might reach 20 cm tall, but around San Salvador Island most are 10-15 cm tall.

Taylor - p. 178, pl. 24

Littler et al. - p. 88

Siphonales, Codiaceae

Caulerpales, Halimedaceae

Halimeda discoidea Decaisne

Similar in shape is *Halimeda discoidea*. Like other species of *Halimeda*, this plant is characterized by flattened, slightly calcified segments giving the plant a slightly stiff, bushy, jointed appearance. In this species, the flat segments are very lightly calcified and the segments are somewhat flexible (less so after drying). Segments are flat (except the lowest 3-4 which are slightly more cylindrical, more heavily calcified, and often fused together). The flat, paper-like segments are generally rounded, oval, or fan-shaped. Segments of each branch are all in one plane, and segments are often 1 cm or more in diameter (and reported to reach 4 cm in diameter). Plants are reported to reach 20 cm tall, and those in shallow water areas around San Salvador Island typically reach 10 cm or more in height.

Taylor - p. 179, pl. 24

Littler et al. - p. 90

Siphonales, Codiaceae

Caulerpales, Halimedaceae



Halimeda tuna

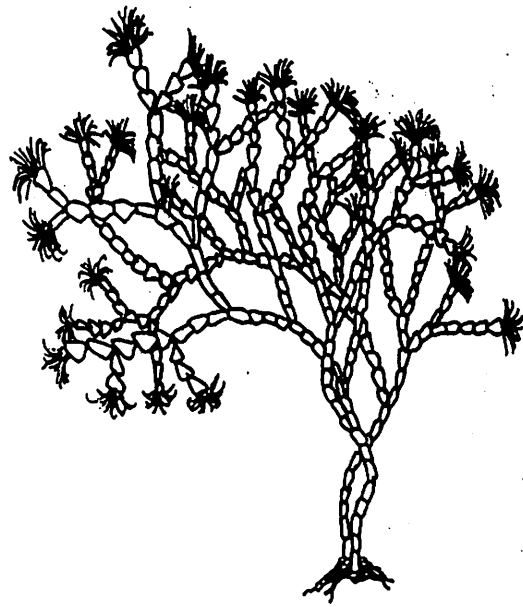
CHLOROPHYTA

Cymopolia barbata (Linnaeus) Lamouroux

Cymopolia plants are bushy, calcified and bright green, especially at the tips of branches. Individuals are typically 10-20 cm tall. The bulk of the plant is calcified as cylindrical segments (2-4 mm wide and 3-10 mm long) with somewhat flexible joints between segments. These calcified axes and branches might be white or green. At the tip of each branch is a bright green tuft of non-clacified hairlike filaments. *Cymopolia* grows in shallow water, typically attached to rocks and shells scattered in otherwise soft bottom sandy or sea grass areas (eg. in front of the Bahamian Field Station or along the west side of North Point). Although it is one of the brightest and most beautiful of the seaweeds, it is very disappointing when dried or pressed because it loses its bright green color and even the bright green hairlike tufts turn brown.

Taylor - p. 102, pl. 4,6
Littler et al. - p 84

Siphonales, Dasycladaceae
Dasycladales, Dasycladaceae



Cymopolia barbata

CHLOROPHYTA

Penicillus capitatus Lamarck

Dark and somewhat dull green *Penicillus* plants consist of a single erect calcified stalk supporting a terminal capitulum (inflated head) of thin calcified, forking filaments. This general shape of erect smooth stalk topped by an inflated head of filaments is easily identified as "Neptune's shaving brush." *Penicillus* typically grows in shallow water, soft bottom areas among *Halimeda* and sea grasses. At the base of the erect stalk, a branched system of rhizoids penetrates into the sediment below.

Penicillus capitatus plants may be 10-15 cm tall. In taller plants, the calcified stalk (3-5 mm diameter) is longer than the capitulum length. The capitulum consists of thin, forked calcified filaments forming a spherical or oblong shaped tuft (2-3 cm diameter; 3-4 cm long).

Taylor - p. 171, pl. 21,25

Littler et al. - p. 80

Siphonales, Codiaceae

Caulerpales, Halimedaceae

Penicillus pyriformis A. and E.S. Gepp

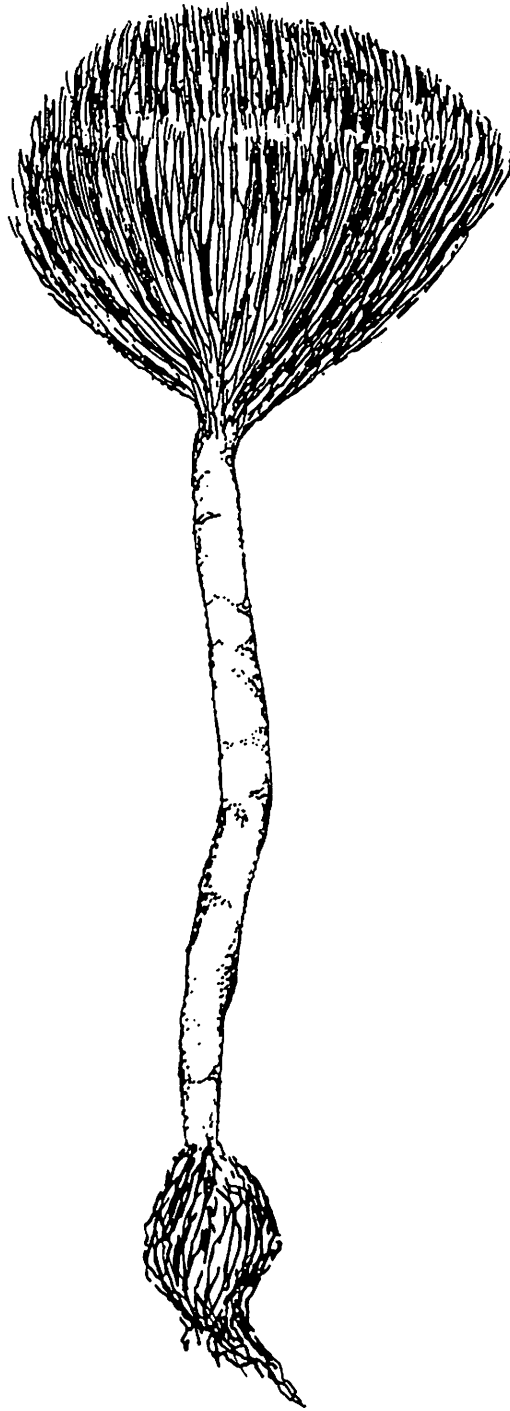
Penicillus pyriformis plants are about the same size and dimensions as *P. capitatus*, and are also calcified. In the case of *P. pyriformis*, however, the capitulum of thin forked calcified filaments is often flat or even funnel shaped at the top (rather than oblong as in *P. capitatus*).

Taylor - p. 170, pl. 21,25

Littler et al. - p. 82

Siphonales, Codiaceae

Caulerpales, Halimedaceae



Penicillus capitatus

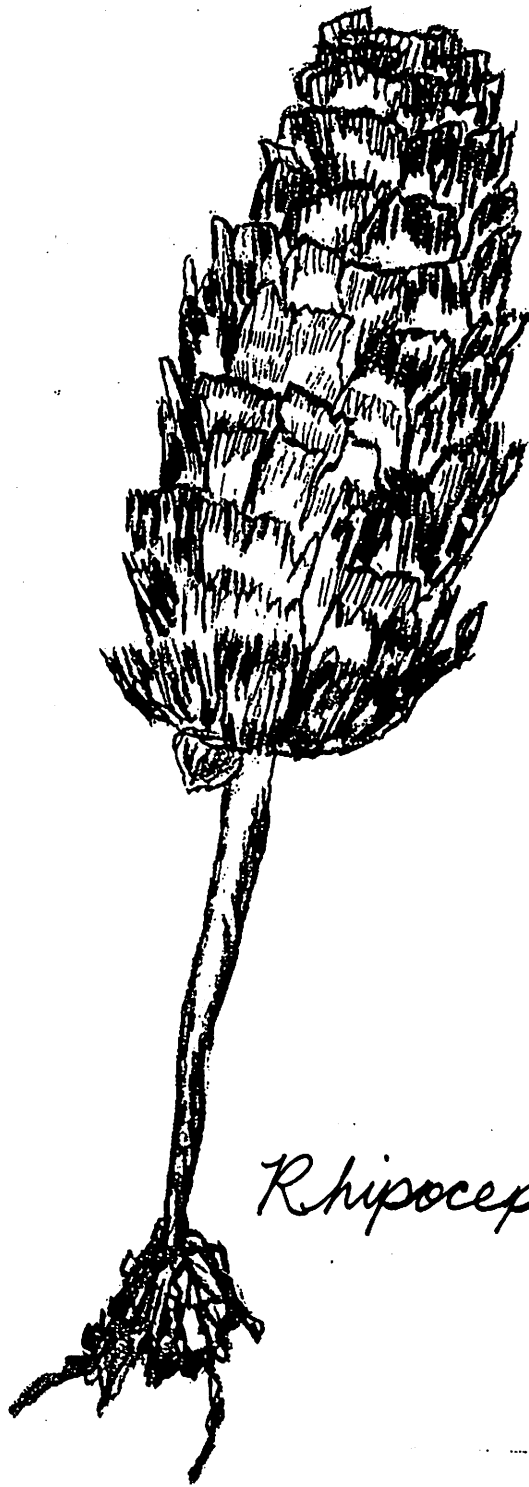
CHLOROPHYTA

Rhipocephalus phoenix (Ellis & Solander) Kuetzing

Rhipocephalus plants resemble *Penicillus* somewhat by consisting of calcified single erect stalks supporting an enlarged terminal capitulum; however *Rhipocephalus* is distinct because its capitulum is composed of small blades (rather than filaments as in *Penicillus*). The blades of the capitulum are lightly calcified and green, overlapping like shingles, and causing the capitulum to appear somewhat like a pine cone. Often the capitulum portion is longer than the stalk portion. *Rhipocephalus* generally grows in shallow soft bottom areas among *Penicillus*, *Halimeda* and sea grasses. Plants generally range from 7-12 cm tall.

Taylor - p. 174, pl. 22
Littler et al. - pp. 78,80

Siphonales, Codiaceae
Caulerpales, Halimedaceae



Rhipocephalus phoenix

CHLOROPHYTA

Codium isthmocladum Vickers

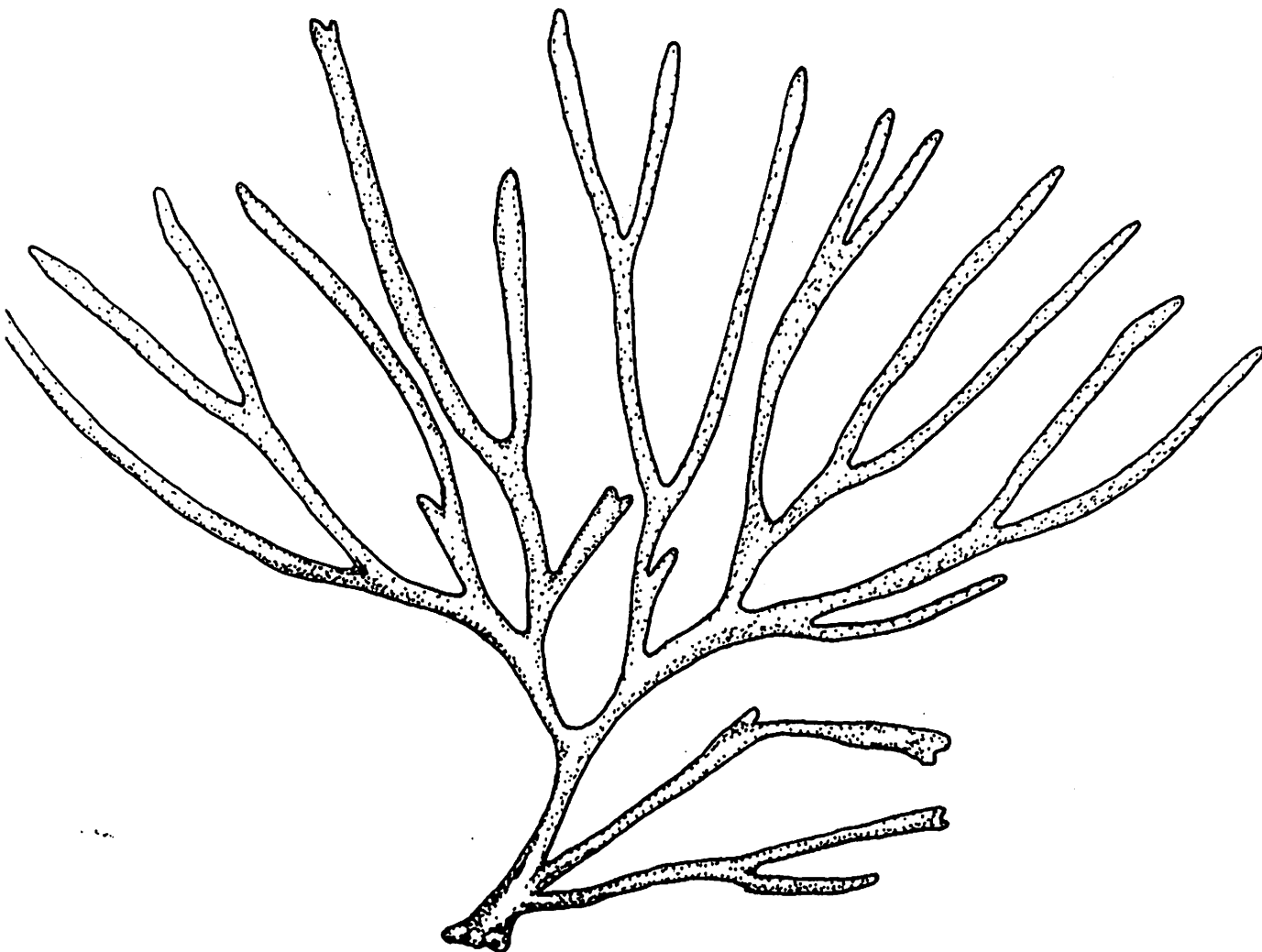
This green alga is sometimes called "dead man's fingers." Individuals consist of green spongy-like, cylindrical, upright branches which repeatedly divide dichotomously (forking like a Y). The spongy branches are 4-8 mm in diameter and have a surface texture like felt. The plant is surprisingly tough and difficult to tear. On San Salvador Island, it usually occurs near the bases of coral and rock ledges at sites such as Rice Bay.

Taylor - p. 186, pl. 26

Littler et al. - p. 62

Siphonales, Codiaceae

Caulerpales, Codiaceae



Codium isthmocladum

75% reduction

CHLOROPHYTA

Ventricaria ventricosa (J. Agardh) Olsen & West
(previously *Valonia ventricosa* J. Agardh)

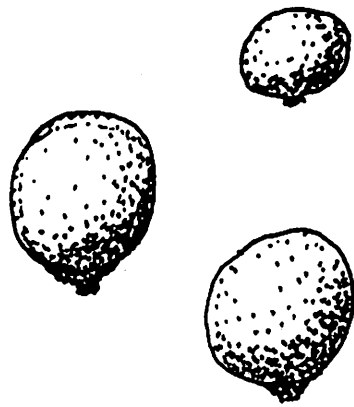
This plant consists of a single, green sphere attached by rhizoids to rocks or other hard structures. In actuality, the single sphere is a single cell. The shiny green plant is typically 1-3 cm in diameter. Usually individuals grow solitary but sometimes a few are clumped together. A good site for observing this species is near the water line on the vertical surfaces of the pier at North Point.

Taylor - p. 110, pl. 9
(as *Valonia ventricosa*)

Siphonocladiales, Valoniaceae

Littler et al. - p. 56

Siphonocladiales, Valoniaceae



Ventricaria ventricosa

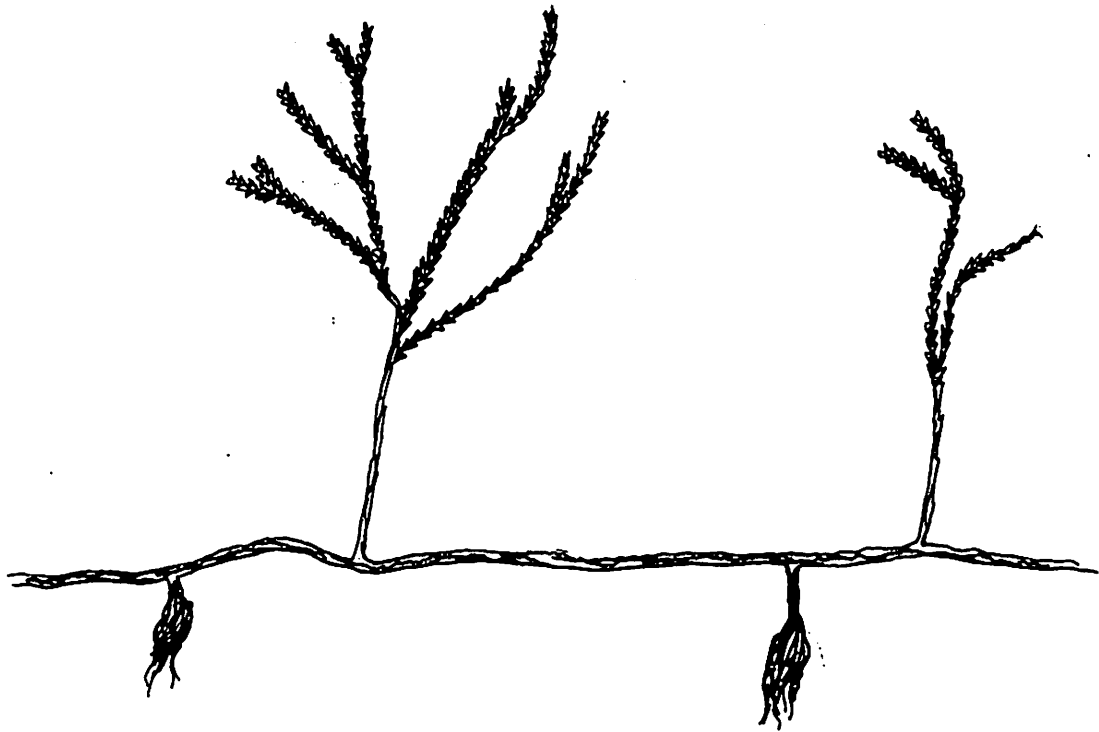
CHLOROPHYTA

Caulerpa cupressoides (West) C. Agardh

Caulerpa species are adapted to living on soft-bottoms by growing horizontal cylindrical stolons over or just below the sediment surface. From these stolons or runners, upright erect portions grow; and occasional clusters of filament-like rhizoids grow downward into the sediment to provide anchorage. Species are generally identified by characteristics of the erect, upright portions or blades.

Caulerpa cupressoides is a species with many varieties and growth forms (Taylor recognized 11). In general the species has stolons approximately 2 mm in diameter, and the stolons occasionally branch. The erect portions, which issue from the stolon at various intervals, are usually darker green. Typically, the erect portion has a cylindrical upright base supporting forked branches (2-3 mm wide, highly dentate or toothed) which may be 2-7 cm long. This is often a fairly robust species.

Taylor - p. 146-149, pl. 14,15,18 Siphonales, Caulerpaceae
Littler et al. - p. 48 Caulerpales, Caulerpaceae



Caulerpa cymatocarpa

CHLOROPHYTA

Caulerpa sertularioides (S.G. Gmelin) Howe

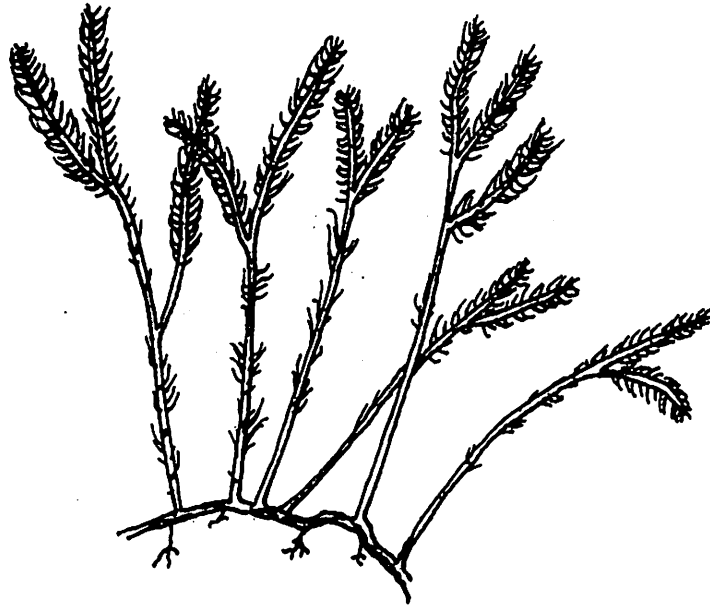
As in other *Caulerpa* species, individuals of this species consist of a system of branched, cylindrical, horizontal stolons which are anchored by occasional rhizoids, and issue erect blades. In this species, the blades resemble green feathers. Each blade has a distinct central axis with needle-like, slightly curved branches issuing from the axis pinnately (oppositely) in a single plane, and thus producing a flat, feather-like blade. Some blades might branch, but most are like single feathers attached to the stolon. Blades are reported to reach 15 cm tall.

Taylor - p. 144, pl. 13

Little et al. - p. 38

Siphonales, Caulerpaceae

Caulerpales, Caulerpaceae



Caulerpa sertularioides

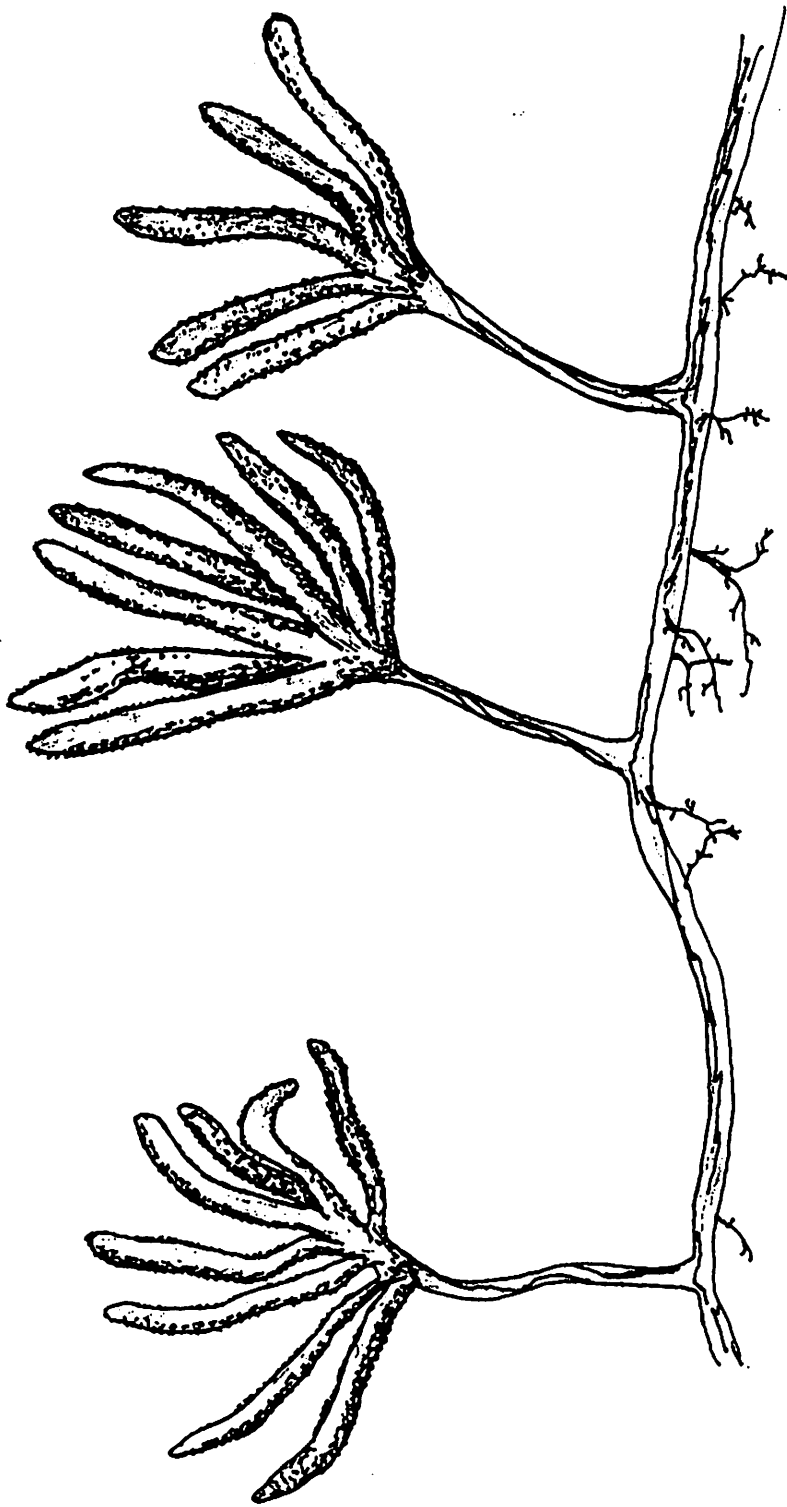
CHLOROPHYTA

Caulerpa lanuginosa J. Agardh

Like other species of *Caulerpa*, this species consists of horizontal stolons with occasional erect portions. The stolons are 2-4 mm in diameter, and issue downward directed basal filaments at intervals of 1- several cm. These basal filaments anchor the stolon in sandy sediments. The erect portions arise from the stolon every few cm and are 5-8 cm tall. These erect portions consist of a basal stalk (2-3 cm long) similar in appearance to the stolon, topped by a cluster of club-shaped, densely filamentous branches. Each club-shaped branch (3-5 mm diameter, 1-4 cm long) is composed of densely packed, minute filaments growing out in all directions, and thus producing a spongy or felt-like appearance. Taylor reports 1-4 club-shaped branches per erect stalk, however specimens from Grotto Beach have had clusters of as many as 9 branches per stalk.

Taylor - p. 145, pl 14
Littler et al. - p. 46

Siphonales, Caulerpáceae
Caulerpales, Caulerpáceae



Caulerpa lanuginosa

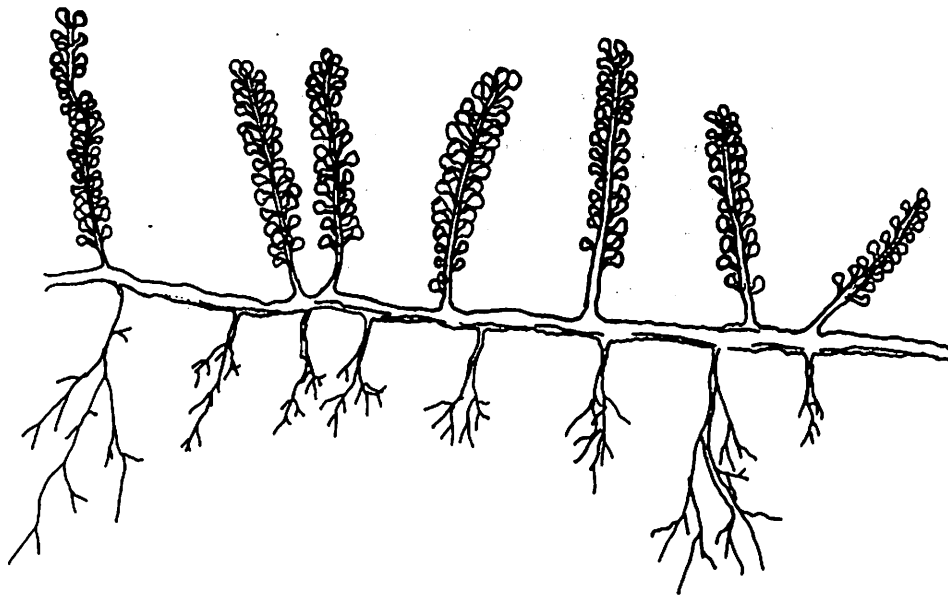
CHLOROPHYTA

Caulerpa racemosa (Forsskal) J. Agardh

As in the case with *Caulerpa cupressoides*, this species also has many varieties and forms (Taylor lists 11). In *C. racemosa*, the upright branches may be one to several cm tall, and they characteristically support short, round (spherical to club-shaped) branchlets. Sometimes the stolons are wide spreading with occasional upright portions; but in other cases the stolons might form densely crowded colonies of entangled stolons, uprights and rounded branchlets.

Taylor - p. 151, pl. 17,18
Littler et al. - p. 44, 46

Siphonales, Caulerpaceae
Caulerpales, Caulerpaceae



Caulerpa racemosa

CHLOROPHYTA

Acetabularia crenulata Lamouroux

Individuals of *Acetabularia* are very distinct, calcified green algae. The plant consists of a stiff, thin (1 mm or less diameter) upright stalk (which is actually a single cell) typically 5-7 cm tall with a green funnel-shaped disk on top. This plant is like a long-handled umbrella turned inside out, or like a long-stemmed martini glass, and thus its common name "mermaid's wine glass." The terminal, funnel-shaped disk is actually a whorl of branchlets. In *A. crenulata*, the terminal disk is commonly 1-1.5 cm in diameter, although young disks will be much smaller. Each ray of the disk might have a small tooth or spine at its tip. Often *Acetabularia* grow in clusters rather than as solitary individuals in shallow water attached to rocks, shell and coral rubble.

Taylor - p. 105-106, pl. 4,6
Littler et al. - p 28

Siphonocladiales, Dasycladaceae
Dasycladales, Polyphysaceae



Acetabularia crenulata

CHLOROPHYTA

Dasycladus vermicularis (Scopoli) Krasser

These short, green, fuzzy, club-shaped individuals often grow in clusters on shallow rocks and shells. A plant consists of a main axis with successive, crowded whorls of branches which branch repeatedly. This results in a soft, fuzzy, cylindrical-to-club-shaped stalk 3-6 cm tall.

Taylor - p. 99, pl. 4,6
Littler et al. - p. 52

Siphonocladiales, Dasycladaceae
Dasycladales, Dasycladaceae

Another taxon, *Batophora oerstedii* J. Agardh, is very similar in appearance and habitat. Distinguishing these two taxa usually requires magnification, especially if they are not producing spores.

Taylor - p. 98, pl. 4,5,6
Littler et al. - p. 50

Siphonocladiales, Dasycladaceae
Dasycladales, Dasycladaceae



Batophora oerstedii

CHLOROPHYTA

Microdictyon marinum (Bory) Silva

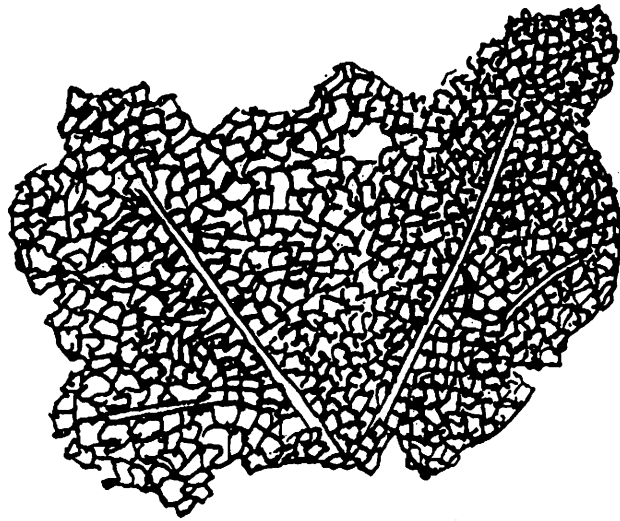
These plants consist of green, mesh-like, crispy blades that range from flat to ruffled, and often form a raised, green, mesh-like, springy covering on rocks and dead coral in shallow areas. Upon close examination, the slightly stiff blade is seen to consist of a network of rather large cylindrical cells forming a meshwork with mesh openings as large as 1 mm. Close observation, especially with a hand lens, can reveal the primary filaments within the meshwork, however the primary filaments and branches are not exceedingly pronounced.

Taylor - p. 121

Littler et al. - p. 26

Siphonocladiales, Valoniaceae

Cladophorales, Anadyomenaceae



Microdictyon marinum

CHLOROPHYTA

Anadyomene saldenhae Joly & Oliveira

Like *Microdictyon* these plants consist of green, crispy, rounded blades, and they often grown in clusters in cracks and crevices in rock and coral mounds. Often a distinctive holdfast is not apparent. Blades are generally rounded in outline and may reach 10 cm tall but are often shorter. Close examination, usually requiring a good hand lens, is well worth the effort and time. Within the blade are polychotomous (multiforked) "veins" composed of larger, longer cells producing a succession of fan-like ribs. Between the ribs, smaller cells (randomly arranged in this species) fill the spaces. This elegant, lacy construction in a related species, *A. stellata*, lead Taylor to add that live specimens "are seen to be among the most beautifully constructed of marine plants."

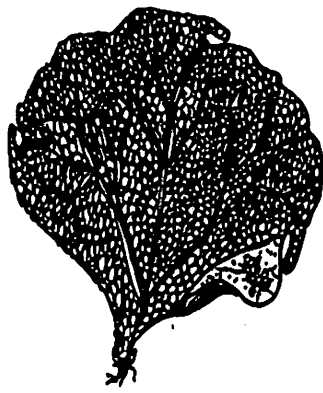
Taylor - (species not included)

Littler et al. - p. 24

Siphonocladiales, Valoniaceae

Cladophorales, Anadyomenaceae

For a recent detailed treatment of *Anadyomene*, see: Littler, D.S. and M.M. Littler, 1991, Systematics of *Anadyomene* species (Anadyomenaceae, Chlorophyta) in the tropical Western Atlantic, Journal of Phycology 27:101-118.



Anadyomene saldenhae

CHLOROPHYTA

Dictyosphaeria cavernosa (Forsskal) Boergesen

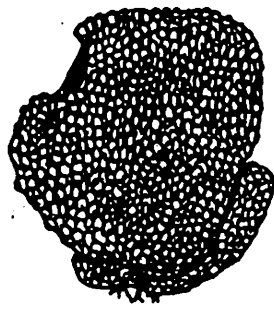
Like *Anadyomene* and *Microdictyon*, this species often forms a green, ruffly, springy, crispy-like covering of rounded blades (or ruptured spheres) on rocks and dead coral mounds. Before rupturing, a plant consists of a hollow sphere or sac, but after rupturing (older individuals) rounded, raised, crispy crusts remain. Close examination (and easily seen with a hand lens) reveals that a plant is composed of a single layer of large rounded or angular cells without spaces between them. Cells might be 1 mm in diameter. Before rupturing, a sphere might be 2-5 cm in diameter, and the rounded crust might become larger after rupturing.

Taylor - p. 116, pl. 7

Little et al. - p. 62

Siphonocladiales, Valoniaceae

Siphonocladales, Valoniaceae



Dictyosphaeria cavernosa

PHAEOPHYTA

Colpomenia sinuosa (Roth) Derbes & Solier

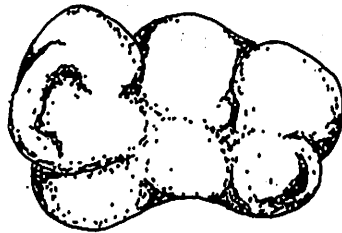
Although this plant is a brown alga (Phaeophyta), specimens growing in the intertidal zone around San Salvador Island are often golden-green in color. Local specimens grow as small (1-2 cm), soft slick-to-slimy, cushion or pillow shaped clumps on intertidal rocks. A good place to see specimens is on the flatter intertidal rocks between the pier and the inlet between North Point and Cut Cay. The wrinkled, pillow-like clumps grow singly or in small clumps, and attach directly to the rock without a stipe or stalk.

Taylor - p. 260, pl. 36

Littler et al. - p. 120

Punctariales, Punctariaceae

Scytosiphonales, Scytosiphonaceae



Colpomenia sinuosa

PHAEOPHYTA

Dictyota menstrualis (Hoyt) Schnetter
(formerly *Dictyota dichotoma* (Hudson) Lamouroux)

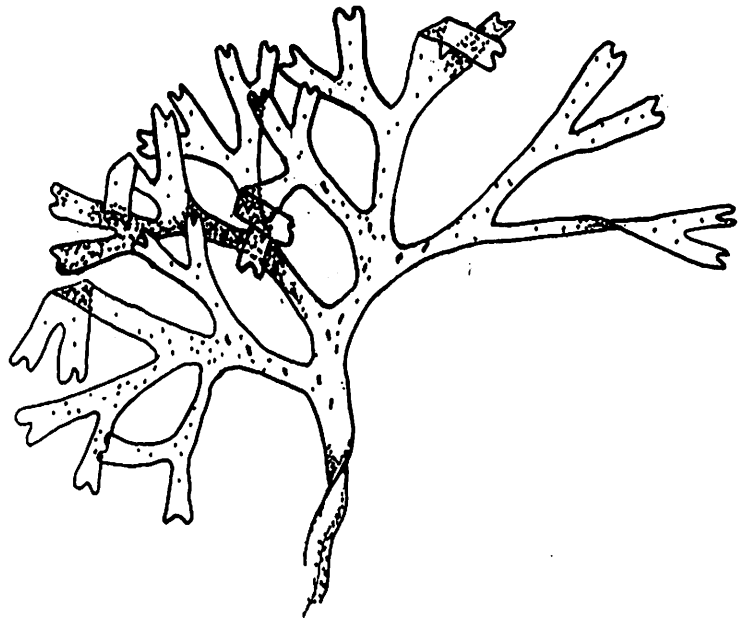
Dichotomous branching (equal forking to produce Y-like branches) characterizes this brown seaweed. From a basal holdfast, an upright blade consisting of flat, strap-like branches (0.2 - 1 cm wide) emerges. Dichotomous branching usually occurs every 1-2 cm. Often the flat branches are somewhat twisted. At the tip of each branch is a single large apical cell which can be seen with a dissecting microscope. Often in nature, the plants appear iridescent blue-green. *D. menstrualis* is common in shallow water on stones, shells and hard objects. It is also common on the pilings of the pier at North Point.

Taylor - p. 218, pl. 31
(as *Dictyota dichotoma*)

Dictyotales, Dictyotaceae

Little et al. - p. 104

Dictyotales, Dictyotaceae



Dictyota menstrualis

PHAEOPHYTA

Dicytota mertensii (Martius) Kuetzing

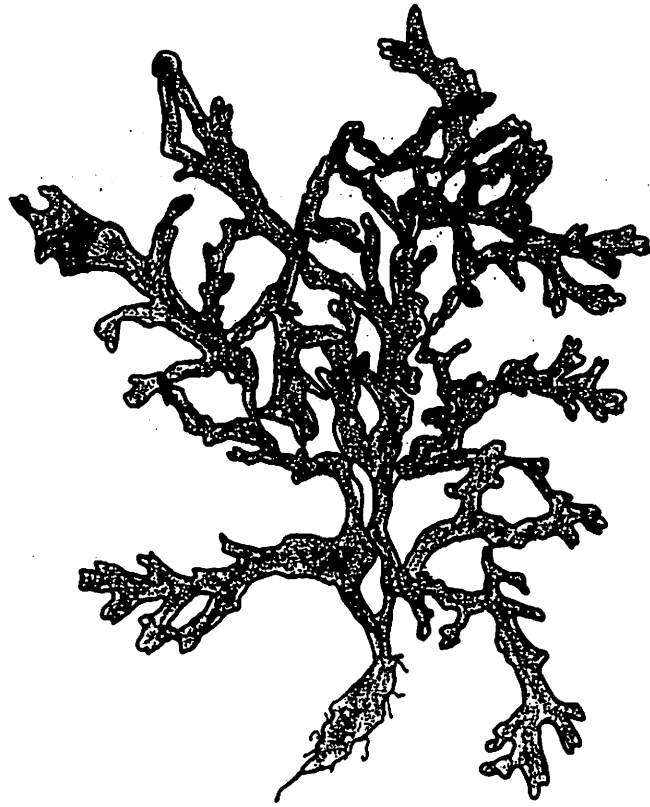
This plant consists of medium sized, brown or yellow-brown fronds which often grow as thick bushy clumps with twisted upright flat blades composed of alternately branching sections. A main axis (approx. 5-6 mm broad) is generally discernable with alternate branches arising at intervals of 3-7 mm. No midrib. Branching often hints of being dichotomous, but unequal growth of one prong results in a multi-leveled, saw-tooth outline on both sides of branches. A very handsome plant often found attached to hard substrates in areas of moderate waves surge. Previously named *D. dentata* Lamouroux.

Taylor - p. 224, pl 30
(as *D. dentata*)

Dictyotales, Dictyotaceae

Littler et al. - p. 102

Dictyotales, Dictyotaceae



Dictyota mertensii

PHAEOPHYTA

Dictyota cervicornis Kuetzing

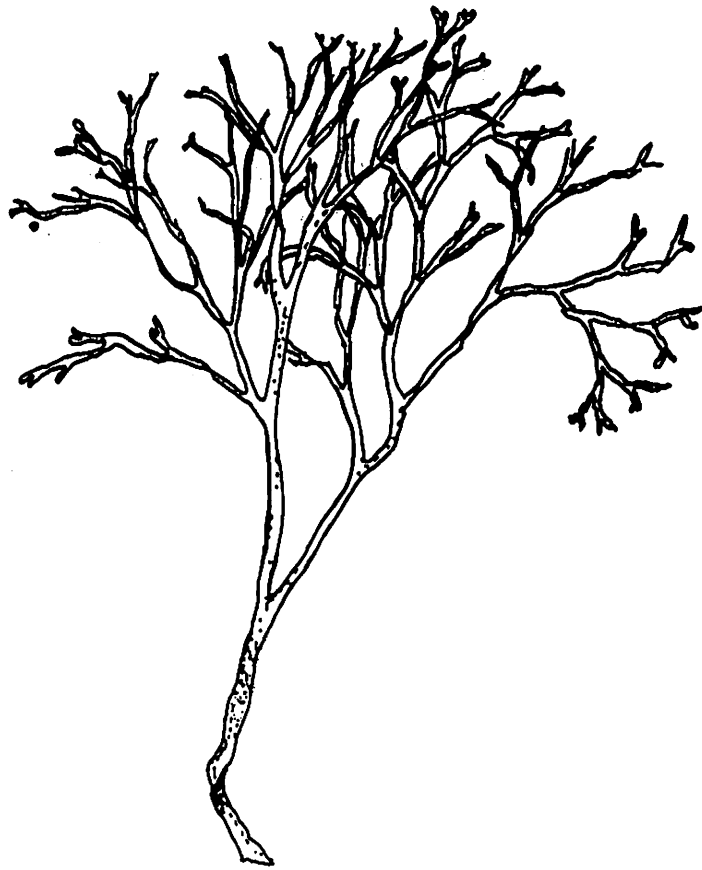
At first view, this plant resembles a thin, twisted *Dictyota menstrualis*; however closer observation reveals that although some dichotomous (equal forking) branching is present, this species also has a great deal of unequal (cervicorn) branching. Plants are brown to greenish-brown, and are reported to reach 20-25 cm tall. Usually the flat blades are only 1-2 mm wide and taper slightly toward the tips. Often (especially in lower regions of the plant) forks may be 1-2 cm apart. This species grows attached to rocks and shells, often in otherwise sandy areas.

Taylor - p. 222, pl. 31

Littler et al. - p. 100

Dictyotales, Dictyotaceae

Dictyotales, Dictyotaceae



Dictyota cervicornis

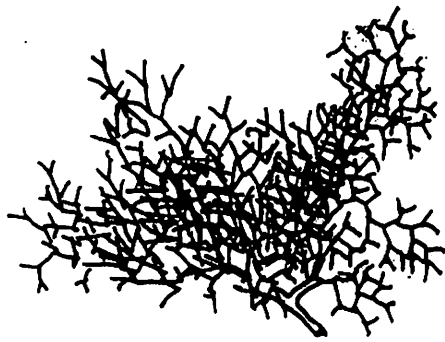
PHAEOPHYTA

Dictyota linearis (C. Agardh) Greville

This is a small species of *Dictyota* that often grows as small tangled, dark-brown, turf-like clumps. Branching is dichotomous (equal forking) generally every 2-5 mm. The blades are flat but very narrow (0.5 - 1 mm broad), and the branches do not taper noticeably in successive branches as they do in *D. divaricata*. Although it grows attached to rocks, shell, and other larger algae, small clumps are often found detached and washing ashore (eg. between the Field Station and the pier at North Point). It is fairly common but is often overlooked.

Taylor - p. 219
Littler et al. - p. 98

Dictyotales, Dictyotaceae
Dictyotales, Dictyotaceae



Dictyota linearis

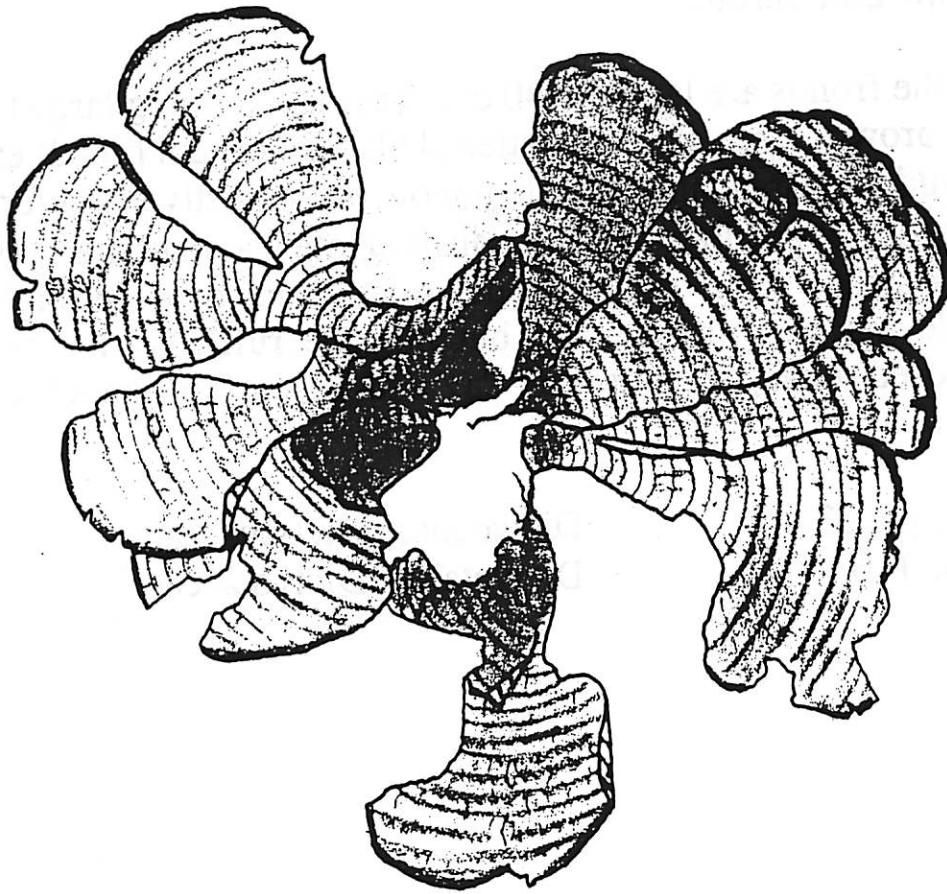
PHAEOPHYTA

Padina sanctae-crucis Boergesen

Padina plants consist of tan or light brown, fan-shaped blades with inrolled margins and with concentric lines of microscopic hairs approx. 1-2.5 mm apart. Upper surface of blade often chalky white due to calcium carbonate deposits. Sides of fan-shaped blades often curl inward to produce funnel-shaped appearance in the water. If growing in wave surge zone, these "funnels" alternately open (uncurl) and close (curl) due to wave action. Often growing in shallow water on tops of shallow rocks forming thick turfs. *Padina* appears somewhat like *Styopodium* due to concentric zones on the surface, but can be distinguished by: *Padina* having obvious inrolled outer margin; and *Padina* having a chalky appearance. Often found on shallow rocks in areas of light to moderate wave action, such as Cut Cay and Rices Bay.

Taylor - p. 237, pl. 34
Littler et al. - p. 114

Dictyotales, Dictyotaceae
Dictyotales, Dictyotaceae



Padina sanctae-crucis

PHAEOPHYTA

Dictyopteris justii Lamouroux

In this species, the fronds are large (to 40 cm, Taylor), forming large tufts of olive to dark brown, strap-shaped, flattened blades (1-8 cm broad) each with a distinct midrib. Branching is dichotomous with mostly equal forks. Often the lower (older) portions of blades disintegrate leaving bare midrib appearing like a stalk. Tops of flat blades often blunt or even slightly indented. Blade margins not dentate, but may be ruffled. Found in moderately exposed areas, such as Cut Cay and Rices Bay, attached to firm substrates.

Taylor - p. 226, pl. 33
Littler et al. - p. 110

Dictyotales, Dictyotaceae
Dictyotales, Dictyotaceae



Dictyopteris justii

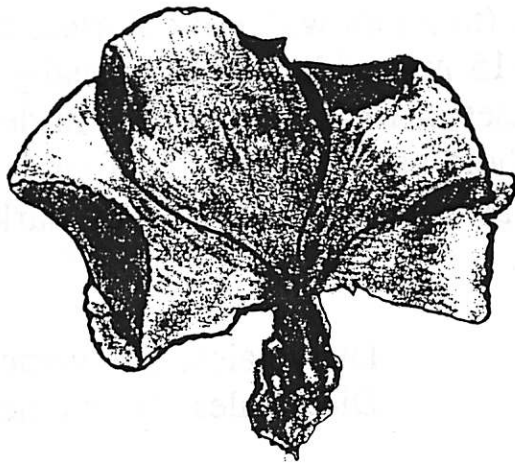
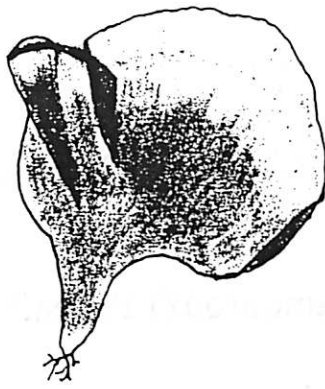
PHAEOPHYTA

Lobophora variegata (Lamouroux) Womersley

This species is composed of flat, brown or slightly yellow- or olive-brown, fan-shaped fronds. These flat fronds are mostly not divided into split lobes but instead mostly single, broad, fan shaped blades with round margin (which is not inrolled as is *Padina*). Also, not encrusted with lime as is *Padina*. Fronds 3-8 cm tall and 1-7 cm broad (Taylor). Fronds may be erect, or in some cases where they form dense beds over hard surfaces, they may be rather prostrate. When forming these prostrate beds, the blades are slightly crispy. Often found in areas of moderate wave surge energy.

Taylor - p. 231, pl. 33
Littler et al. - p. 114, 116

Dictyotales, Dictyotaceae
Dictyotales, Dictyotaceae



Lobophora variegata

PHAEOPHYTA

Styopodium zonale (Lamouroux) Papenfuss

These plants have large dark brown fronds up to 40 cm tall, forming large clumps of flat, fan-shaped blades. The dark brown, flat blades do not have a mid-rib and are not inrolled at the margins; however the fan-shaped blades often split irregularly. Color is usually dark brown, but *Styopodium* often appears iridescent green in the water. The flat blades have conspicuous dark bands (to 3 mm wide) of colorless hairs producing "zonate" concentric zones 3-15 mm wide. Blades usually 1-5 cm broad. Clumps are common near bases of reefs in water 2-4 m deep, attached to hard substrates by strong holdfasts. Typically found in areas with moderate wave surge such as Lindsey reef. Dries dark brown when pressed and may stain paper.

Taylor - p. 232, pl. 28
Littler et al. - p. 112

Dictyotales, Dictyotaceae
Dictyotales, Dictyotaceae



Stypopodium zonale

75% reduction

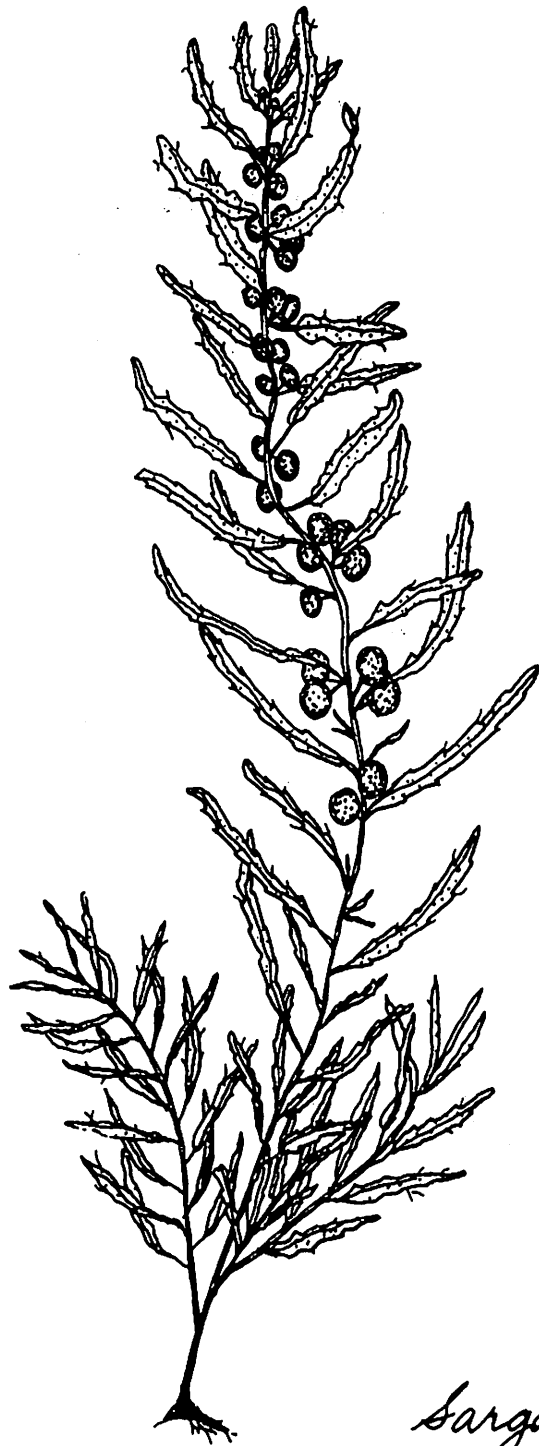
PHAEOPHYTA

Sargassum pteropleuron Grunow

A common *Sargassum* species that grows attached to old coral and rocks in shallow water out to 4-5 m depth, for example just offshore at Telephone Pole Reef or Rocky Point. Individuals might be 0.5 to 1 m long (or longer), and extend like frayed brown rope straight up from the bottom. Air bladders (looking like small brown berries) are common, on very short stalks or almost no stalk at all but attached directly to the main branches. Most individuals consist of one main axis and have little or no branching except at the very base. Leaf-like blades are thin (1-3 mm wide), 2-5(9) cm long, and usually obviously dentate or serrate (toothed) on their edges. Air bladders are spherical and smooth and range from 3-6(8) mm in diameter.

Taylor - p. 274, pl. 39,40
Littler et al. - p. 128

Fucales, Sargassaceae
Fucales, Sargassaceae



Sargassum pteropodum
75% reduction

PHAEOPHYTA

Sargassum natans (Linnaeus) J. Meyen

One of the two free-floating and sterile species of *Sargassum* that might wash ashore. *Sargassum* species are brown, ranging from dark to light tan, and have floats or air bladders (vesicles) which look like berries; and they are generally bushy with branched stem-like branches and many flat, distinct leaf-like blades. *Sargassum natans* has slender leaf-like blades (1-3 mm wide), 2-6 cm long, with distinct teeth or serrations on the margins. The air vesicles are approximately 2-4 mm in diameter, usually on short stalks 2-5 mm long, and usually have a short (1-3 mm) spine-like tip. At times, great quantities of this species wash ashore where it dries into brittle, dark-brown, tangled clumps.

Taylor - p. 281, pl. 37,40

Fucales, Sargassaceae

Littler et al. - p. 122

Fucales, Sargassaceae



Sargassum natans

PHAEOPHYTA

Turbinaria turbinata (Linnaeus) Kuntze

Turbinaria is a very distinct genus of brown algae. Plants grow from a rhizoidal, fiber-like holdfast as erect individuals with a conspicuous main axis and may reach up to 0.5 m long. In some cases, branching near the base causes 2-3 or more main axes. The distinctive feature of this genus is its pyramid-like leaves or blades. These distinct blades are broadest at the distal end, and taper to a triangular petiole-like stalk which attaches to the main axis. Two species are fairly similar and both occur in fairly shallow water attached to old coral and rocks (eg. Linsay Reef). *T. tricostata* Barton is the smaller of the two species (5-15 cm tall) and is characterized by its petioles having serrated ridges and its pyramidal leaves without an inflated vesicle. *T. turbinata* plants may be larger, and its pyramidal leaves typically have an inflated vesicle-like swelling in the middle of the distal surface. Its petioles are not serrated.

Taylor - p. 285, pl. 39

Fucales, Sargassaceae

Littler et al. - p. 130

Fucales, Sargassaceae



Turbinaria turbinata

RHODOPHYTA

Heterosiphonia gibbesii (Harvey) Falkenberg

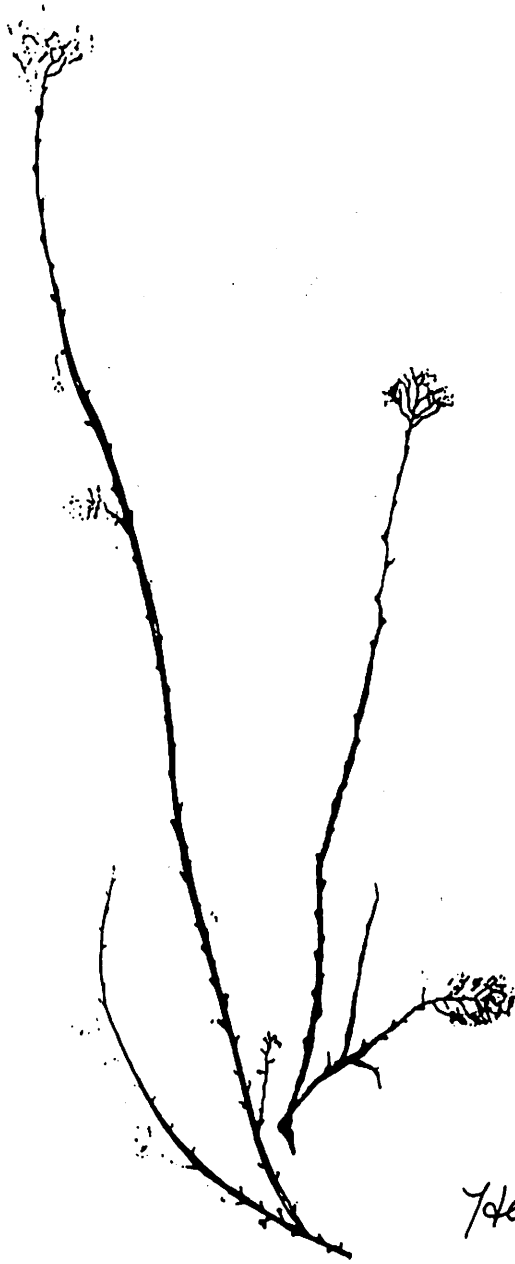
These plants consist of delicate looking fronds, pinkish to straw-colored, growing erect to 20 cm tall (Taylor, Littler et al.). Individuals produce upright distinct main axes (diameter approx. 1 mm) with zig-zag appearance due to alternate branches which have fallen off (at 3-4 mm intervals between zigs), resulting in a denuded main axis. Top of main axis is fluffy, pink, due to presence of dense young alternate branches each of which continues to branch into smaller, fine branchlets. Found in open sunny locations, not in heavy surf, attached to hard substrates (often between shoreline and reefs such as Gerace Reefs at Rocky Point).

Taylor - p. 566, pl. 72, 73

Littler et al. - p. 148

Ceramiales, Dasyaceae

Ceramiales, Dasyaceae



Heterosiphonia gibbesii

75% reduction

RHODOPHYTA

Liagora pinnata Harvey

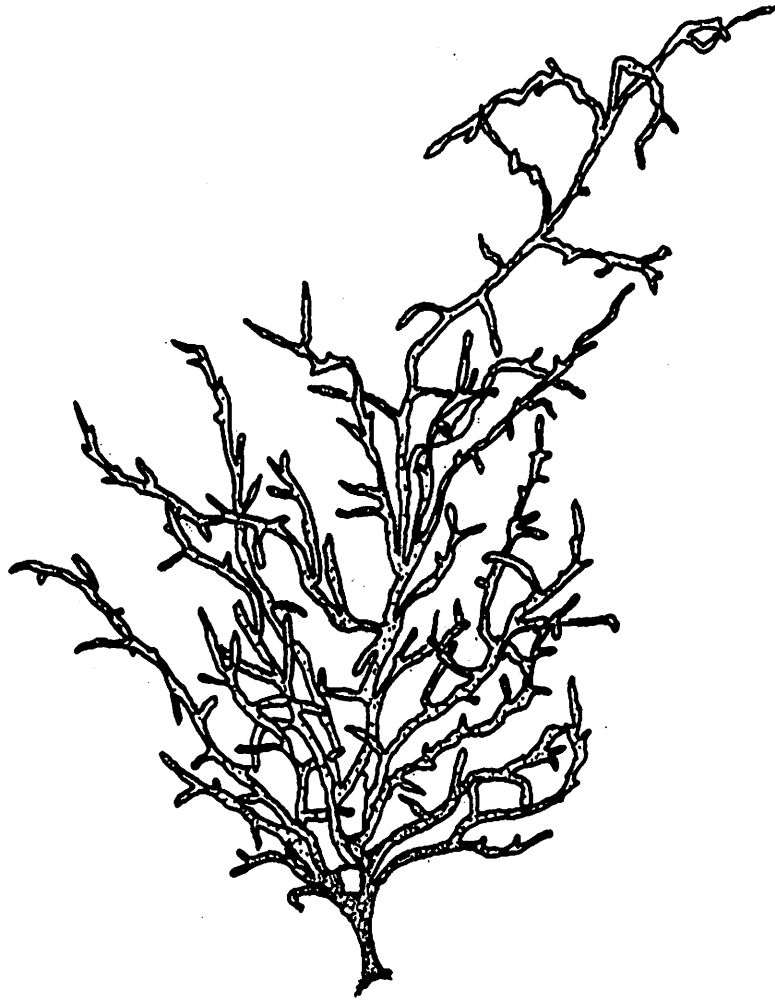
These individuals produce soft, intertwined light pink to white fronds. Each plant is much branched, lightly calcified, and forms a rather dense, tangled tuft. Branching is alternate to irregular. Occasional individuals grow attached to hard substrates often in slightly protected areas on shallow reefs and rocks such as in slightly shaded areas of Lindsey Reef and Grotto Beach.

Taylor - p. 329

Littler et al. - p. 164

Nemalionales, Helminthocladiaceae

Nemaliales, Helminthocladiaceae



Liagora pinnata

RHODOPHYTA

Chondria tenuissima (Goodenough & Woodward) C. Agardh

This red alga is often light brown to straw colored during the summer and more reddish or purplish during winter months. It generally grows as tufts with a few main axes and might grow as long as 30 cm or more. The main axes and larger branches are cylindrical (1-2 mm wide) and support short (2-5 mm long; 0.5 mm wide) spiny-like, tapered branchlets. Often toward the basal half of the plant, the main axes and larger branches are denuded or without branchlets. This species of *Chondria* is common in shallow sandy areas attached to rocks, shells, or a hard bottom just below a thin veneer of sand (eg. between the shoreline and the reefs at Rocky Point or Lindsay Reef, or between the Bahamian Field Station and the pier at North Point.

Taylor - p. 613
Litter et al. - p. 156

Ceramiales, Rhodomelaceae
Ceramiales, Rhodomelaceae



Chondria tenuissima

RHODOPHYTA

Laurencia obtusa (Hudson) Lamouroux

This species is bushy, fleshy, and turf-like. Main axes are evident, with alternate branches supporting successively smaller alternate (usually) branches. Ultimate short, stubby branchlets are blunt at their tips and are not constricted or tapering at their base. Plants are usually mostly greenish except for the rose-red tips of the branchlets. This species is usually found attached to rocks, shells and dead coral.

Taylor - p. 626

Ceramiales, Rhodomelaceae

Little et al. - p. 182

Ceramiales, Rhodomelaceae



Laurencia obtusa

RHODOPHYTA

Dasya baillouviana (S.G. Gmelin) Montagne

This beautiful red alga may be deep, dark red to lighter pink in color. At San Salvador Island, the darker red plants are more common during winter months. Individuals consist of much branched erect axes, and some of the branches may be long and repeatedly branched. All axes and branches (2-4 mm diameter) are covered by fine, short hair-like branchlets giving the axes and branches a soft, furry-like appearance. The plant is soft and slightly gelatinous, and it waves gracefully in the water from its basal disk-like holdfast attached to rocks, shells and coral rubble. These plants (which might be 20-50 cm tall) typify grace and beauty in the water, but they quickly lose their intense red color when removed.

Taylor - p. 562

(as *D. pedicellata*)

Little et al. - p. 152

Ceramiales, Dasyaceae

Ceramiales, Dasyaceae



Gasya baillouviana

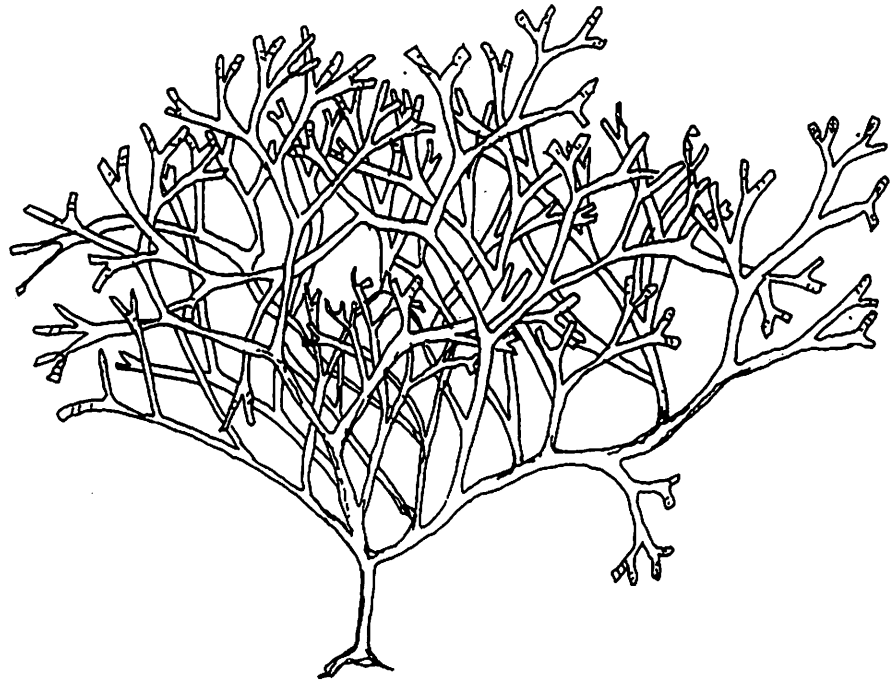
RHODOPHYTA

Galaxaura oblongata (Ellis & Solander) Lamouroux

This plant is dark red to purplish, bushy due to dichotomous (forking) branching, and slightly wiry or slightly stiff due to light calcification. Bushy tufts are usually 5-10 cm in height and diameter. The tips of the dichotomous branches are fairly obtuse (not pointed) and the axes and branches are about the same diameter throughout (1-2 mm). This plant grows as tufts in shallow water attached to rocks and old coral, but is most commonly seen washing around in sandy pockets between coral reef mounds at sites such as Rocky Point/Gerace Reef, or Lindsay Reef. Taylor notes that within this genus there is some taxonomic difficulty among species, particularly because what may be recognized as separate species might actually be different life-history stages of the same species.

Taylor - p. 342, pl. 44,45
Littler et al. - p. 202

Nemalionales, Chaetangiaceae
Nemaliales, Chaetangiacea



Salayaura oblongata

RHODOPHYTA

Amphiroa rigida Lamouroux v. *antillana* Boergesen

Amphiroa plants are strongly calcified, rigid and pink. This species grows as stiff, rigid tufts of clusters of cylindrical branches about 1 mm in diameter, and tufts are typically 3-7 cm high and broad. Branching is mostly dichotomous, usually with a wide angle. In this species, the articulations (joints) between the calcified, cylindrical segments are not located at the site of branching, but instead the articulations are usually just above the site of forking. (You will need some magnification to see this). This species is somewhat fragile because it is not flexible. It grows attached to rocks and old coral, but tufts are often found washing around in sandy pockets between coral reef mounds at locations like Rocky Point/Gerace Reef.

Taylor - p. 404, pl. 47,48
Littler et al. - p. 208

Cryptonemiales, Corallinaceae
Corallinales, Corallinaceae



Amphiroa rigida

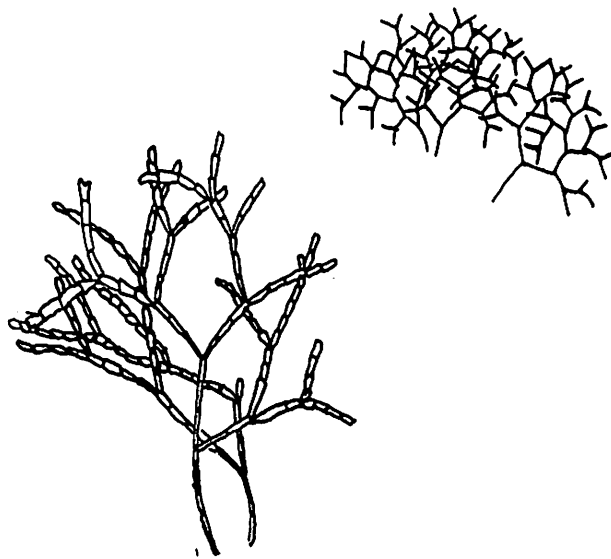
RHODOPHYTA

Jania adherens Lamouroux

This is a very small, bushy coralline alga which is common but often overlooked. Plants grow as small (2-3 cm) tufts of hair-thin, branched, stiff (due to calcification) clusters of axes and branches, often as epiphytes on sea grasses and older parts of larger seaweeds. Tufts may be light pink, gray or white; and the tufts are quite fragile and crumble easily. Branching is wide angled (generally greater than 45 degrees) and appears somewhat dichotomous.

Taylor - p. 413, pl. 49
Littler et al. - p. 204

Cryptonemiales, Corallinaceae
Corallinales, Corallinaceae



Jania adherens

RHODOPHYTA

Neogoniolithon strictum (Foslie) Setchell & Mason

This pink coralline alga grows as rigid thickets of stone-hard, cylindrical, gradually tapering branches. Tips of branches are blunt (1-2 mm in diameter), and basal regions of branches may be 3 mm or more in diameter. Joints are not apparent. Some branches curve slightly. Branching might be dichotomous or irregular, and often a clump is composed of somewhat criss-crossed branches. Clumps are reported to reach 10-14 cm in diameter and up to 6 cm high. Clumps are generally found in seagrass beds.

Taylor - p. 399, pl. 48,77
(as *Goniolithon strictum*)

Cryptonemiales, Corallinaceae

Littler et al. - p. 214

Cryptonemiales, Corallinaceae



Neogoniolithon strictum

RHODOPHYTA

Neogoniolithon spectabile (Foslie) Setchell & Mason

Like *Neogoniolithon strictum*, this pink coralline alga grows as rigid thickets of stone-hard, tapering, cylindrical branches. In this species, however, the branches are rather knobby or warty, thick in diameter (5 mm or more in basal regions), and often anastomosed (fusing together) in lower regions. Branching is dichotomous to irregularly forking. Terminal tips of branches are 1 mm or more in diameter, and are blunt. Due to lower sections of branches being thick and often anastomosed, clumps of this species are more dense, solid and massive than are the open-thicket clumps of *N. strictum*. Clumps are reported to reach 15 cm in diameter, and are often found in back reef areas.

Taylor - p. 399, pl. 78

(as *Goniolithon spectabile*)

Cryptonemiales, Corallinaceae

Littler et al. - p. 212

Cryptonemiales, Corallinaceae



Neogoniolithon spectabile

RHODOPHYTA

Porolithon pachydermum (Weber-van Bosse & Foslie) Foslie

This pink, rock-hard crustose alga is perforated by numerous deep holes (up to 1 cm in diameter). This species grows on rocks and reef surfaces, and is capable of withstanding heavy wave energy, bright sunlight and is tolerant of dessication; thus it is capable of growing at the reef crest near the water surface. The conspicuous holes are caused by a chiton, *Acanthochitona lata*, and often chitons can be observed down in the holes.

Taylor - p. 401

Littler et al. - p. 220

Cryptonemiales, Corallinaceae

Corallinales, Corallinaceae



Porolithon pachydermum

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