

Revised checklist of benthic marine macroalgae and seagrasses of Guam and Micronesia.

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Abstract— We have compiled the new records and nomenclatural changes since Tsuda & Wray's 1977 checklist and Tsuda's 1981a addendum. There are now 653 species of benthic marine algae reported from Micronesia: 85 species of Cyanophyta, 324 Rhodophyta, 58 Heterokontophyta (including 54 Phaeophyceae), and 186 Chlorophyta. We document here 40 new records for Guam. The total for Guam is now 237 species: 26 Cyanophyta, 109 Rhodophyta, 31 Heterokontophyta (including 27 Phaeophyceae), and 71 Chlorophyta. We have included 3 Pelagophyceae and 1 Bacillariophyceae (diatom) that form macroscopic colonies, as well as the 10 species of seagrasses (Magnoliophyta) that occur in the region.

Introduction

There has been a modest amount of phycological activity in Micronesia in the decades since Tsuda & Wray (1977) published a checklist of seaweeds that had been reported from the islands in the region. Some additions to the list were published by Tsuda (1981a). Tsuda (1981b) also printed a checklist for Guam, which included a number of species not included in either of his other checklists. Recent work in Pohnpei by Hodgson & McDermid (2000) and McDermid et al. (2002) added many new records, particularly of subtidal Rhodophyta. We document here 40 new records from Guam, including those from technical reports by Tsuda (1981b, 1992, 1993), 22 of which are new for Micronesia.

Additionally, there has been much phycological work, chiefly outside the region, that improves our understanding of the species and their systematic positions. We have also benefitted from the recent checklist from Fiji (N'Yeurt et al. 1996) and the new Rhodophyta flora of Hawai'i (Abbott 1999). Specimens from the Guam herbarium were included in studies of the genera *Avrainvillea* (Olsen-Stojkovich 1985), *Gracilaria* (Tsuda 1985, Meneses & Abbott 1988,

Abbott et al. 1991), *Kappaphycus (Eucheuma)* (Doty 1988) and *Sargassum* (Tsuda 1988).

Benthic algae in the taxa not traditionally treated as seaweeds have been scarcely touched in our region, and remain a wealth of potential studies. In this checklist we have included in Heterokontophyta, besides the Phaeophyceae, a few species that form macroscopic colonies—"chrysophytes" (these species now considered to be in the Pelagophyceae) and one tube-dwelling diatom (Bacillariophyceae). There remain the abundant benthic free-living diatoms (listed by Zolan 1981), the benthic dinoflagellates, some of which are involved in ciguatera poisoning, and many other interesting organisms, such as *Chlorarachnion globosum*, a new member of the Chlorarachniophyta, described from material collected on Guam (Ishida & Hara 1994).

One intriguing red alga that has not yet been reported from Micronesia, but may well be here, is *Rhodogorgon ramosissima* J. Norris & Bucher. This species, which superficially resembles a gorgonian (octocoral), has recently been reported from the Philippines (Ogden 1992) and Fiji (N'Yeurt et al. 1996).

Our purpose here is simply to update the checklist and document the new records, adding the seagrasses and the macroscopic chrysophytes. We have not attempted to review the specimens on which the literature is based, and any misidentifications in the literature remain. Unlike the original checklist, this is not intended to be a bibliography, and we have not listed additional records of species in the earlier lists, nor provided a geographical update. Moreover, we have primarily arranged the list systematically. An alphabetical index of genera is appended.

Methods

Because this volume of *Micronesica* focuses on checklists for Guam, we have formatted the list by marking Guam records with (G) in the margin and indenting records of species known only from other islands in Micronesia. Of course, many species listed for Guam also occur on other islands. As in the original lists, boldface names indicate species with types from the region. Species or genera added since the 1977/1981a checklists are marked with an asterisk (*); these include species reported in recent publications as well as those first reported here. As in the earlier checklists, records are included only from published papers and not from technical reports or theses. (Those in Tsuda's technical reports are documented on the basis of herbarium specimens.) A dagger (†) indicates a previously unpublished record for Guam of a species already reported from elsewhere in Micronesia; as with the *, all post 1977/1981a checklist records are marked. New records identified only to genus have been included only if they are the only representative of the genus in our region. Names from the earlier checklists that are now in synonymy are indicated in [square brackets]; other synonymies have been omitted. Variant spellings are given in single quotation marks, e.g., [*'kairnbackii'*]. Vouchers listed from

GUAM-ML are in the algal collection at the University of Guam Marine Laboratory.

The nomenclature and arrangement into families and orders follows that of Silva et al. (1996 and online updates); this work has also been our primary source for spellings, authorities, and synonymies. Additional sources for spellings, authorities, and synonymies were: Silva et al. (1987), Abbott (1999), N'Yeurt et al. (1996), Yoshida (1998), and additional recent papers cited in the list.

Systematic List

ALGAE

DIVISION CYANOPHYTA¹

CLASS CYANOPHYCEAE

CHROOCOCCALES²

SYNECHOCOCCACEAE

Aphanothece stagnina (Sprengel) A. Braun [= *Coccochloris stagnina* Sprengel]

Aphanothece elabens (Brébisson in Meneghini) Elenkin [= *Coccochloris elabens* (Brébisson in Meneghini) Drouet & Daily]

Nomenclature *fide* Komárek & Anagnostidis (1999: 79)

(G)**Johannesbaptistia pellucida* (Dickie) W.R. Taylor & Drouet

CL found several pseudofilaments epiphytic on old *Lyngbya*, approx. 10 m deep, Apra Harbor, Guam, 2/16/91 (Fig. 1). The granular cytoplasm and lack of stellate plastid distinguish this small red-colored cyanophyte from the red alga *Stylonema*. New record for Guam and Micronesia.

MERISMOPEDIACEAE

Gomphosphaeria aponina Kützing

Merismopedia glauca (Ehrenberg) Kützing [= *Agmenellum quadruplicatum* (Meneghini) Brébisson]

Merismopedia thermalis Kützing [= *Anacystis thermalis* Drouet & Daily]

MICROCYSTACEAE

Gloeocapsa atrata Kützing [= *Gloeocapsa alpicola* (Lyngbye) Bornet]

Nomenclature *fide* Komárek & Anagnostidis (1999: 243)

(G) *Microcystis dimidiata* (Kützing) P. Silva [= *Anacystis dimidiata* (Kützing) Drouet & Daily]

¹ As noted by Whitton & Potts (2000), many US botanists in the 1960's and 1970's adopted Drouet's system. Where field biologists listed species using this system, we cannot now go back and determine which of the Geitlerian taxa had been collected. For instance, each of Drouet & Daily's *Entophysalis* species incorporated numerous species that Geitler before them and now Komárek have in different families!

² Systematics of the Chroococcales follows the new revision by Komárek & Anagnostidis (1999).

- Microcystis sanguinea* (C. Agardh) Kützing [= *Anacystis montana* (Lightfoot) Drouet & Daily]
Microcystis zanardinii (Hauck) P. Silva [= *Anacystis aeruginosa* (Zanardini) Drouet & Daily]

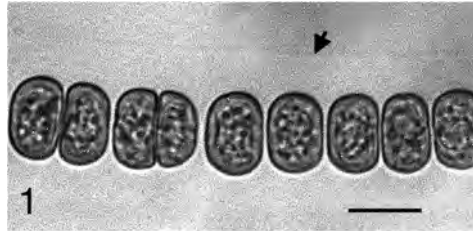


Figure 1. *Johannesbaptistia*; arrow indicates extent of mucilage sheath. Scale bar = 5 μ m

CHROOCOCCACEAE

- Chroococcus turgidus* (Kützing) Nägeli [= *Gloeocapsa turgida* (Kützing) Hollenbach]
 Nomenclature *vide* Komárek & Anagnostidis (1999: 306)

ENTOPHYSALIDACEAE

- (G) *Entophysalis conferta* (Kützing) Drouet & Daily
 See footnote (1)
Entophysalis crustacea (J. Agardh) Drouet & Daily
 Listed as an “unrevised” species in Komárek & Anagnostidis (1999: 338)
 (G) *Entophysalis deusta* (Meneghini) Drouet & Daily
Entophysalis granulosa Kützing

OSCILLATORIALES

OSCILLATORIACEAE

- (G) *Blennothrix lyngbyacea* (Kützing) Anagnostidis & Komárek [= *Microcoleus lyngbyaceus* (Kützing) Crouan & Crouan; *Hydrocoleum lyngbyaceum* Kützing]
Blennothrix cantharidosma (Montagne) Anagnostidis & Komárek [= *Hydrocoleum cantharidosmum* (Montagne) Gomont]
Hormoscilla spongelliae (Schultze ex Gomont) Anagnostidis & Komárek
 Sponge endosymbiont, reported (as *Oscillatoria spongelliae* (Schulze) Hauck) from *Dysidea herbacea* and other sponges by Hinde et al. (1994), among others; recorded from Palau by Unson & Faulkner (1993).
 (G) *Lyngbya aestuarii* (Mertens) Liebman
 (G)**Lyngbya bouillonii* Hoffmann & Demoulin
 This recently-described species (Hoffmann & Demoulin 1991) differs from *L. majuscula* in its habit (forming mats rather than erect free filaments) and in its trichome morphology (wall indented at the cross-walls; Fig. 2). Common on Guam. Collected and identified by E. Cruz-Rivera and V. Paul, and identity

confirmed by Hoffmann (pers. comm.). It is likely that some records of *L. majuscula* from our region may be this species. Specimen in GUAM-ML. Also collected in Pohnpei by Lobban & Scheffter (3/9/02—GUAM-ML), common at barrier reef sites.

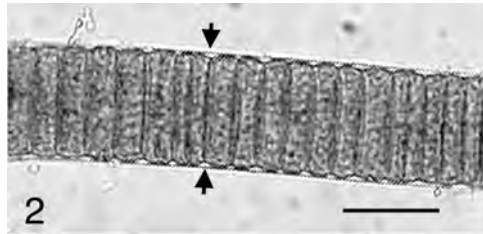


Figure 2. *Lyngbya bouillonii*, showing indented cross walls (arrows). Scale bar = 25µm

- (G) *Lyngbya confervoides* C. Agardh
- (G) *Lyngbya guaymensis* Drouet
- (G) *Lyngbya majuscula* (Dillwyn) Harvey
- (G) *Lyngbya meneghiniana* (Kützing) Falkenberg
- (G) *Lyngbya penicilliformis* P. Silva [= *Phormidium penicillatum* Gomont]
- (G) *Lyngbya polychroa* (Meneghini) Rabenhorst [= *L. sordida* Gomont]
- (G) *Lyngbya semiplena* (C. Agardh) J. Agardh
- (G) *Microcoleus acutissimus* Gardner
- Microcoleus chthonoplastes* (Mertens) Zanardini
- * *Microcoleus vaginatus* (Vaucher) Gomont
 - Reported here on the basis of Tsuda collection GUAM-ML RT 2814, Sasanhaya Bay, Rota, 3/15/69.
- Oscillatoria margaritifera* (Kützing) Gomont

PHORMIDIACEAE

- Arthrospira major* (Kützing) Crow [= *Spirulina major* Kützing]
- Hydrocoleum coccineum* Gomont
 - Although Anagnostidis & Komárek (1988) transferred several species of *Hydrocoleum* to *Blennothrix*, they kept the genus, with a note that it still needs study.
- Hydrocoleum comoides* (Harvey) Gomont
- Hydrocoleum confluens* (Setchell & Gardner) Drouet
- Hydrocoleum floccosum* (Hauck) Gomont
- Hydrocoleum glutinosum* (C. Agardh) Gomont
 - One subspecies of this genus was transferred to *Blennothrix* but not the whole species.
- Phormidium amphibia* (C. Agardh ex Gomont) Anagnostidis & Komárek [= *Oscillatoria amphibia* C. Agardh]
- (G) *Phormidium breve* (Kützing) Anagnostidis & Komárek [= *Arthrospira brevis* (Kützing) Drouet]

- Phormidium chalybeum* (Mertens) Anagnostidis & Komárek [= *Oscillatoria chalybea* Mertens]
- Phormidium corium* (Agardh) Kützing
Listed in Tsuda & Wray (1977) in synonymy with *Schizothrix rubella*, following Drouet; see Silva et al. (1996: 51).
- Phormidium nigroviride* (Thwaites) Anagnostidis & Komárek [= *Oscillatoria nigroviridis* Thwaites]
- Phormidium submembranaceum* (Ardissonne & Strafforello) Gomont [= *Oscillatoria submembranacea* Ardissonne & Strafforello]
- Phormidium valderianum* Gomont
- (G) *Porphyrosiphon luteus* (Gomont ex Gomont) Anagnostidis & Komárek [= *Oscillatoria lutea* C. Agardh]
- (G) *Porphyrosiphon notarisii* (Meneghini) Kützing
- (G) *Porphyrosiphon versicolor* (Gomont) Anagnostidis & Komárek
- Sirocoleum guianense* Kützing
- Sirocoleum kurzii* (Zeller) Gomont
- (G) *Spirulina subsalsa* Oersted
- Spirulina tenerrima* Kützing
- Symploca hydroides* (Harvey) Kützing
- Symploca laeteviridis* Gomont
- Symploca muscorum* (C. Agardh) Gomont

PSEUDANABAENACEAE

- (G) *Leibleinia gracilis* Meneghini [= *Lyngbya gracilis* (Meneghini) Rabenhorst]
- Leptolyngbya crosbyana* (Tilden) Anagnostidis & Komárek [= *Phormidium crosbyanum* Tilden]
- Nomenclature *vide* Anagnostidis & Komárek (1988: 391–393).
- Leptolyngbya golenkiniana* (Gomont) Anagnostidis & Komárek [= *Plectonema golenkinianum* Gomont]
- Leptolyngbya nostocorum* (Bornet) Anagnostidis & Komárek [= *Plectonema nostocorum* Bornet ex Gomont]
- Leptolyngbya terebrans* (Bornet & Flahault ex Gomont) Anagnostidis & Komárek [= *Plectonema terebrans* Bornet & Flahault ex Gomont]

SCHIZOTRICHACEAE

- Schizothrix arenaria* (Berkeley) Gomont
This species was listed by Tsuda & Wray (1977) under synonymy with *S. longiarticulata*, but Silva et al. (1996: 64) show this species as distinct (and do not list *S. longiarticulata*).
- (G) *Schizothrix calcicola* (Agardh) Gomont
- Schizothrix cresswellii* (Harvey) Harvey
- Schizothrix heufleri* Grunow
- Schizothrix lacustris* A. Braun
- Schizothrix longiarticulata* Gardner
- (G) *Schizothrix mexicana* Gomont

NOSTOCALES
MICROCHAETACEAE

- (G)†*Tolypothrix byssoidea* (Berkeley) Kirchner
Common on reef flats on Guam. We have added a voucher specimen to GUAM-ML.

NOSTOCACEAE

- (G) *Hormothamnium enteromorphoides* Grunow
See Silva et al. (1996: 69) on spelling vs. *Hormothamnion*.
(G) *Hormothamnium solutum* Bornet & Grunow

RIVULARIACEAE

- Calothrix confervicola* (Dillwyn) C. Agardh
(G) *Calothrix crustacea* Thuret
Calothrix parietina (Nägeli ex Kützing) Thuret
Calothrix pilosa Harvey
Calothrix scopulorum (Weber & Mohr) C. Agardh
Dichothrix bornetiana Howe
Dichothrix penicillata Zanardini
Rivularia atra Roth
Rivularia polyotis (J. Agardh) Hauck

SCYTONEMATACEAE

- Scytonema guyanense* (Montand) Bornet & Flahault
Scytonema hofman-bangii C. Agardh [= *S. hofmannii* C. Agardh]
Scytonema mirabile (Dillwyn) Bornet [including *Scytonema figuratum* C. Agardh—
see Desikachary 1959: 483]
Scytonema myochrous (Dillwyn) C. Agardh
Scytonema polycystum Bornet & Flahault

STIGONEMATALES
MASTIGOCLADACEAE

- Brachytrichia quoyi* (C. Agardh) Bornet & Flahault
Fischerella ambigua (Nägeli) Gomont

NOSTOCHOPSIDACEAE

- Mastigocoleus testarum* Lagerheim

PROCHLORALES
PROCHLORACEAE

- (G) *Prochloron didemni* (ex Lewin) Florenzano, Balloni & Materassi
The proposed Division Prochlorophyta now appears to be artificial (see van den Hoek et al. 1995: 44), and when *P. didemni* was formally named, Florenzano et al. (1986) placed it in Photobacteria (=Cyanophyta). This species occurs as a

consistent symbiont in six didemnid ascidians (tunicates), including *Didemnum molle* (Herdman, 1886) (Kott 1982; Lambert 2003).

DIVISION RHODOPHYTA
 CLASS RHODOPHYCEAE
 SUBCLASS BANGIOPHYCIDAE
 PORPHYRIDIALES
 PORPHYRIDIAEAE

Chroodactylon ornatum (C. Agardh) Basson [= *Asterocystis ornata* (C. Agardh) Hamel]

Stylonema alsidii (Zanardini) Drew [= *Goniotrichum alsidii* (Zanardini) Howe, including *Goniotrichum elegans* (Chauvin) Zanardini]

- * *Stylonema cornu-cervi* Reinsch
 Reported from Ant Atoll by McDermid et al. (2002).

ERYTHROPELTIDALES
 ERYTHROTRICHIAEAE

(G)†*Erythrotrichia carnea* (Dillwyn) J. Agardh
 Photo record (Fig. 3) for Guam. Several previous reports from Micronesia.

Erythrotrichia parietalis Tanaka

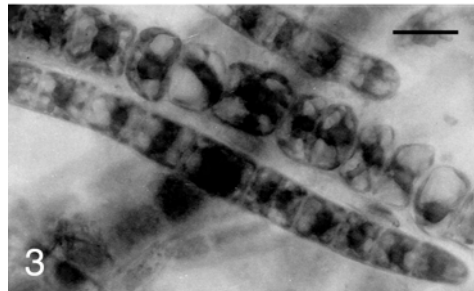


Figure 3. *Erythrotrichia carnea* (photo record). Scale bar = 20 µm

SUBCLASS FLORIDEOPHYCIDAE
 ACROCHAETIALES
 ACROCHAETIACEAE

Acrochaetium gracile Børgesen

Acrochaetium robustum Børgesen

Acrochaetium rongelapense Abbott in Taylor

- * *Acrochaetium seriatum* Børgesen
 Reported from Ant Atoll by McDermid et al. (2002).
Kylinia secunda (Lyngbye) Papenfuss

NEMALIALES
DERMONEMATACEAE

- (G)**Yamadaella caenomyce* (Decaisne) Abbott
Spring annual on intertidal rocks in front of UOG Marine Laboratory and elsewhere. Several specimens from Guam and Rota in GUAM-ML, annotated by Y.M. Chiang, including RT 2801, RHR277 (Guam), RT 2760, RT 2801 (Rota).

GALAXAURACEAE

- (G) *Actinotrichia fragilis* (Forsskål) Børgesen
Galaxaura fasciculata Kjellman ['*fascicularis*'; = *G. cohaerens* Kjellman]
See Abbott (1999: 66)
- (G) *Galaxaura filamentosa* Chou
Galaxaura hystrix Kjellman
- (G) *Galaxaura marginata* (Ellis & Solander) Lamouroux [including *Galaxaura acuminata* Kjellman]
See Abbott 1999: 67.
Galaxaura obtusata (Ellis & Solander) Lamouroux [= *G. robusta* Kjellman]
- (G) *Galaxaura rugosa* (Ellis & Solander) Lamouroux [including *G. elongata* Agardh; *G. glabriuscula* Kjellman; *G. pacifica* Tanaka; *G. subfruticulosa* Chou; and *G. subverticillata* Kjellman]
Galaxaura ventricosa Kjellman
Tricleocarpa cylindrica (Ellis & Solander) Huisman & Borowitzka [= *Galaxaura fastigiata* Decaisne]
The distinction between *Tricleocarpa* and *Galaxaura* was defined by Huisman & Borowitzka (1990). The tetrasporophyte of *Tricleocarpa* is filamentous (see also Magruder 1984).
- (G) *Tricleocarpa fragilis* (Linnaeus) Huisman & Townsend [= *Tricleocarpa oblongata* (Ellis & Solander) Huisman & Borowitzka; = *Galaxaura oblongata* (Ellis & Solander) Lamouroux]

LIAGORACEAE

- Dermonema frappieri* (Montagne & Millardet) Børgesen
Ganomena farinosum (Lamouroux) Fan & Wang [= *Liagora farinosa* Lamouroux]
Liagora albicans Lamouroux [= *Liagora kahukuana* Abbott]
See Abbott (1999: 81)
- (G) *Liagora* cf. *ceranoides* Lamouroux
Several distinct Liagoraceae occur on Guam but have not been identified to species; one resembles *L. ceranoides*.
Liagora hawaiiiana Butters
Liagora megagyna Børgesen
Liagora orientalis J. Agardh
Liagora pinnata Harvey
Liagora robusta Yamada
Liagora valida Harvey

GELIDIALES
GELIDIACEAE

- Gelidium crinale* (Turner) Gaillon
 * *Gelidium divaricatum* Martens
 Reported for Guam by Tsuda (1981b, 1993). There are no vouchers from Guam in GUAM-ML but there are two from Rota, RT 2640 and 2745.
Gelidium pulchellum (Turner) Kützing
 (G) *Gelidium pusillum* (Stackhouse) Le Jolis
 (G) *Pterocladia caloglossoides* (Howe) Dawson [= *Pterocladia parva* Dawson]
Pterocladia pinnata (Hudson) Papenfuss

GELIDIELLACEAE

- (G) *Gelidiella acerosa* (Forsskål) Feldmann & Hamel [= *Gelidiopsis rigida* (C. Agardh) Weber-van Bosse]
Gelidiella adnata Dawson
Gelidiella lubrica (Kützing) Feldman & Hamel [= *Gelidiella bornetii* (Weber-van Bosse) Feldmann & Hamel]
 * *Gelidiella machrisiana* Dawson
 Reported from Pohnpei by McDermid et al. (2002).
 * *Gelidiella myrioclada* (Børgesen) Feldmann & Hamel
 Reported from Pohnpei by McDermid et al. (2002).
Gelidiella pannosa (Feldman) Feldman & Hamel [= *Gelidiella tenuissima* Feldmann & Hamel]

GRACILARIALES
GRACILARIACEAE

- Gracilaria arcuata* Zanardini
 Meneses & Abbott (1988) removed this species from the Guam flora on the basis of examination of specimens in GUAM-ML, but apparently did not reconsider Micronesian records by Kanda, Yamada, and others listed in Tsuda & Wray (1977).
Gracilaria coronopifolia J. Agardh
 (G) *Gracilaria edulis* (Gmelin) Silva [including *Gracilaria lichenoides* Greville]
Gracilaria eucheumatoides Harvey. ['*eucheumoides*']
 (G) *Gracilaria hauckii* Silva [= *Gracilaria radicans* Hauck]
 (G) *Gracilaria salicornia* (C. Agardh) Dawson [including *Gracilaria cacalia* (J. Agardh) Dawson, and *Gracilaria minor* (Sonder) Durairatnam]
 See Meneses & Abbott (1988).
 (G)**Gracilaria tsudae* (Abbott & Meneses) Abbott
 Originally described by Meneses & Abbott (1988) as *Polycavernosa tsudae*, species transferred by Abbott et al. (1991).

BONNEMAISONIALES
BONNEMAISONIACEAE

- (G) *Asparagopsis taxiformis* (Delile) Trevisan [including the sporophytic “*Falkenbergia*” stage]

CRYPTONEMIALES
ACROSYMPHYTACEAE

- (G)**Acrosymphyton taylorii* Abbott.
Distinctively uniaxial (Figs. 4, 5). Specimens collected by R. LeGrande, Tumon Bay, Feb. 1997 and M. Schefter/C. Lobban, 11 Mile Reef, 4/19/03 deposited in GUAM-ML.

DUMONTIACEAE

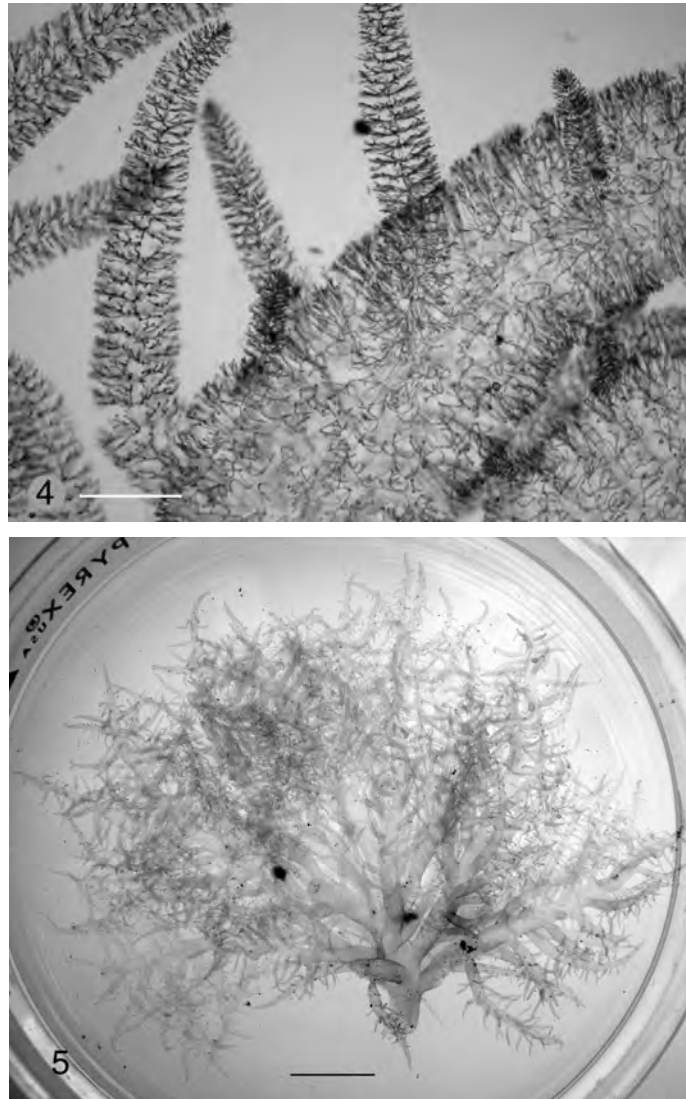
- (G)**Gibsmithia hawaiiensis* Doty
Listed for Guam in Tsuda (1981b) but with no specimen in GUAM-ML; we have added recent specimens collected by Lobban & Schefter, Apra Harbor 3/15/01 (Fig. 6). Occurs sparsely but consistently in Apra Harbor between coral branches, ~ 5–20 m deep. There are also specimens in GUAM-ML from Tinian (RT 3358), Saipan (RT 3767), and Kayangel Atoll (Palau) (RT 5142).

HALYMENIACEAE

- * *Cryptonemia umbraticola* Dawson
Reported from Ant Atoll by McDermid et al. (2002). In addition there are several *Cryptonemia* specimens in GUAM-ML from Malakal Harbor, Palau, identified to genus by I.A. Abbott.
Grateloupia filicina (Lamouroux) C. Agardh
(G)†*Halymenia dilatata* Zanardini
Specimens in GUAM-ML collected by R. Clayshulte (RC100), Mergaga Pt., Guam and by J. Rupp (JR 50). Previously reported from Palau (see Tsuda & Wray 1977), and we have also collected it from Palau and Guam.
(G) *Halymenia durvillei* Bory [‘*durvillaei*’]
Halymenia floresia (Clemente y Rubio) C. Agardh
(G) *Halymenia lacerata* Sonder

PEYSSONNELIACEAE

- Cruoriella dubyi* (Crouan & Crouan) Schmidt
Peyssonnelia conchicola Piccone & Grunow
(G) *Peyssonnelia corallis* (Agardh) Kylin
Peyssonnelia capensis Montagne [= *Peyssonnelia gunniana* J. Agardh]
* *Peyssonnelia inamoena* Pilger
Reported from Pohnpei I. and Ant Atoll by McDermid et al. (2002).
(G) *Peyssonnelia rubra* (Greville) J. Agardh



Figures 4–5. *Acrosymphyton taylorii*, showing (4) uniaxial structure and (5) habit. Scale bars: 4 = 500 μ m; 5 = 20 mm.

RHIZOPHYLLIDACEAE

(G) *Portieria hornemannii* (Lyngbye) Silva [= *Desmia hornemannii* Lyngbye]

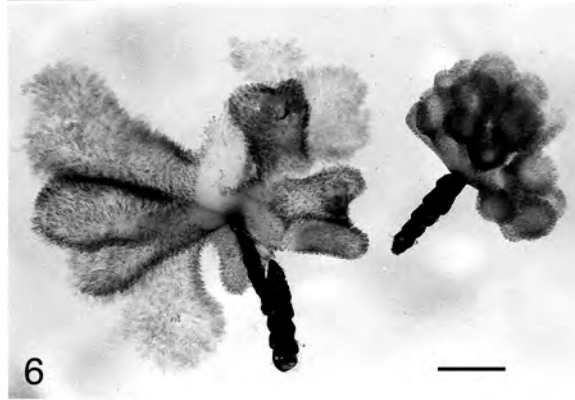


Figure 6. *Gibbsmithia*. Scale bar = 10 mm.

HILDENBRANDIALES
HILDENBRANDIACEAE

Hildenbrandia rubra (Sommerfelt) Meneghini [= *Hildenbrandia prototypus* Nardo]

CORALLINALES
CORALLINACEAE

- Amphiroa anastomosans* Weber-van Bosse
- * *Amphiroa beauvoisii* Lamouroux
Reported from Pohnpei by McDermid et al. (2002).
- Amphiroa foliacea* Lamouroux
- (G) *Amphiroa fragilissima* (Linnaeus) Lamouroux
- * *Amphiroa misakiensis* Yendo
Reported from Pohnpei by McDermid et al. (2002).
- Amphiroa taylorii* Dawson
- * *Amphiroa valonioides* Yendo
Reported from Pohnpei and Ant Atoll by McDermid et al. (2002).
- (G)* *Cheilosporum culturatum* (Harvey) Areschoug subsp. *multifidum* (Kützing) Johansen [= *Cheilosporum multifidum* (Kützing) Yendo]
Reported from Guam by Tsuda (1981b, 1992) as *C. multifidum*. GUAM-ML RT 4742; also specimens from Anatahan (RT 4809) and Saipan (RT 3745).
- * *Cheilosporum spectabile* Harvey ex Grunow
Reported from Pohnpei by McDermid et al. (2002).
- Choreonema thuretii* (Bornet) Schmitz
- Corallina pinnatifolia* (Manza) Dawson
- Heteroderma subtilissima* Foslie
- (G) *Hydrolithon craspedium* (Foslie) Silva [= *Porolithon craspedium* (Foslie) Foslie]
- (G) *Hydrolithon farinosum* (Lamouroux) Penrose & Y.M. Chamberlain [= *Fosliella farinosa* (Lamouroux) Howe]

- (G) *Hydrolithon gardineri* (Foslie) Verheij & Prud'homme van Reine [= *Porolithon gardineri* (Foslie) Foslie and ***Porolithon marshallense*** Taylor]
Hydrolithon megacystum Townsend, Adey & Boykins
 Recorded from Guam by Steneck, GUAM-ML RS 72-4
- (G) *Hydrolithon onkodes* (Heydrich) Penrose & Woelkerling [= *Porolithon onkodes* (Heydrich) Foslie]
- (G) *Hydrolithon reinboldii* (Weber-van Bosse & Foslie) Foslie
Jania adhaerens Lamouroux [including *Jania decussato-dichotoma* (Yendo) Yendo]
- (G) *Jania capillacea* Harvey
Jania constricta Kützing
Jania micrarthrodia Lamouroux [including *Jania antennina* Kützing]
- * *Jania pumila* Lamouroux
 Reported from Pohnpei I. and Ant Atoll by McDermid et al. (2002).
Jania radiata Yendo
Jania rubens (Linnaeus) Lamouroux
- (G) *Jania tenella* (Kützing) Grunow
Jania ungulata (Yendo) Yendo
- (G) *Lithophyllum insipidum* Townsend, Adey & Boykins
 Recorded from Guam by Steneck, GUAM-ML RS 69-10
- (G) *Lithophyllum kotschyanum* Unger
- (G) *Lithophyllum moluccense* Foslie
- (G) *Lithoporella melobesioides* (Foslie) Foslie
- (G) *Mastophora pacifica* (Heydrich) Foslie [= *Lithoporella pacifica* (Heydrich) Foslie]
- (G) *Mastophora rosea* (C. Agardh) Setchell [including *Mastophora macrocarpa* Montagne]
- (G) *Mesophyllum erubescens* (Foslie) Lemoine
- (G) *Mesophyllum funafutiense* (Heydrich) Foslie [= *Lithothamnion funafutiense* Foslie]
- (G) *Mesophyllum mesomorphum* (Foslie) Adey
- (G) *Mesophyllum philippii* (Foslie) Adey [= *Lithothamnion philippii* Foslie]
Mesophyllum simulans (Foslie) Lemoine [= *Lithothamnion simulans* (Foslie) Foslie]
- (G) *Metamastophora flabellata* (Sonder) Setchell [including *Mastophora lamourouxii* (Decaisne) Harvey and *Mastophora plana* (Sonder) Harvey].
- (G) *Neogoniolithon fosliei* (Heydrich) Setchell & Mason [= *Neogoniolithon brassica-florida* (Harvey) Setchell & Mason and *Neogoniolithon frutescens* (Foslie) Setchell & Mason]
- (G) ***Neogoniolithon medioramus*** (Johnson) Setchell & Mason
- (G) *Neogoniolithon megalocystum* (Foslie) Setchell & Mason [= *Neogoniolithon pacificum* (Foslie) Setchell & Mason]
Neogoniolithon reinboldi (Weber-van Bosse & Foslie) Setchell & Mason
- (G) *Paragoniolithon conicum* (Dawson) Townsend, Adey & Boykins [= *Neogoniolithon conicum* (Dawson) Gordon, Masaki & Akioka, *Pneophyllum conicum* (Dawson) Keats, Chamberlain & Baba]
 Yoshida (1998) has this species in *Pneophyllum*.
- (G) *Phymatolithon repandum* (Foslie) Wilks & Woelkerling [= *Lithothamnion asperulum* (Foslie) Foslie]
Pneophyllum minutula (Foslie) Y.M. Chamberlain [= *Heteroderma minutula* Foslie]

Porolithon aequinoctiale (Foslie) Foslie

(G)**Serraticardia maxima* (Yendo) Silva [= *Cheilosporum maximum* Yendo]

Reported here on the basis of specimens from Guam (RT 4744), Pagan (RT 4890), and Alamagan (WJT 16b).

SPOROLITHACEAE

Sporolithon erythraeum (Rothpletz) Kylin

(G) *Sporolithon schmidtii* (Foslie) Gordon, Masaki and Akioka

GIGARTINALES

ARESCHOUGIACEAE

* *Corynocystis prostrata* Kraft

Reported from Ant Atoll by McDermid et al. (2002).

CAULACANTHACEAE

* *Caulacanthus ustulatus* (Turner ex Mertens) Kützing

Reported from Ant Atoll by McDermid et al. (2002).

DICRANEMATACEAE

Dicranema rosaliae Setchell & Gardner

FURCELLARIACEAE

(G) *Halarachnion calcareum* Okamura

GIGARTINACEAE

* *Chondracanthus tenellus* (Harvey) Hommersand

Reported from Ant Atoll by McDermid et al. (2002).

HYPNEACEAE

Hypnea esperi auctorum

Silva et al. (1996: 298) showed that "If the entity currently passing as *H. esperi* is recognized at the level of species [rather than as a variety of *H. musciformis*], it must receive a different name," but they did not assign one.

Hypnea nidulans Setchell

(G) *Hypnea pannosa* J. Agardh

(G)†*Hypnea spinella* (C. Agardh) Kützing [including *Hypnea cervicornis* J. Agardh]

New record for Guam: Tanguisson Beach, 3/13/00, reef flat (deposited in GUAM-ML). These densely spinose specimens agree in cross section with illustrations of *H. spinella* (Littler & Littler 1997: Fig. 26), than with *H. musciformis* (e.g., Tanaka 1941: Fig. 15, as *H. esperi*). Previously recorded from the Marshall Is. by Taylor (1950) (as *H. spinella*) and from Kiribati by Tsuda (1964) (as *H. cervicornis*).

Hypnea valentiae (Turner) Montagne

NEMASTOMATACEAE

(G?)**Predaea weldii* Kraft & Abbott

Reported from Ant Atoll by McDermid et al. (2002). Also listed in Tsuda (1981b), together with an unidentified *Predaea* sp.; no specimens from this time in GUAM-ML but we have added a sterile collection by Lobban & Schefter 3/15/01, Apra Harbor. Millar & Guiry's (1989) key to the species of *Predaea* depends on details of gonimoblast initials, which we have not observed.

POLYIDACEAE

(G) *Stenopeltis gracilis* (Yamada & Tanaka) Itono & Yoshizaki [= *Rhodopeltis gracilis* Yamada & Tanaka]

SCHIZYMENIACEAE

(G)**Titanophora marianensis* Itono & Tsuda

Described from Guam by Itono & Tsuda (1980).

* *Titanophora weberae* Børgesen

Reported from Pohnpei by McDermid et al. (2002).

SOLIERIACEAE

Kappaphycus alvarezii (Doty) Doty ex Silva

This species has been commercially cultivated in Kosrae (Doty 1988) as well as the Marshall Islands. In carrageenan commerce, all species have often been lumped as "*Eucheuma cottonii*".

(G) *Kappaphycus (Eucheuma) cottonii* (Weber-van Bosse) Doty ex Silva

This species, in its scientific sense (Doty 1973, 1988), has been found in Guam. There is a single specimen, identified by Doty in GUAM-ML (RT 5065) and it was collected again in 2001.

Kappaphycus striatum (Schmitz) Doty ex Silva

RHODYMENIALES

CHAMPIACEAE

(G) *Champia compressa* Harvey(G) *Champia parvula* (C. Agardh) Harvey*Champia vieillardii* Kützing*Chylocladia rigens* (C. Agardh) J. Agardh

LOMENTARIACEAE

(G) *Ceratodictyon spongiosum* Zanardini

Familial placement according to Saunders et al. (1999), rather than in Rhodymeniaceae as in Silva et al. (1996). This alga lives symbiotically with a sponge. It has been cultured in isolation by Price et al. (1984).

(G) *Gelidiopsis intricata* (C. Agardh) Vickers [= *Gelidium intricatum* (C. Agardh) Kützing]

Familial placement of *Gelidiopsis* see Saunders et al. (1999).

(G) *Gelidiopsis pannosa* (Grunow.) Schmitz

- (G) *Gelidiopsis repens* (Kützinger) Weber-van Bosse [including *Gelidiopsis acrocarpa* (Harvey) Schmitz]
- * *Gelidiopsis scoparia* (Montagne & Millardet) DeToni
Reported from Pohnpei by McDermid et al. (2002).
 - * *Gelidiopsis variabilis* (J. Agardh) Schmitz
Reported from Pohnpei by McDermid et al. (2002).
 - * *Gloiocladia iyoense* (Okamura) R.E. Norris
Reported from Ant Atoll by McDermid et al. (2002).
- Lomentaria hakodatensis* Yendo

RHODYMENIACEAE

- (G)**Asteromenia peltata* (Taylor) Huisman & Millar prox. [*Fauchea peltata* Taylor]
RT and CL have both collected sterile peltate red algae that agree with Taylor's (1960) description of *Fauchea peltata*. As Taylor did not have fertile material, placement of the species was uncertain. Schneider (1975) first found fertile material and transferred the species to *Weberella*, a genus which was later synonymized into *Halichrysis*, but Huisman & Millar (1996) have now removed it into the new genus *Asteromenia*. Our specimens have a rounded rather than stellate blade and may be immature. Records: CL collected several plants in a shallow cave on the vertical wall of a reef spur, 4 m depth, Urunao Beach (near Ritidian Point), Guam (6/29/96); GUAM-ML. (This habitat matches that in Huisman & Millar 1996: 139).
- Botryocladia microphysa* (Hauck) Kylin
- (G)†*Botryocladia skottsbergii* (Børgesen) Levring [including *Botryocladia kuckuckii* (Weber-van Bosse) Yamada & Tanaka]
Recorded from Guam for the first time by Tsuda (1981b): GUAM-ML RT 2216 and 2455.
- Chamaebotrys boergesenii* (Weber-van Bosse) Huisman [= *Coelarthrum boergesenii* Weber-van Bosse]
- Chrysymenia kaernbachii* Grunow
- Coelothrix irregularis* (Harvey) Børgesen
- Erythrocolon podagricum* J. Agardh
- * *Halichrysis coalescens* (Farlow) R.E. Norris
Reported from Ant Atoll by McDermid et al. (2002).
- Leptofauchea anastomosans* (Weber-van Bosse) R.E. Norris & Aken [= *Rhodymenia anastomosans* Weber-van Bosse]
- (G)†*Rhodymenia divaricata* Dawson
Reported for Guam by Tsuda (1981b, 1993). Several unnumbered specimens in GUAM-ML collected by R. Rechebei. Previously reported from the Caroline Islands (see Tsuda & Wray 1977).

CERAMIALES

CERAMIACEAE

- * *Aglaothamnion boergesenii* (Aponte & Ballentine) L'Hardy-Halos & Rueness
Reported from Ant Atoll by McDermid et al. (2002).
- (G) *Anotrichum tenue* (C. Agardh) Nägeli [= *Griffithsia tenuis* C. Agardh]

Antithamnion lherminieri (Crouan & Crouan) Bornet ex Nasr [*'lherminieri'*]
[including *Antithamnion antillanum* Børgeesen]

Antithamnion percurrens Dawson

Antithamnionella breviformis (Dawson) Wollaston [= *Antithamnion breviformis*
Dawson (*'breviformis'*)]

(G)†**Antithamnionella graeffei* (Grunow) Athanasiadis

Reported from Pohnpei and Ant Atoll by McDermid et al. (2002). New record for Guam: Coll. C. Lobban & M. Schefter, GabGab reef, Apra Harbor, Guam, ~ 15 m deep, 4/23/01, epiphytic on *Ventricaria ventricosa*; voucher in liquid in GUAM-ML (Fig. 7).

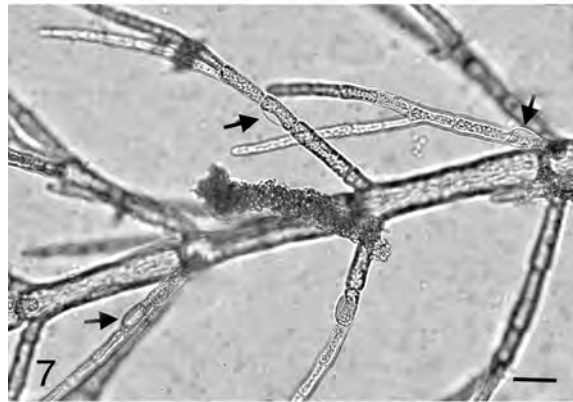


Figure 7. *Antithamnionella graeffei* showing characteristic gland cells (arrows). Scale bar = 50 μ m.

(G)**Balliella* cf. *subcorticata* (Itono) Itono & Tanaka

Coll. C. Lobban & M. Schefter, GabGab reef, Apra Harbor, Guam, ~ 17 m deep, on coral rubble, several dates in March and April 2001—MICH. The material was sterile, but the vegetative features are distinctive for the genus: two whorl branches, one short, the other longer, are arranged in opposite distichous pairs, and there are prominent vesicular (gland) cells at the bases of many branches (Fig. 8) (Huisman & Kraft 1984). The specific determination is based on the following characters (see Huisman 1988: Table 1). Plants were up to 10 mm tall, with erect branches arising from prostrate axes. The arrangement of lateral branches is distichous, indeterminate laterals occur 2 cells apart (though some may fail to grow out—see Fig. 8). On younger branches single vesicular cells occur abaxially on the basal cell of most branches. In prostrate axes vesicular cells also appear to be on corticating filaments (Figs 9, 10). There are no adaxial vesicular cells. The vesicular cells are ca. 15 μ m diameter and the basal cells ca. 50 μ m diameter.

Callithamnion marshallensis Dawson

(G) *Centroceras clavulatum* (C. Agardh) Montagne [= *Ceramium clavulatum* Agardh]

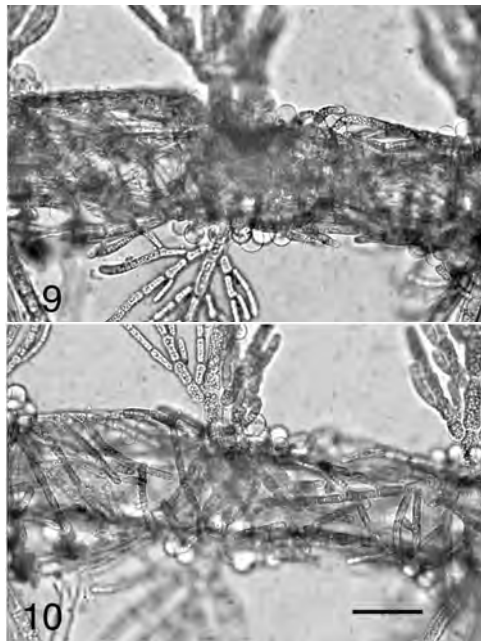
(G) *Centroceras minutum* Yamada

* *Ceramium aduncum* Nakamura

Reported from Pohnpei and Ant Atoll by McDermid et al. (2002).



Figure 8. *Balliella* cf. *subcorticata*, showing pattern of branching on erect axis. Scale bar = 100 μ m



Figures 9-10. *Balliella* cf. *subcorticata*, showing vesicular cells and corticating filaments on prostrate axis at two focal planes. Scale bars = 50 μ m.

- Ceramium affine* Setchell & Gardner
- * *Ceramium borneense* Weber-van Bosse
Reported from Ant Atoll by McDermid et al. (2002).
- Ceramium camouii* Dawson
- (G) *Ceramium clarionensis* Setchell & Gardner [including *Ceramium marshallense* Dawson]
See Abbott (1999: 269) and South & Skelton (2000).
- Ceramium codii* (Richards) Mazoyer [= *Ceramium serpens* Setchell & Gardner]
See South & Skelton (2000: 58).
- Ceramium fimbriatum* Setchell & Gardner
- (G)† *Ceramium flaccidum* (Harvey ex Kützing) Ardissonne [= *Ceramium byssoideum* Harvey, *Ceramium gracillimum* (Kützing) Zanardini, and *Ceramium taylori* Dawson]
The convoluted history of *Ceramium flaccidum* and its synonyms is detailed by Silva et al. (1996: 919–920) and by South & Skelton (2000). Reported for Guam by Tsuda (1981b, 1993) as *C. gracillimum*. Several unnumbered specimens in GUAM-ML collected by L. Egerod.
- Ceramium kororensis* Trono
- (G) *Ceramium macilentum* J. Agardh [= *Ceramium mazatlanense* Dawson]
See South & Skelton (2000: 72).
- (G)* *Ceramium maryae* Weber-van Bosse
Reported by Tsuda (1981b) from Guam. Several unnumbered specimens in GUAM-ML collected by L. Egerod.
- Ceramium personatum* Setchell & Gardner
- * *Ceramium punctiforme* Setchell
Reported from Pohnpei by McDermid et al. (2002).
- Ceramium serpens* Setchell & Gardner
- (G) *Ceramium subdichotomum* Weber-van Bosse [= *Ceramium sympodiale* Dawson]
South & Skelton (2000: 78) disagree with Abbott (1999: 266), who placed *C. sympodiale* in synonymy with *Ceramium borneense* Weber-van Bosse for the Hawaiian flora. South & Skelton (2000: 81) comment that, “This difference [of opinion] is unlikely to be resolved until all the relevant type material has been found and compared with collections from throughout the distribution range.” This taxon has been recorded from Micronesia only in Dawson’s original description of *C. sympodiale* from Enewetak Atoll.
- Ceramium vagans* Silva [= *Ceramium vagabundum* Dawson (‘vagabunde’)]
- (G)* *Ceramium* sp. aff. *C. marshallense* Dawson *sensu* South & Skelton 2000.
South & Skelton suggest that this is a new species, and neither *C. marshallense* nor *C. clarionensis* (q.v.). Lobban & Schefter found an abundant, sterile *Ceramium* forming sandy mats on the reef flat at Tagachang, Guam, 3/27/01, that agrees with South & Skelton’s description. Deposited in GUAM-ML, with an additional voucher sent to SUVA (USP).
- Corallophila apiculata* (Yamada) R.E. Norris [= *Centroceras apiculatum* Yamada]
Recorded for Guam by Tsuda (1992) (as *Centroceras apiculatum*) but with no voucher specimen from Guam in GUAM-ML. There is a specimen from Pagan (RT 4909).

- (G) *Corallophila huysmansii* (Weber-van Bosse) R.E. Norris [= *Ceramium huysmansii* Weber-van Bosse]
- * *Corallophila kleiwegii* Weber-van Bosse
Reported from Ant Atoll by McDermid et al. (2002).
Crouania attenuata (C. Agardh) J. Agardh
Crouania minutissima Yamada
- * *Crouania mageshimensis* Itono
Reported from Ant Atoll by McDermid et al. (2002).
- (G) *Dasyphila plumarioides* Yendo
Kraft & Wilson (1997) included specimens from Guam in their study of the taxonomy of this species.
- * *Diplothamnion jolyi* van den Hoek
Reported from Pohnpei I. and Ant Atoll by McDermid et al. (2002).
Griffithsia heteromorpha Kützing [= *Griffithsia rhizophora* Grunow ex Weber-van Bosse]
- (G) *Griffithsia metcalfei* Tseng
Griffithsia ovalis Harvey
- * *Griffithsia schousboei* Montagne
Reported from Pohnpei I. and Ant Atoll by McDermid et al. (2002).
- * *Gymnothamnion elegans* (Schousboe ex C. Agardh) J. Agardh
Reported from Ant Atoll by McDermid et al. (2002).
Haloplegma duperreyi Montagne
- * *Lejolisea pacifica* Itono
Reported from Ant Atoll by McDermid et al. (2002).
Neomonosporus pedicellatus (J.E. Smith) Feldman-Mazoyer & Meslin [= *Corynospora pedicellata* (Smith) J. Agardh]
- * *Ossiella pacifica* Millar & Abbott
Reported from Pohnpei I. and Ant Atoll by McDermid et al. (2002).
Pleonosporium caribaeum (Børgesen) R.E. Norris [= *Mesothamnion caribaeum* Børgesen]
- * *Ptilothamnion cladophorae* (Yamada & Tanaka) Feldmann-Mazoyer
Reported from Pohnpei I. and Ant Atoll by McDermid et al. (2002).
Spermothamnion orientale Weber-van Bosse
- (G) *Spyridia filamentosa* (Wulfen) Harvey
Spyridia velasquezii Trono
- (G)**Tiffaniella saccorhiza* (Setchell & Gardner) Doty & Menez [= *Spermothamnion saccorhiza* (Setchell & Gardner) Feldmann-Mazoyer]
Listed by Tsuda (1981b) on the basis of GUAM-ML LE-75-25-1.
Wrangelia anastomosans Yamada
Wrangelia argus (Montagne) Montagne
Wrangelia bicuspidata Børgesen
- * *Wrangelia dumontii* (Dawson) Abbott
Reported from Ant Atoll by McDermid et al. (2002).
- (G)†*Wrangelia penicillata* (C. Agardh) C. Agardh
Listed for Guam by Tsuda (1981b) on the basis of GUAM-ML RT 5375 and LE-75-25-1.

DASYACEAE

- Dasya corymbifera* J. Agardh
- * *Dasya irridescens* (Schlech) Millar & Abbott
Reported from Ant Atoll by McDermid et al. (2002).
- Dasya iyengarii* Børgesen
Dasya mollis Harvey
Dasya pacifica Harvey
Dasya pilosa (Weber-van Bosse) Millar [= *Dasyopsis pilosa* Weber-van Bosse;
Dasya adhaerens Yamada]
See Millar (1990, 1996).
- (G)†*Dictyurus purpurascens* Bory
Previously reported from the Marshall Islands and Kiribati (Tsuda & Wray 1977). Collected by Lobban & Schefter in Agat Bay, Guam, ca. 20 m, 1/3/93 and 2/17/02 (GUAM-ML).
- Eupogodon geppii* (Weber-van Bosse) Silva [= *Dasyopsis geppii* Weber-van Bosse]
The distinctions between *Dasya* and *Eupogodon* (*Dasyopsis*) are discussed by Millar (1996) who makes taxonomic adjustments for some but not all of the species listed in our flora. Millar (1996) includes this species under “*Incertae sedis*”.
- Eupogodon planus* (C. Agardh) Kützing [= *Dasyopsis tenella* Weber-van Bosse]
See Millar (1996).
- (G)†*Heterosiphonia crispella* (C. Agardh) Wynne [= *H. wurdemannii* (Bailey) Falkenberg]
Previously reported from several Micronesian islands (Tsuda & Wray 1977), it has also been found on Guam by Egerod (specimens in GUAM-ML) and by C. Lobban & M. Schefter, 3/20/01, on coral rubble at 18 m, GabGab reef, Apra Harbor; GUAM-ML).

DELESSERIACEAE

- Caloglossa adnata* Zanardini
See Silva et al. (1996: 449–450): specimens identified to this species may be *Caloglossa bengalensis* (Martens) King & Puttock, but Micronesian specimens must be examined.
- (G)†*Caloglossa leprieurii* (Montagne) G. Martens
Listed for Guam by Tsuda (1981b) on the basis of GUAM-ML LE-75-19-8, labeled *C. l. f. pygmaea*. Previously reported from the Marshall Islands, but see note on *Hypoglossum simulans*.
- * *Claudea multifida* Harvey
Tsuda (1981c) reported this species from Kayangel Atoll, Palau. The two specimens (GUAM-ML) constituted the only alga from Kayangel not previously reported from Micronesia.
- * *Cottoniella filamentosa* Børgesen
Reported from Pohnpei by McDermid et al. (2002).
- Cottoniella triseriata* Hollenberg
- (G)†*Hypoglossum attenuatum* Gardner

Dawson (1956) reported this species from the southern Marshall Islands [not listed in Tsuda & Wray (1977)]. Wynne et al. (1989) questioned Dawson's (1954) record of this species from Viet Nam, but did not mention his 1956 record. Tsuda (1981b) included it in his checklist for Guam on the basis of an unnumbered specimen in GUAM-ML collected by L. Egerod; there are also vouchers from Maug, Rota, and Chuuk.

Hypoglossum barbatum Okamura

Hypoglossum caloglossoides Wynne & Kraft

Reported from Ant Atoll by McDermid et al. (2002).

Hypoglossum minimum Yamada

According to Wynne et al. (1989), Dawson's specimens of *H. minimum* are *Hypoglossum simulans*; they do not comment on other records of this species in our region.

- (G) *Hypoglossum simulans* Wynne, Price & Ballentine [including Dawson's specimens of *H. minimum* and both Dawson's (1956) and Taylor's (1950) specimens of *Caloglossa leprieurii*, according to Wynne et al. 1989]

Malaconema minimum Hollenberg

Martensia elegans Hering

- (G) *Martensia fragilis* Harvey

- * *Myriogramme bombayensis* Børgesen

Reported from Pohnpei I. and Ant Atoll by McDermid et al. (2002).

- * *Nitophyllum adhaerens* Wynne

Reported from Ant Atoll by McDermid et al. (2002).

Taenioma perpusillum (J. Agardh) J. Agardh

Vanvoorstia coccinea Harvey ex J. Agardh

Vanvoorstia spectabilis Harvey

- * *Zellera tawallina* Martens

Reported from Ant Atoll by McDermid et al. (2002). Also collected twice in Palau by CL, identified by Dr. M.J. Wynne (specimen at MICH— coll. Lobban & Schefter, PK 3; 8 Jan. 1990), and on Pohnpei I. by Lobban & Schefter (10/4/97, 18 m, in pass north of U).

RHODOMELACEAE

Abbottella concinna Hollenberg

- (G) *Acanthophora spicifera* (Vahl) Børgesen

- * *Bostrychia radicans* (Montagne) Montagne

Recorded by Zuccarello et al. (1999) from Pohnpei.

- (G) *Bostrychia tenella* (Lamouroux) J. Agardh [including *Bostrychia binderi* Harvey]

- * *Chondria dangeardii* Dawson

Reported from Ant Atoll by McDermid et al. (2002).

Chondria minutula Weber-van Bosse

- (G) *Chondria polyrhiza* Collins & Hervey

Chondria repens Børgesen

Chondria simpliciuscula Weber-van Bosse

- (G) *Chondrophyucus papillosa* (C. Agardh) Garbary & Harper [= *Laurencia papillosa* (C. Agardh) Greville]

- Chondrophyllum cruciata* (Harvey) K.W. Nam [= *Laurencia cruciata* Harvey]
Dawsoniella bulborhiza Hollenberg
Endosiphonia spinuligera Zanardini
Herposiphonia arcuata Hollenberg
* *Herposiphonia crassa* Hollenberg
 Reported from Pohnpei by McDermid et al. (2002).
Herposiphonia delicatula Hollenberg
Herposiphonia dendroidea Hollenberg
* *Herposiphonia dubia* Hollenberg
 Reported from Pohnpei by McDermid et al. (2002).
Herposiphonia nuda Hollenberg
Herposiphonia obscura Hollenberg
(G) *Herposiphonia pacifica* Hollenberg
(G) *Herposiphonia parca* Setchell
(G) *Herposiphonia secunda* (C. Agardh) Ambronn
 Herposiphonia secunda f. *tenella* [= *Herposiphonia tenella* (C. Agardh) Nägeli]
(G) ***Herposiphonia trichia*** Hollenberg
Herposiphonia variabilis Hollenberg
Laurencia caraibica Silva [= *Laurencia nana* Howe]
Laurencia carolinensis Saito
Laurencia cartilaginea Yamada
Laurencia ceylanica J. Agardh
Laurencia flexilis Setchell
Laurencia glandulifera (Kützing) Kützing [= *Laurencia paniculata* (C. Agardh) J. Agardh]
Laurencia intricata Lamouroux
Laurencia majuscula (Harvey) Lucas
Laurencia mariannensis Yamada
* *Laurencia nidifica* J. Agardh
 Reported from Ant Atoll by McDermid et al. (2002).
(G) *Laurencia obtusa* (Hudson) Lamouroux
Laurencia okamurae Yamada
Laurencia parvipapillata Tseng
Laurencia perforata (Bory) Montagne
Laurencia rigida J. Agardh
Laurencia succisa Cribb
Laurencia surculigera Tseng
(G) *Laurencia tropica* Yamada
* *Laurencia undulata* Yamada
 Reported from Ant Atoll by McDermid et al. (2002).
Laurencia yamadana Howe
(G) *Leveillea jungermannioides* (Hering & Martens) Harvey
* *Lophocladia minima* Itono
 Reported from Pohnpei by McDermid et al. (2002).

(G)*? *Lophocladia trichocladus* (C. Agardh) Schmitz

Collected from Apra Harbor, Guam. (GUAM-ML) The stichidia in this specimen agree with illustrations of *L. trichocladus* in Littler & Littler (2000) (Fig. 11). However, we do not have fertile male material, which is needed to distinguish *Lophocladia* from *Spirocladia* (Abbott 1999).

Lophosiphonia bermudensis Collins & Hervey

Lophosiphonia cristata Falkenberg

Lophosiphonia obscura (C. Agardh) Falkenberg

* *Melanamansia fimbriifolia* R.E. Norris

Reported from Pohnpei by McDermid et al. (2002).



Figure 11. ?*Lophocladia trichocladus*, stichidium. Scale bar = 50 μ m

(G) *Melanamansia glomerata* (C. Agardh) R.E. Norris [= *Amansia glomerata* C. Agardh](G) *Murrayella pericladus* (C. Agardh) Schmitz

Neosiphonia tongatensis (Harvey ex Kützing) M.S. Kim & I.K. Lee [= *Polysiphonia tongatensis*, including *P. mollis* J. Hooker & Harvey]
See Kim & Lee (1999).

Neosiphonia savatieri (Harriot) M.S. Kim & I.K. Lee [= *Polysiphonia savatieri* Harriot ('saratieri')]

Neosiphonia sphaerocarpa (Børgesen) M.S. Kim & I.K. Lee [= *Polysiphonia sphaerocarpa* Børgesen]

Polysiphonia anomala Hollenberg

Polysiphonia apiculata Hollenberg

Polysiphonia coacta Tseng

Polysiphonia delicatula Hollenberg

Polysiphonia dotyi Hollenberg

- Polysiphonia exilis* Harvey
Polysiphonia herpa Hollenberg
Polysiphonia howei Hollenberg
Polysiphonia pentamera Hollenberg
Polysiphonia poko Hollenberg
P. poko, *P. subtilissima*, and *P. upolensis* also belong in *Neosiphonia* (Abbott pers. comm.)
Polysiphonia quadrata Hollenberg
Polysiphonia saccorhiza (Collins & Hervey) Hollenberg
(G) *Polysiphonia scopulorum* Harvey [including *Polysiphonia scopulorum* Harvey var. *villum* (J. Agardh) Hollenberg = *Lophosiphonia villum* (J. Agardh) Setchell & Gardner]
Polysiphonia sertularioides (Grateloup) J. Agardh [= *Polysiphonia flaccidissima* Hollenberg]
Polysiphonia sparsa (Setchell) Hollenberg
Polysiphonia subtilissima Montagne
* *Polysiphonia tepida* Hollenberg
Reported from Pohnpei by McDermid et al. (2002).
* *Polysiphonia tsudana* Hollenberg
Reported from Ant Atoll by McDermid et al. (2002).
(G) *Polysiphonia upolensis* Grunow
(G) *Stictosiphonia kelanensis* (Grunow ex. Post) King & Puttock [= *Bostrychia kelanensis* Grunow]
Symphyocladia marchantioides (Harvey) Falkenberg
Tolypiocladia calodictyon (Harvey ex Kützing) Silva
Tolypiocladia condensata (Weber-van Bosse) Silva
(G) *Tolypiocladia glomerulata* (Agardh) Schmidt
Womersleyella pacifica Hollenberg
Womersleyella setacea (Hollenberg) R.E. Norris [= *Polysiphonia setacea* Hollenberg]

RHODOPHYTA OF UNCERTAIN POSITION

- (G)† *Wurdemannia miniata* (Sprengel) Feldmann & Hamel
Reported for Guam by Tsuda (1981b, 1993), GUAM-ML RT 2482. Also specimens from Maug and Anatahan.

DIVISION HETEROKONTOPHYTA

CLASS PHAEOPHYCEAE

ECTOCARPALES

ECTOCARPACEAE

- (G) *Asteronema breviarticulatum* (J. Agardh) Ouriques & Bouzon [= *Ectocarpus breviarticulatus* J. Agardh]
Feldmannia columellaris (Børgesen) Islam [= *Ectocarpus columellaris* Børgesen]
(G) *Feldmannia irregularis* (Kützing) Hamel
(G) *Hinckesia indica* (Sonder) J. Tanaka [= *Feldmannia indica* (Sonder) Womersley & Bailey]

Hinckesia mitchelliae (Harvey) Silva [= *Ectocarpus mitchelliae* Harvey]

RALFSIACEAE

- (G) *Hapalospongidion pangoense* (Setchell) Silva [= *Ralfsia pangoensis* Setchell]
Ralfsia expansa (J. Agardh) J. Agardh

SPHACELARIALES
 SPHACELARIACEAE

- Sphacelaria carolinensis* Trono
 (G) *Sphacelaria novaehollandiae* Sonder
 (G) *Sphacelaria rigidula* Kützing [= *Sphacelaria furcigera* Kützing]
 (G) *Sphacelaria tribuloides* Meneghini [including *Sphacelaria rigida* Hering in Krauss]

DICTYOTALES
 DICTYOTACEAE

- Dictyopteris delicatula* Lamouroux.
 (G) *Dictyopteris repens* (Okamura) Børgesen
 Tsuda (1972) commented that *D. repens* seems to be restricted to deep water, but we now have a record from Dadi Beach Guam, where it was epiphytic on the base of a *Udotea argentea*, 2/3/93, on the reef flat; deposited in GUAM-ML.
 * *Dictyota acutiloba* J. Agardh
 Reported from Ant and Pohnpei by Hodgson & McDermid (2000).
 (G) *Dictyota bartayresiana* Lamouroux [*'bartayresii'*]
 (G) *Dictyota cervicornis* Kützing
Dictyota dichotoma (Hudson) Lamouroux [including *Dictyota apiculata* J. Agardh]
 (G) *Dictyota divaricata* Lamouroux
 (G) *Dictyota friabilis* Setchell
Dictyota hamifera Setchell
 (G) *Dictyota patens* J. Agardh
Dictyota pinnatifida Kützing
Dilophus radicans Okamura
 (G) *Homeostrichus flabellatus* Okamura
 Tsuda (1972) incorrectly attributed the single deep specimen from Guam (in GUAM-ML) as *Zonaria stipitata* Tanaka & K. Nozawa.
Lobophora papenfussii (Taylor) Farghaly
 (G) *Lobophora variegata* (Lamouroux) Womersley ex Oliveira
Padina australis Hauck
 (G) *Padina boryana* Thivy in Taylor [= *Padina tenuis* (C. Agardh) Bory]
Padina gymnospora (Kützing) Sonder
 (G) ***Padina jonesii*** Tsuda
 (G) *Padina minor* Yamada
Padina pavonica (Linnaeus) Thivy [= *Padina pavonia* Lamouroux]
 (G)† *Padina sanctaerucis* Børgesen [= *Padina japonica* Yamada]
 Tetrasporic and spermatangial plants collected by Lobban & Schefter 3/22/01 at GabGab on the reef flat had indusia (Fig. 12; GUAM-ML.) and correspond to

the description of *P. japonica* in Trono (1969). The three *Padina* species listed by Tsuda (1972) for Guam all lack indusia.

Spatoglossum schroederi (C. Agardh) Kützing

Stypopodium hawaiiensis (Doty & Newhouse) Abbott [= *Zonaria hawaiiensis* Doty & Newhouse]

See Abbott (1977).

Stypopodium zonale (Lamouroux) Papenfuss [= *Stypopodium lobatum* Kützing]

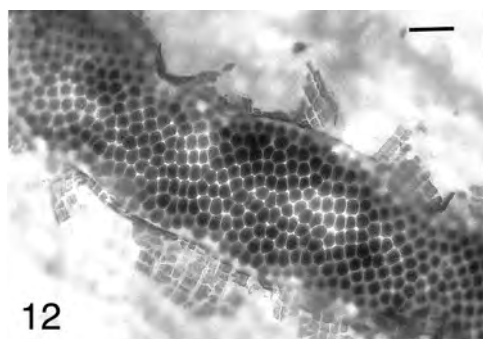


Figure 12. *Padina sanctaerucis* band of spermatangia, showing indusium. Scale bar = 100 μ m.

SCYTOSIPHONALES

CHNOOSPORACEAE

(G) *Chnoospora implexa* J. Agardh

(G) *Chnoospora minima* (Hering) Papenfuss

SCYTOSIPHONACEAE

(G) *Colpomenia sinuosa* (Mertens ex Roth) Derbès & Solier

(G) *Hydroclathrus clathratus* (C. Agardh) Howe

Rosenvingea fastigiata (Zanardini) Børgesen

(G) *Rosenvingea intricata* (J. Agardh) Børgesen

Rosenvingea orientalis (J. Agardh) Børgesen

FUCALES

CYTOSEIRACEAE

Hormophysa cuneiformis (Gmelin) Silva [= *Hormophysa triquetra* (C. Agardh) Kützing]

SARGASSACEAE

Sargassum crassifolium J. Agardh

(G) *Sargassum cristaefolium* C. Agardh

Sargassum ilicifolium (Turner) J. Agardh

Sargassum microphyllum C. Agardh

- (G) *Sargassum obtusifolium* J. Agardh
 Tsuda (1988) placed all specimens (GUAM-ML) identified in Tsuda (1972) as *Sargassum tenerrimum* J. Agardh into *S. obtusifolium*.
- (G) *Sargassum polycystum* C. Agardh
Turbinaria condensata Sonder
Turbinaria conoides (J. Agardh) Kützing
Turbinaria decurrens Bory
- (G) *Turbinaria ornata* (Turner) J. Agardh

CLASS PELAGOPHYCEAE
 SARCINOCHRYSIDALES

Saunders et al. (1997) tentatively placed the Sarcinochrysidales in an expanded Pelagophyceae but few genera in this largely planktonic group have been studied. Lobban et al. (1995) described and documented four macroscopic “chrysophytes” (as they were then classified) of Guam. The following species form very visible, and sometimes abundant, colonies on the reefs.

SARCINOCHRYSIDACEAE

- (G)**Chrysocystis fragilis* Lobban, Honda & Chihara
 Recorded from Guam, Tinian, Saipan and Iriomoto I. (Ryukyus). Also collected in Pohnpei by Lobban & Schefter (3/10/02—GUAM-ML).
- (G)**Chrysonephos lewisii* (Taylor) Taylor
 Recorded from Guam and Saipan. Also collected by Lobban & Schefter in Pohnpei (3/10/02—GUAM-ML) and Palau (7/30/02—GUAM-ML).
- (G)**Chrysophaeum taylori* Lewis & Bryan
 Reported by Lobban et al. (1995). Unpublished observations by Sachiko Fukaya & Daisuke Honda (Konan U., Kobe, Japan) indicate that this alga belongs in the Pelagophyceae (Order/Family not determined).
- (G)**Sarcinochrysis marina* Geitler
 Stiff gelatinous colonies from Guam were tentatively identified by Lobban et al. (1995) as including *Sarcinochrysis* sp. and *Pulvinaria* sp. D. Honda (unpublished) recently confirmed the presence of *S. marina* on the basis of a new sample from Orote Peninsula. The presence of *Pulvinaria* has not yet been confirmed.

CLASS BACILLARIOPHYCEAE

Only the seaweed-like, tube-dwelling diatoms are included here. Classification follows Round et al. (1990). We have found only one with colonies visible to the naked eye. Microscopic scraps of tubes that are probably *Berkeleya rutilans* (Trentepohl) Grunow and *Parlibellus* sp. (see Lobban 1985) have occasionally been seen in epiphytic turf, but were too small to isolate.

BACILLARIALES
 BACILLARIACEAE

- (G)**Nitzschia martiana* (C.A. Agardh) van Heurck

Recorded from Talofof Bay, Guam, 6/21/89 (GU37A in Lobban's diatom collection) and 5/26/90 by Lobban (GUAM-ML) (Fig. 13). The very long, needle-like cells are distinctive (see Lobban & Mann 1987).

DIVISION CHLOROPHYTA
CLASS CHLOROPHYCEAE
CHAETOPHORALES

Gloeococcus grevillei (C. Agardh) Shuttlewhite [= *Protococcus grevillei* (Agardh) Crouan frat.]

The genus *Protococcus* proved to have some species that are cyanophytes, and some that are chlorophytes. *P. grevillei*, originally described as *Haematococcus grevillei*, was used as the type for '*Gloiococcus*' Shuttlewhite (ICBN 1998), and is a green alga. The ordinal placement is *vide* the TAXON request form (TAXON 2000); it is not assigned to a family in that database.

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Figure 13. *Nitzschia martiana*, herbarium specimen of the tube-dwelling diatom. Scale bar = 10 mm

CHAETOPHORACEAE

- * *Uronema marinum* Womersley
Reported from Ant Atoll by McDermid et al. (2002).

CLASS ULVOPHYCEAE
 ULOTRICHALES
 ULOTRICACEAE

- * *Ulothrix flacca* (Dillwyn) Thuret
 Reported from Ant by Hodgson & McDermid (2000).

ULVALES
 GOMONTIACEAE

- Gomontia polyrhiza* (Lagerheim) Bornet & Flahault.
 Probably a stage in the life history of larger greens, e.g., *Monostroma*, but listed
 listed separately by Silva et al. (1996).

ULVELLACEAE

- Entocladia viridis* Reinke
Ulvella lens Crouan
 * *Ulvella setchellii* Dangeard
 Reported from Ant by Hodgson & McDermid (2000).

ULVACEAE

- Enteromorpha acanthophora* Kützing
 Dawson (1957) categorized his own record as doubtful.
 (G) *Enteromorpha clathrata* (Roth) Greville
 Although many species of *Enteromorpha* have been reported from Micronesia,
 specimens on Guam have usually been referred to this species.
Enteromorpha compressa (Linnaeus) Nees
 * *Enteromorpha flexuosa* (Wulfen) J. Agardh
 Reported from Pohnpei by Hodgson & McDermid (2000).
Enteromorpha intestinalis (Linnaeus) Nees
Enteromorpha kylinii Bliding
Enteromorpha lingulata J. Agardh
Enteromorpha procera Ahlner
Enteromorpha prolifera (Müller) J. Agardh [including *Enteromorpha salina*
 Kützing]
Enteromorpha ralfsii Harvey
Enteromorpha torta (Mertens) Reinbold
Enteromorpha tubulosa (Kützing) Kützing
 (G)* *Gayralia oxysperma* (Kützing) Vinogradova ex Scagel et al.
 Reported from Guam by Tsuda (1981b) [as *Monostroma oxyspermum* (Kützing)
 Doty]. GUAM-ML RT 2475.
 * *Percursaria dawsonii* Hollenberg & Abbott
 Reported from Pohnpei by Hodgson & McDermid (2000).
 (G) *Ulva lactuca* Linnaeus

CLADOPHORALES
ANADYOMENACEAE

- (G) *Anadyomene wrightii* Harvey ex Gray
Microdictyon japonicum Setchell
Microdictyon mokilensis Trono
 (G) *Microdictyon okamurae* Setchell ['*okamura*']
Microdictyon pseudohapteron A. Gepp & E. Gepp ['*pseudohaptera*']
Microdictyon setchellianum Howe
Rhipidiphyllon reticulatum (Askenasy) Heydrich

CLADOPHORACEAE

- (G) *Chaetomorpha antennina* (Bory) Kützing
 (G) *Chaetomorpha crassa* (C. Agardh) Kützing
 (G) *Chaetomorpha indica* (Kützing) Kützing
Chaetomorpha linum (Müller) Kützing.
Chaetomorpha rigida Kützing
Cladophora boodleoides Børgesen
Cladophora catenata (Linnaeus) Kützing [= *Cladophora fuliginosa* Kützing]
Cladophora coelothrix Kützing [= *Cladophora repens* Harvey]
Cladophora crystallina (Roth) Kützing
Cladophora inserta Dickie
Cladophora patentiramea (Montagne) Kützing
Cladophora pellucida (Hudson) Kützing [= *Cladophora trichotoma* (C. Agardh) Kützing]
Cladophora sericea (Hudson) Kützing [= *Cladophora gracilis* Kützing]
Cladophora sibogae Reinbold
 (G) *Cladophora socialis* Kützing
 (G)**Cladophora vagabunda* (Linnaeus) van den Hoek [= *Cladophora fascicularis* (Mertens ex C. Agardh) Kützing]
 Reported by Tsuda (1981b, 1993). GUAM-ML RT 4747.
Rhizoclonium hieroglyphicum (C. Agardh) Kützing
Rhizoclonium riparium (Roth) Harvey var. *implexum* (Dillwyn) Kützing [= *Rhizoclonium implexum* (Dillwyn) Kützing]
 (G) *Rhizoclonium samoense* Setchell
Rhizoclonium tortuosum (Dillwyn) Kützing

SIPHONOCLADACEAE

- (G) *Boergesenia forbesii* (Harvey) Feldmann
Boodlea coacta (Dickie) Murray & De Toni
 (G) *Boodlea composita* (Harvey) Brand [including *Boodlea siamensis* Reinbold]
Boodlea trukensis Trono
 (G) *Boodlea vanbosseae* Reinbold
 Silva et al. (1996: 790) explain why this specific epithet should not be hyphenated, in contrast to *Neomeris van-bossae*.
 (G) *Chamaedoris orientalis* Okamura & Higashi in Okamura

- Cladophoropsis carolinensis* Trono
Cladophoropsis fascicularis (Kjellman) Børgesen
 (G) *Cladophoropsis gracillima* Dawson
Cladophoropsis herpestica (Montagne) Howe [including *Cladophoropsis zollingeri* (Kützing) Reinbold]
Cladophoropsis membranacea (Hofman Bang ex C. Agardh) Børgesen
Cladophoropsis palauensis Trono
 (G)†*Cladophoropsis sundanensis* Reinbold
 Reported for Guam by Tsuda (1981b, 1993) GUAM-ML RT 2189; also from Rota (RT 2713) and Saipan (RT 3758). Previously reported from the Marshall Islands (see Tsuda & Wray 1977).
 (G) *Dictyosphaeria cavernosa* (Forsskål) Børgesen
Dictyosphaeria intermedia Weber-van Bosse
Dictyosphaeria mutica Yamada
 (G) *Dictyosphaeria versluysii* Weber-van Bosse [including *Dictyosphaeria setchellii* Børgesen, *D. bokotensis* Yamada]
Phyllodictyon anastomosans (Harvey) Kraft & Wynne [= *Struvea anastomosans* (Harvey) Piccone & Grunow ex Piccone; including *Struvea delicatula* Kützing and *Struvea tenuis* Zanardini (See Kraft & Wynne 1996)]
 (G)**Siphonocladus tropicus* (P. Crouan & H. Crouan) J. Agardh [including *Siphonocladus rigidus* Howe
 Reported by Tsuda (1981b). Unnumbered collection in GUAM-ML from Cetti Bay, Guam; Lobban also collected it there.
Spongocladia dichotoma (Zanardini) Murray & Boodle
Spongocladia vaucheriaeformis Areschoug
 (G) *Ventricaria ventricosa* (J. Agardh) Olsen & West [= *Valonia ventricosa* J. Agardh]

VALONIACEAE

- (G) *Valonia aegagropila* C. Agardh
 (G) *Valonia fastigiata* Harvey ex J. Agardh
Valonia utricularis (Roth) C. Agardh
 (G) *Valoniopsis pachynema* (Martens) Børgesen

BRYOPSIDALES

BRYOPSIDACEAE

- Bryopsis harveyana* J. Agardh
 Silva et al. (1996: 807) list this species as a “possible taxonomic or nomenclatural synonym” of *Bryopsis pennata* Lamouroux var. *secunda* (Harvey) Collins & Hervey
 (G) *Bryopsis hypnoides* Lamouroux
Bryopsis indica A. Gepp & E. Gepp
 (G) *Bryopsis pennata* Lamouroux
Bryopsis plumosa (Hudson) C. Agardh

Derbesia attenuata Dawson

Tsuda (1981b) listed this species as present in Guam, but with no Guam specimen in GUAM-ML; there are specimens from Pagan (WJT 150) and Alamagan (WJT 106). Earlier records are from the Marshall Islands.

* *Derbesia fastigiata* Taylor

Reported from Ant by Hodgson & McDermid (2000).

Derbesia marina (Lyngbye) Solier*Derbesia minima* Weber-van Bosse*Derbesia neglecta* Reinbold*Derbesia padinae* Trono

Pedobesia ryukyuensis (Yamada & Tanaka) Kobara & Chihara [= *Derbesia ryukyuensis* Yamada & Tanaka ('ryukyuensis')]

Pseudodichotomosiphon constricta Yamada(G)**Trichosolen* Montagne sp.

Our species has not been determined, but has prominent pyrenoids in the chloroplasts (Fig. 14), and is thus *Trichosolen* and not *Pseudobryopsis*, according to the emended descriptions of Henne & Schnetter (1999). No gametangia have been observed. This species was abundant in Pago Bay, Guam, after typhoons on two occasions that we observed, and has not been found at other times. Unnumbered specimens in GUAM-ML collected by C. Lobban in front of Marine Lab, Dec. 24 1989, after Typhoon Russ. *Pseudobryopsis oahuensis* Egerod lacks pyrenoids, so remains in *Pseudobryopsis* and is not the same as our material.



Figure 14. *Trichosolen* sp., detail of base of ultimate branch showing chloroplasts with pyrenoids. Scale bar = 20 μ m.

CAULERPACEAE

Caulerpa acuta (Yamada) Yamada

- (G)† *Caulerpa antoensis* Yamada
 Reported from Guam by Tsuda (1981b). GUAM-ML RT 2945, 1929b; also from Saipan (RT 3322) and Kayangel Atoll, Palau (RT 5194).
- Caulerpa arenicola* Taylor
Caulerpa bikinensis Taylor
- (G) *Caulerpa brachypus* Harvey
 (G) *Caulerpa cupressoides* (Vahl) C. Agardh
Caulerpa elongata Weber-van Bosse
Caulerpa fastigiata Montagne
- (G) *Caulerpa filicoides* Yamada
 (G) *Caulerpa lentillifera* J. Agardh
Caulerpa lessonii Bory
Caulerpa matsueana Yamada
Caulerpa mexicana Sonder ex Kützing [including *Caulerpa crassifolia* (C. Agardh) J. Agardh]
Caulerpa okamurae Weber-van Bosse in Okamura
- (G) *Caulerpa peltata* Lamouroux
 Although there is much evidence that *Caulerpa peltata* is a growth form of *Caulerpa racemosa*, formed under low light (see Silva et al. 1996: 829–839 and Peterson 1972), Silva et al. retain it as a separate species, citing (pp. 812–813) the extreme complexity of subspecific taxa in this very variable genus.
- (G) *Caulerpa racemosa* (Forsskål) J. Agardh
 (G) *Caulerpa serrulata* (Forsskål) J. Agardh [including *Caulerpa freycineti* C. Agardh]
Caulerpa serrulata var. *boryana* (J. Agardh) Gilbert [= *Caulerpa boryana* J. Agardh]
- (G) *Caulerpa sertularioides* (Gmelin) Howe [including *Caulerpa plumaris* (Forsskål) Weber-van Bosse]
- (G) *Caulerpa taxifolia* (Vahl) C. Agardh
 (G) *Caulerpa urvilleana* Montagne [‘*urvilliana*’]
 (G) *Caulerpa verticillata* J. Agardh
 (G) *Caulerpa webbiana* Montagne
Caulerpa webbiana var. *pickeringii* (Harvey & Bailey) Eubank [= *C. pickeringii* Harvey & Bailey]
- (G) *Caulerpella ambigua* (Okamura) Prud’homme van Reine & Lokhorst [= *Caulerpa ambigua* Okamura, including *Caulerpa vickersiae* Børgesen.]
 While most Caulerpaceae are holocarpic (see Clifton 1997), this genus is not (Prud’homme van Reine & Lokhorst 1992).

CODIACEAE

- (G) *Codium arabicum* Kützing
Codium edule Silva
- (G) *Codium geppiorum* O. Schmidt [= *Codium geppii* O. Schmidt]
Codium intricatum Okamura
Codium ovale Zanardini
Codium reediae Silva
Codium repens P. Crouan & H. Crouan

Codium saccatum Okamura
Codium tenue (Kützinger) Kützinger

HALIMEDACEAE

- Halimeda bikinensis*** Taylor
 (G) *Halimeda copiosa* Goreau & Graham
Halimeda cuneata Hering
Halimeda cylindracea Decaisne
 (G) *Halimeda discoidea* Decaisne
Halimeda distorta (Yamada) Hillis-Colinvaux
Halimeda fragilis Taylor
 (G)†***Halimeda gigas*** Taylor
 Reported from Guam by Tsuda (1981b). GUAM-ML RHR 67, RT 2603, etc.
 (G) *Halimeda gracilis* Harvey ex J. Agardh
 (G) *Halimeda incrassata* (Ellis) Lamouroux [including *Halimeda tridens* (Ellis & Solander) Lamouroux]
Halimeda lacunalis Taylor
 (G) *Halimeda macroloba* Decaisne
Halimeda macrophysa Askenasy
 (G)†***Halimeda micronesica*** Yamada
 Reported from Guam by Tsuda (1981b). GUAM-ML RHR242, RT 2601, etc.
Halimeda minima (Taylor) Colinvaux
Halimeda monile (Solander) Lamouroux
 (G) *Halimeda opuntia* (Linnaeus) Lamouroux
Halimeda simulans Howe
 (G)†***Halimeda stuposa*** Taylor
 Reported from Guam by Tsuda (1981b). GUAM-ML RT 2862 and LM Anderson 43.
Halimeda taenicola Taylor
Halimeda tuna (Ellis & Solander) Lamouroux
 (G)†***Halimeda velasquezii*** Taylor
 Reported by Tsuda (1981b) for Guam. GUAM-ML RT 2183.

OSTREOBIACEAE

- (G) *Ostreobium quekettii* Bornet et Flahault [= *Ostreobium reineckii* Bornet]

UDOTEACEAE

- Avrainvillea amadelpha* (Montagne) A. Gepp & E. Gepp
Avrainvillea erecta (Berkeley) A. Gepp & E. Gepp [including *Avrainvillea papuana* (Zanardini) Murray]
Avrainvillea hollenbergii Trono
 (G)†***Avrainvillea lacerata*** Harvey ex J. Agardh
 Reported from Guam by Tsuda (1981b). GUAM-ML RT 3062, etc.
 (G)****Avrainvillea mazei*** Murray & Boodle
 Reported by Olsen-Stojkovich (1985) Guam and Tinian.
 (G) *Avrainvillea nigricans* Decaisne

- (G) *Avrainvillea obscura* (C. Agardh) J. Agardh
Avrainvillea pacifica Gepp
Boodleopsis carolinensis Trono
- (G)**Chlorodesmis caespitosa* J. Agardh
 Reported by Tsuda (1981b). GUAM-ML RT 2915. Also specimens from Rota, RT 2721, etc.
Chlorodesmis dotyi Trono
- (G) *Chlorodesmis fastigiata* (C. Agardh) Ducker
- (G) *Chlorodesmis hildenbrandtii* A. Gepp & E.S. Gepp
Pseudochlorodesmis furcellata (Zanardini) Børgesen
 Listed for Guam by Tsuda (1981b) but with no specimen. There are specimens in GUAM-ML from Maug (RT 5384) and Guguan (WJT47).
Rhipidosiphon javensis Montagne [= *Udotea javensis* (Montagne) A. Gepp & E. Gepp]
- Rhipilia diaphana*** Taylor
Rhipilia geppii Taylor
Rhipilia micronesica Yamada
 Dawson (1956: 40) thought that this species was “essentially the same” as *Rhipilia orientalis*.
Rhipilia orientalis A. Gepp & E. Gepp
- (G) ***Rhipilia sinuosa*** Gilbert
Rhipilia tomentosa Kützing
Rhipiliopsis mortensenii (Børgesen) Farghaly & Denizot [= *Geppella mortensenii* Børgesen (‘*martensenii*’)]
- (G) *Tydemania expeditionis* Weber-van Bosse [‘*Tydemannia*’]
- (G) *Udotea argentea* Zanardini
- (G) *Udotea geppii* Yamada
Udotea indica A. Gepp & E. Gepp
Udotea orientalis A. Gepp & E. Gepp
Udotea palmetta Decaisne
Udotea polychotomis Cordero

DASYCLADALES

DASYCLADACEAE

- (G) *Bornetella nitida* Sonder
Bornetella oligospora Solms-Laubach
- (G) *Bornetella sphaerica* (Zanardini) Solms-Laubach
Halicoryne wrightii Harvey
- (G) *Neomeris annulata* Dickie
Neomeris bilimbata Koster
Neomeris dumetosa Lamouroux
Neomeris mucosa Howe
- (G) *Neomeris van-bosseeae* Howe [‘*vanbosseeae*’]
 Silva et al. (1996: 888, 890) explain the reason for adding the hyphen in this species.

POLYPHYSAEAE

Acetabularia clavata Yamada

(G) *Acetabularia exigua* Solms-Laubach

(G) *Acetabularia parvula* Solms-Laubach [including *A. moebii* Solms-Laubach]

Silva et al. (1996: 890–891) describe the on-going debate about whether this species should be separated into *Polyphysa*, and retain it in *Acetabularia* for now.

SEAGRASSES

The list of seagrasses is based on Tsuda et al. (1977), Kock & Tsuda (1978), McMillan (1980), Tsuda & Kamura (1990), and McDermid & Edward (1999). Taxonomic arrangement follows Phillips & Meñez (1988).

DIVISION MAGNOLIOPHYTA

CLASS MAGNOLIOPSIDA

POTAMOGETONACEAE

Cymodocea rotundata Ehrenberg & Hemprich ex Ascherson

Cymodocea serrulata (R. Brown) Ascherson & Magnus

Halodule pinifolia (Miki) den Hartog

(G) *Halodule uninervis* (Forsskål) Ascherson

Syringodium isoetifolium (Ascherson) Dandy

Thalassodendron ciliatum (Forsskål) den Hartog

HYDROCHARITACEAE

(G) *Enhalus acoroides* (Linnaeus f.) Royle

(G) *Halophila minor* (Zollinger) den Hartog

Halophila ovalis (R. Brown) Hooker f.

Thalassia hemprichii (Ehrenberg) Ascherson

Guam record doubtful (Tsuda et al. 1977).

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