

A Preliminary Checklist of the Benthic Marine Algae of the Fiji Islands, South Pacific

G. ROBIN SOUTH

The University of the South Pacific, P.O. Box 1168, Suva, Republic of Fiji

and

HITOSHI KASAHARA

Shizuoka-ken Kamo-gun, Matsuzaki-cho Sakurada 47, 410-36 Japan

Abstract—A preliminary checklist of 314 taxa of benthic marine algae is provided for the Fiji Islands, South Pacific, comprising 11 Cyanophyceae, 99 Chlorophyceae, 36 Phaeophyceae and 168 Rhodophyceae. Included are all previously published records, with the systematic arrangement and nomenclature brought up to date. The flora is relatively poorly known, and many areas have yet to be phycologically studied, such as Rotuma, much of the Lau Group, most of Vanua Levu and Kandavu.

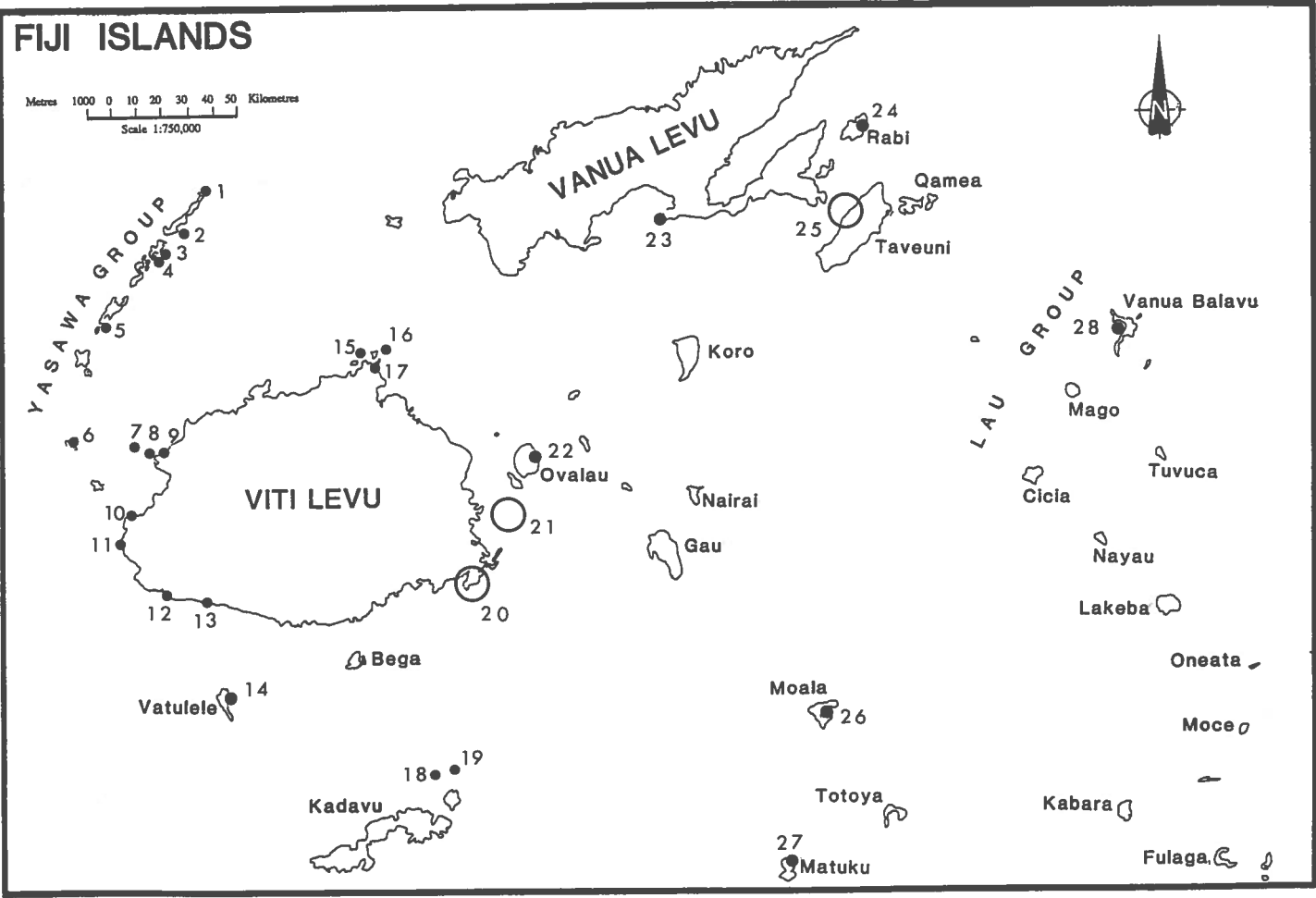
Introduction

The Fiji Islands occupy a central position in Oceania, spanning the 180th meridian and lying between 177 E and 178 W, and 16 to 20 S (Fig. 1). A land of area of some 18,276 sq. km is scattered over 332 islands, occupying 260,000 sq km of ocean (Fig. 1). There are four main islands in the group, Viti Levu, Vanua Levu, Taveuni and Kadavu, and three smaller island groups, the Yasawas, the Lomaiviti Group and the Lau Group. The small island of Rotuma is isolated from the rest of the Fiji group, some 300 km north of Viti Levu. Most of the islands are high islands of volcanic origin, although some low atolls are found in the east in the Lau Group. The islands are surrounded by barrier reefs, and there are many patch reefs throughout; the most significant barrier reef is the Great Astrolabe Reef, which occurs around the Kadavu Islands. The climate is tropical, with mean monthly air temperatures ranging from 23–26°C and sea surface temperatures ranging from 24–28°C.

Despite the strategic position of the Fiji Islands, and their history of early exploration and colonial rule, there have been very few studies of the benthic marine algae. The earliest reports are those of Grunow (1874), Dickie (1876) and Askenasy (1888). Grunow (1874) described collections made by Dr Graeffe, mainly on Ovalau Island to the east of Viti Levu, the location of the early colonial capital of Fiji. He listed 7 species of Phaeophyta (including 4 varieties) and 30 species of Rhodophyta (including 6 varieties); a total of 13 new species was

FIJI ISLANDS

Metres 1000 0 10 20 30 40 50 Kilometres
Scale 1:750,000



included. Dickie (1876) listed nine species, including four new records for Fiji, based on collections made by Mr Moseley, again at Ovalau, from Levuroa Harbour. The list included three Chlorophyta, 4 Phaeophyta and 2 Rhodophyta. An additional ten new records were published by Askenasy (1888). His collections were made at Matuku Island during the H.M.S. "Gazelle" Expeditions. He described 6 new species, and listed a total of five Chlorophyta, one Phaeophyta and four Rhodophyta.

It was not until almost a century after these early records that additions to the known flora of Fiji were made by Chapman (1971), who published a checklist of 79 species from Fiji, including 48 new records. The collections that formed the basis of this checklist were part of a larger programme to study the biogeographical distribution of marine algae from the Kermadec Islands (New Zealand) through to Fiji, Tonga, the Cook Islands and Samoa. The Fiji collections were

-
- ← Figure 1. Map of the Fiji Islands (excluding Rotuma), showing the main sites (numbered) where algal collections have been made. Names of principal collectors are given; collections given as *in Herb.* I. A. Abbott were made variously by D. P. Abbot, N. L. Nicholson and R. Phillips. Chapman, as well as Dromgoole and Darby (reported in Chapman, 1971) made collections at various sites around Viti Levu (sites not specified in Chapman, 1971).
1. Yasawa-i-rara *Garbary 1982* (Garbary et al. 1991); 2. Sawa-i-lau *Garbary 1982* (Garbary et al. 1991); 3. Nanuya levu *Carlson 1972* (Chapman 1977); 4. Nanuya lailai *Villeneuve 1982* (Garbary et al. 1991); 5. Nauvacuvu *Villeneuve 1982* (Garbary et al. 1991); 6. Yanuya Island *Carlson 1972* (Chapman 1977); 7. Plantation Resort, Mamanuca Islands *D. & D. Garbary, 1981* (Gary et al. 1991); 8. Beachcomber Resort, off Lautoka *Villeneuve 1982* (Garbary et al. 1991); 9. Lautoka *D. & D. Garbary, 1981* (Garbary et al. 1991); 10. Regent Hotel *D. & D. Garbary 1981* (Garbary et al. 1991); 11. Sea Shell Resort *D. & D. Garbary 1981* (Garbary et al. 1991); 12. Sigatoka and district *In Herb. I. A. Abbott (UH) 1973; Ajisaka & Enomoto 1982; Kasahara 1985* (Kasahara, 1985; 1988); 13. Korolevu *R. F. & C. Scagel 1981; D. & D. Garbary 1981; Villeneuve 1982* (Garbary et al. 1991); 14. Vatulele *Carlson 1972* (Chapman 1977); 15. Namuaimada *D. & D. Garbary 1981* (Garbary et al. 1991); 16. Nananuira *Villeneuve 1982* (Garbary et al. 1991); 17. Rakiraki & district *Kasahara 1985* (Kasahara 1988); 18. Namara Island, Great Astrolabe Lagoon *Carlson 1972* (Chapman 1977); 19. Dravuni Island, Great Astrolabe Lagoon *Ajisaka & Itono 1982* (Kasahara 1985); 20. Suva and district *Dromgoole & Darby 1966; Chapman 1967; Devombez 1967; Carlson 1972; Bowden 1975; Ajisaka, Enomoto & Itono 1982; In Herb. I. A. Abbott (UH)*; (Chapman 1971 1977, Kapraun & Bowden 1978, Kasahara 1985); 21. Various stations in Eastern Viti Levu *Carlson 1972; Kasahara 1985*; (Chapman 1977, Kasahara 1988); 22. Various stations on Ovalau *Graeffe 1870s; Moseley 1870s* (Grunow 1874, Dickie 1986); 23. Savusavu *Bowden 1975; In Herb. I. A. Abbott (UH); Villeneuve 1982* (Kapraun & Bowden 1978, Garbary et al. 1991); 24. Rabi Island *Bowden 1975* (Kapraun & Bowden 1978); 25. Various stations around Taveuni Island *Villeneuve 1982* (Garbary et al. 1991); 26. Moala Island *Bowden 1975* (Kapraun & Bowden 1978); 27. Matuku Island *H.M.S. Gazelle Expedition* (Askenasy 1888); 28. Vanua Balavu *Bowden 1975* (Kapraun & Bowden 1978).

made by Dromgoole and Darby in 1966, mainly around Suva and on the south coast of Viti Levu Island, by Chapman from all the coasts of Viti Levu, and by Devombe, who collected around Suva. Chapman's list included a total of 2 Cyanophyta, 41 Chlorophyta (including 7 varieties), 19 Phaeophyta (including 4 varieties) and 17 Rhodophyta. He added 17 species to this list in 1977, based on collections made by Dr Carlson.

Following from Chapman (1971, 1977) further additions to the Fiji algal flora were published by Kapraun and Bowden (1978), based on collections made by Bowden in 1975. A total of 43 new records were included, from collections made in Suva and Laucala Bay of Viti Levu, from Moala Island, Vanua Balavu Island, Rabi Island and Savusavu on Vanua Levu Island. Included in their list were 12 Chlorophyta, five Phaeophyta and 26 Rhodophyta. McRaid (1979) summarized the early history of algal collecting in Fiji, and discussed some biogeographic and ecological aspects of the flora.

The most detailed recent reports of Fijian algae are in Kasahara (1985, 1988). In his M.Ag. thesis, Kasahara (1985) made a study of benthic marine algae of Viti Levu and Dravuni Island (Kadavu, Great Astrolabe Lagoon). The collections had been made during two Kagoshima-Marui Expeditions to Fiji in 1982, as part of a scientific survey of the South Pacific by Kagoshima University (Enomoto & Ajisaka 1983, Itono & Ajisaka 1984). Collections were made by Dr Hiroshi Itono and Dr Tetsuru Ajisaka in January, and by Dr Sachito Enomoto and Dr Ajisaka in November. Three stations were studied, at the Suva Reef, around Sigatoka and around Dravuni Island, Great Astrolabe Lagoon. Ajisaka and Enomoto (1985) subsequently published an account of *Dictyota* species from Fiji and Solomon Islands, and Itono (1985a, b) published an account of *Galaxaura* species, and a description of a new species of *Rhodolachne* (Rhodophyta, Rhodomelaceae). Kasahara (1985) provided a list of all previously reported Chlorophyta and Rhodophyta from Fiji, and reported on a total of 76 Chlorophyta and Rhodophyta, including 37 new records. Four previously undescribed species were included in his report, although not formally published. Kasahara (1985) illustrated the majority of the species included in his study. He later (1988) described much more extensive collections that he made during a visit to Fiji in 1985. During this visit he collected from a total of 26 stations, between September 9th and October 29th. In his 1988 report he listed a total of 43 Chlorophyta, and provided photographs and drawings of the majority.

The most recent additions to the Fiji flora were those of Garbary et al. (1991), who gave numerous new distribution records of Fijian algae, based on collections made in August 1980, August 1981 and February 1982. A total of 82 species was included (9 Cyanophyta; 15 Chlorophyta; 10 Phaeophyta and 48 Rhodophyta).

With the development of seaweed aquaculture in Fiji, a number of publications have appeared on the subject, principally focussing on *Eucaema* (Luxton et al. 1987; Prakash 1990, Foscarini & Prakash 1990, Ram 1991). Singh et al. (1975) carried out a study of the nutritional value of some Fijian seaweeds.

In his overview of the shore ecology of the tropical Pacific, Morton (1990) describes many Fijian shores, and includes an overview of seaweed ecology and

zonation. While potentially useful, this publication unfortunately includes many typographical, factual and nomenclatural errors.

In this paper, all previously known records of benthic marine Cyanophyta, Chlorophyta, Phaeophyta and Rhodophyta from Fiji are listed. The list is preliminary, since the flora of Fiji is still poorly known, and many important areas have never been visited by a phycologist. The main purpose of the list is to provide a working basis for future taxonomic, floristic and biogeographical studies of Fijian algae. Some essential notes are included and where possible an attempt has been made to employ the most recent nomenclature. The lists of Tsuda and Wray (1977), and Tsuda (1988) have been indispensable references. As far as possible, nomenclature used here follows Silva et al. (1987).

One of the greatest difficulties of working with tropical Pacific marine algae is the lack of suitable floras; there is a need to refer to widely scattered literature and, for many species, there is a lack of adequate illustrations. The collections on which this checklist were based are widely scattered in in herbaria the northern hemisphere, or in New Zealand (AKU; Chapman). Some Fijian collections are housed in Dr I.A. Abbott's personal herbarium (UH) and were reviewed in preparation of this list. Other collections housed in the Bernice P. Bishop Herbarium have yet to be examined. H. Kasahara deposited a duplicate set of his Fijian collections at the Institute of Marine Resources, University of the South Pacific, and these will ultimately be placed in the Pacific Regional Herbarium, also located at USP. Some of the collections made by Carlson in 1972, and reported in Chapman (1977), are also housed at the Institute of Marine Resources, University of the South Pacific.

Checklist of Benthic Marine Algae of Fiji

ARRANGEMENT OF THE LIST

The systematic order adopted is that of Silva et al. (1987), where appropriate. Genera are listed alphabetically within each family, and species are listed alphabetically within each genus. Brief nomenclatural or taxonomic notes are given where required, and a list of the source references follows each taxon. The distribution of known collecting sites within Fiji is shown (Fig. 1); since some authors do not state details of collecting sites, however, a complete distributional record of each species cannot be given until an examination of voucher specimens, particularly for the species listed in Chapman (1971; 1977), has been completed. In the longer-term, it will also be necessary to verify older records of algae from Fiji in the light of modern treatments.

SYSTEMATIC LIST

CYANOPHYCEAE

NOSTOCALES

Nostocaceae

Hormothamnium Grunow

H. solutum Bornet et Grunow
Garbary et al. (1991)

Oscillatoriaceae**Lyngbya** C. Agardh

L. confervoides C. Agardh
Garbary et al. (1991)

L. lutea (C. Agardh) J.E. Areschoug
Garbary et al. (1991)

L. majuscula (Dillwyn) Harvey
Askenasy (1888), Chapman (1971)

Microcoleus Desmazières

M. lyngbyaceus Kützing
Garbary et al. (1991)

Spirulina Turpin

S. subsalsa Oersted
Garbary et al. (1991)

Symploca Kützing

S. muscorum (C. Agardh) Gomont
Garbary et al. (1991)

Microchaetaceae**Microchaete** Askenasy

M. vitiensis Askenasy
Askenasy (1888), Chapman (1971)

Rivulariaceae**Calothrix** C. Agardh

C. crustacea Thuret
Garbary et al. (1991)

Scytonemataceae**Tolypothrix**

T. byssoidea (Berkeley) Kirchner
Garbary et al. (1991)

STIGONEMATALES**Mastigocladaceae****Brachytrichia** Zanardini

B. quoyi (C. Agardh) Bornet et Flahault
Garbary et al. (1991)

CHLOROPHYCEAE**CTENOCLADALES****Ulvellaceae****Entocladia** Reinke

E. sp.?
Garbary et al. (1991)

ULVALES

Ulvaceae

Enteromorpha Link in Nees

- E. clathrata* (Roth) Greville
Kapraun & Bowden (1978)
- E. compressa* (Linnaeus) Nees
Kasahara (1988)
- E. flexuosa* (Wulfen) J. Agardh
Kapraun & Bowden (1978)
- E. intestinalis* (Linnaeus) Nees
Chapman (1971)
- E. lingulata* J. Agardh
Kapraun & Bowden (1978)
- E. linza* (Linnaeus) J. Agardh
Kasahara (1985)
- E. multiramosa* Bliding
Kapraun & Bowden (1978)
- E. prolifera* (O. F. Müller) J. Agardh
Chapman (1971), Kasahara (1988)

Ulva Linnaeus

- U. lactuca* Linnaeus
Chapman (1971), Kasahara (1985)

Monostromataceae

Monostroma Thuret

- M. nitidum* Wittrock
Kasahara (1988)
- M. oxyspermum* Kützing
Kapraun & Bowden (1978)
[=*Gayralia oxysperma* (Kützing) Vinogradova]

CLADOPHORALES

Anadyomenaceae

Microdictyon Decaisne

- M. japonicum* Setchell
Askenasy (1888), Chapman (1971), Kasahara (1985, 1988)
- M. sp. aff. M. montagnei* Harvey
Kasahara, 1985

Cladophoraceae

Chaetomorpha Kützing

- C. crassa* (C. Agardh) Kützing
Chapman (1971), Kasahara (1985)
- C. linum* (O. F. Müller) Kützing
Kapraun & Bowden (1978)

C. valida (Hooker et Harvey) Kützing
Dickie (1876), Chapman (1971)

Cladophora Kützing

C. anastomosans Harvey
Chapman (1971)

C. inserta Dickie
Garbary et al. (1991)

C. vagabunda (Linnaeus) van den Hoek
Kapraun & Bowden (1978)

Rhizoclonium Kützing

R. kernerii Stockmayer
In Herb. I.A. Abbott, UH.

SIPHONOCLADALES

Boodleaceae

Boodlea Murray et De Toni

B. composita (Harvey) Brand
Chapman (1971), Kasahara (1985)
[=*Boodlea siamensis* Reinbold; see Boergesen 1913 and Silva et al. 1987]

Struvea Sonder

S. anastomosans (Harvey) Piccone et Grunow ex Piccone
Chapman (1971), Kapraun & Bowden (1978)
[includes *Struvea delicatula* Kützing; see Womersley & Bailey, 1970].

Siphonocladaceae

Boergesenia J. Feldmann

B. forbesii (Harvey) J. Feldmann
Chapman (1971), Kasahara (1985, 1988)

Cladophoropsis Boergesen

C.? luxurians
In Herb. I.A. Abbott, UH

C. membranacea (C. Agardh) Boergesen
Kasahara (1985, 1988)

C. vaucheriaeformis (J.E. Areschoug) Papenfuss
Kasahara (1988)

Valoniaceae

Dictyosphaeria Decaisne ex Endlicher

D. cavernosa (Forskåll) Boergesen
Chapman (1971), Kapraun & Bowden (1978), Kasahara (1985, 1988)
[includes *Dictyosphaeria favulosa* (C. Agardh) Decaisne ex Endlicher]

D. versluisii Weber-van Bosse
Chapman (1971), Kasahara (1985, 1988)

Valonia J. Agardh

V. aegagropila C. Agardh
Kapraun & Bowden (1978), Kasahara (1985, 1988)

- V. fastigiata* Harvey ex J. Agardh
Kasahara (1988)
- V. utricularis* (Roth) Agardh
Kasahara (1985, 1988)
- Valoniopsis** Boergesen
- V. pachynema* (Martens) Boergesen
Kasahara (1988)
- Ventricaria** Olsen et West
- V. ventricosa* (J. Agardh) Olsen et West
Chapman (1971), Kasahara (1985; 1988)
[= *Valonia ventricosa* J. Agardh]

BRYOPSIDALES

Bryopsidaceae

- Bryopsis** Lamouroux
- B. harveyana* J. Agardh
Kasahara (1985, 1988)

Caulerpaceae

- Caulerpa** Lamouroux
- C. acuta* (Yamada) Yamada
Kasahara (1988)
- C. ambigua* Okamura
Garbary et al. (1991)
- C. brachypus* Harvey
Chapman (1971), Kasahara (1985)
- C. crassifolia* (C. Agardh) J. Agardh
Chapman (1971)
- C. cupressoides* (Vahl) C. Agardh
Kasahara (1988)
f. *disticha* (Weber-van Bosse) Collins
Kasahara (1985)
var. *lycopodium* Weber-van Bosse
Chapman (1971), Kasahara (*in Herb. Kyoto University, Faculty of Agriculture*)
- C. juniperoides* J. Agardh
Chapman (1971)
- C. mexicana* Sonder ex Kützing
var. *pluriseriata* W.R. Taylor
Kasahara (1988)
- C. microphysa* (Weber-van Bosse) J. Feldmann
Garbary et al., (1991)
- C. racemosa* (Forskåll) J. Agardh
Kasahara (1988)
var. *clavifera* (Turner) Weber-van Bosse
Chapman (1971)

- var. *laetevirens* (Montagne) Weber-van Bosse
Kasahara (1985)
- var. *macrophysa* (Sonder ex Kützing) W.R. Taylor
Chapman (1971), Kasahara (1985)
- var. *peltata* (Lamouroux) Eubank
Kasahara (1985)
[=*Caulerpa peltata* Lamouroux]
f. *nummularia* (Harvey) Dawson
Kasahara (1988)
[=*Caulerpa peltata* Lamouroux var. *nummularia* (Harvey) Weber-van
Bosse]
- var. *uvifera* (Turner) J. Agardh
Chapman (1971), Kasahara (1985)
- C. remotifolia* Sonder
Chapman (1971)
- C. serrulata* (Forskäll) J. Agardh
Chapman (1971), Kasahara (1985, 1988)
- C. sertularioides* (S.G. Gmelin) Howe
Dickie (1876), Chapman (1971), Kasahara (1985, 1988)
[according to Chapman (1971) includes *Caulerpa plumaris* (Forskäll) Weber-
van Bosse of earlier collectors]
- C. taxifolia* (Vahl) C. Agardh
Kasahara (1985, 1988)
- C. urvilleana* Montagne
var. *vitiensis* Weber-van Bosse
Chapman (1971), Kasahara (1985, 1988)
- C. verticillata* J. Agardh
Kasahara (1988)
- C. webbiana* Montagne
Garbary et al. (1991)

Codiaceae

Codium Stackhouse

- C. arabicum* Kützing
[=*C. adhaerens* in Chapman (1971); see Silva et al. 1987]
- C. bulbopilum* Setchell
Kasahara (1985)
- C. coronatum* Setchell
var. *aggregata* Boergesen
Kasahara (1985)
- C. geppii* O.C. Schmidt
Chapman (1971), Kasahara (1988)

Halimediaceae

Halimeda Lamouroux

- H. bikiensis* W.R. Taylor
Kasahara (1988)

- H. copiosa* Goreau et Graham
 [= *Halimeda hederacea* (Barton) Hillis; *H. opuntia* v. *hederacea* (Barton) Hillis]
 Chapman (1971), Kasahara (in *Herb. Kyoto University, Faculty of Agriculture*)
- H. cuneata* Hering
 f. *undulata* Barton
 Kasahara (1985)
- H. cylindracea* Decaisne
 Chapman (1971), Kasahara (1985, 1988)
- H. discoidea* Decaisne
 Chapman (1971), Kasahara (1988)
- H. fragilis* W.R. Taylor
 Kasahara (1988)
- H. incrassata* (Ellis) Lamouroux
 Askenasy (1888), Chapman (1971), Kasahara (1985)
- H. macroloba* Decaisne
 Chapman (1971), Kasahara (1985, 1988)
- H. macrophysa* Askenasy
 Askenasy (1888), Chapman (1971), Kasahara (1985, 1988)
- H. minima* (W.R. Taylor) Colinvaux
 Garbary et al. (1991)
 [= *Halimeda opuntia* f. *minima* W.R. Taylor]
- H. opuntia* (L.) Lamouroux
 Askenasy (1888), Chapman (1971), Kasahara (1985, 1988)
 [= *Halimeda cordata* J. Agardh; see Tsuda & Wray 1977; Silva et al. 1987]
 var. *macrocarpa* Askenasy
 Chapman (1971)
- H. renschii* Hauck
 Garbary et al. (1991)
 [= *Halimeda opuntia* f. *renschii* (Hauck) Barton; see Womersley & Bailey, 1970]
- H. simulans* Howe
 Kasahara (1985; 1988)
- H. taenicola* W.R. Taylor
 Garbary et al. (1991)
- H. tuna* (Ellis et Solander) Lamouroux
 f. *triloba* Barton
 Chapman (1971, 1977), Kasahara (1985, 1988)

Udoteaceae

- Avrainvillea* Decaisne
A. amadelpa (Montagne) A. & E.S. Gepp
 Kasahara (1988)
- A. asarifolia* Boergesen
 Kasahara (1985)

- A. erecta* (Berkeley) A. Gepp & E.S. Gepp
Kasahara (1985)
- A. nigricans* Decaisne
Kapraun & Bowden (1978)
- Chlorodesmis** Harvey et Bailey
- C. fastigiata* (C. Agardh) Ducker
Chapman (1971), Kasahara (1985, 1988)
[includes *Chlorodesmis comosa* Harvey et Bailey; see Ducker, 1967]
- C. hildenbrandtii* A. Gepp & E.S. Gepp
Garbary et al. (1991)
- Pseudochlorodesmis** Boergesen
- P. furcellata* (Zanardini) Boergesen
Garbary et al. (1991)
- Rhipidosiphon** Montagne
- R. javensis* Montagne
[= *Udotea javensis* (Montagne) A. Gepp et E.S. Gepp; see Littler & Littler, 1990]
Kasahara (1985, 1988, as *Udotea javensis*)
- Tydemannia** Weber-van Bosse
- T. expeditionis* Weber-van Bosse
Chapman (1977), Kasahara (1985, 1988); in *Herb.* I.A. Abbott, UH.
- Udotea** Lamouroux
- U. glaucescens* Harvey ex J. Agardh
Kasahara (1988)

DASYCLADALES

Polyphysaceae

- Acetabularia** Lamouroux
- A. calycus* Lamouroux
Chapman (1971)
- A. clavata* Yamada
Garbary et al. (1991)
- A. dentata* Solms-Laubach
Garbary et al. (1991)
- A. exigua* Solms-Laubach
Garbary et al. (1991)

Dasycladaceae

- Bornetella** Munier-Chalmas
- B. capitata* (Harvey) J. Agardh
Kasahara (1988), Garbary et al. (1991)
- B. nitida* (Harvey) Munier-Chalmas
Chapman (1971), Kasahara (1985)
- B. oligospora* Solms-Laubach
Kapraun & Bowden (1978), Kasahara (1985, 1988)

B. sphaerica (Zanardini) Solms-Laubach

Kasahara (1985)

B. vitileviana sp. ined. H. Kasahara

Kasahara (1988)

Neomeris Lamouroux

N. vanbosseae Howe

Chapman (1971), Kasahara (1985)

PHAEOPHYCEAE

ECTOCARPALES

Ectocarpaceae

Ectocarpus Lyngbye

E. simpliusculus C. Agardh

var. *vitiensis* Askenasy

Chapman (1971)

Feldmannia Hamel

F. indica (Sonder) Womersley et Bailey

Chapman (1971)

[=*Ectocarpus indicus* Sonder in Zollinger]

F. irregularis (Kützinger) Hamel

Garbary et al. (1991)

F. simplex (Crouan et Crouan) Hamel

Garbary et al. (1991)

Ralfsiaceae

Ralfsia Berkeley in Smith et Sowerby

R. expansa J. Agardh

Garbary et al. (1991)

SPHACELARIALES

Sphacelariaceae

Sphacelaria Lyngbye

S. furcigera Kützinger

Garbary et al. (1991)

S. novae-hollandiae Sonder

Garbary et al. (1991)

S. tribuloides Meneghini

Chapman (1971)

[Includes *S. novae-hollandiae* according to Chapman 1971, but listed separately in Tsuda & Wray, 1977]

DICTYOTALES

Dictyotaceae

Dictyopteris Lamouroux

D. repens (Okamura) Boergesen

Garbary et al. (1991)

Dictyota Lamouroux

(See Ajisaka & Enomoto, 1985)

D. bartayresiana Lamouroux

Kapraun & Bowden (1978), Ajisaka & Enomoto (1985)

D. cervicornis Kützing

Kapraun & Bowden (1978), Ajisaka & Enomoto (1985)

D. dentata Lamouroux

Ajisaka & Enomoto (1985)

D. dichotoma (Hudson) Lamouroux

Chapman (1971)

var. *elongata* Kützing

Chapman (1971)

D. divaricata Lamouroux

Ajisaka & Enomoto (1985), Garbary et al. (1991)

D. friabilis Setchell

Ajisaka & Enomoto (1985)

D. patens J. Agardh

Ajisaka & Enomoto (1985)

Dilophus J. Agardh*D. radicans* Okamura

Garbary et al. (1991)

Lobophora J. Agardh*L. variegata* (Lamouroux) Womersley

Chapman (1971)

Padina Adanson*P. australis* Hauck

Garbary et al. (1991)

P. fraseri (Greville) Greville

Chapman (1971)

P. gymnospora (Kützing) Sonder

Kapraun & Bowden (1978)

P. japonica Yamada

Garbary et al. (1991)

P. pavonica (Linnaeus) Thivy

Chapman (1971)

P. tenuis Boergesen

Kapraun & Bowden (1978)

P. minor Yamada

Kapraun & Bowden (1978)

SCYTOSIPHONALES

Scytosiphonaceae

Colpomenia (Endlicher) Derbès et Solier in Castagne*C. sinuosa* (Mertens ex Roth) Derbès et SolierChapman (1971); in *Herb.* I.A. Abbott, UH.

Hydroclathrus Bory

H. clathratus (C. Agardh) Howe
Chapman (1971)

FUCALES

Sargassaceae**Sargassum** C. Agardh

S. cristaefolium C. Agardh
Chapman (1971)

[=*S. duplicatum* (J. Agardh) J. Agardh; see Tsuda & Wray (1977) and Silva et al. 1987. This record (as *S. duplicatum*) uncertain, the species showing some similarity with *Sargassum fonanonense* Setchell]

S. horridulum Grünow

Chapman (1971)

[Includes *Sargassum polycystum* C. Agardh according to Chapman, 1971; see, however, Silva et al. 1987]

S. obovatum Harvey

Chapman (1971)

S. polycystum C. Agardh

Chapman (1971)

[See note to *S. horridulum*, above. According to Chapman, 1971, this species was recorded by earlier collectors as *S. vulgare*, an Atlantic species]

Turbinaria Lamouroux

T. conoides (J. Agardh) Kützing

Chapman (1971)

[=*Turbinaria vulgaris* J. Agardh according to Chapman, 1971, but see note in Silva et al. 1987]

T. ornata (Turner) J. Agardh

Chapman (1971)

Cystoseiraceae**Cystoseira** C. Agardh

? *C. prolifera* J. Agardh
Chapman (1971)

RHODOPHYCEAE

Bangiophycidae

BANGIALES

Erythropeltidaceae**Erythrotrichia** J.E. Areschoug

E. carnea (Dillwyn) J. Agardh
Garbary et al. (1991)

Goniotrichaceae**Bangiopsis** Smith in Smith et Hollenberg

B. humphreyi (Collins) Hamel
Kapaun & Bowden (1978)

Goniotrichopsis Smith*G. sublittoralis* Smith

Garbary et al. (1991)

Stylonema Reinsch[=*Goniotrichum* Kützing]*S. alsidii* (Zanardini) Drew

Garbary et al. (1991)

[=*Goniotrichum alsidii* (Zanardini) Howe]**Florideophycidae****ACROCHAETIALES****Acrochaetiaceae****Audouinella** Bory[See nomenclatural note in Silva et al., where *Acrochaetium* Nägeli is preferred]*A. microscopica* (Nägeli) Woelkerling

Garbary et al. (1991)

A. thuretii (Bornet) Woelkerling

Garbary et al. (1991)

BONNEMAISONIALES**Bonnemaisoniaceae****Asparagopsis** Montagne*A. taxiformis* (Delile) TrevisanChapman (1977), Garbary et al. (1991). Both record the probable tetrasporic phase as *Falkenbergia hillebrandii* (Bornet) Falkenberg.**Galaxauraceae**[=*Chaetangiaceae*; see Silva et al. 1987]**Actinotrichia** Decaisne*A. fragilis* (Forskåll) BoergesenGrunow (1874), Askenasy (1888), Chapman (1971), Kasahara (1985); in *Herb. I.A. Abbott, UH.***Galaxaura** Lamouroux*G. apiculata* Kjellman

Kasahara (1985)

[Possible relationship between *G. apiculata* and *G. marginata* discussed in Kasahara, 1985]*G. fasciculata* Kjellman

Chapman (1971), Kasahara (1985)

[=*G. fascicularis* Kjellman in Tsuda & Wray, 1977]*G. filamentosa* Chou

Kasahara (1985), Garbary et al. (1991)

[includes *Galaxaura rudis* Kjellman according to Kasahara 1985, and Silva et al. 1987; but *G. rudis* included in *Galaxaura rugosa* (Ellis et Solander)]

- Lamouroux according to Huisman & Borowitzka 1990. According to Papenfuss et al. (1982), *G. rudis* is a taxonomic synonym of *G. lapidescens* (Ellis et Solander) Lamouroux]
- G. glabriuscula* Kjellman
Itono (1985a)
- G. hystrix* Kjellman
Chapman (1971)
- G. lapidescens* (Ellis et Solander) Lamouroux
Grunow (1874)
[see note to *G. filamentosa*]
- G. marginata* (Ellis et Solander) Lamouroux
Kasahara (1985)
[according to Kasahara (1985) and Silva et al. 1987, includes *Galaxaura clavigera* Kjellman and *G. ventricosa* Kjellman; but see Huisman & Borowitzka, 1990]
- G. obtusata* (Ellis et Solander) Lamouroux
Grunow (1874), Chapman (1971, 1977), Kasahara (1985)
[according to Kasahara (1985) includes *Galaxaura breviararticulata* Kjellman and *G. robusta* Kjellman (cf. Chapman, 1977); see, however, Huisman & Borowitzka 1990]
- G. rugosa* (Ellis et Solander) Lamouroux
Grunow (1874), Dickie (1876), Kasahara (1985)
[includes *Galaxaura rudis* Kjellman; see Huisman & Borowitzka 1990, and note to *G. filamentosa*]
- G. striata* Kjellman
Chapman (1971)
- G. subfruticulosa* Chou ex W.R. Taylor
Itono (1985a)
- G. stupocaula* Kjellman
Itono (1985a)
- G. subverticillata* Kjellman
Kasahara (1985)
- G. ventricosa* Kjellman
Itono (1985a)
- Tricleocarpa** Huisman et Borowitzka
- T. oblongata* Huisman et Borowitzka
Kasahara (1985)
[= *Galaxaura oblongata* (Ellis et Solander) Lamouroux; includes *Galaxaura fastigiata* Decaisne and *Galaxaura fragilis* Lamarck et Decaisne. See Huisman & Borowitzka 1990]

GELIDIALES

Gelidiaceae

Gelidiella J. Feldmann et Hamel

- G. acerosa* (Forskåll) J. Feldmann et Hamel
Chapman (1971), Kasahara (1985); in *Herb.* I.A. Abbott, UH.

Gelidium Lamouroux*G. pusillum* (Stackhouse) Le Jolis

Chapman (1971)

Pterocladia J. Agardh*P. nana* Okamura

Kapraun & Bowden (1978)

Helminthocladiaceae**Liagora** Lamouroux*L. ceranoides* Lamouroux

Chapman (1971), Kasahara (1985)

[according to Kasahara (1985) includes *Liagora pulverentula* C. Agardh]*L. demelii* Sonder

Grunow (1874), Chapman (1971)

L. farinosa Lamouroux

Grunow (1874), Chapman (1971)

L. setchellii Yamada

Kasahara (1985)

L. subarticulata Grunow

Grunow (1874), Chapman (1971)

L. viscida (Forskäll) C. Agardh

Grunow (1874), Chapman (1971)

Yamadaella Abbott*Y. caenomyce* (Decaisne) Abbott

Kasahara (1985)

CRYPTONEMIALES**Cryptonemiaceae****Carpopeltis** Schmitz*C. affinis* (Harvey) Okamura

Garbary et al. (1991)

C. formosana Okamura

Kasahara (1985)

C. maillardii (Montagne et Millardet) Chiang

Garbary et al. (1991)

[Possibly includes a record of *Carpopeltis rigida* (Harvey ex J. Agardh)
Schmitz in *Herb.* I.A. Abbott, UH]**Grateloupia** C. Agardh*G. filicina* (Lamouroux) C. Agardh

Kapraun & Bowden (1978)

Halymenia C. Agardh*H. durvillaei* Bory de Saint-Vincent

Chapman (1971), Kasahara (1985)

[According to Kasahara (1985) includes *Halymenia formosa* Harvey]*H. floresia* (Clemente et Rubio) C. Agardh

Kasahara (1985)

[According to Kasahara (1985) includes *Halymenia harveyana* J. Agardh]

Peyssonneliaceae**Peyssonnelia** Decaisne

- P. rubra* (Greville) J. Agardh
Grunow (1874), Chapman (1971)

CORALLINALES**Corallinaceae****Amphiroa** Lamouroux

- A. anceps* (Lamarck) Decaisne
Garbary et al. (1991)
- A. annulata* Lemoine
Kasahara (1985)
- A. crassa* Lamouroux
Chapman (1971)
[Includes *Amphiroa godeffroyi* Grunow according to Chapman 1971]
- A. foliacea* Lamouroux
Kasahara (1985)
- A. fragilissima* (Linnaeus) Lamouroux
Grunow (1874), Chapman (1971), Kapraun & Bowden (1978), Kasahara (1985)
- A. tribulus* (Ellis et Solander) Lamouroux
Kapraun & Bowden (1978)
- A. sp. aff. A. hancockii* W.R. Taylor
Kasahara (1985)

Arthrocardia Decaisne

- A. sp.*
Garbary et al. (1991)
- Cheilosporum** (Decaisne) Zanardini
- C. jungermannioides* Ruprecht ex J.E. Areschoug
Chapman (1971)
- C. spectabile* Harvey
Grunow (1874)

Dermatolithon Foslie

- D. saxicolum* Lemoine
Chapman (1971)

Fosliella Howe

- F. farinosa* (Lamouroux) Howe
Grunow (1874), Chapman (1971)
[=*Melobesia farinosa* Lamouroux]

Heteroderma

- H. parvicarpa* Dawson
Chapman (1971)

Hydrolithon (Foslie) Foslie

- H. reinboldii* (Weber-van Bosse et Foslie) Weber-van Bosse
Chapman (1977)

Jania Lamouroux

- J. adhaerens* Lamouroux
Garbary et al. (1991)
- J. capillacea* Harvey
Garbary et al. (1991)
- J. pumila* Lamouroux
Grunow (1874)
- J. unguolata* (Yendo) Yendo
Garbary et al. (1991)
- J. tenella* (Kützing) Grunow
Grunow (1874), Dickie (1876), Chapman (1971)

Lithophyllum Philippi

- L. divaricatum* Lemoine
Chapman (1977)
- L. moluccense* (Foslie) Foslie
Chapman (1977)
f. *pygmaea* Heydrich
Chapman (1977)
- L. impar* Foslie
Chapman (1971)
- L. okamurai* Foslie
Chapman (1977)

Lithothamnion Heydrich

- L. engelhartii* Foslie
Chapman (1977)
- L. granuliferum* Foslie
Chapman (1971)
- Neogoniolithon** Setchell et Mason
- N. frutescens* (Foslie) Setchell et Mason
Chapman (1971)
[= *Goniolithon frutescens* Foslie]

Porolithon (Foslie) Foslie

- P. coccoticum* Foslie
Chapman (1971)

GIGARTINALES

Rhizophyllidaceae**Portieria Zanardini**

- P. hornemannii* (Lyngbye) Silva
Grunow (1874), Chapman (1971), Kasahara (1985)
[= *Chondrococcus hornemannii* (Lyngbye) Schmitz; see Silva et al. 1987.
According to Chapman (1971) = *Portieria cincinnata* Montagne var. *pul-*
vinata Grunow in Grunow (1874)]

Gracilariaceae**Gelidiopsis Schmitz**

- G. acrocarpum* (Harvey) Schmidt

- Grunow (1874), Chapman (1971)
 [= *Gelidiopsis acrocarpa* in Tsuda & Wray (1977); includes *Gelidium radicans* Kützing in Grunow 1873]
- G. intricata* (C. Agardh) Vickers
 Kasahara (1985)
 [= *Gelidium intricatum* (C. Agardh) Kützing in Setchell, 1924, according to Kasahara, 1985]
- G. rigida* (Vahl) Weber-van Bosse
 Chapman (1971)
 [= *Echinocaulon rigidum* (Vahl) Kützing in Grunow (1873) and Chapman (1971)]
- G. variabilis* (J. Agardh) Schmitz
 Kapraun & Bowden (1978)
- Gracilaria** Greville
- G. coronopifolia* J. Agardh
 Kapraun & Bowden (1978)
- G. edulis* (S.G. Gmelin) P.C. Silva
 In *Herb.* H. Kasahara, Kyoto University, Faculty of Agriculture
- G. eucheumoides* Harvey
 Chapman (1971)
- G. furcellata* Harvey
 Chapman (1977)
- G. lichenoides* (Linnaeus) J. Agardh
 Askenasy (1888), Chapman (1971)
- G. mammilaris* (Montagne) Howe
 Kapraun & Bowden (1978)
- G. sp. aff. G. parvispora* Abbott
 In *Herb.* I.A. Abbott, UH. "From quarantine, airport officials"
- G. verrucosa* (Hudson) Papenfuss
 Chapman (1971)
 [= *Gracilaria confervoides* (L.) Greville according to Chapman 1971]

Hypneaceae

Hypnea Lamouroux

- H. cervicornis* J. Agardh
 Kapraun & Bowden (1978)
- H. charoides* Sonder
 Kasahara (1985)
- H. cornuta* (Kützing) J. Agardh
 Kapraun & Bowden (1978)
- H. divaricata* (C. Agardh) Greville
 Grunow (1974), Chapman (1871)
- H. esperi* Bory
 Askenasy (1888), Chapman (1971), Kasahara (1985)
- H. musciformis* (Wulfen) Lamouroux
 var. *esperi* J. Agardh

Chapman (1971)

[see note regarding *Hypnea esperi* in Silva et al. 1987]

H. pannosa J. Agardh

Grunow (1874), Chapman (1971), Kasahara (1985)

[According to Kasahara (1985) includes *Hypnea nidulans* Setchell]

Nemastomataceae

Titanophora (J. Agardh) J. Feldmann

T. sp. aff. *T. pulchra* Dawson

Kasahara (1985)

Plocamiaceae

Plocamium Lamouroux

P. abnorme Hooker et Harvey

Chapman (1971)

[=*P. botryoides* Kützing in Grunow (1874) according to Chapman (1971)]

Solieriaceae

Callophycus Trevisan

C. serratus (Harvey ex Kützing) P.C. Silva

Chapman (1971)

[=*Thysanocladia serrata* Harvey ex Kützing]

Eucheuma J. Agardh

[*Eucheuma* is cultivated in Fiji, with introduced species and varietes; taxa cultivated in Fiji include *Eucheuma alvarezii* Doty (the most commonly cultivated) and *E. denticulatum* (N.L. Burman) Collins et Hervey (= *Eu-cheuma spinosum* J. Agardh). See Luxton et al. 1987, Prakash 1990, Foscarini & Prakash 1990 and Ram 1991.]

E. sp.

Garbary et al. (1991)

Thysanocladia Endlicher

T. densa Sonder

Grunow (1874)

RHODYMENIALES

Champiaceae

Champia Desvaux

C. parvula (C. Agardh) Harvey

Kapraun & Bowden (1978)

C. vieillardii Kützing

Kasahara (1985)

Rhodymeniaceae

Botryocladia (J. Agardh) Kylin

B. spinulifera W.R. Taylor et Abbott

Kasahara (1985)

Erythrocolon J. Agardh

- E. podagricum* J. Agardh
 Chapman (1971), Kasahara (1985)
 [According to Kasahara (1985) includes *Erythrocytis podagrica* Harvey and
Chylocladia podagrica Harvey]

CERAMIALES

Ceramiaceae

- Centroceras** Kützing
C. clavulatum (C. Agardh) Montagne
 Grunow (1874; as var. *hyalcanthum* Kützing), Chapman (1971)
C. minutum Yamada
 Garbary et al. (1991)
Ceramium Roth
C. camouii Dawson
 Garbary et al. (1991)
C. brevizonatum Peterson
 Kapraun & Bowden (1978)
C. clarionense Setchell et Gardner
 Garbary et al. (1991)
C. gracillimum (Kützing) Zanardini
 var. *bysoideum* (Harvey) Feldmann-Mazoyer
 Garbary et al. (1991)
C. huysmansii Weber-van Bosse
 Garbary et al. (1991)
C. masonii Dawson
 Kasahara (1985)
C. serpens Setchell et Gardner
 Garbary et al. (1991)
C. subverticillatum (Grunow) Weber-van Bosse
 [= *Ceramium kützingianum* Grunow var. *subverticillata* Grunow; see Chap-
 man 1971]
 Grunow (1874), Chapman (1971)
C. vagabunde Dawson
 Kapraun & Bowden (1978)
Crouania J. Agardh
C. minutissima Yamada
 Garbary et al. (1991)
Griffithsia C. Agardh
G. metcalfi Tseng
 Garbary et al. (1991)
G. ovalis Harvey
 Garbary et al. (1991)
G. tenuis C. Agardh
 Garbary et al. (1991)
Haloplegma Montagne

H. duperreyi Montagne

Kasahara (1985)

Pterothamnion Nägeli

P. plumula (Ellis) Nägeli

Garbary et al. (1991)

Spermothamnion Areschoug

S. sp.

Garbary et al. (1991)

Spyridia Harvey

S. filamentosa (Wulfen) Harvey

Chapman (1971)

S. hypnoides (Bory) Papenfuss

Kapraun & Bowden (1978)

[=*Spyridia aculeata* (Schimper) Kützing; see Kapraun & Bowden 1978]

Wrangelia C. Agardh

W. argus (Montagne) Montagne

Kasahara (1985), Garbary et al. (1991)

Dasyaceae

Dasya C. Agardh

D. sp.

Garbary et al. (1991)

Heterosiphonia Montagne

H. subsecunda (Suhr) Falkenberg

Chapman (1971)

[=*Heterosiphonia callithamnion* Sonder and *Dasya callithamnion* (Sonder) Harvey; see Chapman (1971)]

H. wurdemanii (Bailey) Falkenberg

Garbary et al. (1991)

Delesseriaceae

Caloglossa (Harvey) J. Agardh

C. adnata (Zanardini) De Toni

Chapman (1971)

C. leprieurii (Montagne) J. Agardh

Kapraun & Bowden (1978)

C. ogasawaraensis Okamura

Chapman (1971)

Hypoglossum Kützing

H. minimum Yamada

Garbary et al. (1991)

Taenioma J. Agardh

T. perpusillum (J. Agardh) J. Agardh

Garbary et al. (1991)

Vanvoorstia Harvey

V. coccinea J. Agardh

Kasahara (1985)

[According to Kasahara (1985) = *Vanvoorstia spectabilis* (non Harvey) in Okamura (1936)]

Rhodomelaceae

Acanthophora Lamouroux

A. spicifera (Vahl) Boergesen

Grunow (1874), Chapman (1971)

[Includes *Acanthophora muscoides* Bory and *A. orientalis* J. Agardh; see Tsuda & Wray 1977]

Amansia Lamouroux

A. glomerata C. Agardh

Askenasy (1888), Chapman (1971), Kasahara (1985); in *Herb.* I.A. Abbott, UH.

Bostrychia Montagne

B. binderi Harvey

Garbary et al. (1991)

B. moritziana (Sonder ex Kützing) J. Agardh

Chapman (1971)

B. radicans (Montagne) Montagne

Chapman (1971)

B. tenella (Lamouroux) J. Agardh

Kapraun & Bowden (1978)

Chondria C. Agardh

C. armata (Kützing) Okamura

Garbary et al. (1991)

C. dasyphylla (Woodward) C. Agardh

Garbary et al. (1991)

C. minutula Weber-van Bosse

Garbary et al. (1991)

Herposiphonia Nägeli

H. secunda (C. Agardh) Ambronn

f. *tenella* (C. Agardh) Wynne

Garbary et al. (1991)

[= *Herposiphonia tenella* (C. Agardh) Schmitz; see Silva et al. 1987]

H. subdisticha Okamura

Garbary et al. (1991)

Laurencia Lamouroux

L. botryoides (Turner) Gaillard

Chapman (1971)

L. cartilaginea Yamada

Garbary et al. (1991)

L. columellaris Boergesen

Kapraun & Bowden (1978)

- L. distichophylla* J. Agardh
Kapraun & Bowden (1978)
- L. intermedia* Yamada
Kapraun & Bowden (1978)
- L. obtusa* (Hudson) Lamouroux
var. *gracilis* Kützing
Grunow (1874), Chapman (1971)
var. *racemosa* Kützing
Grunow (1874), Chapman (1971)
- L. papillosa* (C. Agardh) Greville
var. *thyrsoides* Kützing
Grunow (1874), Chapman (1971)
- L. parvipapillata* Tseng
Kasahara (1985)
- L. patentiramea* (Montagne) Kützing
Garbary et al. (1991)
[=*Laurencia paniculata* (C. Agardh) J. Agardh in Garbary et al. (1991); see
Silva et al. 1987]
- L. yamadana* Howe
Kasahara (1985)
[=*Laurencia amabilis* Yamada et Segawa according to Kasahara 1985]
- ?*Leachiella* Kugrens
- L. sp.*
[Parasitic on *Polysiphonia scopulorum* Harvey; previously known only from
western N. America; see Kugrens 1982 and Garbary et al. 1991]
- Leveillea** Decaisne
- L. jungermannioides* (Hering et Martens) Harvey
Kasahara (1985), Garbary et al. (1991)
- Lophosiphonia** Falkenberg
- L. reptabunda* (Suhr) Jaasund
Kapraun & Bowden (1978)
- Murrayella** Schmitz
- M. pericladus* (C. Agardh) Schmitz
Kapraun & Bowden (1978)
- Neurymenia** J. Agardh
- N. sp. (1)*
[see Garbary et al. 1991; aff. *Neurymenia fraxinifolia* (Mertens ex Turner)
J. Agardh]
- N. sp. (2)*
Kasahara (1985)
- Polysiphonia** Greville
- P. herpa* Hollenberg
Garbary et al. (1991)
- P. howei* Hollenberg
Garbary et al. (1991)

- P. mollis* J. Hooker et Harvey
 Kapraun & Bowden (1978)
 var. *tongatensis* (Harvey ex Kützing) Hollenberg
 Garbary et al. (1991)
 [= *Polysiphonia tongatensis* Harvey ex Kützing]
- P. scopulorum* Harvey
 Kapraun & Bowden (1978)
- P. sphaerocarpa* Boergesen
 Kasahara (1985), Garbary et al. (1991)
 [May include *Polysiphonia pulvinata* (Roth) J. Agardh *sensu* Segi (1951)
 according to Kasahara (1985)]
- Rhodolachne** Wynne
- R. radicata* Itono
 Itono (1985b)
- Stictosiphonia** King et Puttock
- S. kelanensis* (Grunow ex Post) King et Puttock
 Chapman (1971)
 [= *Bostrychia kelahensis* Grunow ex Post in Chapman (1971); see King &
 Puttock 1989]
- Tolypiocladia** Schmitz
- T. calodictyon* (Harvey ex Kützing) P.C. Silva
 Kapraun & Bowden (1978)
- T. glomerulata* (C. Agardh) Schmitz
 Garbary et al. (1991)

FAMILIA INCERTAE SEDIS

Wurdemanniaceae

[see Silva et al., 1987]

Wurdemannia Harvey

- W. miniata* (Sprengel) J. Feldmann et Hamel
 Kapraun & Bowden (1978)

Acknowledgements

We are grateful to Dr C. S. Lobban for his thorough review of an earlier draft of this manuscript. G. R. South thanks the Natural Sciences and Engineering Research Council (Canada), the International Centre for Ocean Development (Canada), the Canadian International Development Agency (CIDA), and the Institute of Marine Resources, University of the South Pacific, for support. Dr I. A. Abbott, University of Hawaii, kindly made her algal collections available for study. Gunnu Pillai, School of Pure and Applied Sciences, University of the South Pacific, provided the map of the Fiji Islands.

References

- Ajisaka, T. and S. Enomoto. 1985. *Dictyota* Lamouroux (Dictyotales, Phaeophyceae) of the Fiji and Solomon Islands. Kagoshima University Research Center for the South Pacific. Occas. Pap. No. 5: 35-41.

- Askenasy, E. 1889. Algen: in Die Forschungsreise S.M.S. "Gazelle"..... 4(2). Botanik 1-58, Pl. 1-12.
- Boergesen, F. 1913. The marine algae of the Danish West Indies. Part 1. Chlorophyceae. Dansk Bot. Ark. 1: 1-160.
- Chapman, V. J. 1971. The marine algae of Fiji. Rev. Algol. 2: 164-171.
- Chapman, V. J. 1977. Marine algae of Norfolk Island and the Cook Islands. Bot. Mar. 20: 161-165.
- Dickie, G. 1876. Algae chiefly Polynesian: being contributions to the botany of H.M.S. "Challenger". J. Linn. Soc. Bot. 15: 235-246.
- Ducker, S. C. 1967. The genus *Chlorodesmis* (Chlorophyta) in the Indo-Pacific region. Nova Hedwigia 13: 145-182, Pls. 25-43.
- Enomoto, S. & T. Ajisaka. 1983. Marine algae of Viti Levu, the Fiji Islands: Chlorophyceae (Preliminary report). Report 4, Oceanography and Biological Sciences, Prompt Report of 2nd Scientific Survey of South Pacific. Kagoshima University: University of the South Pacific: 14-17.
- Garbary, D. J., J. C. Oliveira, R. F. Scagel & S. Villeneuve. 1991. Notes and distribution records for the marine algae of Fiji. Micronesica 24: 249-260.
- Grunow, A. 1874. Algen der Fidschi-, Tonga- und Samoa-Inseln, gesammelt von Dr. E. Graeffe. Erste Folge: Phaeosporae, Fucoideae und Florideae. J. Mus. Godeffrey VI(1): 23-50.
- Huisman, J. M. & M. A. Borowitzka. 1990. A revision of the Australian species of *Galaxaura* (Rhodophyta, Galaxauraceae), with a description of *Tricleocarpa* gen. nov. Phycologia 29: 150-172.
- Itono, H. 1985a. Some noteworthy species of *Galaxaura* (Chaetangiaceae, Rhodophyta) from Fiji. Kagoshima Univ. Res. Center S. Pac. Occas. Pap. No. 5: 43-51.
- Itono, H. 1985b. *Rhodolachne radicata*, a new species of red alga (Rhodophyceae, Ceramiales) from Fiji and southern parts of Japan. Kagoshima Univ. Res. Center S. Pac. Occas. Pap. 5: 53-64.
- Itono, H. & T. Ajisaka. 1984. Taxonomic study of the marine algae from Fiji. Prompt Rep. 1st Scientific Survey of the South Pacific. Rept. 4, Marine Science and Fisheries. Research Center for the South Pacific, Kagoshima University: Institute of Marine Resources, Univ. S. Pacific: 84-85.
- Kapraun, D. F. and W. A. Bowden. 1978. Additions to the benthic marine algal flora of Fiji. Micronesica 14: 199-207.
- Kasahara, H. 1985. Marine green and red algae collected at Viti Levu and Ndravuni Islands of Fiji. M.Ag. Thesis, Kyoto University. 83 pp.
- Kasahara, H. 1988. [In Japanese: description and illustrations of marine Chlorophyceae collected at Viti Levu, Suva, Makuluva and Ovalau, Fiji.] Mimeographed.
- King, R. J. & C. F. Puttock. 1989. Morphology and taxonomy of *Bostrychia* and *Stictosiphonia* (Rhodomelaceae/Rhodophyta). Aust. Syst. Bot. 2: 1-73.
- Kugrens, P. 1982. *Leachiella pacifica* gen. et sp. nov., a new parasitic red alga from Washington and California. Amer. J. Bot. 69: 306-319.

- Littler, D. S. & M. M. Littler. 1990. Reestablishment of the green algal genus *Rhipidosiphon* Montagne (Udoteaceae, Bryopsidales) with a description of *Rhipidosiphon floridensis* sp. nov. Br. Phycol. J. 25: 33–38.
- Luxton, D. M., M. Robertson & M. J. Kindley. 1987. Farming of *Eucheuma* in the South Pacific islands of Fiji. Hydrobiologia 151/152: 359–362.
- MacRaid, G.N. 1978. Marine algae of the Cook and Fiji Islands. In Proc. Intl. Symp. Marine Biogeography and Evolution in the Southern Hemisphere pp. 455–464. Auckland, New Zealand, 17–20 July, 1978. NZ DSIR Information Series 137.
- Morton, J. 1990. The Shore Ecology of the Tropical Pacific. UNESCO, Jakarta. v + 282 + vii pp.
- Okamura, K. 1936. Nippon Kaiso-shi. (Description of Japanese algae). 964 pp. Tokyo. [In Japanese]
- Olsen, J. L. & J. A. West. 1988. *Ventricaria* (Siphonocladales - Cladophorales complex, Chlorophyta), a new genus for *Valonia ventricosa*. Phycologia 26: 103–108.
- Papenfuss, G. F., K. E. Mshigeni & Y. M. Chiang. 1982. Revision of the red algal genus *Galaxaura* with specific reference to the species occurring in the western Indian Ocean. Bot. Mar. 25: 401–444.
- Prakash, J. 1990. Fiji. In T. Adams & R. Foscarini (eds), Proceedings of the Regional Workshop on Seaweed Culture and Marketing. FAO South Pacific Aquaculture Development Project. iv + 86 pp.
- Ram, V. 1991. Seaweed Farming in Fiji. Univ. S. Pacific, Mar. Stud. Programme Tech. Rep. 1991(2).
- Segi, T. 1951. Systematic study of the genus *Polysiphonia* from Japan and its vicinity. J. Fac. Fish. Pref. Univ. Mie 1(2): 169–272.
- Setchell, W. A. 1924. American Samoa. Part II. Ethnobotany of the Samoans. Carnegie Institute of Washington, Publications, 341. vi + 275 pp, 57 figs., 37 plates.
- Silva, P. C., E. G. Meñez & R. L. Moe. 1987. Catalog of the benthic marine algae of the Philippines. Smithsonian. Contrib. Mar. Sciences 27: iv + 179 pp.
- Singh, A., W. Booth, U. Ray, W. H. Zucker & S. A. Nielsen. 1975. Investigation of marine plants. School of Natural Resources, University of the South Pacific (mimeographed).
- Tsuda, R. T. 1981. Bibliography of marine benthic algae of Micronesia: addendum. Micronesica 17: 213–218.
- Tsuda, R. T. & F. O. Wray. 1977. Bibliography of marine benthic algae in Micronesia. Micronesica 13: 85–120.
- Womersley, H. B. S. & A. Bailey. 1970. Marine algae of the Solomon Islands. Phil. Trans. Roy. Soc. London B. Biological Series 259: 257–352.

Index to Genera

Acanthophora	65	Ectocarpus	53	Monostroma	47
Acetabularia	52	Enteromorpha	47	Murrayella	66
<i>Acrochaetium</i>	56	Entocladia	46	Neogoniolithon	60
Actinotrichia	56	Erythrocolon	62	Neomeris	53
Amansia	65	<i>Erythrocytis</i>	63	Neurymenia	66
Amphiroa	59	Erythrotrichia	55	Padina	54
Arthrocardia	59	Eucheuma	62	Peyssonnelia	59
Asparagopsis	56	Feldmannia	53	Plocamium	62
Audouinella	56	Fosliella	59	Polysiphonia	66
Avrainvillea	51	Galaxaura	56	Porolithon	60
Bangiopsis	55	<i>Gayralia</i>	47	Portieria	60
Boergesenia	48	Gelidiella	57	Pseudochlorodesmis	52
Boodlea	48	Gelidiopsis	60	Pterocladia	58
Bornetella	52	Gelidium	58	Pterothamnion	64
Bostrychia	65	<i>Goniolithon</i>	60	Ralfsia	53
Botryocladia	62	Goniotrichopsis	56	Rhipidosiphon	52
Brachytrichia	46	<i>Goniotrichum</i>	56	Rhizoclonium	48
Bryopsis	49	Gracilaria	61	Rhodolachne	67
Callophycus	62	Grateloupia	58	Sargassum	55
Caloglossa	64	Griffithsia	63	Spermothamnion	64
Calothrix	46	Halimeda	50	Sphacelaria	53
Carpopeltis	58	Haloplegma	63	Spirulina	46
Caulerpa	49	Haylmenia	58	Spyridia	64
Centroceras	63	Herposiphonia	65	Stictosiphonia	67
Ceramium	63	Heteroderma	59	Struvea	48
Chaetomorpha	47	Heterosiphonia	64	Stylonema	56
Champia	62	Hormothamnium	45	Symploca	46
Cheilosporum	59	Hydroclathrus	55	Taenioma	64
Chlorodesmis	52	Hydrolithon	59	Thysanocladia	62
Chondria	65	Hypnea	61	Titanophora	62
<i>Chondrococcus</i>	60	Hypoglossum	64	Tolypiocladia	67
<i>Chylocladia</i>	63	Jania	60	Tolypothrix	46
Cladophora	48	Laurencia	65	Tricleocarpa	57
Cladophoropsis	48	Leachiella	66	Turbinaria	55
Codium	50	Leveillea	66	Tydemannia	52
Colpomenia	54	Liagora	58	Udotea	52
Crouania	63	Lithophyllum	60	Ulva	47
Cystoseira	55	Lithothamnion	60	Valonia	48
Dasya	64	Lobophora	54	Valoniopsis	49
Dermatolithon	59	Lophosiphonia	66	Vanvoorstia	64
Dictyopteris	53	Lyngbya	46	Ventricaria	49
Dictyosphaeria	48	<i>Melobesia</i>	59	Wrangelia	64
Dictyota	54	Microchaete	46	Wurdemannia	67
Dilophus	54	Microcoleus	46	Yamadaella	58
<i>Echinocaulon</i>	61	Microdictyon	47		