

## NOTE

### Notes and Distribution Records for the Marine Algae of Fiji

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**Abstract**—Floristic investigations of the marine algae of the Fijian archipelago are based on collections made in August 1980, August 1981 and February 1982. Numerous new distribution records are described, including representatives of Cyanophyta (11 species), Chlorophyta (15 species or infraspecific taxa), Phaeophyta (12 species) and Rhodophyta (53 species). Most of these records are for species that are widespread throughout the tropical Indo-Pacific region (e.g. *Brachytrichia quoyi* and *Leveillea jungermannioides*) and were previously recorded from Micronesia and/or New Caledonia. *Leachiella* sp. and *Goniotrichopsis sublittoralis* are apparently disjunct populations from western North America. The new records increase the known marine algal flora of Fiji about 45% to about 269 species and infraspecific taxa.

The marine algal flora of Fiji is poorly known. Chapman (1971) summarized early work and presented numerous new records, and he later published a smaller list of additional records (Chapman 1977). Kapraun & Bowden (1978) also published a list of floristic records for Fiji, raising the species list to about 175. MacRaidl (1979) summarized the early history of algal collecting in Fiji and discussed some biogeographic and ecological problems. In this paper we present the results of floristic studies based on three collecting trips carried out from 1980–1982. New records include species of Cyanophyta, Chlorophyta, Phaeophyta and Rhodophyta. These taxa are listed below, and for each species, comments are provided on previously known distributions, particularly in the tropical Pacific. The flora is then compared with that in several other island archipelagos in the tropical western and central Pacific including the Solomon Islands, New Caledonia, Micronesia, and French Polynesia.

Algal collections were made on three trips carried out in August 1980 (R. F. and C. Scagel), August 1981 (D. and D. Garbary) and February 1982 (S. Villeneuve). The collection sites are designated S1 (Scagel & Scagel), G1-G7 (Garbary & Garbary) and V1-V15 (Villeneuve) (Table 1).

Plants were fixed in 5% formalin in seawater as soon as possible after collection, and stored for later mounting and identification. Voucher specimens are deposited in the herbarium at the University of British Columbia (UBC), and some duplicates in the herbarium at St. Francis Xavier University. Where possible, nomenclature follows Silva et al. (1987).

For each species the local distributions are given along with previously known distributions for each alga. Literature citations are not meant to be comprehensive, but rather representative.

The records reported in Table 2 increase the known marine algal flora of Fiji by about 45% to almost 270 species and infraspecific taxa. Most of the species we report are widely distributed throughout the tropical, western and central Pacific Ocean, and their occurrence in Fiji represents part of a pantropical element in geographically disjunct areas. The ease with which these records were found

Table 1. Site designations, locations, dates and habitats for algal collections.

Site	Location	Date	Habitat
S1	Paradise Point, Korolevu, Viti Levu	July 24-30, 1980	coral reef
G1	Bau, Viti Levu	Aug. 3, 1981	estuary and mud flats in mangrove
G2	Nam Vaimada, Viti Levu	Aug. 4, 1981	coral reef
G3	Lautoka, Viti Levu	Aug. 5, 1981	harbor and mud flats;
G4	Regent Hotel, Nandi, Viti Levu	Aug. 6, 1981	sand and coral reef
G5	Sea Shell Resort, Viti Levu	Aug. 5, 1981	sand flats and coral
G6	Plantation Resort and Club Nastos Mamanutha Islands	Aug. 10, 1981	coral reef and intertidal rocks
G7	near Korolevu, Viti Levu	Aug. 12, 1981	coral reef
V1	Nana-nu-i-ra	Feb. 1982	sand beach and coral reef
V2	St. John's College, Ovalau	Feb. 1982	shore of dead coral and rocks
V3	Rukuruku, Ovalau	Feb. 1982	sand beach and coral
V4	Cathaway Hotel, Taveuni Island	Feb. 1982	dead coral reef
V5	Koro Levu, off Taveuni	Feb. 1982	sand beach, coral reef
V6	channel between Koro Levu and Taveuni	Feb. 1982	dead coral reef
V7	Prince Charles Beach, Taveuni, Island	Feb. 1982	sand beach and rocks
V8	Namale Plantation, Vanua Levu	Feb. 1982	dead coral reef
V9	1.5 km off Vanua Levu	Feb. 1982	coral reef
V10	Beachcomber Resort, off Lautoka	Feb. 1982	sand and coral
V11	Nanuya-Lailai, Yasawa Islands	Feb. 1982	sand beach and coral
V12	Yasawa-i-rara, Yasawa Islands	Feb. 1982	sand beach and coral
V13	Sawa-i-lau, Yasawa Islands	Feb. 1982	sand beach and coral, in caves and rocks
V14	Naukathura, Yasawa Islands	Feb. 1982	sand beach and coral
V15	Regent Hotel, Nandi	Feb. 1982	sand beach

Table 2. New records of Cyanophyta, Chlorophyta, Phaeophyta and Rhodophyta from Fiji. For each species the local distributions are given along with previously known distributions for each alga. Literature citations are not meant to be comprehensive, but rather representative.

Species	Fijian Records	Previous Distribution	References/Comment
<b>CYANOPHYTA</b>			
<i>Brachytrichia quoyi</i> (C.Ag.) Born. et Flah.	S1	Cosmopolitan French Polynesia	Drouet 1981 Payri & Meinesz 1985
<i>Calothrix crustacea</i> Thur.	virtually all sites	Cosmopolitan French Polynesia	Drouet 1981 Payri & Meinesz 1985
<i>Hormothamnion solutum</i> Born et Grun.	G2, V11	Micronesia, Vietnam, Cosmopolitan	Dawson 1954
<i>Lyngbya confervoides</i> C. Ag.	G2, V5, V8, V10, V12	Marshall Islands Micronesia French Polynesia	Dawson 1957 Tsuda & Wray 1977 Payri & Meinesz 1985
<i>Lyngbya lutea</i> (C. Ag.) Ares.	V8	Micronesia, French Polynesia, Cosmopolitan	Tsuda & Wray 1977 Payri & Meinesz 1985
<i>Lyngbya majuscula</i> (Dillw.) Harv.	S1, G5, G7, V5, V8	Similar to <i>L. confervoides</i>	Desikachary 1959
<i>Microcoleus lyngbyaceus</i> (Kütz.) Crouan frat.	V8	Micronesia, cosmopolitan	Tsuda & Wray 1977
<i>Scytonema hofman-bangii</i> C. Ag.	V1	Micronesia, cosmopolitan	Tsuda & Wray 1977
<i>Spirulina subsalsa</i> Oerst.	V8	Marshall Islands, Micronesia, French Polynesia, cosmopolitan	Dawson 1957 Tsuda & Wray 1977 Payri & Meinesz 1985
<i>Symploca muscorum</i> (C. Ag.) Gom.	G7, V4, V5, V11, V13	Micronesia, cosmopolitan	Tsuda & Wray 1977
<i>Tolypothrix byssoidea</i> (Berk.) Kirch.	V11	Micronesia, French Polynesia	Tsuda & Wray 1977 Payri & Meinesz 1985

Table 2. Continued

Species	Fijian Records	Previous Distribution	References/Comment
<b>CHLOROPHYTA</b>			
<i>Acetabularia clavata</i> Yamada	V10	Micronesia, New Caledonia	Tsuda & Wray 1977 Garrigue & Tsuda 1988
<i>Acetabularia dentata</i> Solms-Laubach	V10	Philippines, New Caledonia	Silva et al. 1987 Garrigue & Tsuda 1988
<i>Acetabularia exigua</i> Solms-Laubach	V10, V13	Micronesia New Caledonia	Tsuda & Wray 1977 Garrigue & Tsuda 1988
<i>Acetabularia moebii</i> Solms-Laubach	V8, V10	Micronesia, French Polynesia	Tsuda & Wray 1977 Payri & Meinesz 1985
<i>Acrochaete viridis</i> (Reinke) Nielsen	S1	Widely distributed in Northern Hemisphere	
<i>Bornetella capitata</i> (Harv.) J. Ag.	V10	Japan, Philippines, New Caledonia	Okamura 1907 Taylor 1966 Garrigue & Tsuda 1988
<i>Caulerpa ambigua</i> Okam.	V5	Micronesia, New Caledonia	Tsuda & Wray 1977 Garrigue & Tsuda 1988
<i>Caulerpa webbiana</i> Mont.	S1	Fiji, New Caledonia	Payri & Meinesz 1985 Garrigue & Tsuda 1988
<i>Chlorodesmis hildebrandii</i> Gepp et Gepp	S1	Indo-Pacific	Ducker 1967 Tsuda & Wray 1977
<i>Cladophora inserta</i> Dickie	V2, V12	Micronesia, French Polynesia	Tsuda & Wray 1977 Payri & Meinesz 1985
<i>Halimeda minima</i> Taylor Colinv.	S1, G5, V1, V3, V4, V8, V11, V13	Pacific Ocean	Hillis-Collinvaux 1980
<i>Halimeda renschii</i> Hauck	V11	Indo-Pacific	Hillis-Collinvaux 1980
<i>Halimeda taenicola</i> Taylor	V1	Micronesia, New Caledonia, French Polynesia, Philippines	Tsuda & Wray 1977 Garrigue & Tsuda 1988 Payri & Meinesz 1985 Silva et al. 1987
<i>Pseudochlorodesmis furcellata</i> (Zanard.) Børg.	S1	Micronesia	Tsuda & Wray 1977
<i>Rhipiliopsis</i> sp. <sup>1</sup>	V4	Indo-Pacific	Kraft 1986

Table 2. Continued

Species	Fijian Records	Previous Distribution	References/Comment
<b>PHAEOPHYTA</b>			
<i>Dictyopteris repens</i> (Okam.) Børg.	G7, V6, V10, V13	Pacific Ocean	Allender & Kraft 1983
<i>Dictyota divaricata</i> Lamx.	S1, G7, V4, V5, V10, V13	Tropical and subtropical oceans	Allender & Kraft 1983
<i>Dilophus radicans</i> Okam.	S1, G7, V4, V8, V10	Micronesia	Tsuda & Wray 1977
<i>Feldmannia columellaris</i> (Børg.) Islam	V8	Widely distributed in tropics	Islam 1976
<i>Feldmannia indica</i> (Sond.) Womer. et Bail.	S1, G2, G7, G8, V8, V10	French Polynesia, Micronesia, tropical seas	Payri & Meinesz 1985 Tsuda & Wray 1977
<i>Feldmannia irregularis</i> (Kütz.) Joly	G6, V10, V12	Cosmopolitan in temperate and tropical waters	Clayton 1974
<i>Padina australis</i> Hauck	S1, G5, V1, V2, V10	Western and southern Pacific, eastern Australia	Allender & Kraft 1983
<i>Ralfsia expansa</i> (J.Ag.) J.Ag.	V8	Micronesia, French Polynesia	Tsuda & Wray 1977 Payri & Meinesz 1985
<i>Sargassum ilicifolium</i> (Turn.) J.Ag.	S1, V4	Micronesia	Tsuda & Wray 1977
<i>Sargassum polycystum</i> C.Ag.	S1, V4	Micronesia	Tsuda & Wray 1977
<i>Sphacelaria furcigera</i> Kütz.	S1, G2, G5, G7, V10, V12	Micronesia, French Polynesia, cosmopolitan	Payri & Meinesz 1985
<i>Sphacelaria novae-hollandiae</i> Sonder	S1, G7, V12	Micronesia tropical Pacific	Tsuda & Wray 1977
<b>RHODOPHYTA</b>			
<i>Amphiroa anceps</i> (Lamx.) Dcne.	V8	Norfolk Islands, Philippines	Chapman 1977 Silva et al. 1987
<i>Amphiroa crassa</i> Lamx.	S1, V5, V8		
<i>Amphiroa fragilissima</i> (L.) Lamx.	S1, G2, G5, V5, V10	Micronesia, French Polynesia	Tsuda & Wray 1977 Payri & Meinesz 1985
<i>Anotrichium tenue</i> (C.Ag.) Näg. = <i>Griffithsia tenuis</i> C.Ag.	G7	Micronesia, French Polynesia, Philippines	Tsuda & Wray 1977 Payri & Meinesz 1985 Silva et al. 1987
<i>Arthrocardia</i> sp. <sup>2</sup>	S1	Australia, Indo-Pacific South Atlantic	Womersley & Johansen 1988

Table 2. Continued

Species	Fijian Records	Previous Distribution	References/Comment
<i>Audouinella microscopica</i> (Näg.) Woelk.	S1, G2, G6, V10, V13	Cosmopolitan	Garbary et al. 1982
<i>Audouinella thuretii</i> (Born.) Woelk.	S1, G2, G7, V10, V12	Cosmopolitan	Garbary et al. 1982
<i>Bostrichia binderi</i> Harv.	V10, V13	Micronesia, New Caledonia, tropical seas	Tsuda & Wray 1977 Garrigue & Tsuda 1988
<i>Carpopeltis affinis</i> (Harv.) Okam.	S1, V8	Philippines	Silva et al. 1987
<i>Carpopeltis maillardii</i> (Mont. ex. Mill.) Chiang	S1	Tanzania Philippines	Jaasund 1976 Silva et al. 1987
<i>Centroceros apiculatum</i> Yamada	V8	Indo-Pacific	Gallagher & Humm 1983
<i>Centroceros minutum</i> Yamada	V8	Indo-Pacific	Gallagher & Humm 1983
<i>Ceramium camoui</i> Dawson	V13	Micronesia	Tsuda & Wray 1977
<i>Ceramium clarionense</i> Setchell	V5	Micronesia	Tsuda & Wray 1977
<i>Ceramium gracillimum</i> var. <i>byssoideum</i> (Harv.) Feld.-Maz.	S1, G6, G7, V5, V10, V12, V13, V14	Micronesia, tropical and subtropical waters	Tsuda & Wray 1977
<i>Ceramium huysmansii</i> Weber-van Bosse	G2, V8, V13	Micronesia, Indo-Pacific	Tsuda & Wray 1977
<i>Ceramium mazatlanse</i> Dawson	V14	Micronesia	Tsuda & Wray 1977
<i>Ceramium serpens</i> Setch. et Gard.	G2	Marshall Islands, Baja California	Dawson 1962
<i>Ceramium</i> sp. <sup>3</sup>	V13		
<i>Chondria armata</i> (Kütz.) Okam.	S1	New Caledonia, Japan, Solomon Islands, Philippines	Garrigue & Tsuda 1988 Okamura 1907 Womersley & Bailey 1970 Silva et al. 1987
<i>Chondria dasyphylla</i> (Woodw.) C. Ag.	S1, G2	New Caledonia, tropical and temperate waters	Garrigue & Tsuda 1988 Gordon-Mills 1987
<i>Chondria minutula</i> Weber-van Bosse	V2, V4, V12	Micronesia, Australia	Tsuda & Wray 1977 Cribb 1983
<i>Crouania minutissima</i> Yamada	S1, G2, V14	Micronesia	Tsuda & Wray 1977
<i>Dasya</i> sp.	G2	Temperate and tropical seas	Insufficient material for specific determination
<i>Erythrotrichia carnea</i> (Dillw.) J. Ag.	G2, G6, V10, V13, V14	Micronesia, cosmopolitan	Tsuda & Wray 1977

Table 2. Continued

Species	Fijian Records	Previous Distribution	References/Comment
<i>Eucheuma</i> sp. <sup>4</sup>	S1	Tropical seas	
" <i>Falkenbergia hillebrandii</i> (Born.) Falk" <sup>5</sup>	S1, V4, V5, V12	Tropical seas	
<i>Galaxaura filamentosa</i> Chou	V3, V14	Micronesia	Tsuda & Wray 1977
<i>Goniotrichopsis sublittoralis</i> Smith	G2	Western North America	Garbary et al. 1980
<i>Goniotrichum alsidii</i> (Zanard.) Howe	S1, G2, G5, V10, V12	Cosmopolitan	Garbary et al. 1980
<i>Griffithsia metcalfii</i> Tseng	S1, V12	Micronesia	Tsuda & Wray 1977
<i>Griffithsia ovalis</i> Harv.	V5	Micronesia	Tsuda & Wray 1977
<i>Herposiphonia secunda</i> (C.Ag.) Ambron f. <i>tenella</i> (C.Ag.) Wynne	V10, V12, V13	Micronesia, French Polynesia; tropical seas	Tsuda & Wray 1977 Payri & Meinesz 1985
<i>Herposiphonia subdisticha</i> Okam.	S1, G2	Fiji, tropical seas	Hollenberg (1968b)
<i>Heterosiphonia wurdmannii</i> (Bail.) Falk.	V4, V5, V12	Micronesia	Tsuda & Wray 1977
<i>Hypoglossum minimum</i> Yamada	V5	Micronesia	Tsuda & Wray 1977
<i>Jania adhaerens</i> Lamx.	G2, V10, V12	French Polynesia, New Caledonia, Micronesia	Payri & Meinesz 1985 Garrigue & Tsuda 1988 Tsuda & Wray 1977
<i>Jania capillacea</i> Harv.	V8	Micronesia, tropical seas	Tsuda & Wray 1977
<i>Jania ungulata</i> Yendo	G7	Micronesia	Tsuda & Wray 1977
<i>Laurencia cartilaginea</i> Yamada	V2	Micronesia	Tsuda & Wray 1977
<i>Laurencia corymbosa</i> J.Ag.	V14	Japan, Vietnam	Dawson 1954
<i>Laurencia paniculata</i> (C.Ag.) Joly	G5, G7, V2, V5, V14	New Caledonia, Micronesia	Garrigue & Tsuda 1988 Tsuda & Wray 1977
<i>Leachiella</i> ? sp. <sup>6</sup>	G2	Western North America	Kugrens 1982
<i>Leveillea jungermanioides</i> (Mart. et Herr.) Harv.	S1, G5, V10	New Caledonia, Micronesia, tropical seas	Garrigue & Tsuda 1988 Tsuda & Wray 1977
<i>Polysiphonia herpa</i> Hollenb.	V5, V13	Micronesia, Hawaii	Hollenberg 1968a
<i>Polysiphonia howei</i> Hollnb.	V13	Micronesia	Tsuda & Wray 1977
<i>Polysiphonia sphaerocarpa</i> Børg.	G5	Micronesia, tropical seas	Tsuda & Wray 1977 Hollenberg 1968a

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Table 2. Continued

Species	Fijian Records	Previous Distribution	References/Comment
<i>Polysiphonia tongatensis</i> Harv.	French Polynesia, Micronesia	Payri & Meinesz 1985 Tsuda & Wray 1977	
<i>Pterothamnion plumula</i> (Ell.) Näg.	G2	Japan	Itoni 1977 (as <i>Antithamnion</i> )
<i>Spermothamnion</i> sp. <sup>7</sup>	G2, V13	cosmopolitan	
<i>Taenioma perpusillum</i> (J.Ag.) J. Ag.	V10	Micronesia, tropical seas	Tsuda & Wray 1977
<i>Tolypocladia glomerulata</i> (C.Ag.) Schmitz	G1, V4, V5	Micronesia, Philippines	Tsuda & Wray 1977 Silva et al. 1987
<i>Wrangelia argus</i> (Mont.) Mont.	S1, V5, V12	New Caledonia, Micronesia	Garrigue & Tsuda 1988 Tsuda & Wray 1977

<sup>1</sup> *Rhipiliopsis* sp. This is the first record of *Rhipiliopsis* from Fiji. These plants may represent a new species, but insufficient material was present for a full evaluation.

<sup>2</sup> *Arthrocardia* sp. First record of genus from Fiji. Insufficient material available for species identification.

<sup>3</sup> *Ceramium* sp. This collection included spermatangial, tetrasporangial, and cystocarpic plants and was epiphytic on *Gelidiopsis*. Plants resembled *Ceramium maryae* Weber-van Bosse but did not have a decumbent habit. Plants may represent a new species.

<sup>4</sup> *Eucheuma* sp. First record of genus from Fiji. Insufficient material available for species identification.

<sup>5</sup> Sporophytic stage of *Asparagopsis taxiformis* (Del.) Trevisan that was reported previously from Fiji by Chapman (1977).

<sup>6</sup> *Leachiella* ? sp. This genus was previously known only from western North America (Kugrens 1982). Our collection may also represent *Choreocolax*, but insufficient material was available for critical examination. Neither *Leachiella* nor *Choreocolax* has been previously reported from any of the floras being compared to the Fijian one in this paper (i.e. new Caledonia, French Polynesia, Solomon Islands, Philippines). The single collection from Fiji was parasitic on *Polysiphonia scopulorum* and had male, cystocarpic and tetrasporophytic plants.

<sup>7</sup> *Spermothamnion* sp. First collection from Fiji. Insufficient material available for species identification.

in intertidal and shallow subtidal habitats by simply wading or snorkeling from shore suggests that the flora of Fiji is still poorly known, and that more extensive collecting at a wider variety of sites will uncover numerous additional species. As previously emphasized by MacRaild (1979), detailed collections spanning several seasons should certainly uncover numerous new records. Many of our collection sites were adjacent to resort complexes and/or human habitation. The effects of human disturbance on algal distribution in Fiji are presently unknown; however, disturbance and organic pollution (even if limited) will likely promote weedy species that are part of a more cosmopolitan element in the flora.

Species lists based on more or less similar floristic investigations are available for a number of island archipelagos in the tropical Pacific Ocean. These include New Caledonia (Garrigue & Tsuda 1988), French Polynesia (Payri & Meinesz 1985), the Solomon Islands (Womersley & Bailey 1970), Micronesia (Tsuda & Wray 1977, Tsuda 1981) and Fiji. Species numbers from these archipelagos for Cyanophyta, Chlorophyta, Phaeophyta and Rhodophyta are shown in Table 3. These floras have not been intensively studied, and further investigations will be necessary before their diversity can be reasonably established. Although it is difficult to utilize preliminary floristic lists in biogeographic analyses with any confidence (Doty 1973, Lewis 1990) such lists do provide a starting point for discussion.

It appears that Fiji has an algal diversity similar to the Solomon Islands where 233 species were recorded from the same four algal divisions (Table 3). Fiji has apparently fewer species than New Caledonia with 336 species of benthic seaweeds (Garrigue & Tsuda 1988); however, this difference may result from collection intensity. French Polynesia (Payri & Meinesz 1985) and New Caledonia

Table 3. Species of marine benthic algae from some tropical island archipelagos in the western and southern Pacific Ocean.

	Solomon Islands	New Caledonia	French Polynesia	Micronesia	Fiji (previous)	Fiji (current)
Cyanophyta	14		111	86	2	13
Chlorophyta	71	130	86	192	59	74
Phaeophyta	27	59	44	58	25	37
Rhodophyta	121	147	105	290	92	145
Total 1	219	336	235	540	176	256
Total 2	233		346	626	178	269
R/B	4.5	2.5	2.4	5.0	3.7	3.9
(R+G)/B	7.1	4.7	4.3	8.3	6.0	5.9

Sources of floristic information as follows: Solomon Islands (Womersley & Bailey 1970), New Caledonia (Garrigue & Tsuda 1988), French Polynesia (Payri & Meinesz 1985), Micronesia (Tsuda & Wray 1977, Tsuda 1981), Fiji (Chapman 1971, 1977; Kapraun & Bowden 1978; this paper). Literature records have not been corrected for synonymies noted by Silva et al. (1987). Total 1 includes only species of red, brown, and green algae; Total 2 also includes blue-green algae. Values for the Feldmann (1937) and Cheney (1977) floristic indices (R/B; (R+C)/B, respectively) are given.

(Garrigue & Tsuda 1988) have been studied in greater detail than Fiji. These island groups have approximately 350 species of marine algae, about 100 more than Fiji. The French Polynesian flora includes a large number of Cyanophyta (111 species), but this extreme diversity of cyanophycean algae in French Polynesia relative to the other floras may have resulted from inclusion of many freshwater species, and the taxonomic concepts utilized. The flora of New Caledonia is apparently particularly rich in Chlorophyta but, as noted by Garrigue & Tsuda (1988), this may have resulted from intense study of this division by one individual.

The Feldmann (1937) and Cheney (1977) floristic indices for the various archipelagos were calculated based on the number of red, brown and green algal species in a particular flora (Table 3). Values of over 4 (Feldmann Index) and 6 (Cheney Index) are supposedly indicative of a tropical flora (see Druehl 1981 and Lewis 1990 for reviews and further analyses). Some of the differences in species diversity discussed above are reflected in differences in the floristic indices for the various archipelagos. Values for both indices for New Caledonia and French Polynesia are very low for tropical floras, suggesting that large numbers of red algae are unreported. If the values for the Solomon Islands and Micronesia (4.5, 7.1 and 4.9 and 8.3) are typical of these tropical archipelagos, about 100 additional species of red algae might be expected from New Caledonia and French Polynesia. Lewis (1990) showed that for the Philippines, the Cheney Index changed dramatically as new species were reported. But despite a 45% change in the known flora for Fiji, the floristic indices scarcely changed.

The presence of numerous new species apparently endemic to Lord Howe Island (e.g., Gabrielson & Kraft 1984) suggests that similar, critical studies from Fiji will also result in the discovery of additional new taxa in subtidal communities which have remained relatively unexplored in Fiji. Even within shallow water species, specimens of *Rhipiliopsis*, *Ceramium* and *Herposiphonia* were found that could not be placed in described taxa and may represent new species. The discovery of a *Leachiella* (*Chloreocolax*?) species on *Polysiphonia* is of interest since neither of these parasite genera have been reported from any of the island groups compared here with the Fijian flora. These collections were not sufficient, however, to provide a basis for proposing new taxa.

#### Acknowledgements

We would like to thank Caroline Scagel and Dolna Garbary for assistance with field work, and Dr. H. W. Johansen for identifying specimens of Corallinaceae. This work was supported by Natural Sciences and Engineering Research Council of Canada grants A2931 to D. G. and A4471 to R. F. S.

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