

## A Checklist of the Marine Plants from the Canary Islands (Central Eastern Atlantic Ocean)

R. J. Haroun<sup>a\*</sup>, M. C. Gil-Rodríguez<sup>b</sup>, J. Díaz de Castro<sup>a</sup> and W. F. Prud'homme van Reine<sup>c</sup>

<sup>a</sup> Department of Biology, Faculty of Marine Sciences, University of Las Palmas de Gran Canaria, 35017 Las Palmas, Spain

<sup>b</sup> Department of Plant Biology, Universidad of La Laguna, 38071 La Laguna, Tenerife, Spain

<sup>c</sup> Universiteit Leiden Branch, Nationaal Herbarium Nederland, P.O. 9514, 2300 RA Leiden, The Netherlands

\* Corresponding author: ricardo.haroun@biologia.ulpgc.es

Since the last century, the richness of the Canary Islands marine flora has attracted many botanists. Børgesen's seminal papers have been the main reference source for anyone interested in this flora. The first checklist of the marine macroalgae from the Canary Islands was published by Gil-Rodríguez and Afonso-Carrillo (1980a) with 434 macroalgal species being listed together with some dubious records. In recent years, the research efforts of local phycologists and the output of some scientific expeditions have yielded some new species and a large number of new records to the Canarian seaweed flora. The aim of this contribution is to compile an up-to-date catalogue of the marine plants for the Canary Islands (including cyanobacteria, macroalgae, seagrasses and fungi). The review of all published records of these marine plants takes into account the present taxonomic status and nomenclatural changes of the taxa concerned and rejects old and dubious records. After a careful review of the pertinent references and revision of live and preserved material, only valid records published before July 2001 are included in this checklist. Besides, each species is quoted for the islands in an east-west fashion to illustrate the distributional pattern of the species concerned. The marine flora of the Canary Islands is composed of 711 species, which are distributed as follows: 59 Cyanophycota, 385 Rhodophycota, 125 Chromophycota, 117 Chlorophycota, 3 seagrasses and 22 fungi. Compared to nearby regions, the Canarian archipelago comprises a much larger number of species. This high diversity appears to be the result of the combined effects of its geographic location, paleoclimatic events and the prevailing oceanographic conditions.

### Introduction

Since the time of Bory de Saint-Vincent (1803), the marine algae of the Canary Islands have attracted many other botanists. Among them, the work of Montagne (1840) is noteworthy and particularly the publications of Børgesen resulting from his field collections in Tenerife and Gran Canaria Islands (1925–30) can be considered as milestones in Canarian phycological history. Børgesen's papers have been the main reference source for anyone interested in this marine flora. However, the knowledge of Canarian seaweeds has increased, particularly during the last two decades. The first checklist of the marine macroalgae from the Canary Islands was compiled by Gil-Rodríguez and Afonso-Carrillo (1980a), who reported 434 species of macroalgae (including 24 Cyanophyta) and some dubious records. In recent years, the combined research efforts of local phycologists and the output of some scientific expeditions, such as CANCAP Expeditions in the 1980s and the Heincke Expedition (Haroun *et al.* 1993, Prud'homme van Reine 1998), have yielded a large number of new records and several new species to the marine flora (Gil-Rodríguez and Haroun 1992, Nizamuddin 1995, Tabares *et al.* 1997, Afonso-Carrillo *et al.* 1998, Prud'homme van Reine 1998). Most of this

information has been used by Afonso-Carrillo and Sansón (1999) in their analytical key for the Canarian marine plants. Nevertheless, that publication does not compile the distributional pattern of the species quoted and, especially, several recent new records are not quoted (i. e., Sansón *et al.* 2002).

The aim of this contribution is to present an up-to-date catalogue of the marine plants of the Canary Islands (*sensu lato*, including cyanobacteria, macroalgae, seagrasses and fungi). A review of all published records of these marine plants takes account of the present taxonomic status and nomenclatural changes of the taxa concerned, and rejects old and dubious records. However, this list does not pretend to be a definitive catalogue, as new records continue to appear, especially from poorly studied habitats such as the exposed northern coasts or subtidal environments.

Aside from its intrinsic floristic value, this new checklist has two meaningful applications. On the one hand, detailed biogeographical studies of a certain marine area (such as the rich Macaronesian Archipelagos) are only possible when reliable lists of species are available. A better understanding of the relationship of the marine flora from the Canary Islands with those of nearby coastal areas such as the Warm Temperate Eastern Atlantic coasts, the Mediterranean

Sea, the Tropical Western African coasts or the Caribbean Sea will be enhanced. On the other hand, future conservation efforts, through such a powerful management tool as Coastal Zone Management Programs, should take account of the high biodiversity of the marine biota (both flora and fauna) which is found on specific Canarian islands as well as individual sections of coastlines.

## Material and Methods

The systematic arrangement of the macroalgal species, including the ordinal and lower classification schemes, mainly follows Silva *et al.* (1996). Also, we have adopted the new division (phylum) names Cyanophycota, Rhodophycota, Chromophycota (which includes the Phaeophyceae) and Chlorophycota as recommended by these authors. In some cases, the nomenclatural status suggested by Wynne's (1998) recent revision of the tropical and subtropical marine flora of the western Atlantic is adopted. In addition, new taxonomic data for specific taxa, such as Chroococcales (Komárek and Anagnostidis 1995, 1999), Oscillatoriales (Anagnostidis and Komárek 1988), Stigonematales (Anagnostidis and Komárek 1990), *Dictyota* (Hörnig *et al.* 1992a,b, 1993), *Nemacystus* (Jong and Prud'homme van Reine 1997), *Liagora* (Abbott 1990a,b, Kvaternik and Afonso-Carrillo 1995), the *Laurencia* complex including *Osmundea/Chondrophycus* (Nam *et al.* 1994, Nam 1999, Nam *et al.* 2000), *Neosiphonia* (Kim and Lee 1999) and *Eupogodon* (Jong *et al.* 1997) are also incorporated. Many taxa have annotations added to present our view of its systematic position. In accordance with Guiry (1997), descriptive, rather than typified class names are used (e.g., Phaeophyceae instead of Fucophyceae). The marine phanerogams are arranged following Thorne (1992) and the marine fungi species (including the lichens) are listed using the systematic arrangement of Hawksworth *et al.* (1995). Genera and species appear alphabetically within their assigned family or genera respectively. Although Brummitt and Powell's (1992) compilation of names of authors is followed, nomenclatural authorities are given in full, mainly due to the quite diverse abbreviation systems in use by phycologists.

After a careful review of the pertinent references (up to July 2001) and revision of live/preserved material, only valid records are compiled in this checklist. Literature used to compile this checklist include, among others, Afonso-Carrillo (1980, 1983 and 1988), Afonso-Carrillo and Gil-Rodríguez (1982), Afonso-Carrillo *et al.* (1983), Audiffred (1984), Viera-Rodríguez *et al.* (1987), Morales-Ayala and Viera-Rodríguez (1988), Sansón *et al.* (1991), Ballesteros *et al.* (1992), Gil-Rodríguez and Haroun (1992 and 1993), Haroun *et al.* (1993), Sansón and Reyes (1994 and 1995), Betancor Villalba *et al.* (1995), González-Ruíz *et al.* (1995), Pedersen and Kristiansen

(1995), Martín *et al.* (1996), Guadalupe-González *et al.* (1996), Tabares *et al.* (1997), Prud'homme van Reine (1998), Afonso-Carrillo *et al.* (1998), Rojas-González and Afonso-Carrillo (2000c) and Sansón *et al.* (2002). All records were critically reviewed and herbarium specimens examined where appropriate. Most of the specimens are deposited in BCM, TFC and L; with some older collections in C, PC, PAD and W. Herbarium abbreviations are from the "Index Herbariorum" (Holmgren *et al.* 1990). Some records need to be confirmed by further sampling; those species are included in a separate list (taxa inquirenda) until new information is available to reject or confirm their presence in the Canarian coasts. Misidentifications and dubious records are omitted.

## Results

A list of marine plants reported for the Canary Islands is given in Table I, together with an indication, when possible, of the specific island. The symbol + denotes that the species is present somewhere on the Canary Islands, but its precise location is unknown. The records for La Graciosa, Montaña Clara and Alegranza (Islets located north of Lanzarote Island) are compiled together with those of Lanzarote Island. In some cases, annotations are given with the species name to clarify the taxonomic status of the specific taxon or to provide more information about the species concerned in the Canary Islands.

## Discussion

Compared to neighbouring marine floras, the Canary Islands have a much larger number of marine species (South and Tittley 1986, Lawson and John 1987, Ribera *et al.* 1992, Gallardo *et al.* 1993, Nielsen *et al.* 1995, Guiry 1997), the only exception being the tropical and subtropical western Atlantic flora (Wynne 1998). The high number of marine species appears to be the result of the combined effects of the geographical position of the archipelago, its prevailing oceanographic conditions and paleoclimatic events (Prud'homme van Reine and van den Hoek 1990, Silva 1992, Prud'homme van Reine 1998). However, the present list cannot be considered as a definitive catalogue as new taxa will be added as subtidal environments are better sampled (Ballesteros *et al.* 1992, Haroun *et al.* 1993, Sansón *et al.* 2002) or detailed studies are carried out on certain groups (e.g., Ceramiaceae by Sansón and Reyes 1994, 1995, and Rhodomelaceae by Rojas-González *et al.* 1994, Rojas-González and Afonso-Carrillo 2000a,b).

The Canary Islands have a rich flora with co-occurrence of floristic elements from the Mediterranean Sea, the Tropical Western Atlantic Ocean (mainly the Caribbean Sea) and the Warm Temperate North Atlantic coasts (both European and American coasts).

Table I. List of marine plants and their distribution in the Canary Islands (+ = Canaries, L = Lanzarote I., F = Fuerteventura I., C = Gran Canaria I., T = Tenerife I., G=Gomera I., P = La Palma I. and H = El Hierro I.)

	+	L	F	C	T	G	P	H
<b>CYANOPHYCOTA</b>								
<b>CYANOPHYCEAE</b>								
<b>Chroococcales (1)</b>								
Chroococcaceae Nägeli								
<i>Chroococcus</i> Nägeli								
<i>C. turgidus</i> (Kützing) Nägeli (2)								
			F	C				
Dermocarpellaceae Ginsburg-Ardré ex T. A. Christensen								
<i>Cyanocystis</i> Borzi								
<i>C. minimus</i> (Geitler) Komarek et Anagnostidis								
				C				
<i>C. olivaceus</i> (Reinsch) Komarek et Anagnostidis								
				C	T			
<i>Dermocarpella</i> Lemmermann								
<i>D. prasina</i> (Reinsch) Komarek et Anagnostidis								
	L			C	T			
Entophysalidaceae Geitler								
<i>Entophysalis</i> Kützing								
<i>E. conferta</i> (Kützing) F. E. Drouet et W. A. Daily								
			F	C	T			
<i>E. deusta</i> (Meneghini) F. E. Drouet et W. A. Daily								
	L		F	C	T	G		H
Hydrococcaceae Kützing								
<i>Placoma</i> Schousboe ex Bornet et Thuret								
<i>P. vesiculosus</i> Schousboe ex Bornet et Flahault								
					T			
Hyellaceae Borzi								
<i>Hyella</i> Bornet et Flahault								
<i>H. caespitosa</i> Bornet et Flahault								
	L							
<i>Pleurocapsa</i> Thuret								
<i>P. fuliginosa</i> Hauck								
					T			
Merismopediaceae Elenkin								
<i>Aphanocapsa</i> Nägeli								
<i>A. littoralis</i> Hansgirg (3)								
				C				
<i>A. marina</i> Hansgirg (4)								
	L			C				
<i>A. salina</i> Woronichin								
				C				
Xenococcaceae Geitler								
<i>Xenococcus</i> Thuret								
<i>X. acervatus</i> Setchell et N. L. Gardner								
				C	T			
<b>Oscillatoriales</b>								
Schizotrichaceae Elenkin								
<i>Schizothrix</i> Kützing ex Gomont								
<i>S. arenaria</i> (Berkeley) Gomont								
			F	C	T			
<i>S. calcicola</i> (C. Agardh) Gomont								
	L		F	C	T			
<i>S. mexicana</i> Gomont								
	L		F	C	T			
<i>S. rubella</i> Gomont								
					T			
Phormidiaceae Anagnostidis et Komárek								
<i>Arthrospira</i> Stizenberger ex Gomont								
<i>A. neapolitana</i> (Kützing ex Gomont) F. E. Drouet								
	L				T			H
<i>Hydrocoleum</i> Kützing ex Gomont								
<i>H. glutinosum</i> (C. Agardh) Gomont								
				C				
<i>Microcoleus</i> Desmazières ex Gomont								
<i>M. chthonoplastes</i> (Hornemann) Gomont								
				C	T			
<i>M. codii</i> Frémy								
				C	T			
<i>M. wuiteri</i> Frémy								
				C	T			
<i>Phormidium</i> Kützing ex Gomont								
<i>P. breve</i> (Kützing ex Gomont) Anagnostidis et Komárek								
				C				
<i>P. corallinae</i> (Kützing ex Gomont) Anagnostidis et Komárek								
				C	T			
<i>P. corium</i> (C. Agardh) Gomont								
					T			
<i>P. nigroviride</i> (Thwaites ex Gomont) Anagnostidis et Komárek								
				C	T			
<i>P. submembranaceum</i> Gomont								
			F		T			
<i>P. subuliforme</i> (Thwaites ex Gomont) Anagnostidis et Komárek								
				C				
<i>Porphyrosiphon</i> Kützing ex Gomont								
<i>P. notarisii</i> (Meneghini) Kützing ex Gomont								
	L			C	T			
<i>Spirulina</i> Turpin ex Gomont								

Table I. Continued.

	+	L	F	C	T	G	P	H
<i>S. labyrinthiformis</i> (S. G. Gmelin) Gomont				C				
<i>S. subsalsa</i> Oersted <i>ex</i> Gomont		L	F	C	T			H
<i>S. subtilissima</i> Kützing <i>ex</i> Gomont				C				
<i>S. tenerrima</i> Kützing <i>ex</i> Gomont				C	T			
<i>Symploca</i> Kützing <i>ex</i> Gomont								
<i>S. hydroides</i> (Harvey) Kützing <i>ex</i> Gomont				C	T			
Oscillatoriaceae (S. F. Gray) Harvey <i>ex</i> Kirchaer								
<i>Blennothrix</i> Kützing <i>ex</i> Gomont								
<i>B. lyngbyacea</i> (Kützing <i>ex</i> Gomont) Anagnostidis <i>et</i> Komárek		L	F	C	T			H
<i>Lyngbya</i> C. Agardh <i>ex</i> Gomont								
<i>L. aestuarii</i> Liebman <i>ex</i> Gomont				C	T			
<i>L. confervoides</i> C. Agardh <i>ex</i> Gomont		L		C	T			
<i>L. lutea</i> (C. Agardh) Gomont		L		C	T			
<i>L. majuscula</i> (Dillwyn) Harvey <i>ex</i> Gomont				C	T			
<i>Oscillatoria</i> Vaucher <i>ex</i> Gomont								
<i>O. margaritifera</i> Kützing <i>ex</i> Gomont				C	T			
<i>O. princeps</i> Vaucher <i>ex</i> Gomont		L						
Homoeotrichaceae Elenkin								
<i>Heteroleibleinia</i> (Geitler) L. Hoffmann								
<i>H. infixata</i> (Frémy) Anagnostidis <i>et</i> Komárek				C	T			
<b>Nostocales</b>								
Microchaetaceae Lemmermann								
<i>Microchaete</i> Thuret <i>ex</i> Bornet <i>et</i> Flahault								
<i>M. vitiensis</i> Askenasy <i>ex</i> Bornet <i>et</i> Flahault				C				
Nostocaceae Eichler								
<i>Anabaena</i> Bory de Saint-Vincent <i>ex</i> Bornet <i>et</i> Flahault								
<i>A. oscillarioides</i> Bory de Saint-Vincent <i>ex</i> Bornet <i>et</i> Flahault		L	F	C	T			
<i>A. torulosa</i> (Carmichael) Lagerheim <i>ex</i> Bornet <i>et</i> Flahault		L		C				
<i>Trichormus</i> (Bornet <i>et</i> Flahault) Komárek <i>et</i> Anagnostidis								
<i>T. variabilis</i> (Kützing <i>ex</i> Bornet <i>et</i> Flahault) Komárek <i>et</i> Anagnostidis		L						
Rivulariaceae (Kützing) Kirchner								
<i>Calothrix</i> C. Agardh <i>ex</i> Bornet <i>et</i> Flahault								
<i>C. aeruginea</i> (Kützing) Thuret <i>ex</i> Bornet <i>et</i> Flahault		L		C	T			
<i>C. confervicola</i> (Dillwyn) C. Agardh <i>ex</i> Bornet <i>et</i> Flahault		L		C	T	G		
<i>C. consociata</i> (Kützing) Bornet <i>et</i> Flahault					T			
<i>C. crustacea</i> Schousboe <i>et</i> Thuret <i>ex</i> Bornet <i>et</i> Flahault		L	F	C	T	G	P	H
<i>C. fusco-violacea</i> P.L. Crouan <i>et</i> H.M. Crouan <i>ex</i> Bornet <i>et</i> Flahault					T			
<i>C. scopulorum</i> (Weber <i>et</i> Mohr) C. Agardh <i>ex</i> Bornet <i>et</i> Flahault				C		G		
<i>Dichothrix</i> Zanardini <i>ex</i> Bornet <i>et</i> Flahault								
<i>D. bornetiana</i> Howe								H
<i>Isactis</i> Thuret <i>ex</i> Bornet <i>et</i> Flahault								
<i>I. plana</i> (Harvey) Thuret <i>ex</i> Bornet <i>et</i> Flahault				C				
<i>Rivularia</i> C. Agardh <i>ex</i> Bornet <i>et</i> Flahault								
<i>R. atra</i> Roth <i>ex</i> Bornet <i>et</i> Flahault				C	T			
<i>R. bullata</i> (Poiret) Berkeley <i>ex</i> Bornet <i>et</i> Flahault		L	F	C	T	G		H
Scytonemataceae (Kützing) Kirchaer								
<i>Scytonema</i> C. Agardh <i>ex</i> Bornet <i>et</i> Flahault								
<i>S. hofmannii</i> C. Agardh <i>ex</i> Bornet <i>et</i> Flahault		L	F		T			H
<b>Stigonematales</b>								
Mastigocladaceae Geitler								
<i>Brachytrichia</i> Zanardini <i>ex</i> Bornet <i>et</i> Flahault								
<i>B. quoyi</i> (C. Agardh) Bornet <i>et</i> Flahault		L	F	C	T	G	P	H
Nostochopsidaceae Geitler								
<i>Mastigocoleus</i> Lagerheim <i>ex</i> Bornet <i>et</i> Flahault								
<i>M. testarum</i> Lagerheim <i>ex</i> Bornet <i>et</i> Flahault		L						

Table I. Continued.

	+	L	F	C	T	G	P	H
<b>RHODOPHYCOTA</b>								
<b>RHODOPHYCEAE</b>								
<b>BANGIOPHYCIDAE</b>								
<b>Porphyridiales</b>								
Porphyridiaceae Kylin <i>ex</i> Skuja								
<i>Chroodactylon</i> Hansgirg								
		L		C	T			
<i>Rhodosorus</i> Geitler								
				C				
<i>Stylonema</i> Reinsch								
	L	F	C	T				H
					T			
<b>Compsogonales</b>								
Erythrotrichiaceae G. M. Smith								
<i>Erythrocladia</i> Rosenvinge								
	+							
<i>Erythrotrichia</i> Areschoug								
			F	C	T			H
<i>Porphyrostromium</i> Trévisan de Saint-Léon								
				C				
				C				
<i>Sahlingia</i> Kornmann								
								H
<b>Bangiales</b>								
Bangiaceae Nägeli								
<i>Bangia</i> Lyngbye								
		L	F	C	T	G		
<i>Porphyra</i> C. Agardh								
	L	F	C	T				
				C	T			
				C				
<b>FLORIDEOPHYCIDAE</b>								
<b>Acrochaetiales</b>								
Acrochaetiaceae Fritsch <i>ex</i> W. R. Taylor								
<i>Acrochaetium</i> Nägeli								
				C	T			
	L			C	T			
					T			
				C				
	L	F			T	G	P	
	L			C			P	
					T			
					T			
	L			C	T			
				C				
	L			C				
	L			C				
	L			C				
<b>Palmariales</b>								
Rhodothamniellaceae G. W. Saunders								
<i>Rhodothamniella</i> Feldmann								
	L	F	C	T	G	P		
<b>Nemaliales</b>								
Galaxauraceae P. G. Parkinson								
<i>Galaxaura</i> J. V. Lamouroux								
					T			
	L	F	C	T	G	P	H	

Table I. Continued.

	+	L	F	C	T	G	P	H
<b>Scinaia</b> Bivona-Bernardi								
<i>S. australis</i> (Setchell) Huisman (6)					T			
<i>S. caribaea</i> (W. R. Taylor) Huisman (6)			F		T			
<i>S. complanata</i> (Collins) Cotton		L	F	C	T			
<i>S. furcellata</i> (Turner) J. Agardh		L	F	C	T	G		
<b>Tricleocarpa</b> Huisman <i>et</i> Borowitzka								
<i>T. cylindrica</i> (J. Ellis <i>et</i> Solander) Huisman <i>et</i> Borowitzka		L	F	C	T		P	
<i>T. fragilis</i> (Linnaeus) Huisman <i>et</i> Townsend		L	F		T	G	P	H
<b>Liagoraceae</b> Kützing								
<b>Ganonema</b> K. C. Fan <i>et</i> Y. C. Wang								
<i>G. farinosa</i> (J. V. Lamouroux) K. C. Fan <i>et</i> Y. C. Wang			F	C	T			H
<i>G. lubrica</i> Afonso-Carrillo, Sansón <i>et</i> Reyes				C	T		P	H
<b>Helminthocladia</b> J. Agardh								
<i>H. agardhiana</i> P. S. Dixon					T			
<i>H. calvadosii</i> (J. V. Lamouroux <i>ex</i> Duby) Setchell		L			T			H
<b>Helminthora</b> J. Agardh								
<i>H. stackhousei</i> (Clemente) Cremandes <i>et</i> Pérez-Cirera	+							
<b>Liagora</b> J. V. Lamouroux								
<i>L. albicans</i> J. V. Lamouroux				C	T			
<i>L. canariensis</i> Børgesen		L	F	C	T	G	P	H
<i>L. ceranoides</i> J. V. Lamouroux		L		C	T			
<i>L. distenta</i> (Mertens <i>ex</i> Roth) J. V. Lamouroux		L	F	C	T	G	P	
<i>L. gymnarthron</i> Børgesen				C				
<i>L. maderensis</i> Kützing								H
<i>L. tetrasporifera</i> Børgesen		L	F	C	T		P	H
<i>L. valida</i> Harvey (7)			F	C	T			H
<i>L. viscida</i> (Forsskål) C. Agardh		L			T			
<b>Nemalion</b> Duby								
<i>N. helminthoides</i> (Vellely) Batters		L		C	T	G	P	
<b>Trichogloeopsis</b> I. A. Abbott <i>et</i> Doty								
<i>T. pedicellata</i> (Howe) I. A. Abbott <i>et</i> Doty							P	H
<b>Gelidiales</b>								
<b>Gelidiaceae</b> Kützing								
<b>Gelidium</b> J. V. Lamouroux								
<i>G. arbuscula</i> Bory de Saint-Vincent <i>ex</i> Børgesen				C	T	G	P	
<i>G. canariense</i> (Grunow) Seoane-Camba <i>ex</i> Haroun, Gil-Rodríguez, Díaz de Castro <i>et</i> Prud'homme van Reine (8)				C	T	G	P	
<i>G. crinale</i> (Turner) Gaillon (9)				C				
<i>G. microdon</i> Kützing (10)				C	T			
<i>G. pusillum</i> (Stackhouse) Le Jolis		L	F	C	T	G	P	H
<i>G. spathulatum</i> (Kützing) Bornet					T			
<i>G. spinosum</i> (S. G. Gmelin) P. Silva								H
<b>Pterocladella</b> Santelices <i>et</i> Hommersand								
<i>P. capillacea</i> (S. G. Gmelin) Santelices <i>et</i> Hommersand		L	F	C	T	G	P	H
<i>P. melanoidea</i> (Schousboe <i>ex</i> Bornet) Santelices <i>et</i> Hommersand					T			
<b>Gelidiellaceae</b> K. C. Fan								
<b>Gelidiella</b> Feldmann <i>et</i> G. Hamel								
<i>G. antipai</i> Celan					T			
<i>G. pannosa</i> (Feldmann) Feldmann <i>et</i> G. Hamel					T			H
<i>G. tinerfensis</i> Seoane-Camba		L			T			
<b>Gracilariales</b>								
<b>Gracilariaceae</b> Nägeli								
<b>Gracilaria</b> Greville								
<i>G. armata</i> (C. Agardh) Greville				C				
<i>G. cervicornis</i> (Turner) J. Agardh (11)				C				
<i>G. confervoides</i> (Linnaeus) Greville (12)		L	F		T			
<i>G. dura</i> (C. Agardh) J. Agardh (13)		L		C				
<i>G. longa</i> Gargiulo, De Masi <i>et</i> Tripodi					T			
<i>G. multipartita</i> (Clemente) Harvey		L			T			

Table I. Continued.

	+	L	F	C	T	G	P	H
<i>G. verrucosa</i> (Hudson) Papenfuss (12)		L		C				
Pterocladophylaceae K. C. Fan <i>et</i> Papenfuss								
<i>Gelidiocolax</i> N. L. Gardner								
<i>G. microsphaericus</i> N. L. Gardner								H
<b>Bonnemaisoniales</b>								
Bonnemaisoniaceae F. Schmitz								
<i>Asparagopsis</i> Montagne								
<i>A. armata</i> Harvey (14)		L	F	C	T	G	P	H
<i>A. taxiformis</i> (Delile) Trevisan de Saint-Léon (14)		L	F	C	T	G	P	H
<i>Bonnemaisonia</i> C. Agardh								
<i>B. hamifera</i> Hariot (15)		L	F	C	T			H
Naccariaceae Kylin								
<i>Naccaria</i> Endlicher								
<i>N. wiggii</i> (Turner) Endlicher			F		T			
<b>Cryptonemiales</b>								
Acrosymphytaceae S. C. Lindstrom								
<i>Acrosymphyton</i> G. Sjöstedt								
<i>A. purpuriferum</i> (J. Agardh) G. Sjöstedt			F		T			H
Dumontiaceae Bory de Saint-Vincent								
<i>Dudresnaya</i> P. L. Crouan <i>et</i> H. M. Crouan								
<i>D. canariensis</i> Tabares, Afonso-Carrillo, Sansón <i>et</i> Reyes					T			
<i>D. crassa</i> Howe (16)	+							
<i>D. verticillata</i> (Withering) Le Jolis		L		C	T		P	H
Gloiosiphoniaceae F. Schmitz								
<i>Atractophora</i> H. L. Crouan <i>et</i> P. M. Crouan								
<i>A. hypnoides</i> P. L. Crouan <i>et</i> H. M. Crouan (17)					T			
<i>Schimmelmannia</i> Schousboe <i>ex</i> Kützing								
<i>S. schousboei</i> (J. Agardh) J. Agardh (18)		L						
<i>Thuretella</i> F. Schmitz								
<i>T. schousboei</i> (Thuret) F. Schmitz					T		P	H
Halymeniaceae Bory de Saint-Vincent								
<i>Cryptonemia</i> J. Agardh								
<i>C. crenulata</i> (J. Agardh) J. Agardh		L	F		T			
<i>C. lomation</i> (Bertoloni) J. Agardh		L	F	C	T			
<i>C. seminervis</i> (C. Agardh) J. Agardh		L	F					
<i>Grateloupia</i> C. Agardh								
<i>G. dichotoma</i> J. Agardh		L		C	T			
<i>G. doryphora</i> (Montagne) M. Howe				C	T			
<i>G. filicina</i> (J. V. Lamouroux) C. Agardh					T			
<i>Halymenia</i> C. Agardh								
<i>H. elongata</i> C. Agardh			F		T			
<i>H. floresia</i> (Clemente y Rubio) C. Agardh		L	F	C				
<i>H. floridana</i> J. Agardh			F		T			
<i>H. latifolia</i> P. L. Crouan <i>et</i> H. M. Crouan <i>ex</i> Kützing		L	F	C				
<i>H. rosea</i> M. Howe <i>et</i> W. R. Taylor		L	F					
<i>H. vinacea</i> M. Howe <i>et</i> W. R. Taylor		L	F		T		P	
Kallymeniaceae W. R. Taylor								
<i>Kallymenia</i> J. Agardh								
<i>K. feldmannii</i> Codomier		L	F					
<i>K. reniformis</i> (Turner) J. Agardh			F	C	T			
<i>K. requienii</i> J. Agardh		L	F		T			
<i>Meredithia</i> J. Agardh								
<i>M. microphylla</i> (J. Agardh) J. Agardh		L	F	C	T			
Peyssonneliaceae Denizot								
<i>Peyssonnelia</i> Decaisne								
<i>P. armorica</i> (P. L. Crouan <i>et</i> H. M. Crouan) Weber-van Bosse			F		T			
<i>P. dubyi</i> P. L. Crouan <i>et</i> H. M. Crouan		L			T			
<i>P. harveyana</i> P. L. Crouan <i>et</i> H. M. Crouan <i>ex</i> J. Agardh			F					
<i>P. inamoena</i> Pilger		L	F	C	T			
<i>P. polymorpha</i> (Zanardini) F. Schmitz			F		T			

Table I. Continued.

	+	L	F	C	T	G	P	H
<i>P. rubra</i> (Greville) J. Agardh		L		C	T			
<b>Hildenbrandiales</b>								
Hildenbrandiaceae Rosenvinge								
<i>Hildenbrandia</i> Nardo								
<i>H. crouanii</i> J. Agardh				C	T			
<i>H. occidentalis</i> Setchell					T			
<i>H. rubra</i> (Sommerfelt) Meneghini				C	T			
<b>Corallinales</b>								
Corallinaceae J. V. Lamouroux								
<i>Amphiroa</i> J. V. Lamouroux								
<i>A. beauvoisii</i> J. V. Lamouroux		L		C	T			H
<i>A. fragilissima</i> (Linnaeus) J. V. Lamouroux		L	F	C	T			H
<i>A. rigida</i> J. V. Lamouroux		L		C	T			
<i>Choreonema</i> F. Schmitz								
<i>C. thuretii</i> (Bornet) F. Schmitz		L	F		T			H
<i>Corallina</i> Linnaeus								
<i>C. elongata</i> J. Ellis <i>et</i> Solander		L	F	C	T	G	P	H
<i>C. officinalis</i> Linnaeus		L	F		T	G		H
<i>Fosliella</i> M. Howe								
<i>F. paschalis</i> (Me. Lemoine) Setchell <i>et</i> N. L. Gardner					T			H
<i>Haliptilon</i> (Montagne <i>ex</i> Kützing) Lindley								
<i>H. cubense</i> (Montagne <i>ex</i> Kützing) Garbary <i>et</i> H. W. Johansen			F	C				
<i>H. squamatum</i> (Linnaeus) H. W. Johansen, L. M. Irvine <i>et</i> A. M. Webster (19)	+							
<i>H. virgatum</i> (Zanardini) Garbary <i>et</i> H. W. Johansen		L	F	C	T	G		H
<i>Hydrolithon</i> (Foslie) Foslie								
<i>H. boreale</i> (Foslie) Y. M. Chamberlain			F		T			
<i>H. cruciatum</i> (Bressan) Y. M. Chamberlain			F		T			
<i>H. farinosum</i> (J. V. Lamouroux) Penrose <i>et</i> Y. M. Chamberlain		L	F	C	T	G	P	H
<i>H. onkodes</i> (Heydrich) Penrose <i>et</i> Woelkerling		L	F	C	T	G		
<i>H. samoëense</i> (Foslie) Keats <i>et</i> Y. M. Chamberlain		L			T			
<i>Jania</i> J. V. Lamouroux								
<i>J. adhaerens</i> J. V. Lamouroux		L	F	C	T			H
<i>J. capillacea</i> Harvey		L	F	C	T		P	H
<i>J. longifurca</i> Zanardini					T			
<i>J. pumila</i> J. V. Lamouroux			F	C	T		P	H
<i>J. rubens</i> (Linnaeus) J. V. Lamouroux		L	F	C	T	G	P	H
<i>Lithophyllum</i> Philippi								
<i>L. cystoseirae</i> (Hauck) Heydrich		L	F	C				
<i>L. esperi</i> Heydrich				C	T			
<i>L. incrustans</i> Philippi		L		C	T	G		
<i>L. irregulare</i> (Foslie) Huvé <i>ex</i> Steentoft					T			
<i>L. lobatum</i> Me. Lemoine		L			T			
<i>L. vickersiae</i> Me. Lemoine		L	F	C	T			
<i>Lithoporella</i> (Foslie) Foslie								
<i>L. sauvageaui</i> (Foslie) W. H. Adey		L		C	T			
<i>Lithothamnion</i> Heydrich								
<i>L. corallioides</i> (P. L. Crouan <i>et</i> H. M. Crouan) P. L. Crouan <i>et</i> H. M. Crouan		L	F		T			
<i>L. sonderi</i> Hauck					T			
<i>Melobesia</i> J. V. Lamouroux								
<i>M. membranacea</i> (Esper) J. V. Lamouroux		L	F	C	T		P	H
<i>Mesophyllum</i> Me. Lemoine								
<i>M. canariense</i> (Foslie) Me. Lemoine				C	T	G		
<i>M. ectocarpon</i> (Foslie) W. H. Adey					T			
<i>M. lichenoides</i> (J. Ellis) Me. Lemoine		L			T		P	
<i>Neogoniolithon</i> Setchell <i>et</i> L. R. Mason								
<i>N. accretum</i> (Foslie <i>et</i> Howe) Setchell <i>et</i> L. R. Mason				C	T			
<i>N. caribaeum</i> (Foslie) W. H. Adey					T			
<i>N. hirtum</i> (Me. Lemoine) Afonso-Carrillo				C	T			
<i>N. orotavicum</i> (Foslie) Me. Lemoine		L	F	C	T	G		
<i>Phymatolithon</i> Foslie								







Table I. Continued.

	+	L	F	C	T	G	P	H
<i>B. boergesenii</i> Feldmann		L	F		T			
<i>B. botryoides</i> (Wulfen) Feldmann		L	F	C	T	G	P	H
<i>B. chiajeana</i> (Meneghini) Kylin		L	F	C	T		P	
<i>B. pyriformis</i> (Børgesen) Kylin		L	F	C	T			
<i>B. wynnei</i> D. L. Ballantine			F				P	
<i>Chrysymenia</i> J. Agardh								
<i>C. enteromorpha</i> Harvey		L	F					
<i>C. ventricosa</i> (J. V. Lamouroux) J. Agardh			F					
<i>Coelarthrum</i> Børgesen								
<i>C. cliftonii</i> (Harvey) Kylin		L						
<i>Coelothrix</i> Børgesen								
<i>C. irregularis</i> (Harvey) Børgesen		L			T			
<i>Fauchea</i> Montagne <i>et</i> Bory de Saint-Vicent								
<i>F. repens</i> (C. Agardh) Montagne <i>et</i> Bory de Saint-Vicent		L						
<i>Gelidiopsis</i> F. Schmitz								
<i>G. intricata</i> (C. Agardh) Vickers		L		C	T	G		H
<i>G. planicaulis</i> (W. R. Taylor) W. R. Taylor				C				
<i>Gloiocladia</i> J. Agardh								
<i>G. atlantica</i> (Searles) R. E. Norris				C				
<i>G. blomquistii</i> (Searles) R. E. Norris			F					
<i>Halichrysis</i> (J. Agardh) F. Schmitz								
<i>H. depressa</i> (J. Agardh) F. Schmitz					T			
<i>Leptofauchea</i> Kylin								
<i>L. brasiliensis</i> A. B. Joly					T			
<i>Rhodymenia</i> Greville								
<i>R. ardissoni</i> Feldmann		L	F		T			
<i>R. caespitosa</i> P. A. Dangeard		L	F	C				
<i>R. holmesii</i> Ardissoni		L		C				
<i>R. pseudopalmata</i> (J. V. Lamouroux) P. Silva		L	F	C	T	G	P	H
<b>Ceramiales</b>								
Ceramiaceae Dumortier								
<i>Aglaothamnion</i> Feldmann-Mazoyer								
<i>A. byssoides</i> (Arnott <i>ex</i> Harvey) L'Hardy-Halos <i>et</i> Ruess		L		C	T	G	P	
<i>A. cordatum</i> (Børgesen) Feldmann-Mazoyer		L	F	C	T			
<i>A. gallicum</i> (Nägeli) L'Hardy-Halos <i>et</i> Ardré				C	T			
<i>A. hookeri</i> (Dillwyn) Maggs <i>et</i> Hommersand		L						
<i>A. neglectum</i> Feldmann-Mazoyer				C				
<i>A. tenuissimum</i> (Bonnemaison) Feldmann-Mazoyer		L		C	T	G		
<i>Anotrichium</i> Nägeli								
<i>A. barbatum</i> (C. Agardh) Nägeli		L	F	C	T			H
<i>A. furcellatum</i> (J. Agardh) Baldock		L	F	C	T	G		H
<i>A. tenue</i> (C. Agardh) Nägeli		L	F	C	T			H
<i>Antithamnion</i> Nägeli								
<i>A. cruciatum</i> (C. Agardh) Nägeli		L	F	C	T	G	P	H
<i>A. decipiens</i> (J. Agardh) Athanasiadis (23)	+							
<i>A. densum</i> (Suhr) Howe		L	F	C				
<i>A. diminuatum</i> E. M. Wollaston		L	F	C	T			
<i>A. lherminieri</i> (P. L. Crouan <i>et</i> H. M. Crouan) Bornet <i>ex</i> Nasr			F	C	T	G		
<i>A. ogdeniae</i> Abbott		L	F	C				H
<i>Antithamnionella</i> Lyle								
<i>A. boergesenii</i> (Cormaci <i>et</i> Furnari) Athanasiadis (24)	+							
<i>A. elegans</i> (Berthold) J. H. Price <i>et</i> D. M. John		L	F	C	T	G	P	
<i>Bornetia</i> Thuret								
<i>B. secundiflora</i> (J. Agardh) Thuret					T			
<i>Callithamniella</i> Feldmann-Mazoyer								
<i>C. tingitana</i> (Schousboe <i>ex</i> Bornet) Feldmann-Mazoyer		L	F					
<i>Callithamnion</i> Lyngbye								
<i>C. corymbosum</i> (Smith) Lyngbye		L		C	T			
<i>C. ellipticum</i> Montagne				C				
<i>C. granulatum</i> (Ducluzeau) C. Agardh					T			
<i>C. tetragonum</i> (Withering) Gray		L	F	C	T			H

Table I. Continued.

	+	L	F	C	T	G	P	H
<i>Centroceras</i> Kützing								
<i>C. clavulatum</i> (C. Agardh) Montagne		L	F	C	T	G	P	H
<i>Centrocerocolax</i> A. B. Joly								
<i>C. ubatubensis</i> A. B. Joly		L	F	C	T			
<i>Ceramium</i> Roth								
<i>C. atrorubescens</i> Kylin			F		T			
<i>C. ciliatum</i> (J. Ellis) Ducluzeau		L	F	C	T	G	P	H
<i>C. cingulatum</i> Weber-van Bosse			F		T			
<i>C. circinatum</i> (Kützing) J. Agardh		L	F	C	T		P	H
<i>C. codii</i> (H. Richards) Feldmann-Mazoyer		L	F	C	T			H
<i>C. deslongchampii</i> Chauvin <i>ex</i> Duby				C	T			
<i>C. diaphanum</i> (Lightfoot) Roth		L	F	C	T	G	P	H
<i>C. echionotum</i> J. Agardh		L	F	C	T	G	P	H
<i>C. flaccidum</i> (Kützing) Ardissonne		L	F	C	T		P	H
<i>C. gaditanum</i> (Clemente y Rubio) Cremades		L		C	T		P	
<i>C. rubrum</i> C. Agardh		L	F	C	T	G	P	H
<i>C. tenerrimum</i> (Martens) Okamura		L	F	C	T			
<i>Compsothamnion</i> Nägeli								
<i>C. decompositum</i> (J. Agardh) Maggs <i>et</i> L'Hardy-Halos					T			
<i>C. thuyoides</i> (Smith) Nägeli				C	T			
<i>Crouania</i> J. Agardh								
<i>C. attenuata</i> (C. Agardh) J. Agardh		L	F	C	T	G	P	H
<i>Diplothamnion</i> A. B. Joly <i>et</i> Yamagushi-Tomita								
<i>D. jolyi</i> C. van den Hoek		L					P	
<i>Grallatoria</i> M. Howe								
<i>G. reptans</i> M. Howe					T			
<i>Griffithsia</i> J. Agardh								
<i>G. capitata</i> Børgesen				C	T			
<i>G. opuntioides</i> J. Agardh		L	F	C	T		P	
<i>G. phyllamphora</i> J. Agardh		L	F	C	T	G	P	
<i>G. radicans</i> Kützing			F					
<i>G. schousboei</i> Montagne				C	T			
<i>Gymnophycus</i> Huisman <i>et</i> Kraft								
<i>G. hapsiphorus</i> Huisman <i>et</i> Kraft		L	F		T			H
<i>Gymnothamnion</i> J. Agardh								
<i>G. elegans</i> (Schousboe <i>ex</i> C. Agardh) J. Agardh		L	F	C	T	G	P	
<i>Halurus</i> Kützing								
<i>H. equisetifolius</i> (Lightfoot) Kützing		L	F					
<i>Lejolisia</i> Bornet								
<i>L. mediterranea</i> Bornet				C				
<i>Monosporus</i> Solier								
<i>M. pedicellatus</i> (Smith) Solier			F	C	T			
<i>Pleonosporium</i> Nägeli								
<i>P. borrieri</i> (Smith) Nägeli		L		C	T			
<i>P. caribaeum</i> (Børgesen) R. E. Norris			F	C	T			H
<i>Pterothamnion</i> Nägeli								
<i>P. crispum</i> (Ducluzeau) Nägeli			F					
<i>P. plumula</i> (J. Ellis) Nägeli		L	F	C				
<i>Ptilothamnion</i> Thuret								
<i>P. pluma</i> (Dillwyn) Thuret		L						
<i>P. speluncarum</i> (Collins <i>et</i> Hervey) Ballantine <i>et</i> M. J. Wynne			F		T			
<i>Seirospora</i> Harvey								
<i>S. interrupta</i> (Smith) F. Schmitz			F					
<i>Spermothamnion</i> Areschoug								
<i>S. flabellatum</i> Bornet		L	F					
<i>S. repens</i> (Dillwyn) Rosenvinge		L	F	C	T		P	
<i>Sphondylothamnion</i> Nägeli								
<i>S. multifidum</i> (Hudson) Nägeli		L	F					
<i>Spyridia</i> Harvey								
<i>S. filamentosa</i> (Wulfen) Harvey		L	F	C	T	G	P	H
<i>S. hypnoides</i> (Bory de Saint-Vincent) Papenfuss		L	F	C	T		P	H

Table I. Continued.

	+	L	F	C	T	G	P	H
<i>Tiffaniella</i> Doty <i>et</i> Meñez								
<i>T. capitata</i> (Schousboe <i>ex</i> Bornet) Doty <i>et</i> Meñez		L	F	C				
<i>T. gorgonea</i> (Montagne) Doty <i>et</i> Meñez		L		C	T			
<i>Vickersia</i> Karsakoff								
<i>V. baccata</i> (J. Agardh) Karsakoff		L	F	C	T	G	P	H
<i>Wrangelia</i> C. Agardh								
<i>W. argus</i> (Montagne) Montagne			F	C	T		P	H
<i>W. penicillata</i> (C. Agardh) C. Agardh		L	F	C	T			H
Dasyaceae Kützing								
<i>Dasya</i> C. Agardh								
<i>D. baillouviana</i> (S. G. Gmelin) Montagne		L		C	T		P	H
<i>D. caraibica</i> Børgesen					T			
<i>D. corymbifera</i> J. Agardh		L	F	C	T			H
<i>D. crouaniana</i> J. Agardh					T			
<i>D. hutchinsiae</i> Harvey		L	F	C	T			H
<i>D. ocellata</i> (Grateloup) Harvey		L	F	C	T	G	P	H
<i>D. rigidula</i> (Kützing) Ardissonne		L	F		T			
<i>Eupogodon</i> Kützing								
<i>E. planus</i> (J. Agardh) Kützing		L	F					
<i>E. spinellus</i> (C. Agardh) Kützing		L						
<i>Halydictyon</i> Zanardini								
<i>H. mirabile</i> Zanardini		L	F	C	T			H
<i>Heterosiphonia</i> Montagne								
<i>H. crispella</i> (C. Agardh) M. J. Wynne		L	F	C	T	G	P	H
Delesseriaceae Bory de Saint-Vincent								
<i>Acrosorium</i> Zanardini <i>ex</i> Kützing								
<i>A. venulosum</i> (Zanardini) Kylin			F	C	T	G	P	H
<i>Apoglossum</i> J. Agardh								
<i>A. ruscifolium</i> (Turner) J. Agardh		L	F		T			
<i>Branchioglossum</i> Kylin								
<i>B. prostratum</i> C. W. Schneider			F					
<i>Cottoniella</i> Børgesen								
<i>C. filamentosa</i> (M. Howe) Børgesen		L	F	C	T	G	P	H
<i>Cryptopleura</i> Kützing								
<i>C. ramosa</i> (Hudson) Kylin <i>ex</i> L. Newton		L	F					
<i>Drachiella</i> J. Ernst <i>et</i> Feldmann								
<i>D. minuta</i> (Kylin) Maggs <i>et</i> Hommersand		L			T			
<i>Haraldia</i> Feldmann								
<i>H. lenormandii</i> (Derbès <i>et</i> Solier) Feldmann		L						
<i>Hypoglossum</i> Kützing								
<i>H. hypoglossoides</i> (Stackhouse) Collins <i>et</i> Hervey		L	F	C	T	G	P	
<i>Nitophyllum</i> Greville								
<i>N. punctatum</i> (Stackhouse) Greville		L	F		T			
<i>Platysiphonia</i> Børgesen								
<i>P. caribaea</i> D. L. Ballantine <i>et</i> M. J. Wynne		L						
<i>P. delicata</i> (Clemente y Rubio) Cremades		L	F	C	T			H
<i>Taenioma</i> J. Agardh								
<i>T. nanum</i> (Kützing) Papenfuss			F		T	G		
<i>T. perpusillum</i> (J. Agardh) J. Agardh		L	F	C	T			
Rhodomelaceae Areschoug								
<i>Alsidium</i> C. Agardh								
<i>A. corallinum</i> C. Agardh		L	F	C				
<i>Aphanocladia</i> Falkenberg								
<i>A. stichidiosa</i> (Funk) Ardré		L		C	T			
<i>Boergeseniella</i> Kylin								
<i>B. fruticulosa</i> (Wulfen) Kylin		L	F		T		P	H
<i>Chondria</i> C. Agardh								
<i>C. capillaris</i> (Hudson) M. J. Wynne		L	F	C	T	G	P	H
<i>C. coerulescens</i> (J. Agardh) Falkenberg			F		T	G		
<i>C. dasyphylla</i> (Woodward) C. Agardh		L	F	C	T			H
<i>C. mairei</i> Feldmann-Mazoyer					T			

Table I. Continued.

	+	L	F	C	T	G	P	H
<i>Chondrophycus</i> (Tokida <i>ex</i> Saito) Garbary <i>et</i> Harper								
<i>C. corallopsis</i> (Montagne) K. W. Nam			F		T			H
<i>C. papillosa</i> (C. Agardh) Garbary <i>et</i> Harper (25)	L		F		T			
<i>C. perforata</i> (Bory de Saint-Vincent) K. W. Nam	L		F	C	T	G	P	H
<i>C. poiteaui</i> (J. V. Lamouroux) K. W. Nam	L		F					
<i>Ctenosiphonia</i> Falkenberg								
<i>C. hypnoides</i> (Welwitsch <i>ex</i> J. Agardh) Falkenberg	L		F	C	T		P	H
<i>Digenea</i> C. Agardh								
<i>D. simplex</i> (Wulfen) C. Agardh	L		F					
<i>Dipterosiphonia</i> F. Schmitz <i>et</i> Falkenberg								
<i>D. dendritica</i> (C. Agardh) F. Schmitz	L		F	C	T	G	P	H
<i>D. rigens</i> (Schousboe <i>ex</i> C. Agardh) Falkenberg	L		F	C	T		P	H
<i>Erythrocyctis</i> J. Agardh								
<i>E. montagnei</i> (Derbès <i>et</i> Solier) P. Silva	L		F	C	T	G	P	H
<i>Halopithys</i> Kützing								
<i>H. incurva</i> (Hudson) Batters	L		F	C	T	G		
<i>Herposiphonia</i> Nägeli								
<i>H. secunda</i> (C. Agardh) Ambronn	L		F	C	T	G	P	H
<i>Janczewskia</i> Solms-Laubach								
<i>J. verrucaeformis</i> Solms-Laubach	L				T		P	
<i>Laurencia</i> J. V. Lamouroux								
<i>L. brongniartii</i> J. Agardh	L							H
<i>L. chondrioides</i> Børgesen	L							
<i>L. flexilis</i> Setchell			F		T			
<i>L. glandulifera</i> (Kützing) Kützing								H
<i>L. intricata</i> J. V. Lamouroux				C	T			
<i>L. majuscula</i> (Harvey) Lucas	L		F	C	T		P	
<i>L. microcladia</i> Kützing	L		F	C				H
<i>L. minuta</i> Vandermeulen, Garbary <i>et</i> Guiry					T			
<i>L. obtusa</i> (Hudson) J. V. Lamouroux	L		F	C	T	G	P	H
<i>L. tenera</i> Tseng					T			
<i>L. viridis</i> Gil-Rodríguez <i>et</i> Haroun	L		F	C	T		P	H
<i>Leptosiphonia</i> Kylin								
<i>L. schousboei</i> (Thuret) Kylin	L							
<i>Lophocladia</i> F. Schmitz								
<i>L. trichocladus</i> (Mertens <i>ex</i> C. Agardh) F. Schmitz	L		F	C	T		P	H
<i>Lophosiphonia</i> Falkenberg								
<i>L. cristata</i> Falkenberg	L				T		P	H
<i>L. obscura</i> (C. Agardh) Falkenberg	L				T			H
<i>L. reptabunda</i> (Suhr) Kylin	L		F	C	T	G	P	H
<i>Neosiphonia</i> M. S. Kim <i>et</i> I. K. Lee								
<i>N. sphaerocarpa</i> (Børgesen) M. S. Kim <i>et</i> I. K. Lee	L			C	T		P	H
<i>Ophidocladus</i> Falkenberg								
<i>O. simpliciusculus</i> (P. L. Crouan <i>et</i> H. M. Crouan) Falkenberg			F	C	T		P	
<i>Osmundaria</i> J. V. Lamouroux								
<i>O. volubilis</i> (Linnaeus) R. E. Norris	L		F					
<i>Osmundea</i> Stackhouse								
<i>O. hybrida</i> (De Candolle) K. W. Nam				C	T	G		H
<i>O. pinnatifida</i> (Hudson) Stackhouse	L		F	C	T	G	P	H
<i>O. truncata</i> (Kützing) K. W. Nam <i>et</i> Maggs	L				T		P	
<i>Polysiphonia</i> Greville								
<i>P. atlantica</i> Kapraun <i>et</i> J. N. Norris	L		F	C	T	G	P	H
<i>P. breviarticulata</i> (C. Agardh) Zanardini			F	C	T		P	H
<i>P. brodiaei</i> (Dillwyn) Sprengel	L							
<i>P. caretia</i> Hollenberg					T			
<i>P. ceramiaeformis</i> P. L. Crouan <i>et</i> H. M. Crouan					T		P	
<i>P. denudata</i> (Dillwyn) Greville <i>ex</i> Harvey	L		F		T		P	H
<i>P. elongata</i> (Hudson) Sprengel	L		F		T	G		H
<i>P. ferulacea</i> Suhr <i>ex</i> J. Agardh	L		F	C	T	G	P	H
<i>P. fibrillosa</i> (Dillwyn) Sprengel (26)	L		F	C	T	G	P	H
<i>P. flexella</i> (C. Agardh) J. Agardh	L		F	C	T			

Table I. Continued.

	+	L	F	C	T	G	P	H
<i>P. flocculosa</i> (C. Agardh) Kützing		L	F	C	T		P	
<i>P. fucooides</i> (Hudson) Greville		L	F	C	T			H
<i>P. funebris</i> De Notaris ex J. Agardh					T		P	
<i>P. furcellata</i> (C. Agardh) Harvey		L		C	T			
<i>P. harveyi</i> J. Bailey			F		T		P	H
<i>P. havanensis</i> Montagne				C				
<i>P. opaca</i> (C. Agardh) Morris et De Notaris		L	F	C	T		P	H
<i>P. scopulorum</i> Harvey		L	F		T			H
<i>P. sertularioides</i> (Grateloup) J. Agardh		L	F	C	T	G	P	H
<i>P. stricta</i> (Dillwyn) Greville		L	F	C	T			H
<i>P. subulifera</i> (C. Agardh) Harvey		L	F	C	T		P	H
<i>P. tepida</i> Hollenberg		L	F	C				H
<i>P. tripinnata</i> J. Agardh		L	F	C	T			
<i>Pterosiphonia</i> Falkenberg								
<i>P. pennata</i> (C. Agardh) Sauvageau		L	F	C	T			
<i>Rytiplaea</i> C. Agardh								
<i>R. tinctoria</i> (Clemente) C. Agardh		L	F	C	T	G		
<i>Stichothamnion</i> Børgesen								
<i>S. cymatophilum</i> Børgesen		L	F	C	T	G	P	
<i>Womersleyella</i> R. E. Norris								
<i>W. setacea</i> (Hollenberg) R. E. Norris (27)		L		C	T	G	P	H
<b>Red algae of uncertain systematic position</b>								
<i>Ailocolax</i> Pocock								
<i>A. pulchellus</i> Pocock (28)					T			
<b>CHROMOPHYCOTA</b>								
<b>PHAEOPHYCEAE</b>								
<b>Ectocarpales</b>								
<b>Ectocarpaceae</b> C. Agardh								
<i>Acinetospora</i> Bornet								
<i>A. crinita</i> (Carmichael ex Harvey) Kornmann				C	T			
<i>Asteronema</i> Delépine et Asensi								
<i>A. rhodochortonoides</i> (Børgesen) D. G. Müller et E. Parodi		L	F	C				H
<i>Ectocarpus</i> Lyngbye								
<i>E. fasciculatus</i> Harvey		L		C	T			
<i>E. repens</i> Reinke (29)				C	T			
<i>E. siliculosus</i> (Dillwyn) Lyngbye		L		C	T		P	
<i>Feldmannia</i> Hamel								
<i>F. globifera</i> (Kützing) Hamel		L		C	T	G	P	
<i>F. irregularis</i> (Kützing) Hamel		L	F	C	T			H
<i>F. paradoxa</i> (Montagne) Hamel				C	T			
<i>Hincksia</i> J. F. Gray								
<i>H. conifera</i> (Børgesen) P. Silva			F	C				
<i>H. intermedia</i> (Rosenvinge) P. Silva		L		C		G		
<i>H. mitchelliae</i> (Harvey) P. Silva		L	F	C	T	G	P	H
<i>H. onslowensis</i> (Amsler et Kapraun) P. Silva		L	F					
<i>H. rallsiae</i> (Vickers) P. Silva		L		C				H
<i>H. sandriana</i> (Zanardini) P. Silva				C	T			
<i>Kuckuckia</i> Hamel								
<i>K. spinosa</i> (Kützing) Kuckuck		L			T			
<i>Kuetzingiella</i> Kornmann								
<i>K. battersii</i> (Bornet) Kornmann		L		C	T			
<i>Phaeostroma</i> Kuckuck								
<i>P. pustulosum</i> Kuckuck		L		C				
<i>Pilinia</i> Kützing								
<i>P. rimosa</i> Kützing				C	T			
<i>Spongonema</i> Kützing								
<i>S. tomentosum</i> (Hudson) Kützing				C	T			
<b>Pilayellaceae</b> Pedersen								
<i>Bachelotia</i> (Bornet) Kuckuck ex G. Hamel								
<i>B. antillarum</i> (Grunow) Gerloff				C	T			

Table I. Continued.

	+	L	F	C	T	G	P	H
<b>Ralfsiaceae Farlow</b>								
<i>Hapalospongidium</i> D. A. Saunders								
<i>H. macrocarpum</i> (Feldmann) León-Álvarez <i>et</i> González-González (30)					T			H
<i>Nemoderma</i> Schousboe <i>ex</i> Bornet								
<i>N. tingitanum</i> Schousboe <i>ex</i> Bornet		L	F	C	T			H
<i>Pseudolithoderma</i> Svedelius								
<i>P. adriaticum</i> (Hauck) Verlaque		L	F		T			
<i>Ralfsia</i> Berkeley								
<i>R. verrucosa</i> (Areschough) Areschough		L	F	C	T	G		H
<b>Sphacelariales</b>								
<b>Choristocarpaceae Kjellman</b>								
<i>Discosporangium</i> Falkenberg								
<i>D. mesarthrocarpum</i> (Meneghini) Hauck		L	F	C	T			
<b>Cladostephaceae Oltmanns</b>								
<i>Cladostephus</i> C. Agardh								
<i>C. spongiosus</i> (Hudson) C. Agardh		L	F	C	T			
<b>Sphacelariaceae Decaisne</b>								
<i>Sphacelaria</i> Lyngbye								
<i>S. cirrosa</i> (Roth) C. Agardh		L	F	C	T	G	P	H
<i>S. fusca</i> (Hudson) S. F. Gray			F		T			
<i>S. plumula</i> Zanardini		L						
<i>S. rigidula</i> Kützing		L	F	C	T			H
<i>S. tribuloides</i> Meneghini		L	F	C	T			H
<i>Sphacella</i> Reinke								
<i>S. subtilissima</i> Reinke			F					
<b>Stypocaulaceae Oltmanns</b>								
<i>Halopteris</i> Kützing								
<i>H. filicina</i> (Grateloup) Kützing		L	F	C	T			
<i>Stypocaulon</i> Kützing								
<i>S. scoparium</i> (Linnaeus) Kützing		L	F	C	T	G	P	H
<b>Dictyotales</b>								
<b>Dictyotaceae J. V. Lamouroux <i>ex</i> Dumortier</b>								
<i>Dictyopteris</i> J. V. Lamouroux								
<i>D. delicatula</i> J. V. Lamouroux		L			T			
<i>D. plagiogramma</i> (Montagne) Vickers (31)				C	T			
<i>D. polypodioides</i> (De Candolle) J. V. Lamouroux		L	F	C	T	G	P	H
<i>Dictyota</i> Lamarck								
<i>D. ciliolata</i> Sonder <i>ex</i> Kützing		L	F	C	T			H
<i>D. crenulata</i> J. Agardh		L	F		T		P	H
<i>D. dichotoma</i> (Hudson) J. V. Lamouroux		L	F	C	T	G	P	H
<i>D. fasciola</i> (Roth) J. V. Lamouroux		L	F	C	T	G	P	H
<i>D. humifusa</i> Hörning, Schnetter <i>et</i> Coppejans		L	F	C	T		P	H
<i>D. kohlmeyeri</i> (Nizamuddin <i>et</i> Gerloff) Hörnig, Schnetter <i>et</i> Prud'homme van Reine					T			
<i>D. liturata</i> J. Agardh		L	F	C	T		P	H
<i>D. menstrualis</i> (Hoyt) Schnetter, Hörning <i>et</i> Weber-Peuckert		L	F		T			
<i>D. mertensii</i> (Martius) Kützing (32)					T			
<i>D. pfaffii</i> Schnetter (32)	+							
<i>D. pinnatifida</i> Kützing		L						
<i>D. pulchella</i> Hörnig <i>et</i> Schnetter (32)	+							
<i>D. spiralis</i> Montagne		L	F	C	T	G	P	H
<i>Lobophora</i> J. Agardh								
<i>L. variegata</i> (J. V. Lamouroux) Womersley <i>ex</i> E. C. Oliveira		L	F	C	T	G	P	H
<i>Padina</i> Adanson (33)								
<i>P. gymnospora</i> (Kützing) Sonder		L			T			
<i>P. pavonica</i> (Linnaeus) Thivy		L	F	C	T	G	P	H
<i>Spatoglossum</i> Kützing								
<i>S. schroederi</i> (C. Agardh) Kützing					T			
<i>S. solierii</i> (Chauvin <i>ex</i> Montagne) Kützing			F					
<i>Stypodium</i> Kützing								
<i>S. schimperi</i> (Buchinger <i>ex</i> Kützing) Verlaque <i>et</i> C. Boudouresque					T			



Table I. Continued.

	+	L	F	C	T	G	P	H
<i>S. zonale</i> (J. V. Lamouroux) Papenfuss		L	F	C	T	G	P	H
<i>Taonia</i> J. Agardh								
<i>T. atomaria</i> (Woodward) J. Agardh		L	F	C	T	G	P	H
<i>Zonaria</i> C. Agardh								
<i>Z. tournefortii</i> (J. V. Lamouroux) Montagne		L	F	C	T	G	P	H
<b>Cutleriales</b>								
Cutleriaceae Hauck								
<i>Cutleria</i> Greville								
<i>C. chilosa</i> (Falkenberg) P. Silva			F					
<i>C. multifida</i> (Smith) Greville		L	F		T			
<i>Zanardinia</i> Nardo ex Zanardini								
<i>Z. typus</i> (Nardo) G. Furnari								T
<b>Chordariales</b>								
Chordariaceae Greville								
<i>Cladosiphon</i> Kützing								
<i>C. zosteræ</i> (J. Agardh) Kylin								T
<i>Liebmannia</i> J. Agardh								
<i>L. leveillei</i> J. Agardh		L	F					
<i>Mesogloia</i> C. Agardh								
<i>M. vermiculata</i> (Smith) S. F. Gray	+							
<i>Papenfussiella</i> Kylin								
<i>P. kuromo</i> (Yendo) Inagaki								T
<i>Sauvageaugloia</i> Hamel ex Kylin								
<i>S. chordariaeformis</i> (P. L. Crouan et H. M. Crouan) Kylin		L	F	C	T			
<i>Strepsithalia</i> Bornet ex Sauvageau								
<i>S. curvata</i> Sauvageau		L						
Corynophlaeaceae Oltmanns								
<i>Corynophlaea</i> Kützing								
<i>C. cystophoræ</i> J. Agardh			F		T			
<i>Leathesia</i> S. F. Gray								
<i>L. difformis</i> (Linnaeus) Areschoug		L						
<i>Microcoryne</i> Strömfelt								
<i>M. ocellata</i> Strömfelt		L						T
<i>Myriactula</i> Kuntze								
<i>M. chordæ</i> (Areschoug) Levring								T
<i>Petrospongium</i> Nägeli ex Kützing								
<i>P. berkeleyi</i> (Greville) Nägeli ex Kützing		L						
Elachistaceae Kjellman								
<i>Elachista</i> Duby								
<i>E. stellaris</i> (Areschoug) P. Silva		L						
<i>E. globulosa</i> (C. Agardh) J. Agardh	+							
<i>Leptonematella</i> P. Silva								
<i>L. fasciculata</i> (Reinke) P. Silva			F	C				
Myrionemataceae Nägeli								
<i>Hecatonema</i> Sauvageau								
<i>H. terminale</i> (Kützing) Sauvageau		L		C				
<i>Myrionema</i> Greville								
<i>M. orbiculare</i> J. Agardh		L	F	C	T			
<i>M. strangulans</i> Carmichael ex Greville		L		C	T			
<i>Protectocarpus</i> Kornmann								
<i>P. speciosus</i> (Børgesen) Kuckuck ex Kornmann						C		
Spermatochnaceae Kjellman								
<i>Nemacystus</i> Derbès et Solier								
<i>N. erythraeus</i> (J. Agardh) Sauvageau								T
<i>N. flexuosus</i> (C. Agardh) Kylin								T
<i>N. hispanicus</i> (Sauvageau) Kylin		L		C	T		P	H
<i>N. howei</i> (W. R. Taylor) Kylin	+							
<i>Stilophora</i> J. Agardh								
<i>S. tenella</i> (Esper) P. Silva			F		T			

Table I. Continued.

	+	L	F	C	T	G	P	H
<b>Scytosiphonales</b>								
Scytosiphonaceae Farlow								
<i>Colpomenia</i> (Endlicher) Derbès <i>et Solier</i>								
		L						H
		L	F	C	T	G	P	H
<i>Compsomena</i> Kuckuck								
					T			
		L		C				
<i>Hydroclathrus</i> Bory de Saint-Vincent								
		L	F	C	T	G	P	H
<i>Petalonia</i> Derbès <i>et Solier</i>								
				C	T			
<i>Rosenvingea</i> Børgeesen								
		L						
		L	F		T			
		L	F		T			
<i>Scytosiphon</i> C. Agardh								
					T			
		L	F	C	T	G		H
<b>Syringodermatales</b>								
Syringodermataceae Henry								
<i>Syringoderma</i> Levring								
		L	F		T			
<b>Dictyosiphonales</b>								
Giraudiaceae Kylin								
<i>Giraudia</i> Derbès <i>et Solier</i>								
		L			T			
Myriotrichiaceae Kjellman								
<i>Myriotrichia</i> Harvey								
					T			
Punctariaceae (Thuret) Kjellman								
<i>Asperococcus</i> J. V. Lamouroux								
	+	L	F	C				
		L	F	C				
<b>Sporochnales</b>								
Sporochnaceae Greville								
<i>Carpomitra</i> Kützing								
		L	F					
<i>Nereia</i> Zanardini								
		L	F	C	T			
		L		C	T			
<i>Sporochnus</i> C. Agardh								
		L	F	C	T			
		L						
		L	F	C	T			
<b>Desmarestiales</b>								
Arthrocladiaceae Chauvin								
<i>Arthrocladia</i> Duby								
		L	F					
<b>Laminariales</b>								
Phyllariaceae Tilden								
<i>Saccorhiza</i> Bachelot de la Pylaie								
		L						
<b>Fucales</b>								
Cytoseiraceae de Toni								
<i>Cytoseira</i> C. Agardh								
		L	F	C	T	G	P	H

Table I. Continued.

	+	L	F	C	T	G	P	H
<i>C. compressa</i> (Esper) Gerloff <i>et</i> Nizamuddin		L	F	C	T	G	P	H
<i>C. foeniculacea</i> (Linnaeus) Greville		L	F	C	T	G	P	H
<i>C. humilis</i> Schousboe <i>ex</i> Kützing		L	F	C	T	G	P	H
<i>C. mauritanica</i> Sauvageau		L	F	C	T			
<i>C. tamariscifolia</i> (Hudson) Papenfuss		L	F	C				
<i>C. wildpretii</i> Nizamuddin (36)		L						
Fucaceae Adanson								
<i>Fucus</i> Linnaeus								
<i>F. spiralis</i> Linnaeus		L		C	T			
<i>F. vesiculosus</i> Linnaeus		L			T			
Sargassaceae Kützing								
<i>Sargassum</i> C. Agardh								
<i>S. acinarium</i> (Linnaeus) Setchell	+							
<i>S. cymosum</i> C. Agardh		L	F	C	T			
<i>S. desfontainesii</i> (Turner) J. Agardh		L	F	C	T	G	P	H
<i>S. filipendula</i> C. Agardh		L	F	C	T			
<i>S. furcatum</i> Kützing			F	C				
<i>S. natans</i> (Linnaeus) Gaillon		L			T			
<i>S. vulgare</i> C. Agardh		L	F	C	T	G	P	H
CHLOROPHYCOTA								
<b>Chaetophorales</b>								
Chaetophoraceae Greville								
<i>Acrochaete</i> Pringsheim								
<i>A. geniculata</i> (Gardner) O'Kelly (37)	+							
<i>A. repens</i> Pringsheim		L						
<i>Pseudendoclonium</i> Wille								
<i>P. fucicola</i> (Rosenvinge) Nielsen		L						
<b>Ctenocladales</b>								
Ulvellaceae Schmidle								
<i>Entocladia</i> Reinke								
<i>E. viridis</i> Reinke		L		C	T			
<i>Epicladia</i> Reinke								
<i>E. heterotricha</i> (Yarish) Nielsen		L	F		T			
<i>Ochlochaete</i> Twaites								
<i>O. hystrix</i> Twaites <i>ex</i> Harvey		L	F		T			
<i>Pringsheimiella</i> von Höhnel								
<i>P. sanctae-luciae</i> Nielsen <i>et</i> McLachlan		L						
<i>P. scutata</i> (Reinke) von Höhnel <i>ex</i> Marchewianka		L						
<i>Stromatella</i> Kormann <i>et</i> Sahling								
<i>S. monostromatica</i> (P. Dangeard) Kornmann <i>et</i> Sahling		L						
<i>Ulvella</i> P.L. Crouan <i>et</i> H.M. Crouan								
<i>U. setchellii</i> P. Dangeard			F		T			
<b>Tetrasporales</b>								
Palmellopsidaceae Korshikov								
<i>Palmophyllum</i> Kützing								
<i>P. crassum</i> (Naccari) Rabenhorst								T
<b>Ulotrichales</b>								
Ulotrichaceae Kützing								
<i>Ulothrix</i> Kützing								
<i>U. flacca</i> (Dillwyn) Thuret				C	T			
<b>Phaeophilales</b>								
Phaeophilaceae								
<i>Phaeophila</i> Hauck								
<i>P. dendroides</i> (P.L. Crouan <i>et</i> H.M. Crouan) Batters		L	F	C	T			H
<i>P. tenuis</i> (Kylin) Nielsen (38)	+							

Table I. Continued.

	+	L	F	C	T	G	P	H
<b>Ulvales</b>								
Gomontiaceae de Toni								
<i>Gomontia</i> Bornet <i>et</i> Flahault								
					C			
Percursariaceae Bliding								
<i>Percursaria</i> Bory de Saint-Vincent								
				C	T			
Monostromataceae Kunieda								
<i>Blidingia</i> Kylin								
	+							
		L		C	T			
Ulvaceae J. V. Lamouroux								
<i>Enteromorpha</i> Link								
		L	F	C	T	G		H
		L	F	C	T	G	P	H
		L		C	T			
		L	F	C	T	G	P	H
				C				
				C	T	G		
		L	F	C	T	G	P	H
	+				T	G		
		L			T			
<i>Gayralia</i> Vinogradova								
		L			T			
<i>Ulva</i> Linnaeus								
					T			
			F					
		L	F	C	T	G	P	H
			F		T			
<b>Cladophorales</b>								
Anadyomenaceae Kützing								
<i>Anadyomene</i> J. V. Lamouroux								
			F		T			
		L	F	C	T		P	H
<i>Microdictyon</i> Decaisne								
		L	F	C	T	G	P	H
		L	F	C	T			H
		L	F		T			
Chaetosiphonaceae Blackman <i>et</i> Tansley								
<i>Blastophysa</i> Reinke								
			F		T			
Cladophoraceae Wille <i>in</i> Warming								
<i>Chaetomorpha</i> Kützing								
		L	F	C	T	G	P	H
		L	F		T		P	
								H
		L		C	T			
		L	F	C	T	G	P	H
		L	F	C	T	G	P	H
<i>Cladophora</i> Kützing								
				C	T			
		L	F	C	T		P	H
					T			
				C	T			
			F	C	T			
		L						
			F	C				
			F	C				
		L						

Table I. Continued.

	+	L	F	C	T	G	P	H
<i>C. inclusa</i> Børgesen				C	T			
<i>C. laetevirens</i> (Dillwyn) Kützing		L	F	C	T			H
<i>C. lehmanniana</i> (Lindenberg) Kützing		L	F	C	T			
<i>C. liebetruithii</i> Grunow		L	F	C	T		P	H
<i>C. pellucida</i> (Hudson) Kützing		L	F	C	T	G	P	H
<i>C. prolifera</i> (Roth) Kützing		L	F	C	T	G	P	H
<i>C. sericea</i> (Hudson) Kützing (40)					T		P	
<i>C. vagabunda</i> (Linnaeus) C. van den Hoek		L	F	C	T	G		
<i>Rhizoclonium</i> Kützing								
<i>R. riparium</i> (Roth) Kützing ex Harvey		L		C	T			
<i>R. tortuosum</i> (Dillwyn) Kützing		L		C	T			
<i>Urospora</i> Areschoug								
<i>U. laeta</i> (Thuret ex Bornet) Børgesen				C	T			
Siphonocladaceae F. Schmitz								
<i>Boodlea</i> G. Murray et de Toni								
<i>B. struveoides</i> Howe					T			
<i>Cladophoropsis</i> Børgesen								
<i>C. macromeres</i> W. R. Taylor		L	F					
<i>C. membranacea</i> (Hofman Bang ex C. Agardh) Børgesen		L	F	C	T	G		H
<i>Phyllocladon</i> J. E. Gray								
<i>P. pulcherrimum</i> J. E. Gray (41)		L	F	C	T		P	
<i>Siphonocladus</i> F. Schmitz								
<i>S. tropicus</i> (P. L. Crouan et H. M. Crouan) J. Agardh		L		C	T			
Valoniaceae Kützing								
<i>Dictyosphaeria</i> Decaisne ex Endlicher								
<i>D. ocellata</i> (Howe) J. L. Olsen		L	F	C				
<i>Ernodesmis</i> Børgesen								
<i>E. verticillata</i> (Kützing) Børgesen		L			T			H
<i>Valonia</i> C. Agardh								
<i>V. aegagropila</i> C. Agardh (42)	+							
<i>V. macrophysa</i> Kützing		L	F	C	T			H
<i>V. utricularis</i> (Roth) C. Agardh		L	F	C	T	G	P	H
<b>Bryopsidales</b>								
Bryopsidaceae Bory de Saint-Vincent								
<i>Bryobesia</i> Weber-van Bosse								
<i>B. johanna</i> Weber-van Bosse								H
<i>Bryopsidella</i> Feldmann								
<i>B. neglecta</i> (Berthold) H. Rietema		L	F		T		P	H
<i>Bryopsis</i> Laouroux								
<i>B. corymbosa</i> J. Agardh		L		C			P	
<i>B. cupressina</i> J. V. Lamouroux		L	F		T			
<i>B. duplex</i> De Notaris		L		C	T	G		
<i>B. hypnoides</i> J. V. Lamouroux		L	F	C	T			
<i>B. plumosa</i> (Hudson) C. Agardh		L	F	C	T	G		H
<i>Derbesia</i> Solier								
<i>D. marina</i> (Lyngbye) Solier					T			
<i>D. tenuissima</i> (Moris et De Notaris) P. L. Crouan et H. M. Crouan		L	F	C	T			
<i>Pseudobryopsis</i> Berthold								
<i>P. myura</i> (J. Agardh) Berthold (43)		L		C				
Caulerpaceae Kützing								
<i>Caulerpa</i> J. V. Lamouroux								
<i>C. cupressoides</i> (Vahl) C. Agardh		L	F					
<i>C. mexicana</i> Sonder ex Kützing		L	F	C	T			H
<i>C. prolifera</i> (Forsskål) J. V. Lamouroux		L	F	C	T	G	P	
<i>C. racemosa</i> (Forsskål) J. Agardh (44)		L	F	C	T	G	P	H
<i>C. sertularioides</i> (S. G. Gmelin) Howe					T			
<i>C. webbiana</i> Montagne		L	F	C	T	G	P	H
Codiaceae Kützing								
<i>Codium</i> Stackhouse								
<i>C. adhaerens</i> C. Agardh		L	F	C	T	G	P	H
<i>C. bursa</i> (Linnaeus) C. Agardh		L	F	C				

Table I. Continued.

	+	L	F	C	T	G	P	H
<i>C. carolinianum</i> Searles		L	F					
<i>C. decortcatum</i> (Woodward) Howe		L	F	C	T	G		H
<i>C. effusum</i> (Rafinesque) Delle Chiaje		L	F		T		P	H
<i>C. elisabethiae</i> O. C. Schmidt (45)		L						
<i>C. fragile</i> (Suringar) Hariot (46)		L	F					
<i>C. guineënsis</i> P. Silva <i>ex</i> Lawson <i>et</i> John					T			
<i>C. intertextum</i> Collins <i>et</i> Hervey		L	F	C	T	G	P	H
<i>C. repens</i> P.L. Crouan <i>et</i> H.M. Crouan <i>ex</i> Vickers		L		C				
<i>C. taylorii</i> P. Silva		L	F	C	T	G	P	H
<i>C. tomentosum</i> Stackhouse (47)					T			
<i>C. vermilara</i> (Olivi) Delle Chiaje		L	F		T			
<b>Halimedaceae</b> Link								
<i>Halimeda</i> J. V. Lamouroux								
<i>H. discoidea</i> Decaisne		L	F	C				
<i>H. tuna</i> (J. Ellis <i>et</i> Solander) J. V. Lamouroux		L	F	C				
<b>Ostreobiaceae</b>								
<i>Ostreobium</i> Bornet <i>et</i> Flahault								
<i>O. quekettii</i> Bornet <i>et</i> Flahault		L		C				
<b>Udoteaceae</b> J. Agardh								
<i>Avrainvillea</i> Decaisne								
<i>A. canariensis</i> A. Gepp <i>et</i> E. S. Gepp				C	T			
<i>Flabellia</i> Reichenbach								
<i>F. petiolata</i> (Turra) Nizamuddin		L	F					
<i>Pseudochlorodesmis</i> Børgesen								
<i>P. furcellata</i> (Zanardini) Børgesen		L	F	C	T	G	P	H
<b>Dasycladales</b>								
<b>Dasycladaceae</b> Kützing								
<i>Batophora</i> J. Agardh								
<i>B. occidentalis</i> (Harvey) S. Berger <i>et</i> Kaeffer <i>ex</i> M. J. Wynne (48)					T			
<i>Cymopolia</i> J. V. Lamouroux								
<i>C. barbata</i> (Linnaeus) J. V. Lamouroux		L	F	C	T			
<i>Dasycladus</i> C. Agardh								
<i>D. vermicularis</i> (Scopoli) Krasser		L	F	C	T	G	P	H
<b>Polyphysaceae</b> Kützing								
<i>Acetabularia</i> J. V. Lamouroux								
<i>A. acetabulum</i> (Linnaeus) P. Silva		L		C				
<i>A. calyculus</i> J. V. Lamouroux		L			T			
<i>A. parvula</i> Solms-Laubach			F	C	T		P	
<i>A. polyphysoides</i> P.L. Crouan <i>et</i> H.M. Crouan		L	F	C	T	G	P	H
<b>MAGNOLIOPHYTA</b>								
<b>LILIOPSIDA</b>								
<b>Alismatales</b>								
<b>Hydrocharitaceae</b> A. L. de Jussieu								
<i>Halophila</i> Du Petit-Thouars								
<i>H. decipiens</i> Ostenfeld				C	T		P	
<b>Zosterales</b>								
<b>Cymodoceaceae</b> N. Taylor								
<i>Cymodocea</i> K. D. König								
<i>C. nodosa</i> (Ucria) Ascherson		L	F	C	T	G	P	H
<b>Zosteraceae</b> Dumortier								
<i>Zostera</i> Linnaeus								
<i>Z. noltii</i> Horneman (49)		L						
<b>MYCOPHYTA</b>								
<b>ASCOMYCOTA</b>								
<b>Dothideales</b>								
<b>Arthopyreniaceae</b> W. Watson								
<i>Arthopyrenia</i> A. Massalongo								
<i>A. halodytes</i> (Nylander) Arnold		L						



## Notes

- (1) The systematic position of these taxa is mainly in accordance with the recent publications of Komárek and Anagnostidis (1995, 1999).
- (2) Gil-Rodríguez and Afonso-Carrillo (1980a: 23) reported this species as *Anacystis dimidiata* (Kützting) Drouet *et* Daily, including the earlier record of Frémy (1936: 11–12). Later González-Ruiz *et al.* (1995: 15) reported it for Fuerteventura Island and Afonso-Carrillo and Sansón (1999: 27) included this species in their recent key.
- (3) *Aphanocapsa orae* (Kosinskaja) Komárek *et* Anagnostidis is a superfluous name for *A. littoralis* Hansgirg. The later is the correct name under *Aphanocapsa*. Thus, *A. littoralis* (Hansgirg) Komárek *et* Anagnostidis based on *Polycystis littoralis* Hansgirg is a later homonym of *A. littoralis* Hansgirg and has to be renamed.
- (4) *Aphanocapsa marina* (Hansgirg) P. Silva (see in P. Silva *et al.* 1996) cannot be considered the correct name. It ought to be *A. marina* Hansgirg *in* Foslie. The alternative combination *Microcystis marina* (Hansgirg) P. Silva is a later homonym of *Microcystis marina* (Hansgirg) Kosinskaja.
- (5) This species was reported by Reyes *et al.* (1993: 55, figs 18–20) growing on rocks and epiphytic on other algal species, such as *Fucus spiralis*.
- (6) These two *Scinaia* species, *S. australis* and *S. caribaea*, were reported for the first time from the area by Reyes *et al.* (1993: 55–57, figs 21–22) mainly from subtidal habitats.
- (7) This species is considered conspecific with *L. fragilis* as reported by John *et al.* (1994: 58), following the criteria of Abbott (1990a: 312, fig. 3). Nevertheless, further studies are needed to support the view of Silva *et al.* (1996: 127–128) who considered that both entities are not conspecific.
- (8) This species was described by Grunow as *Gelidium cartilagineum* var. *canariensis* from material collected at Puerto Orotava (Tenerife) and Gran Canaria by Liebethuth (see Piccone 1884: p. 56). Later, Seoane-Camba (1979) renamed it as *G. canariensis* (Grunow *in* Piccone) Seoane-Camba, and Prud'homme van Reine *et al.* (1994) accepted that proposal. Nevertheless, in accordance with article 33.3 of the ICBN (Greuter *et al.* 2000) this combination was not correctly done and therefore we validated this new name by a full and direct reference to its author and place of valid publication: *Gelidium canariense* (Grunow *in* Piccone) Seoane-Camba *ex* Haroun, Gil-Rodríguez, Díaz de Castro *et* Prud'homme van Reine *comb. nov.* Basionym: *Gelidium cartilagineum* var. *canariensis* Grunow *in* Piccone (1884: 56) collected at Orotava, Gran Canaria. *G. canariensis*: Seoane-Camba, *Acta Bot. Malacit.*, 5, 1979: p. 106, *nom. illeg.*
- (9) According to Price *et al.* (1988) often cited for the Canary Islands. Nevertheless, no voucher specimen could be found until now. Recently, this species was collected on a field trip to the northern coast of Gran Canaria Island by J. Rico and R. Haroun. Material has been deposited in BCM (No. 3609). Details of this new record will be published elsewhere.
- (10) Includes records as *G. spinulosum* (C. Agardh) J. Agardh.
- (11) The first record of this species in the Canary Islands was as *G. ferox* J. Agardh. See González Henríquez (1991) and Oliveira *et al.* (1983).
- (12) *Gracilaria gracilis* (Stackhouse) Steentoft, L. M. Irvine *et* Farnham is an illegitimate name for *G. confervoides* (L.) Greville. It also falls within the original description of *G. verrucosa* (Hudson) Papenfuss, of which another part belongs to *Gracilariopsis longissima* (S. G. Gmelin) Steentoft, L. M. Irvine *et* Farnham. This is, however, also a illegitimate name and deserves a new name.
- (13) Includes the records of *Gracilaria rubra* (C. Agardh) J. Agardh by Gil-Rodríguez and Afonso-Carrillo (1980a), which is probably a misspelling of *G. dura* (C. Agardh) J. Agardh.
- (14) This species was quoted by Tabares *et al.* (1997) and by Afonso-Carrillo and Sansón (1999: 199) without providing any additional information of its distributional pattern.
- (15) The sporophytic phase: *Falkenbergia rufolanosa* (Harvey) Schmitz, is also reported. The same applies to the sporophytic phase: *F. hillebrandii* (Bornet) Falkenberg, which is also found in the Canary Islands. It is not possible to separate the species based only on the morphology of the *Falkenbergia* stages.
- (16) Only the sporophytic phase: *Trilliella intricata* Batters has been reported in the islands. See Prud'homme van Reine (1998).
- (17) The sporophytic phase of this species, *Rhododiscus pulcherrimus* P. L. Crouan *et* H. M. Crouan, has been collected growing on shells of *Patella* sp. See Gil-Rodríguez *et al.* (1985).
- (18) Cited in the Canaries as *S. ornata* Schousboe *ex* Kützting and recently collected in the islets located north of Lanzarote Island. Details of these records will be published elsewhere.
- (19) The record of *H. squamatum* by Price *et al.* (1992: 125) needs confirmation.
- (20) The only record of this adelphoparasite is in Haroun and Prud'homme van Reine (1993), with three voucher specimens deposited at L with the numbers 1307 and 1315 on *Hypnea spinella* (C. Agardh) Kützting, and 6146 on *Hypnea valentiae* (Turner) Montagne, from the CANCAP Expeditions.
- (21) This family was erected to accommodate multiaxial genera formerly placed in Nemastomataceae,



- such as *Schizymania* and *Platoma*. See Masuda and Guiry (1995).
- (22) The genus *Sebdenia* is being revised in the Macaronesian region; Soler-Onís *et al.* (1996) and published elsewhere.
- (23) This species was recently reported by Afonso-Carrillo and Sansón (1999: 50, 203, fig. 15) for the Canary Islands, without specifying any particular location or island.
- (24) This species was also reported by Afonso-Carrillo and Sansón (1999: 50, 203, fig. 15) questioning the presence of *A. elegans* (Berthold) J. H. Price *et* D. M. John in the Canary Islands. Nevertheless, recent collections do not support their view.
- (25) The Canarian material is probably all *C. poiteaui* (J. V. Lamouroux) K. W. Nam. Both species are retained here until further data are collected to support it.
- (26) This northern species was quoted by Afonso-Carrillo and Sansón (1999) and Rojas-González and Afonso-Carrillo (2000b: 122) as occurring in the Canary Islands, including the older records of *P. myriococca* Montagne and *P. nutans* Montagne for Gran Canaria Island. The correct synonym might well be *P. fucooides* (Hudson) Greville [= *P. violacea* (Roth) Sprengel].
- (27) Rojas-González and Afonso-Carrillo (2000a) have recently found this interesting rhodomelacean species in subtidal habitats with a certain degree of siltation.
- (28) The systematic position of this supposed adelphoparasite is still unclear; see Rojas-González and Afonso-Carrillo (2000a).
- (29) *Ectocarpus repens* Reinke does not have a clear taxonomic position. According to some authors it is *Chilonema reptans* (P. L. Crouan *et* H. M. Crouan) Sauvageau, or it is considered to be a microstage of *Asperococcus fistulosus* (Hudson) Hooker, a species occasionally recorded for the Canary Islands (amongst others by Fletcher, 1987: 298).
- (30) The combination *Hapalospongidion macrocarpum* for *Mesospora macrocarpa* (Feldmann) Hartog was made by León-Álvarez and González-González (1993: 474) in a frequently overlooked Mexican publication, following the proposal of Womersley (1987: 74–75) to merge the genera *Basispora*, *Hapalospongidium* and *Mesospora* under the earliest name, *Hapalospongidium*.
- (31) This species was recorded by Vickers (1905: 58) from Gran Canaria. After that time, only Afonso-Carrillo and Sansón (1999: 114, 210, fig. 7a) and Sansón *et al.* (2002) confirmed its presence also in Tenerife Island.
- (32) These three *Dictyota* species are only quoted by Afonso-Carrillo and Sansón (1999: 111–112, 211, figs 5a, 5i and 5l), but without specification of any particular island. Besides, Hörnig *et al.* (1992b) considered them not to be present in the Eastern Atlantic Ocean.
- (33) The real number of species belonging to this genus in the Canary Islands remains to be determined (as well as in the other Macaronesian Archipelagos).
- (34) The first record of *C. peregrina* (Sauvageau) Hamel is credited to Johnston (1969) from Lanzarote Island. Later, Audiffred (1984: 166, figs 1–2) and Reyes and Sansón (1990: 77, fig. 1) reported it from El Hierro Island. However, the presence of this cold-water species needs to be confirmed.
- (35) The record of this species is credited to Fletcher (1987: 298). See remarks under (28).
- (36) This species was recently described from limited Canarian material by Nizamuddin (1995), but the taxonomic relationship of this new entity with other *Cystoseira* species present in nearby areas remains to be determined.
- (37) This species was reported by Afonso-Carrillo and Sansón (1999) for the Canary Islands, without specifying any particular island.
- (38) *Phaeophila tenuis* was recently reported for the Canary Islands, as *Entocladia tenuis* (Kylin) Nielsen, by Afonso-Carrillo and Sansón (1999: pp. 122–123, 213, figs 5, 13a) without specifying any particular island.
- (39) Includes *C. capillaris* (Kützinger) Børgesen and *C. mediterranea* (Kützinger) Kützinger recently reported by Afonso-Carrillo and Sansón (1999: 125, 214).
- (40) *Cladophora crystallina* (Roth) Kützinger and *C. flexuosa* (O. F. Müller) Kützinger are probably synonyms of *C. sericea* (Hudson) Kützinger. However, according to Hoek (1982) the latter species does not occur south of mainland Spain. New data are needed to discern the taxonomic status of the Canarian specimens.
- (41) According to Børgesen (1925: 72), the Canarian specimens [*Struvea anastomosans* (Harvey) Piccone *et* Grunow var. *canariensis* Piccone] are conspecific with *Struvea ramosa* Sonder, which it is now quoted as *Phyllocladion pulcherrimum* based on Kraft and Wynne (1996: 139). Nevertheless, a critical review of these two genera along their pantropical distribution range is needed.
- (42) *Valonia aegagropila* C. Agardh was reported by Afonso-Carrillo and Sansón (1999) for the Canary Islands without specifying any particular island. The morphological plasticity of *Valonia* species, such as the widespread *V. utricularis* (Roth) C. Agardh, may hamper an accurate identification. Thus, this species is retained here until a detailed study of this genus is made on the Eastern Atlantic coasts.
- (43) Henne and Schnetter (1999) recognized *Pseudobryopsis* and *Trichosolen* as separate genera, based on considerable differences in chloroplast features and gametangial behaviour.

- (44) *Caulerpa racemosa* includes different varieties, such as var. *laetevirens*, var. *occidentalis*, var. *lamourouxii* and var. *peltata* (sometimes reported also as *C. peltata* J. V. Lamouroux). The experimental evidence obtained by Ohba and Enomoto (1987) strongly supports the merge of these varieties as morphological extremes in response to a gradient in light intensity.
- (45) This species collected near Montaña Clara (Lanzarote) by Prud'homme van Reine during a CANCAP Expedition, 31-III-83 (L, 8143), was reported by Audiffred and Prud'homme van Reine (1985: 28).
- (46) Chacana (1990) identified as *C. fragile* ssp. *mentosoides* (van Goor) P. Silva some specimens attached to ropes inside two small fishing/recreational harbours.
- (47) Several records from other Canarian Islands are currently considered as misidentification of similar species, such as *C. decorticatum* (Woodward) Howe and *C. taylorii* P. Silva (Chacana, pers. comm.).
- (48) Sterile plants were collected in a tidepool of El Medano (Tenerife Island) by Reyes *et al.* (1993: 50–51, fig. 1) as *B. oerstedii* J. Agardh var. *occidentalis* (Harvey) M. Howe.
- (49) At present, endangered populations of this species are only found in very restricted coastal areas of Lanzarote Island. See Guadalupe-González *et al.* (1995) and Pavón-Salas *et al.* (2000).

### List of Taxa Inquirenda

Several doubtful records of macroalgae from the Canary Islands are included here in alphabetic order as there is no recent information to support their presence. Some other records such as *Ahnfeltia plicata* (Hudson) Fries, *Antithamnion pteroton* Schousboe ex Bornet, *Callophyllis fastigiata* (J. Agardh) J. Agardh, *Chondrus crispus* Stackhouse, *Phymatolithon borneitii* (Foslie) Foslie, *Porphyra atropurpurea* (Olivier) De Toni, *Ascophyllum nodosum* (Linnaeus) Le Joly, *Ecklonia muratii* Feldmann, *Cystoseira nodicaulis* (Whitening) Roberts, *Rhipilia tenaculosa* A. Gepp *et* E. Gepp, *Ulva uvoides* Bory de Saint-Vincent have been rejected or considered as taxa inquirenda by Gil-Rodríguez and Afonso-Carrillo (1980) and Afonso-Carrillo and Sansón (1999).

### Cyanophycota

*Aphanocapsa orae* (Kosinskaja) Komárek *et* Anagnostidis. This species was incidentally reported for the Canary Islands by Komárek and Anagnostidis (1999: 160) without mentioning any collecting station. Its presence needs to be confirmed.

*Bachytrichia maculans* Gomont. Lawson and Norton (1971) reported this species from the northern coast of Tenerife Island. From the information pro-

vided in their publication, it seems that it may correspond to *Calothrix crustacea* Schousboe *et* Thuret *ex* Bornet *et* Flahault. Thus, this record needs to be verified.

*Blennothrix cantharidosma* (Montagne *ex* Gomont) Anagnostidis *et* Komárek. Since the first collection by Despréaux (and reported by Montagne as *Lyngbya cantharidosma* in Webb *et* Berthelot 1840: p. 188), this species has not been found in the area.

*Chamaecalyx leibleiniae* (Reinsch) Komárek *et* Anagnostidis. Frémy (1936: 16) reported this species [as *Dermocarpa leibleiniae* (Reinsch) Bornet *et* Thuret] from a single sample in Gran Canaria Island. No other recent record is available.

*Chamaecalyx swirenkoi* (Sirsov) Komárek *et* Anagnostidis. This species was reported by Kristiansen *et al.* (1993: 94) in culture growing on *Anotrichum* sp. from Lanzarote Island. Nevertheless, according to Komárek and Anagnostidis (1999: 401) this is a freshwater species. This record, however, might be listed under the name *Ch. clavatus* (Setchell *et* Gardner) Komárek *et* Anagnostidis.

*Gomphosphaeria aponina* Kützing. First reported by Frémy (1936: 10–11) from Bahía del Confital, Gran Canaria. Later, it was reported again from the same locality by González (1976: 62). This species was listed by Gil-Rodríguez and Afonso-Carrillo (1980a: 23) and also by Afonso-Carrillo and Sansón (1999: 27, 193). Nevertheless, this name applies to a freshwater species.

*Hormothamnion enteromorphoides* (Grunow) *ex* Bornet *et* Flahault. Frémy (1936: 40–41) did not study this species and only reported it as observed by Vickers between November and February as a rare epiphytic species on *Spyridia* at Bahía del Confital (Gran Canaria).

*Leptolyngbya fragilis* (Meneghini *ex* Gomont) Anagnostidis *et* Komárek. This species was cited with doubt by Frémy (1936: 22–23) from an isolated sample (No. 3985) collected in Gran Canaria: ... 'Christoballo, ?*Phormidium fragile* Gomont, avec les espèces mentionnées à propos de *Aphanocapsa marina* Hangsg'. Further samples are needed to confirm its presence.

*Lyngbya polychroa* (Meneghini) Rabenhorst. There is only one incidental record of this species, as *Lyngbya sordida* (Zanardini) *ex* Gomont, by Ballesteros (1992: fig. 1, tab. 2) from a deep water area off Lanzarote.

*Lyngbya semiplena* (C. Agardh) *ex* Gomont. The only record of this species is in Johnston (1969) from coastal areas of Lanzarote Island. Nevertheless, it has not been possible to confirm this record as there is no voucher specimen available.

*Merismopedia convoluta* De Brébisson was reported only by Frémy (1936: 8) from a coastal area in Gran Canaria Island. This species is considered as freshwater species and thus, its status in the Canarian coasts needs to be reviewed.

*Merismopedia thermalis* Kützing. Although this species occurs in thermal water only, several records

of this species [as *Agmenellum thermale* (Kütz.) Drouet *et* Daily] are reported for the Canary Islands, such as Pinedo *et al.* (1991: 31) and Afonso-Carrillo and Sansón (1999: 27).

*Oscillatoria angina* (Børgesen) Gomont and *O. limosa* (Dillwyn) C. Agardh *ex* Gomont were also reported by Johnston (1969) from coastal areas in Lanzarote Island. Nevertheless, it has not been possible to confirm these records as there are no voucher specimens available.

*Rivularia monticulosa* Montagne *ex* Bornet *et* Flahault. The only record of this species is by Sauvageau (1912), who mentioned this species incidentally in his study of *Cystoseira* species from the Canarian coast. No other records exist.

### Rhodophycota

*Acrochaetium codii* (P. L. Crouan *et* H. M. Crouan) G. Hamel. This species was first reported for the Canary Islands by Feldmann in 1946; other authors such as Ardré (1970: 10) and Levring (1974: 52) cited it as *Rhodothamniella codii*, and Price *et al.* (1986: 20) as *Audouinella codii* (P. L. *et* H. M. Crouan) Garbary, without adding any new records. Its presence in the Canary Islands requires confirmation.

*Cordylecladia erecta* (Greville) J. Agardh. The only voucher specimen assigned to this species is deposited in L (CANCAP II Expedition, 15-IX-1977, No. 682), from the intertidal area of Pto. de Arinaga (Gran Canaria). Besides, Ballesteros (1992: fig. 1, tab. I) mentioned this species from a maërl bottom area in Fuerteventura. According to Brodie and Guiry (1988), this species seems to be confined to the north eastern Atlantic Ocean. A review of the Canarian samples is needed to verify if these are conspecific with the Mediterranean *C. guiryi* Gargiulo, Furnari *et* Cormaci (Gargiulo *et al.* 1990).

*Dumontia canariensis* Montagne. In the description of this species, Montagne (1840: 165) did not include any illustration, neither did Børgesen (1929) who was able to study the holotype and two small fragments from the original collection of Despréaux, but did not arrive at any conclusion regarding its identity. The taxonomic status of this entity still remains uncertain.

*Halurus flosculosus* (J. Ellis) Maggs *et* Hommersand was reported for the islands as *Griffithsia setacea* C. Agardh *sensu* Montagne *in* Webb *et* Berthelot (1840: 175). According to Børgesen (1930: 30–31), the material is not present in Herb. Montagne in the Muséum National d'Histoire Naturelle in Paris.

*Heterosiphonia pellucida* was only reported by Johnston (1969), and subsequently cited by other authors without any new data. Its presence in the islands needs confirmation.

*Jania micrarthrodia* J. V. Lamouroux was cited by Price *et al.* (1992: 136). It has not been possible to locate authentic material for this record.

*Kallymenia perforata* J. Agardh was cited by Price *et*

*al.* (1992) based on a pers. comm. by Prud'homme van Reine on 10 April 1987 to J. H. Price from a dredge sample south of Lanzarote (CANCAP IV Expedition, station 4.072, 45–60 m, 20-5-1980), but no further information has been published yet. The correct species might well be *K. westii* Ganesan, a species from the western Atlantic coasts.

*Lithophyllum crouanii* Foslie was reported for the Canaries only by John *et al.* (1994: 61) and needs confirmation.

*Lithophyllum daedaleum* Foslie *et* Howe was cited for the Canaries by John *et al.* (1994: 61). Although the holotype has been recently studied in detail in a modern context (Woelkerling and Lamy 1998: 308–309, figs 169–170), the identification of the material from the Canary Islands is still uncertain.

*Lithophyllum decussatum* (Ellis *et* Solander) Philippi f. *planiscula* Foslie was reported by John *et al.* (1994: 61). No such specimen is filed in the Foslie herbarium under *Lithophyllum decussatum* (Adey and Lebednik 1967: 44), and until the relevant specimen is located and examined in a modern context, this record should be regarded as questionable.

*Lithophyllum papillosum* (Zanardini) Price, John *et* Lawson reported by Woelkerling *et al.* (1998: 128) based on the records of *Lithophyllum (Dermatolithon) papillosum* (Zanardini) Foslie by Lemoine (1929: 46–47) for Tenerife and Gran Canaria is considered as a doubtful species requiring confirmation by Afonso-Carrillo *et al.* (1983: 46).

The report of *Mesophyllum brachycladum* (Foslie) W. H. Adey by Prud'homme van Reine [in John *et al.* (1994: 73)] requires confirmation. It might be *Lithophyllum racemus* (Lamarck) Foslie.

*Mesophyllum erubescens* (Foslie) Lemoine. This species was reported incidentally for the Canary Islands by Lemoine (1964) in her study of the coralline algae from the Cape Verde Archipelago. It needs confirmation.

*Polysiphonia erythraea* (Schousboe) J. Agardh, was reported by Afonso-Carrillo and Sansón (1999) without specification of any particular island; its presence needs confirmation.

*Ptilota gunneri* P. Silva, Maggs *et* L. M. Irvine *ex* Maggs *et* Hommersand [= *P. plumosa* (Hudson) C. Agardh]. This species was reported as *Fucus plumosus* Linnaeus by Bory de Saint-Vicent (1803: 304) for the Canary Islands. According to Børgesen (1930) and Gil-Rodríguez and Afonso-Carrillo (1980a: 12, 33) this was a misidentification of *Spyridia hypnoides* (Bory de Saint-Vicent) Papenfuss.

### Chromophycota

Two *Asperococcus* species reported from Gran Canaria Island are considered here as dubious records: *A. bullosus* J. V. Lamouroux (by Børgesen 1926: 68–69) and *A. compressus* Griffiths *ex* Hooker (only cited by Afonso-Carrillo and Sansón 1999: 119, 209, fig. 11).

Further data are needed to clarify their taxonomic value.

*Myriotrichia canariensis* Kützing was reported for the islands without any indication of the locality by Kützing (1856) and De Toni (1895). Only small fragments of the original material remain in L, which seems very similar to *M. adriatica* Hauck. The taxonomic value of this entity remains to be determined.

*Sphacelaria racemosa* Greville, a boreal species, does most probably not occur in the Canary Islands. It was only recorded by González (1976: 64) from Playa de las Canteras, Gran Canaria.

### Chlorophycota

*Caulerpa taxifolia* (Vahl) C. Agardh was reported by Lawson and Price (1969: 291–292) and subsequently other authors mentioned it for different islands. Afonso-Carrillo *et al.* (1983: 42), after reviewing the TFC herbarium, considered that all specimens were *C. mexicana* Sonder *ex* Kützing.

*Cladophoropsis monodensis* (Kützing) Reichenbach. This species was cited only by Meñez and Mathieson (1981: 28) in their study of the Tunisian algae. New data are needed to confirm its presence in the Canary Islands.

*Spongomorpha aeruginosa* (Linnaeus) van den Hoek, was reported only by Bory de Saint-Vincent (1803: 306), growing on rocks on Santa Cruz Bay

(Tenerife Island). Since that time no other collections have been added. Gil-Rodríguez and Afonso-Carrillo (1980a: 2, 27) considered it as a doubtful record, but Afonso-Carrillo and Sansón (1999: 130, 213) still retained this species without providing any evidence of its presence.

*Ulva lactuca* Linnaeus. Several old records of this species are found in the literature (Bory de Saint-Vincent 1803: 306, Montagne 1840: 181, Vickers 1896: 298, Frémy 1936: 27) and, subsequently, later authors include the Canaries in its distribution range (Feldmann 1946: 403, Lawson and Price 1969: 334–335). Gil-Rodríguez and Afonso-Carrillo (1980a: 14) considered these records as misidentifications of *U. rigida* C. Agardh, although it is present in the northern Madeira Archipelago (Neto *et al.* (2001: 393).

### Acknowledgements

The final layout of this paper has been enriched by inputs and suggestions of many colleagues. We feel much indebted to Professors I. A. Abbott, M. D. Guiry, P. C. Silva and W. J. Woelkerling for their accurate comments on the taxonomic status and recent nomenclatural changes of several taxa. Also, the technical help of Mr M. Garrido (ULPGC) during typing is much appreciated.

Accepted 28 November 2001.

### References

- Abbott, I. A. 1990a. A taxonomic assessment of the species of *Liagora* (Nemaliales, Rhodophyta) recognized by J. Agardh, based upon studies of type specimens. *Cryptogamic Bot. I*: 308–322.
- Abbott, I. A. 1990b. A taxonomic and nomenclatural assessment of the species of *Liagora* (Rhodophyta, Nemaliales) in the herbarium J. V. Lamouroux. *Cryptogamie, Algol. II*: 111–136.
- Adey, W. H. and P. A. Lebednik. 1967. *Catalog of the Foslie Herbarium*. Trondheim, Norway. Det Kongelige Norske Videnskabers Selskab Museet. pp. 92.
- Afonso-Carrillo, J. 1980. Nota sobre algunas Corallinaceae (Rhodophyta) nuevas para la flora ficológica de las islas Canarias. *Vieraea 10*: 53–58.
- Afonso-Carrillo, J. 1983. Estudios en las algas Corallinaceae (Rhodophyta) de las Islas Canarias. II. Notas taxonómicas. *Vieraea 13*: 127–144.
- Afonso-Carrillo, J. 1988. Structure and reproduction of *Spongites wildpretii* sp. nov. (Corallinaceae, Rhodophyta) from the Canary Islands, with observations and comments on *Spongites absimile* comb. nov. *Br. phycol. J.* 23: 89–102.
- Afonso-Carrillo, J. and M. C. Gil-Rodríguez. 1982. Sobre la presencia de un fondo de “maerl” en las islas Canarias. *Collectanea Botánica 13*: 703–708.
- Afonso-Carrillo, J. and M. Sansón. 1999. *Algas, hongos y fanerógamas marinas de las Islas Canarias. Clave analítica*. Servicio de Publicaciones Universidad de La Laguna, La Laguna. pp. 256.
- Afonso-Carrillo, J., M. C. Gil-Rodríguez and W. Wildpret de la Torre. 1978. Estudio de la vegetación algal de la costa del futuro polígono industrial de Granadilla (Tenerife). *Vieraea 8*: 201–242.
- Afonso-Carrillo, J., M. C. Gil-Rodríguez, R. Haroun Tabraue, M. Villena Balsa and W. Wildpret de la Torre. 1983. Adiciones y correcciones al catálogo de algas marinas bentónicas para el Archipiélago Canario. *Vieraea 13*: 27–49.
- Afonso-Carrillo, J., S. Pinedo and Y. Elejabeitia. 1992. Notes on the benthic marine algae of the Canary Islands. *Cryptogamie, Algol. 13*: 281–290.
- Afonso-Carrillo, J., M. Sansón and J. Reyes. 1998. Vegetative and reproductive morphology of *Ganonema lubrica* sp. nov. (Liagoraceae, Rhodophyta) from the Canary Islands. *Phycologia 37*: 319–329.
- Anagnostidis, K. and J. Komárek. 1988. Modern approach to the classification system of cyanophytes 3 – Oscillatoriales. *Arch. Hydrobiol. Suppl. Band 80*: 327–472, figs 1–35, tabs 1–13.
- Anagnostidis, K. and J. Komárek. 1990. Modern approach to the classification system of cyanophytes 5 – Stigonematales. *Arch. Hydrobiol. Suppl. Band 85*: [1]–73, figs 1–14, tabs 1–4.
- Ardré, F. 1970. Contribution à l'étude des algues marines du Portugal I. La Flore. *Port. Acta Biol. B 10*: 137–155.
- Audiffred, P. A. J. 1984. Marine algae of El Hierro (Canary Islands). *Vieraea 14*: 157–183.
- Audiffred, P. A. J. and W. F. Prud'homme van Reine. 1985. Marine algae of Ilha do Porto Santo and Deserta Grande

- (Madeira Archipelago). *Bol. Mus. Munic. Funchal* 37: 20–51.
- Ballesteros, E. 1992. Algunas observaciones sobre las comunidades de algas profundas en Lanzarote y Fuerteventura (Islas Canarias). *Vieraea* 22: 17–27.
- Ballesteros, E., M. Sansón, J. Reyes, J. Afonso-Carrillo and M. C. Gil-Rodríguez. 1992. New records of benthic marine algae from the Canary Islands. *Bot. Mar.* 35: 513–522.
- Betancor Villalba, M.<sup>a</sup> J., M. N. González Henríquez, R. Haroun Tabraue, R. Herrera Pérez, E. Soler Onís and M. A. Viera Rodríguez. 1995. Adiciones corológicas a la flora marina de Canarias. *Bot. Macaronésica* 22: 75–89.
- Børgesen, F. 1925–30. Marine algae from the Canary Islands especially from Tenerife and Gran Canaria. I. Chlorophyceae. II. Phaeophyceae. III. Rhodophyceae, part I: Bangiales and Nematiales. III. Rhodophyceae, part II: Cryptonemiales, Gigartinales and Rhodymeniales. III. Rhodophyceae, part III: Ceramiales. *Biologiske Meddelelser. Kgl. Danske Videnskabernes Selskab.* – Bind 5, 3: 1–123. Bind 6, 2: 1–112. Bind 6, 6: 1–97. Bind 8, 1: 1–97. Bind 9, 1: 1–159.
- Bory de Saint-Vincent, J. B. G. M. 1803. *Essais sur les Isles Fortunées et l'antique Atlantide, ou Précis de l'histoire générale de l'Archipel des Canaries*. Paris: Baudouin, . . . , Paris. [i–viii], [1]–522, [2 p. err.] pp., pls. 1–7.
- Brodie, J. and M. D. Guiry. 1988. Life history and reproduction of *Cordylecladia erecta* (Rhodymeniales, Rhodophyta). *Br. phycol. J.* 23: 347–364.
- Brummitt, R. K. and C. E. Powell. 1992. *Authors of Plant Names: a List of Scientific Names of Plants, with Recommended Standard Forms of their Names, Including Abbreviations*. Royal Bot. Garden, Kew. London. pp. 732.
- Chacana, M. 1990. Ocurrencia de *Codium fragile* ssp. *tomentosoides* en Canarias. *Abstract First Congress on Oceanography and Marine Resources in the Central-East Atlantic*, Cabildo de Gran Canaria, Taliarte (Gran Canaria): p. 109.
- De Toni, G.-B. 1895. *Sylloge Algarum Omnium Hucusque Cognitarum. Vol. 3. Sylloge Fucoidearum*. Padova, xvi + pp. 638.
- Feldmann, J. 1946. La flore marine des îles Atlantides. *Mémoires de la Société de Biogéographie* 8: 395–435.
- Fletcher, R. L. 1987. *Seaweeds of the British Isles. . . Volume 3. Fucophyceae (Phaeophyceae). Part 1*. British Museum (Natural History), London. x + 359 pp., 90 figs, 15 pls, 3 tabs.
- Frémy, P. 1936. Marine algae from the Canary Islands: especially from Tenerife and Gran Canaria IV. Cyanophyceae collected by F. Børgesen, worked out by P. Frémy. *Biologiske Meddelelser. Kgl. Danske Videnskabernes Selskab*, Bind 12, no. 5: 1–43.
- Gallardo, T., A. Gómez-Garreta, M. A. Ribera, M. Cormaci, G. Furnari, G. Giaccone and Ch. F. Boudouresque. 1993. Check-list of Mediterranean seaweeds II. Chlorophyceae Wille s. l. *Bot. Mar.* 36: 399–421.
- Gargiulo, G. M., G. Furnari and M. Cormaci. 1990. Structure and reproduction of *Cordylecladia guiryi* sp. nov. (Rhodophyta, Rhodymeniales) from the Mediterranean Sea. *Giorn. Bot. Ital.* 124: 631–640.
- Gil-Rodríguez, M. C. and J. Afonso-Carrillo. 1980a. *Catálogo de las Algas Marinas Bentónicas (Cyanophyta, Chlorophyta, Phaeophyta y Rhodophyta) para el Archipiélago Canario*. Aula de Cultura de Tenerife. Santa Cruz de Tenerife, pp. 47.
- Gil-Rodríguez, M. C. and J. Afonso-Carrillo. 1980b. Adiciones a la flora marina y catálogo ficológico para la isla de Lanzarote. *Vieraea* 10: 59–70.
- Gil-Rodríguez, M. C. and R. Haroun. 1992. *Laurencia viridis* sp. nov. (Ceramiales, Rhodophyta) from the Macaronesian Archipelagos. *Bot. Mar.* 35: 227–237.
- Gil-Rodríguez, M. C. and R. Haroun. 1993. The genus *Laurencia* (Rhodomelaceae, Rhodophyta) in the Canary Islands. *Courier Forschungsinstitut Senckenberg.* 159: 113–117.
- Gil-Rodríguez, M. C., R. Haroun Tabraue, J. Afonso-Carrillo and W. Wildpret de la Torre. 1985. Adiciones al catálogo de las algas marinas bentónicas para el Archipiélago Canario. II. *Vieraea* 15: 101–112.
- González, N. 1976. Contribución al estudio del epifitismo en *Zostera marina* L. (Zosteraceae) en la Playa de Las Canteras (Gran Canaria). *Bot. Macaronésica* 2: 59–67.
- González Henríquez, M. N. 1991. *Gracilaria ferox* J. Agardh, nuevo taxon para la isla de Gran Canaria. *Acta Bot. Malacitana* 16: 59–62.
- González-Ruiz, S., M. Sansón and J. Reyes. 1995. New records of sublittoral algae from the Canary Islands. *Cryptogamie, Algol.* 16: 21–31.
- Greuter, W., J. McNeill, F. R. Barrie, H. M. Burdet, V. Demoulin, T. S. Filgueiras, D. H. Nicolson, P. C. Silva, J. E. Skog, P. Trethane, N. J. Turland and D. L. Hawksworth. 2000. *International Code of Botanical Nomenclature (Saint Louis Code)*. Koeltz Scientific Books, Königstein. 474 pp.
- Guadalupe, M. E., M. C. Gil-Rodríguez and M. C. Hernández-González. 1995. Fitobentos de Arrecife de Lanzarote, reserva de la biosfera (Islas Canarias). *Cryptogamie, Algol.* 16: 33–46.
- Guiry, M. D. 1997. Benthic red, brown and green algae. In: (C. M. Howson and B. E. Picton, eds): *The species directory of the marine fauna and flora of the British Isles and surrounding seas. Ulster Museum Publication* 276: 341–367.
- Haroun, R. J. and W. F. Prud'homme van Reine. 1993. A biogeographical study of *Laurencia* and *Hypnea* species of the Macaronesian Region. *Courier Forschungsinstitut Senckenberg.* 159: 119–125.
- Haroun, R. J., W. F. Prud'homme van Reine, D. G. Müller, E. Serrao and R. Herrera. 1993. Deep-water macroalgae from the Canary Islands: new records and biogeographical relationships. *Helgoländer Meeresunters.* 47: 125–143.
- Hawksworth, D. L., P. M. Kirk, B. C. Sutton and D. N. Pegler. 1995. *Ainsworth & Bisby's Dictionary of the Fungi*. 8th edition. International Mycological Institute, Wallingford, U. K., CAB International. xii, pp. 616.
- Henne, K.-D. and R. Schnetter. 1999. Revision of the *Pseudobryopsis/Trichosolen* complex (Bryopsidales, Chlorophyta) based on features of gametangial behaviour and chloroplasts. *Phycologia* 38: 114–127.
- Hoek, C. van den. 1982. *A Taxonomic Revision of the American Species of Cladophora (Chlorophyceae) in the North Atlantic Ocean and Their Geographic Distribution*. North-Holland Publ. Co., Amsterdam. pp. 236.
- Holmgren, P. K., N. H. Holmgren and L. C. Barnett. 1990. *Index Herbariorum. Part I. The herbaria of the world*. 8th edition. *Regnum Vegetabile* 120: 1–693.
- Hörnig, I., R. Schnetter and W. F. Prud'homme van Reine. 1992a. The genus *Dictyota* (Phaeophyceae) in the North Atlantic. I. A new generic concept and new species. *Nova Hedwigia* 54: 45–62.
- Hörnig, I., R. Schnetter and W. F. Prud'homme van Reine. 1992b. The genus *Dictyota* (Phaeophyceae) in the North Atlantic. II. Key to the species. *Nova Hedwigia* 54: 397–402.

- Hörnig, I., R. Schnetter and W. F. Prud'homme van Reine. 1993. Additional notes to "The genus *Dictyota* (Phaeophyceae) in the North Atlantic. I. A new generic concept and new species." Correction and validation of new combinations in the genus *Dictyota*. *Nova Hedwigia* 56: 169–171.
- John, D. M., G. W. Lawson, J. H. Price, W. F. Prud'homme van Reine and W. J. Woelkerling. 1994. Seaweeds of the western coast of tropical Africa and adjacent islands: a critical assessment. IV. Rhodophyta (Florideae) 4. Genera L-O. *Bull. Nat. Hist. Mus. London (Bot. Ser.)* 24: 49–90.
- Johnston, C. S. 1969. The ecological distribution and primary productivity of macrophytic marine algae in the Eastern Canaries. *Internat. Rev. Ges. Hydrobiol.* 54: 473–490.
- Jong, Y. S. D. M. de and W. F. Prud'homme van Reine. 1997. A review of the genus *Nemacystus* (Sporochneaceae, Chordariales, Phaeophyceae), including phylogenetic and biogeographical hypotheses. *Nova Hedwigia* 64: 1–40.
- Jong, Y. S. D. M. de, W. F. Prud'homme van Reine and G. M. Lokhorst. 1997. Studies on Dasyaceae. 2. A revision of the genera *Eupogodon* and *Dipterocladia* gen. nov. (Ceramiales, Rhodophyta). *Bot. Mar.* 40: 421–450.
- Kim, M. S. and I. K. Lee. 1999. *Neosiphonia flavimarina* gen. et sp. nov. with a taxonomic reassessment of the genus *Polysiphonia* (Rhodomelaceae, Rhodophyta). *Phycol. Res.* 47: 271–281.
- Komárek, J. and K. Anagnostidis. 1995. Nomenclatural novelties in chroococcalean cyanoprokaryotes. *Preslia* 67: 15–23.
- Komárek, J. and K. Anagnostidis. 1999. Cyanoprokaryota 1. Teil: Chroococcales. In: *Süßwasserflora von Mitteleuropa*, Band 19/1. Gustav Fischer, Jena. pp. 1–548, figs 1–643.
- Kraft, G. and M. J. Wynne. 1996. Delineation of the genera *Struvea* Sonder and *Phyllocladion* J. E. Gray (Cladophorales, Chlorophyta). *Phycol. Res.* 44: 129–142.
- Kristiansen, A., R. Nielsen, and P. M. Pedersen. 1993. An annotated list of marine algae collected on Lanzarote, Canary Islands, January 1986. *Courier Forschungsinstitut Senckenberg*. 159: 93–102.
- Kützing, F. T. 1856. *Tabulae Phycologicae* Vol. 6. Nordhausen. ii + 35 pp., 100 pls.
- Kvaternik, D. and J. Afonso-Carrillo. 1995. The red algal genus *Liagora* (Liagoraceae, Rhodophyta) from the Canary Islands. *Phycologia* 34: 449–471.
- Lawson, G. W. and D. M. John. 1987. The marine algae and coastal environment of tropical west Africa. 2nd edition. *Beih. Nova Hedwigia* 93: 1–415.
- Lawson, G. W. and T. Norton. 1971. Some observations on littoral and sublittoral zonation at Teneriffe (Canary Islands). *Bot. Mar.* 14: 116–120.
- Lawson, G. W. and J. H. Price. 1969. Seaweeds of the western coast of tropical Africa and adjacent islands: a critical assessment. I. Chlorophyta and Xanthophyta. *Bot. J. Linn. Soc.* 62: 279–346.
- Lemoine, P. 1929. Subfamilia I. Melobesieae. In: (F. Børgesen, ed.) Marine algae from the Canary Islands: especially from Teneriffe and Gran Canaria. III. Rhodophyceae, part II: Cryptonemiales, Gigartinales and Rhodymeniales. *Biol. Meddelelser. Kgl. Danske Videnskabernes Selskab* 8: 19–68.
- Lemoine, P. 1964. Contribution a l'étude des Mélobésiées de l'Archipel du Cap-Vert. *Proc. Int. Seaweed Symposium* 4: 234–239.
- León-Álvarez, D. and J. González-González. 1993. Algas costrosas del Pacífico tropical. 456–474. In: (S. I. Salazar Vallejo and N. E. González, eds) *Biodiversidad Marina y Costera de México*. Chetumal, Mexico. 865 pp.
- Levring, T. 1974. The marine algae of the archipelago of Madeira. *Bolm. Mus. munic. Funchal* 28: 5–111.
- Martín, M. J., M. Sansón and J. Reyes. 1996. Morphology and anatomy of *Papenfussiella kuromo* (Chordariaceae, Phaeophyta) from the Canary Islands. *Cryptogamie, Algol.* 17: 165–173.
- Masuda, M. and M. D. Guiry. 1995. Reproductive morphology of *Itonoa marginifera* (J. Agardh) gen. et comb. nov. (Nemastomataceae, Rhodophyta). *Eur. J. Phycol.* 30: 57–67.
- Meñez, E. G. and A. C. Mathieson. 1981. The marine algae of Tunisia. *Smith. Contrib. Mar. Sc.* 10: 1–59.
- Montagne, J. P. F. C. 1840. Plantae cellulares. In: (P. Webb and S. Berthelot, eds) *Histoire naturelle des îles Canaries, Tome troisième. Deuxième partie: Phytographia canariensis. Sectio ultima*. Béthune, Paris. [4] + xv + [1] + 208 pp., Láms 1–9.
- Morales-Ayala, S. and M. A. Viera-Rodríguez. 1988. Adiciones al catálogo de las algas marinas bentónicas para el archipiélago canario. *Vieraea* 18: 189–192.
- Nam, K. W. 1999. Morphology of *Chondrophyucus undulata* and *C. parvipapillata* and its implications for the taxonomy of the *Laurencia* (Ceramiales, Rhodophyta) complex. *Eur. J. Phycol.* 34: 455–468.
- Nam, K. W., C. A. Maggs and D. J. Garbary. 1994. Resurrection of the genus *Osmundea* with an emendation of the generic delimitation of *Laurencia* (Ceramiales, Rhodophyta). *Phycologia* 33: 384–395.
- Nam, K. W., C. A. Maggs, L. McIvor and M. J. Stanhope. 2000. Taxonomy and phylogeny of *Osmundea* (Rhodomelaceae, Rhodophyta) in Atlantic Europe. *J. Phycology*, 36: 759–772.
- Neto, A. I., D. C. Cravo and R. J. Haroun. 2001. Check-list of the benthic marine plants of the Madeira Archipelago. *Bot. Mar.* 44: 391–414.
- Nielsen, R., A. Kristiansen, L. Mathiesen and H. Mathiesen. 1995. Distributional index of the benthic macroalgae of the Baltic Sea area. *Acta Bot. Fennica* 155: 1–51.
- Nizamuddin, M. 1995. *Cystoseira wildpretii* Nizamuddin sp. nov. from the Canary Islands. *Pakistan J. Bot.* 27: 263–266.
- Ohba, H. and S. Enomoto. 1987. Culture studies on *Caulerpa* (Caulerpales, Chlorophyceae) II. Morphological variation of *C. racemosa* var. *laetevirens* under various culture conditions. *Jap. J. Phycol.* 35: 178–188.
- Oliveira, F. E. C. de, C. J. Bird and J. McLachlan. 1983. The genus *Grevillia* Greville (Rhodophyta, Gigartinales): The western Atlantic *G. domingensis* Sonder ex Kütz., pro syn., *G. cervicornis* (Turner) J. Ag. and *G. ferox* J. Ag. *Can. J. Bot.* 61: 2999–3008.
- Pavón-Salas, N., R. Herrera, A. Hernández-Guerra and R. Haroun. 2000. Distribution pattern of seagrasses in the Canary Islands (Central-East Atlantic Ocean). *J. Coastal Res.* 16: 329–335.
- Pedersen, P. M. and A. A. Kristiansen. 1995. Temperature gradient experiments on *Giraudia sphacelarioides* (Algae, Fucophyceae) from Lanzarote, Canary Islands. *Bolm. Mus. munic. Funchal Supl.* 4B: 589–597.
- Piccone, A. 1884. *Crociera del Corsaro alle Isole Madera e Canarie del capitano Enrico d'Albertis*. *Algha*. Tipografia del R. Istituto Sordo-Muti, Genova. pp. 60, 1 lám.
- Price, J. H., D. M. John and G. W. Lawson. 1986. Seaweeds of the western coast of tropical Africa and adjacent islands: a critical assessment. IV. Rhodophyta (Florideae) 1. Genera

- A-F. *Bull. Brit. Mus. (Nat. Hist.), Bot. Ser. 15*: 1–122.
- Price, J. H., D. M. John and G. W. Lawson. 1988. Seaweeds of the western coast of tropical Africa and adjacent islands: a critical assessment. IV. Rhodophyta (Florideae) 2. Genera G. *Bull. Brit. Mus. (Nat. Hist.), Bot. Ser. 18*: 195–273.
- Price, J. H., D. M. John and G. W. Lawson. 1992. Seaweeds of the western coast of tropical Africa and adjacent islands: a critical assessment. IV. Rhodophyta (Florideae) 3. Genera H–K. *Bull. Brit. Mus. (Nat. Hist.), Bot. Ser. 22*: 123–146.
- Prud'homme van Reine, W. F. 1998. Seaweeds and biogeography in the Macaronesian Region. *Bolm. Mus. munic. Funchal Supl. 5B*: 307–331.
- Prud'homme van Reine, W. F. and C. van den Hoek. 1990. Biogeography of Macaronesian seaweeds. *Courier Forschungsinstitut Senckenberg 129*: 55–73.
- Prud'homme van Reine, W. F., R. J. Haroun and P. A. J. Audiffred. 1994. A reinvestigation of Macaronesian seaweeds as studied by A. Piccone with remarks on those studied by A. Grunow. *Nova Hedwigia 58*: 67–121.
- Reyes, J. and M. Sansón. 1990. Adiciones a la flora marina de la isla de El Hierro (Islas Canarias). *Vieraea 20*: 71–81.
- Reyes, J., M. Sansón and J. Afonso-Carrillo. 1993. Notes on some interesting marine algae new from the Canary Islands. *Cryptogamic Bot. 4*: 50–59.
- Ribera, M. A., A. Gomez-Garreta, T. Gallardo, M. Cormaci, G. Furnari and G. Giaccone. 1992. Check-list of Mediterranean Seaweeds I. Fucophyceae (Warming, 1884). *Bot. Mar. 35*: 109–130.
- Rojas-González, B. and J. Afonso-Carrillo. 2000a. Notes on Rhodomelaceae (Rhodophyta) from the Canary Islands: Observations on reproductive morphology and new records. *Bot. Mar. 43*: 147–155.
- Rojas-González, B. and J. Afonso-Carrillo. 2000b. Notas corológicas sobre algas rojas Rhodomelaceae de las islas Canarias. *Vieraea 28*: 119–125.
- Rojas-González, B. and J. Afonso-Carrillo. 2000c. Morfología y distribución de Boergeseniella fruticulosa en las islas Canarias (Rhodophyta, Rhodomelaceae). *Vieraea 28*: 127–136.
- Rojas-González, B., J. Afonso-Carrillo and C. Ibeas. 1994. New records of Rhodomelaceae (Rhodophyta) from the Canary Islands. *Bot. Mar. 37*: 133–138.
- Sansón, M. and J. Reyes. 1994. Notes on Ceramiaceae (Rhodophyta) from the Canary Islands: new records and observations on morphology and geographical distribution. *Bot. Mar. 37*: 347–356.
- Sansón, M. and J. Reyes. 1995. Morphological and geographical observations on four species of Ceramiaceae (Rhodophyta) new to the Canary Islands. *Bot. Mar. 38*: 89–95.
- Sansón, M., J. Reyes and J. Afonso-Carrillo. 1991. Contribution to the seaweed flora of the Canary Islands: new records of Florideophyceae. *Bot. Mar. 34*: 527–536.
- Sansón, M., J. Reyes, J. Afonso-Carrillo and E. Muñoz. 2002. Sublittoral and deep-water red and brown algae new from the Canary Islands. *Bot. Mar. 45*: 35–49.
- Sauvageau, C. 1912. A propos des *Cystoseira* de Banyuls et Guéthary. *Bull. Stn. Biol. Arcachon 14*: 133–556.
- Seoane-Camba, J. 1979. Sobre algunas Gelidiaceas nuevas o poco conocidas de las costas españolas. *Acta Bot. Malacitana 5*: 99–112.
- Silva, P. C. 1992. Geographic patterns of diversity in benthic marine algae. *Pacific Science 46*: 429–437.
- Silva, P. C., P. W. Basson and R. L. Moe. 1996. Catalogue of the benthic marine algae of the Indian Ocean. *Univ. California Publ. Bot. 79*: xiv + 1–1281.
- Soler-Onís, E., R. J. Haroun, M. A. Viera-Rodríguez, W. F. Prud'homme van Reine and Y. S. D. M. de Jong. 1996. Systematics and phylogenetics of the genus *Sebdenia* Berthold in the Atlantic Ocean. In: (R. Haroun and M. A. Viera-Rodríguez, eds) *II Symposium Fauna and Flora Atlantic Islands*. Univ. Las Palmas de Gran Canaria. 137 pp.
- South, G. R. and I. Tittley. 1986. *A Check-list and Distributional Index of the Benthic Marine Algae of the North Atlantic Ocean*. Huntsman Marine Laboratory and British Museum (Natural History), St. Andrews and London. 76 pp.
- Tabares, N., J. Afonso-Carrillo, M. Sansón and J. Reyes. 1997. Vegetative and reproductive morphology of *Dudresnaya canariensis* sp. nov. (Dumontiaceae, Rhodophyta). *Phycologia 36*: 267–273.
- Thorne, R. F. 1992. Classification and geography of the flowering plants. *The Botanical Review 58*: 225–348.
- Vickers, A. 1896. Contribution a la flora algologique des Canaries. *Annl. Sc. Nat. (Bot.), ser. 8, 4*: 293–306.
- Vickers, A. 1905. Liste de algues marines de la Barbade. *Annl. Sc. Nat. (Bot.), ser. 9, 1*: 45–66.
- Viera-Rodríguez, M. A., P. A. J. Audiffred, M. C. Gil-Rodríguez, W. F. Prud'homme van Reine and J. Afonso-Carrillo. 1987. Adiciones al catálogo de algas marinas bentónicas para el Archipiélago Canario. III. *Vieraea 17*: 227–235.
- Woelkerling, W. J. and D. Lamy. 1998. *Non geniculate Coral-line Red Algae and the Paris Muséum: Systematics and Scientific History*. Publ. Scientifiques du Muséum/A. D. A. C., Paris. viii + 767 pp., 369 pls.
- Woelkerling, W. J., G. W. Lawson, J. H. Price, D. M. John and W. F. Prud'homme van Reine. 1998. Seaweeds of the western coast of tropical Africa and adjacent islands: a critical assessment. IV. Rhodophyta (Florideae) 5. Genera [Q] R–Z. *Bull. Nat. Hist. Mus. London (Bot. Ser.) 28*: 115–150.
- Womersley, H. B. S. 1987. *The Marine Benthic Flora of Southern Australia. Part II*. South Australian Government Printing Division, Adelaide. 484 pp., 169 figs, 8 pls, 1 tab.
- Wynne, M. J. 1998. A Check-list of Benthic Marine Algae of the Tropical and Subtropical Western Atlantic: First Revision. *Beih. Nova Hedwigia 116*: iii + pp. 155.