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# Conspectus of the Benthic Marine Algae of the Gulf of California: Rhodophyta, Phaeophyceae, and Chlorophyta

*James N. Norris, Luis E. Aguilar-Rosas,  
and Francisco F. Pedroche*

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# Conspectus of the Benthic Marine Algae of the Gulf of California: Rhodophyta, Phaeophyceae, and Chlorophyta

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## ABSTRACT

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Cover images (*left to right*): *Hydroclathrus clathratus* (Punta La Gringa, Baja California), *Asparagopsis taxiformis* (Bahía de La Paz, Baja California Sur); *Colpomenia sinuosa* (Puerto Peñasco, Sonora), and *Spyridia filamentosa?* (Laguna Percebú, Baja California). Image credits (*left to right*): 1, 2, 4 by L. E. Aguilar-Rosas; 3 by J. N. Norris.

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# Conspectus of the Benthic Marine Algae of the Gulf of California: Rhodophyta, Phaeophyceae, and Chlorophyta

James N. Norris,<sup>1\*</sup> Luis E. Aguilar-Rosas,<sup>2</sup>  
and Francisco F. Pedroche<sup>3</sup>

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## INTRODUCTION

The Gulf of California (Golfo de California), also known as the Sea of Cortez (Mar de Cortés) or Vermilion Sea (Mar Bermejo), is basically a long, rectangular basin, over 1,050 km in length (between 24°N and 32°N), and ranges 48–241 km (averaging about 175 km) in width. Closed in the north, the Gulf of California extends from the Río Colorado delta southward between the east coast of the Mexican Baja California peninsula (states of Baja California and Baja California Sur) and the west coast of mainland Mexico (states of Sonora, Sinaloa, Nayarit, and northern Jalisco) to its southernmost entrance, which runs southeast from Cabo San Lucas (Baja California Sur) to Cabo Corrientes (Jalisco). It has a coastline of about 4,000 km (Figures 1–5). There are over 900 islands (islas), islets (isolets), and rocas throughout the Gulf, including the largest islands in the Gulf, the Islas Grandes (Islas de la Cinura; Midriff Islands). The Gulf of California has wide range of habitats from coastal salt marshes, mangrove lagoons, estuaries, and marine intertidal and shallow subtidal waters to very deep waters over its tropical and subtropical to warm temperate regions (Pedroche et al., 2005, 2008; Norris, 2010, 2014).

The Gulf of California has a wide variety of habitats that has yielded a high diversity of benthic macroalgae. Currently 730 species (including 3 subspecies, 30 varieties, and 9 forms) are recognized in the Gulf of California, with the Rhodophyta well represented by 23 orders, 52 families, 155 genera, and 490 species (including 1 subspecies, 21 varieties, and 2 forms); Phaeophyceae represented by 10 orders, 19 families, 37 genera, and 112 species (including 1 subspecies, 2 varieties, and 2 forms); and Chlorophyta represented by 7 orders, 16 families, 30 genera, and 128 species (including 1 subspecies, 10 varieties, and 3 forms). Among those marine algae previously recorded in the Gulf of California, 39 species were found to be uncertain records or of uncertain taxonomic status, and 15 species are excluded from its marine flora. A lectotype is selected for *Gracilaria hancockii* E. Y. Dawson, which is treated as a synonym of *G. subsecundata* Setchell et N. L. Gardner, and new combinations for three varieties of *Caulerpa chemnitzia* are proposed.

The general features of the Gulf of California's marine flora and its history of marine botanical exploration can be found in Pedroche et al. (2005, 2008) and Norris (2010). Oceanographic features of the Gulf of California are given by van Andel and Shor (1964), Álvarez-Borrego (1983, 2002), and Lavín and Marinone (2003), with overviews by Maluf (1983), González-González et al. (1996), Brusca et al. (2005),

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FIGURE 1. Gulf of California. NASA Moderate Resolution Imaging Spectroradiometer (MODIS) image (M xico.A200334.2040), taken 30 November 2003 by the *Aqua* Earth-observing satellite. Credit: Jacques Desclotres, MODIS Rapid Response team, NASA/GSFC, Visible Earth, EOS Project Science Office, NASA Goddard Space Flight Center.



FIGURE 2. Gulf of California coasts from the mouth of Río Colorado to the southern entrance from Cabo San Lucas (Baja California Sur) to Cabo Corrientes (northern Jalisco): east coast (mainland Mexico; green), west coast (Baja California peninsula; brown), and Islas Grandes (yellow).



FIGURE 3. Islas Grandes (=Islas de la Cintura; Midriff Islands) of the central northern Gulf of California.

Pedroche et al. (2005, 2008), and Norris (2010). Names for Gulf localities referred to in the distribution of the systematic list and shown in the maps (Figures 2–4) are from Lewis and Ebeling (1971) and Pedroche et al. (2005, 2008). Herein the names of authors of the scientific names of the taxa are after Brummitt and Powell (1992). Herbaria with important holdings of Gulf of California marine algae include the following (herbarium abbreviations follow Thiers, 2015; see also Norris, 2014:2):

AD State Herbarium of South Australia, Adelaide, South Australia, Australia

AHFH Herbarium of the Allan Hancock Foundation, University of Southern California, Los Angeles, California, USA; AHFH algae collection moved to LAM, now UC

CAS Herbarium of the California Academy of Sciences, San Francisco, California, USA; now UC

CMMEX Algae Herbarium of the Universidad Autónoma de Baja California, Ensenada, Mexico

CN Herbarium, Université de Caen, Laboratoire de Biologie, Caen, France



FIGURE 4. East coast of the Gulf of California (west coast of mainland Mexico): extends southward from Río Colorado to Cabo Corrientes, including mainland states (estados) of Sonora, Sinaloa, Nayarit, and northern Jalisco.



FIGURE 5. West coast of the Gulf of California (east coast of the Baja California peninsula); extends southward from Río Colorado to Cabo San Lucas, including the Baja California peninsula states (estados) of Baja California and Baja California Sur.

|               |   |
|---------------|---|
| ENCB          | Herbario, Escuela Nacional de Ciencias Biológicas, Instituto Politécnico Nacional, Mexico City, Mexico  |
| FBCS          | Herbario Ficológico, Museo de Historia Natural, Universidad Autónoma de Baja California Sur, La Paz, Baja California Sur, Mexico  |
| LAM           | Algal Herbarium of the Los Angeles County Museum, Los Angeles, California, USA; now UC  |
| LD            | Botanical Museum, Lund, Sweden  |
| MEXU          | Herbario Nacional de México, Universidad Nacional Autónoma de México, Mexico City, Mexico   |
| MICH          | Herbarium of the University of Michigan, Ann Arbor, Michigan, USA   |
| MLML          | Marine Algae Collection, Marine Biological Collection (Museum), Moss Landing Marine Laboratories, consortium of California State University System, Moss Landing, California, USA |
| PC            | Muséum National d'Histoire Naturelle, Laboratoire de Cryptogamie, Paris, France   |
| TCD           | Herbarium, School of Botany, Trinity College, Dublin, Ireland   |
| UC            | Herbarium of the University of California, Berkeley, USA  |
| US Alg. Coll. | Algal Collection of the U.S. National Herbarium, National Museum of Natural History, Smithsonian Institution, Washington, D.C., USA   |

The aim of this work is to create an updated, annotated, systematic list with the distribution of the Gulf of California marine macroalgae. The systematic list contains the currently accepted taxon names of red, brown, and green benthic algae, the date and place of valid publication, and type locality. The geographical distribution range of each taxon is given from its northernmost locale to its southernmost locale within three regions of the Gulf of California: the east coast of the Gulf, comprising the states from Sonora to the northern part of Jalisco (Figures 2, 3); the west coast of the Gulf, covering the states of the peninsula of Baja California (Figures 2, 4); and the taxa on the islands of the Gulf, including the Islas Grandes (also called Grandes Islas, Midriff Islands, or Islas de la Cintura; see Lewis and Ebeling,

1971), which contain two of the largest islands of the Gulf (Figures 2, 5). Abbreviations related to the distribution include the following:

|      |  |
|------|--|
| BC   | Baja California                                      |
| BCS  | Baja California Sur                                  |
| EC   | east coast of the Gulf of California                 |
| GRO  | Guerrero   |
| IS   | islas (islands) of the Gulf of California            |
| ISG  | Islas Grandes (Midriff Islands; Islas de la Cintura) |
| JAL  | Jalisco  |
| MICH | Michoacán  |
| NAY  | Nayarit  |
| SIN  | Sinaloa  |
| SON  | Sonora   |
| WC   | west coast of the Gulf of California                 |

Where appropriate, remarks on taxonomy, nomenclature, biology, ecology, and/or distribution are included with the taxon. Additional references to the Gulf of California taxa, including taxonomic accounts of the species with their basionym and synonyms, type localities, distribution, and published records, can be found in Pedroche et al. (2005, 2008) and Norris (2010, 2014).

We hope this conspectus will encourage further taxonomic and phylogenetic research on the biodiversity, morphological and molecular systematics, phylogenetics, and phylogeographic and ecological investigations of the marine algae of this biologically unique region. Many challenging questions on taxonomy problems and molecular systematics and phylogenetic relationships remain to be solved. The Gulf of California taxa presented here all require genetic testing to verify, resolve, or correct their identification, phylogenetic relationships, and taxonomy.

Conservation of the diverse ecosystems in the Gulf of California is being provided by several marine biosphere reserves, marine protected areas (for natural resources or flora and fauna), marine sanctuaries, and national marine parks (Cartron et al., 2005; Enriquez-Andrade et al., 2005; Lluch-Cota et al., 2007; Danemann and Ezcurra, 2008; Brusca, 2010; Norris, 2014). The current protected areas of the Gulf of California include 244 islands, islets, and coastal areas indicated on the World Heritage List “Islands and Protected Areas of the Gulf of California” (UNESCO, 2011, 2013, 2016) and “Ficha Técnica para la evaluación de los sitios prioritarios para la conservación de los ambientes costeros y oceánicos de México” (CONABIO et al., n.d.; Sánchez-Ibarra et al., 2013).





# Systematic List

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## SYNOPSIS OF RED ALGAL TAXA

The synoptic list below of Rhodophyta of the Gulf of California is of the phylum, classes, orders, families, and genera of red algae presented in the accounts following this list.

### RHODOPHYTA

#### RHODOPHYTINA

##### STYLONEMATOPHYCEAE

###### Stylonematales

###### Stylonemataceae

*Chroodactylon* Hansgirg

*Stylonema* Reinsch

##### COMPSOPOGONOPHYCEAE

###### Erythropeltales

###### Erythrotrichiaceae

*Erythrocladia* Rosenvinge

*Erythropeltis* F. Schmitz

*Erythrotrichia* Areschoug

*Porphyrostromium* Trevisan

*Sablingia* Kornmann

#### EURHODOPHYTINA

##### BANGIOPHYCEAE

###### Bangiales

###### Bangiaceae

*Bangia* Lyngbye

###### Porphyrales

###### Porphyraceae

*Pyropia* J. Agardh

##### FLORIDEOPHYCEAE

##### HILDENBRANDIOPHYCIDAE

###### Hildenbrandiales

###### Hildenbrandiaceae

*Hildenbrandia* Nardo

##### NEMALIOPHYCIDAE

###### Acrochaetiales

###### Acrochaetiaceae

*Acrochaetium* Nägeli

*Rhododrewia* S. L. Clayden et G. W. Saunders

###### Colaconematales

###### Colaconemataceae

*Colaconema* Batters

###### Nemaliales

###### Galaxauraceae

*Dichotomaria* Lamarck

*Galaxaura* J. V. Lamouroux

- Tricleocarpa* Huisman et  
 Borowitzka  
 Liagoraceae  
*Dermonema* Harvey ex  
 Heydrich  
*Ganonema* K.-C. Fan et Y.-C.  
 Wang  
*Helminthora* J. Agardh  
*Izziella* Doty  
*Liagora* J.V. Lamouroux  
 Scinaiaaceae  
*Scinaia* Bivona-Bernardi  
 Palmariales  
 Rhodophysemataceae  
*Rhodonematella* Clayden et  
 G. W. Saunders  
**CORALLINOPHYCIDAE**  
 Corallinales  
 Corallinales subord. Corallineae  
 Corallinaceae  
 Corallinaceae subfam.  
 Corallinoideae  
*Crusticorallina* K. R. Hind et  
 P. W. Gabrielson  
 Corallinoideae tribe Corallineae  
*Corallina* Linnaeus  
 Corallinoideae tribe Janieae  
*Haliptilon* (Decaisne) Lindley  
*Jania* J. V. Lamouroux  
 Corallinaceae subfam.  
 Metagoniolithoideae  
*Harveylithon* A. Rösler,  
 Perfectti, V. Peña et  
 J. Braga  
 Lithophyllaceae  
 Lithophyllaceae subfam.  
 Lithophylloideae  
 Lithophylloideae tribe  
 Amphiroeae  
*Amphiroa* J. V. Lamouroux  
 Lithophylloideae tribe  
 Dermatolitheae  
*Titanoderma* Nägeli  
 Lithophylloideae tribe  
 Lithophylleae  
*Lithophyllum* Philippi  
*Litholepis* Foslie  
*Pseudolithophyllum* Me.  
 Lemoine  
 Spongitiaceae  
 Spongitiaceae subfam.  
 Hydrolithoideae  
*Hydrolithon* (Foslie) Foslie  
*Fosliella* M. Howe  
*Pneophyllum* Kützing  
 Spongitiaceae subfam.  
 Mastophoroideae  
*Heteroderma* Foslie  
 Spongitiaceae subfam.  
 Neogoniolithoideae  
*Neogoniolithon* Setchell et  
 L. R. Mason  
 Spongitiaceae subfam.  
 Porolithoideae  
*Porolithon* Foslie  
*Spongitis* Kützing  
 Corallinales subord. Mesophyllineae  
 Lithothamniaceae  
 Lithothamniaceae subfam.  
 Lithothamnioideae  
 Lithothamnioideae tribe  
 Lithothamnieae  
*Lithothamnion* Heydrich  
 Lithothamnioideae tribe  
 Phymatolitheae  
*Phymatolithon* Foslie  
 Mesophyllaceae  
*Mesophyllum* Me. Lemoine  
 Hapalidiales  
 Hapalidiaceae  
 Hapalidiaceae subfam.  
 Choreonematoideae  
 Choreonematoideae tribe  
 Choreonemateae  
*Choreonema* F. Schmitz  
 Hapalidiaceae subfam.  
 Melobesioideae  
 Melobesioideae tribe  
 Melobesieae  
*Melobesia* J. V. Lamouroux  
**AHNFELTIOPHYCIDAE**  
 Ahnfeltiales  
 Ahnfeltiaceae  
*Ahnfeltia* Fries  
**RHODYMENIOPHYCIDAE**  
 Gelidiales  
 Gelidiaceae  
*Gelidium* J. V. Lamouroux  
 Gelidiellaceae  
*Gelidiella* J. Feldmann et  
 G. Hamel  
 Pterocladaceae  
*Pterocladia* J. Agardh  
*Pterocladiella* Santelices et  
 Hommersand  
 Gracilariales  
 Gracilariaceae  
 Gracilariaceae subfam.  
 Gracilarioideae  
 Gracilarioideae tribe Gracilariaceae

- Gracilaria* Greville  
*Gracilariopsis* E. Y. Dawson  
*Gracilariophila* Setchell et  
H. L. Wilson  
Pterocladiophilaceae  
*Gelidiocolax* N. L. Gardner  
Bonnemaisoniales  
Bonnemaisoniaceae  
*Asparagopsis* Montagne  
*Bonnemaisonia* C. Agardh  
Ceramiales  
Ceramiales subord. Ceramiineae  
Callithamniaceae  
Callithamniaceae subfam.  
Callithamnioideae  
Callithamnioideae tribe  
Callithamnieae  
*Aglaothamnion* Feldmann-  
Mazoyer  
*Callithamnion* Lyngbye  
Callithamniaceae subfam.  
Crouanioideae  
Crouanioideae tribe Crouanieae  
*Crouania* J. Agardh  
*Crouanophycus* Athanasiadis  
Ceramiaceae  
Ceramiaceae subfam. Ceramioideae  
Ceramioideae tribe Antithamnieae  
*Antithamnion* Nägeli  
Ceramioideae tribe Ceramieae  
*Centroceras* Kützing  
*Ceramium* Roth  
*Corallophila* Weber-van Bosse  
*Gayliella* T. O. Cho, L. McIvor  
et S. M. Boo  
Ceramioideae tribe  
Delesseriopsieae  
*Balliella* Itono et Tak. Tanaka  
Ceramioideae tribe Dohrnielleae  
*Antithamnionella* Lyle  
*Irtugovia* Perestenko  
Ceramioideae tribe  
Pterothamnieae  
*Pterothamnion* Nägeli  
Ceramiaceae subfam.  
Spongoclonioideae  
Spongoclonioideae tribe  
Spongoclonieae  
*Pleonosporium* Nägeli  
Spyridiaceae  
Spyridiaceae tribe Spyrideae  
*Spyridia* Harvey  
Ceramiales subord. Spermiothamniineae  
Wrangeliaceae  
Wrangeliaceae tribe Griffithsieae  
*Anotrichium* Nägeli  
*Griffithsia* C. Agardh  
Wrangeliaceae tribe Lejolisieae  
*Lejolisia* Bornet  
Wrangeliaceae tribe  
Spermiothamnieae  
*Spermiothamnion* Areschoug  
*Tiffaniella* Doty et Meñez  
Dasyaceae  
Dasyaceae subfam. Dasyoideae  
*Dasya* C. Agardh  
Dasyaceae subfam.  
Heterosiphonioideae  
*Heterosiphonia* Montagne  
Delesseriaceae  
Delesseriaceae subfam.  
Delesserioideae  
Delesserioideae tribe Apoglosseae  
*Apoglossum* J. Agardh  
Delesserioideae tribe Caloglosseae  
*Caloglossa* (Harvey)  
G. Martens  
*Taenioma* J. Agardh  
Delesserioideae tribe  
Grinnellieae  
*Grinnellia* Harvey  
Delesserioideae tribe  
Hypoglosseae  
*Branchioglossum* Kylin  
*Hypoglossum* Kützing  
Delesseriaceae subfam.  
Nitophylloideae  
Nitophylloideae tribe  
Valeriemayaeae  
*Polyneurella* E. Y. Dawson  
Delesseriaceae subfam.  
Phycodryoideae  
Phycodryoideae tribe  
Myriogrammeae  
*Myriogramme* Kylin  
Phycodryoideae tribe Phycodryeae  
*Erythrogllossum* J. Agardh  
*Phycodrys* Kützing  
*Sorella* Hollenberg  
Phycodryoideae tribe  
Schizoserideae  
*Schizoseris* Kylin  
Sarcomeniaceae  
*Platysiphonia* Borgesen  
Rhodomelaceae  
Rhodomelaceae tribe Alsidieae  
*Bryothamnion* Kützing  
*Digenea* C. Agardh  
Rhodomelaceae tribe Bostrychieae  
*Bostrychia* Montagne

- Rhodomelaceae tribe  
Lophothalieae  
*Veleroa* E. Y. Dawson  
*Murrayellopsis* E. Post
- Rhodomelaceae tribe  
Lophosiphonieae  
*Lophosiphonia* Falkenberg
- Rhodomelaceae tribe  
Streblocladiae  
*Melanothamnus* Bornet et  
Falkenberg
- Rhodomelaceae tribe  
Polysiphonieae  
*Polysiphonia* Greville
- Rhodomelaceae tribe  
Pterosiphonieae  
*Amplisiphonia* Hollenberg  
*Pterosiphonia* Falkenberg  
*Pterosiphoniella* E. Y. Dawson  
*Symphyocladia* Falkenberg  
*Tayloriella* Kylin
- Rhodomelaceae tribe  
Herposiphonieae  
*Herposiphonia* Nägeli
- Rhodomelaceae tribe Chondriaceae  
*Acanthophora* J. V.  
Lamouroux  
*Chondria* C. Agardh
- Rhodomelaceae tribe Laurenciaceae  
*Erythrocyctis* J. Agardh  
*Laurencia* J. V. Lamouroux  
*Osmundea* Stackhouse  
*Palisada* K. W. Nam
- Gigartinales
- Caulacanthaceae  
*Caulacanthus* Kützing
- Cystocloniaceae  
*Hypnea* J. V. Lamouroux
- Dicranemataceae  
*Dicranema* Sonder
- Dumontiaceae  
*Dudresnaya* P. Crouan et  
H. Crouan
- Gigartinaceae  
*Chondracanthus* Kützing  
*Mazzaella* G. De Toni
- Kallymeniaceae  
*Kallymenia* J. Agardh  
*Pugetia* Kylin  
*Erythrophyllum* J. Agardh
- Phylloporaceae  
*Abnfeltiopsis* P. C. Silva et  
DeCew  
*Besa* Setchell  
*Gymnogongrus* Martius
- Petroglossum* Hollenberg
- Solieriaceae  
Solieriaceae tribe Agardhielleae  
*Agardhiella* F. Schmitz
- Solieriaceae tribe Solierieae  
*Sarcodiotheca* Kylin  
*Tacanoosca* J. N. Norris,  
P. W. Gabrielson et  
D. P. Cheney  
*Wurdemannia* Harvey
- Weeksiaceae  
*Weeksia* Setchell
- Peyssonneliales  
Peyssonneliaceae  
*Cruoriella* P. Crouan et  
H. Crouan  
*Metapeyssonnelia*  
Boudouresque,  
Coppejans et Marcot  
*Peyssonnelia* Decaisne
- Cryptonemiales  
Halymeniaceae  
*Cryptonemia* J. Agardh  
*Grateloupia* C. Agardh  
*Halymenia* C. Agardh  
*Prionitis* J. Agardh  
*Norrissia* Balakrishnan  
*Pachymenia* J. Agardh
- Tsengiaceae  
*Tsengia* K.-C. Fan et Y.-P. Fan
- Nemastomatales  
Nemastomataceae  
*Predaea* G. De Toni
- Schizymeniaceae  
*Platoma* Schousboe ex  
F. Schmitz  
*Schizymenia* J. Agardh  
*Haematocelis* J. Agardh
- Plocamiales  
Plocamiaceae  
*Plocamium* J. V. Lamouroux
- Sebdeniales  
Sebdeniaceae  
*Sebdenia* (J. Agardh) Berthold
- Rhodymeniales  
Champiaceae  
*Champia* Desvaux  
*Gastroclonium* Kützing
- Faucheaceae  
*Gloiocladia* J. Agardh  
*Gloioderma* J. Agardh
- Lomentariaceae  
Lomentariaceae tribe  
Ceratodictyeae  
*Ceratodictyon* Zanardini

Lomentariaceae tribe  
 Lomentarieae  
*Fushitsunagia* Filloramo et  
 G. W. Saunders  
*Lomentaria* Lyngbye

Rhodymeniaceae  
*Botryocladia* (J. Agardh) Kylin  
*Irvinea* Guiry  
*Rhodymenia* Greville

## RHODOPHYTA WETTSTEIN, 1901:46

**RHODOPHYTINA H. S. YOON, K. M. MÜLLER,  
 SHEATH, F. OTT ET D. BHATTACHARYA, 2006:490**

**STYLONEMATOPHYCEAE H. S. YOON, K. M. MÜLLER,  
 SHEATH, F. OTT ET D. BHATTACHARYA, 2006:490**

**STYLONEMATALES K. M. DREW, 1956:73**

**STYLONEMATACEAE K. M. DREW, 1956:73**

***Chroodactylon* Hansgirg, 1885:14**

*Chroodactylon ornatum* (C. Agardh) Basson, 1979:67  
 GULF OF CALIFORNIA DISTRIBUTION. EC: Segundo  
 Cerro Prieto, Bahía Kino, SON. WC: Bahía de La Paz, BCS.  
 TYPE LOCALITY. Lake Mälaren, bridge near Transberg,  
 Stockholm, Sweden.

***Stylonema* Reinsch, 1875:40**

*Stylonema alsidii* (Zanardini) K. M. Drew, 1956:72  
 GULF OF CALIFORNIA DISTRIBUTION. EC: El  
 Tornillal, SON, to Puerto Vallarta, JAL. WC: San Felipe, BC, to  
 Cabeza Ballena, BCS. IS: Isla María Magdalena, NAY.  
 TYPE LOCALITY. Trieste, Gulf of Trieste (in northern  
 Adriatic Sea, near border with Slovenia), northeastern Italy.

*Stylonema cornu-cervi* Reinsch, 1875:40  
 GULF OF CALIFORNIA DISTRIBUTION. EC:  
 Punta Robinson, SON.  
 TYPE LOCALITY. Cres (northern island in Kvarner  
 Gulf), Adriatic Sea, Croatia.

**COMPSOPOGONOPHYCEAE G. W. SAUNDERS  
 ET HOMMERSAND, 2004:1503**

**ERYTHROPELTALES GARBARY, G. I. HANSEN  
 ET SCAGEL, 1980:140**

REMARKS. Athanasiadis (2016a) noted the original  
 spelling, Erythropeltidales, should be corrected to  
 Erythropeltales.

## ERYTHROTRICHIACEAE G. M. SMITH, 1933:120, 122

***Erythrocladia* Rosenvinge, 1909:71**

*Erythrocladia endophloea* M. Howe, 1914:81  
 GULF OF CALIFORNIA DISTRIBUTION. WC:  
 Bahía de Las Ánimas, BC, to Bahía de La Paz, BCS.  
 TYPE LOCALITY. Bahía de Sechura, Departamento de  
 Piura, northeastern Peru.

*Erythrocladia irregularis* Rosenvinge, 1909:72  
 GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto  
 Peñasco, SON, to Punta de Mita, NAY. WC: Bahía Concepción to  
 Bahía Balandra, BCS. IS: Isla Turner, ISG; Isla de la Piedra, SIN.  
 TYPE LOCALITY. On *Polysiphonia*; Møllegrund, off  
 Hirtshals, Skagerrak, northern Denmark.

***Erythropeltis* F. Schmitz, 1896:313**

*Erythropeltis discigera* (Berthold) F. Schmitz, 1896:313  
 GULF OF CALIFORNIA DISTRIBUTION. IS: Isla  
 Tiburón, ISG.  
 TYPE LOCALITY. Gulf of Naples, Tyrrhenian Sea, SW  
 coast of Italy.

***Erythrotrichia* Areschoug, 1850:435,  
 nom. cons.**

*Erythrotrichia ascendens* E. Y. Dawson, 1953:6  
 GULF OF CALIFORNIA DISTRIBUTION. WC:  
 Cabo Pulmo, BCS.  
 TYPE LOCALITY. Beach drift, on *Galaxaura*; about  
 8.05 km N of Cabo Pulmo, Baja California Sur, Gulf of Califor-  
 nia, Mexico.  
 REMARKS. A southern Gulf endemic, *Erythrotrichia*  
*ascendens* is a little-known species. Although this tropical species  
 was considered a synonym of *E. carnea* by Garbary et al. (1981),  
 its taxonomic status needs reinvestigation.

*Erythrotrichia biseriata* Tak. Tanaka, 1944:86  
 GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto  
 Libertad to Mazatlán, SIN. WC: Bahía de Las Ánimas, BC.  
 TYPE LOCALITY. Hachijō-jima (Hatidyō Island), Izu  
 Islands (Fuji-Hakone-Izu National Park), Japan, Philippine Sea.

*Erythrotrichia carnea* (Dillwyn) J. Agardh, 1883:15  
 GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Gorda,  
 SON, to Bahía de Banderas, JAL. WC: Playa El Coloradito, BC,  
 to Punta Los Frailes, BCS. IS: Isla Tiburón, ISG.  
 TYPE LOCALITY. Mouth of Loughor River, Glamor-  
 ganshire (Loughor), Wales, UK. EPITYPE. Port Eynon, Gower,  
 Wales, UK.

*Erythrotrichia carnea* f. *tenuis* Tak. Tanaka, 1944:92  
 GULF OF CALIFORNIA DISTRIBUTION. WC:  
 Cabo Pulmo, BCS.

**SYNTYPE LOCALITIES.** Tanaka (1944) listed 7 locales from 3 countries—Japan: Yonakuni-sima, Yonaguni Island, Yaeyama Islands (SW Okinawa Prefecture), Makurazaki, Kyūshū (Kagoshima Prefecture), Takamatu, Shikoku Island (Kagawa Prefecture), Fukue Island, Gotō Islands (Nagasaki Prefecture), and Hinomisaki, Izumo (Shimane Prefecture); Taiwan: Cape Garanbi, Hengchun Peninsula, Pingtung (Píngdōng) County; and Micronesia: Pohnpei (Ponape), Senyavin Islands, Caroline Islands.

*Erythrotrichia parksii* var. *minor* N. L. Gardner, 1927a:239

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Punta Pelicano, Puerto Peñasco, SON.

**TYPE LOCALITY.** Neah Bay, Makah Reservation, Olympic Peninsula, Clallam County, Washington, USA.

*Erythrotrichia tetraseriata* N. L. Gardner, 1927a:240

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Puerto Peñasco, SON. WC: La Paz, BCS. IS: Isla Tiburón, ISG; Islas de Los Gemelos, BC.

**TYPE LOCALITY.** On the seagrass *Zostera marina* Linnaeus; San Pedro, Los Angeles County, southern California, USA.

### ***Porphyrostromium* Trevisan, 1848:100**

*Porphyrostromium boryanum* (Montagne) P. C. Silva, in Silva et al., 1996:914

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Puerto Peñasco, SON.

**TYPE LOCALITY.** Fort des Anglais, Algiers, Algeria.

*Porphyrostromium ciliare* (Carmichael ex Harvey) M. J. Wynne, 1986:329

**GULF OF CALIFORNIA DISTRIBUTION.** IS: Isla Tiburón, ISG.

**TYPE LOCALITY.** Appin, Argyll, Scotland, UK.

### ***Sahlingia* Kornmann, 1989:227**

*Sahlingia subintegra* (Rosenvinge) Kornmann, 1989:227

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Puerto Peñasco, SON, to Puerto Vallarta, JAL. WC: Faro de San Felipe, BC, to Cabeza Ballena, BCS. IS: Isla Turner and Isla Estanque, ISG; Isla Tortuga, BCS.

**TYPE LOCALITY.** Møllegaard, off Hirtshals, Skagerrak, northern Denmark.

### **EURHODOPHYTINA G. W. SAUNDERS ET HOMMERSAND, 2004:1503**

### **BANGIOPHYCEAE WETTSTEIN, 1901:187**

#### **BANGIALES NÄGELI, 1847:136**

#### **BANGIACEAE DUBY, 1830:985**

### ***Bangia* Lyngbye, 1819:18**

*Bangia enteromorphoides* E. Y. Dawson, 1953:13

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Mazatlán, SIN. WC: Punta La Gringa, Bahía de Los Ángeles, BC.

**TYPE LOCALITY.** Epiphytic on *Gelidium sclerophyllum*; north of El Faro de Olas Atlas, Mazatlán, Sinaloa, Gulf of California, Mexico.

*Bangia vermicularis?* Harvey, 1858:55

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Mazatlán, SIN. WC: Calerita to Punta Arena, BCS. IS: Isla Partida, ISG.

**TYPE LOCALITY.** Golden Gate, westernmost entrance to San Francisco Bay (locale probably now below the Golden Gate Bridge either at Fort Point or the San Francisco Presidio), San Francisco, San Francisco County, northern California, USA.

**REMARKS.** Norris (2014) queried identification of *Bangia vermicularis?* in the Gulf, and it needs to be tested.

### **PORPHYRALES KJELLMAN, 1880:7**

### **PORPHYRACEAE KÜTZING, 1843:382**

### ***Pyropia* J. Agardh, 1899:149**

**REMARKS.** *Pyropia* and *Porphyra* C. Agardh (1824) are often treated within the Bangiales and Bangiaceae, however Athanasiadis (2016a) recognized them as members of this order and family. The *Conchocelis*-phase, known in culture of the Gulf *P. hollenbergii* (López-Vivas et al., 2011), has not yet been found in nature for any of the reported species of *Pyropia* in the Gulf of California.

*Pyropia hollenbergii* (E. Y. Dawson) J. E. Sutherland, L. E. Aguilar-Rosas et R. Aguilar-Rosas, in Sutherland et al., 2011:1143

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Bahía Bacoahibampo, SON. WC: Punta Chivato to Punta Arena, BCS. IS: Isla San Ildefonso, BCS.

**TYPE LOCALITY.** Bahía Agua Verde, Baja California Sur, Gulf of California, Mexico.

**REMARKS.** A Gulf endemic, *P. hollenbergii* was not recently found in Sonora or Sinaloa but reported on the Gulf coast of Baja California Sur (López-Vivas et al., 2015). The *Conchocelis*-phase, while known in culture studies of *P. hollenbergii* (López-Vivas et al., 2011), has not yet been found in natural habitats.

*Pyropia lanceolata* (Setchell et Hus) S. C. Lindstrom, in Sutherland et al., 2011:1144

**GULF OF CALIFORNIA DISTRIBUTION.** WC: Nopoló to Puerto Escondido, BCS.

**LECTOTYPE LOCALITY.** Land's End, Golden Gate National Recreation Area (westernmost entrance to San Francisco Bay), San Francisco, San Francisco County, northern California,

USA (Lindstrom and Cole, 1992:435). Note that the lectotype of Krishnamurthy (1972:34) from Carmel Bay, Monterey County, central California, was rejected by Lindstrom and Cole (1992).

*Pyropia pendula* (E. Y. Dawson) J. E. Sutherland, L. E.

Aguilar-Rosas et R. Aguilar-Rosas, in Sutherland et al., 2011:1144

GULF OF CALIFORNIA DISTRIBUTION. WC: Calerita to Los Planes, BCS. IS: Isla Patos, Isla Partida (Isla Cordonazo), and Isla San Pedro Mártir, ISG; Isla San Pedro Nolasco, SON; Isla Carmen, Isla San José, and Isla Espíritu Santo, BCS.

TYPE LOCALITY. Isla Partida [norte] (Isla Cordonazo), Sonora, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

REMARKS. *Pyropia pendula* is a Gulf endemic.

*Pyropia perforata* (J. Agardh) S. C. Lindstrom, in Sutherland et al., 2011:1144

GULF OF CALIFORNIA DISTRIBUTION. WC: Calerita, Bahía de La Paz, BCS.

TYPE LOCALITY. Near the Golden Gate entrance to San Francisco Bay (locale probably now below the Golden Gate Bridge either at Fort Point or the San Francisco Presidio), San Francisco, San Francisco County, northern California, USA.

*Pyropia thuretii* (Setchell et E. Y. Dawson) J. E. Sutherland, L. E. Aguilar-Rosas et R. Aguilar-Rosas, in Sutherland et al., 2011:1145

GULF OF CALIFORNIA DISTRIBUTION. EC: Ensenada Bacoahibampo, SON, to Playa Olas Altas, SIN. WC: Punta San Felipe, BC, to Bahía de La Paz, BCS. IS: Rocas Consag, BC; Puerto Refugio, Isla Ángel de la Guarda, Isla Patos, and Isla Partida (Isla Cordonazo), ISG; Isla Carmen, and Isla Danzante, BCS.

TYPE LOCALITY. Pacific Grove, Monterey County, central California, USA.

*Pyropia* sp. GCI of López-Vivas et al., 2015:tbl. 2, fig. 3

GULF OF CALIFORNIA DISTRIBUTION. WC: Punta Las Galeras to Punta Arenas, BCS. IS: Isla San José, and Isla Espíritu Santo, BCS.

REMARKS. One of three undescribed species that were considered to be southern Gulf endemics (López-Vivas et al., 2015).

*Pyropia* sp. GCII of López-Vivas et al., 2015:tbl. 2, fig. 3

GULF OF CALIFORNIA DISTRIBUTION. WC: Las Cruces, BCS.

REMARKS. This undescribed species was identified as a southern Gulf endemic (López-Vivas et al., 2015).

*Pyropia* sp. GCIII of López-Vivas et al., 2015:tbl. 2, fig. 2

GULF OF CALIFORNIA DISTRIBUTION. IS: Isla Patos, ISG; Isla el Choyero, and Isla San Pedro Nolasco, SON.

REMARKS. The third southern Gulf endemic species (López-Vivas et al., 2015), it is also currently undescribed.

## FLORIDEOPHYCEAE CRONQUIST, 1960:438

### HILDENBRANDIOPHYCIDAE G. W. SAUNDERS ET HOMMERSAND, 2004:1504

#### HILDENBRANDIALES PUESCHEL ET K. M. COLE, 1982:718

#### HILDENBRANDIACEAE RABENHORST, 1868:408

#### *Hildenbrandia* Nardo, 1834:676

*Hildenbrandia dawsonii* (Ardré) Hollenberg, 1971:286

GULF OF CALIFORNIA DISTRIBUTION. EC: Cabo Corrientes, JAL.

TYPE LOCALITY. Punta Malamarrimo, Bahía Sebastián Vizcaíno, Pacific coast of Baja California, Mexico.

*Hildenbrandia prototypus* Nardo, 1834:676

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON. WC: Calerita to Cabeza Ballena, BCS. IS: Isla Turner, ISG; Isla Carmen, BCS; Isla María Magdalena, NAY.

TYPE LOCALITY. Venice, Veneto region, Adriatic Sea, northeast Italy.

*Hildenbrandia rubra* (Sommerfelt) Meneghini, 1841:426

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía la Choya, Puerto Peñasco, SON, to Puerto Vallarta, JAL. WC: Campo Hawaii, BC, to Cabeza Ballena, BCS. IS: Isla Larga, NAY.

TYPE LOCALITY. Saltdal, Nordland, Norway.

### NEMALIOPHYCIDAE T. A. CHRISTENSEN, 1978:66

#### ACROCHAETIALES FELDMANN, 1953:11

#### ACROCHAETIACEAE FRITSCH EX W. R. TAYLOR, 1957:209

#### *Acrochaetium* Nägeli, in Nägeli and C. E. Cramer, 1858:532

*Acrochaetium arcuatum* (K. M. Drew) C. K. Tseng, 1945:158

GULF OF CALIFORNIA DISTRIBUTION. IS: Isla Turner, ISG.

TYPE LOCALITY. Moss Beach, San Mateo County, central California, USA.

*Acrochaetium bornetii* Papenfuss, 1945:313

GULF OF CALIFORNIA DISTRIBUTION. WC: Puertecitos, BC.

TYPE LOCALITY. Belle-Ile-en-Mer, Morbihan, Brittany, northwest France.

*Acrochaetium crassipes* (Børgesen) Børgesen, 1915:20

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON. IS: Isla Turner and Isla Rasa (with a query), ISG.

TYPE LOCALITY. Harbor, St. Thomas, U.S. Virgin Islands, Caribbean Sea.

*Acrochaetium microscopicum* (Nägeli ex Kützing) Nägeli, in Nägeli and Cramer, 1858:532

GULF OF CALIFORNIA DISTRIBUTION. EC: Piedras del Burro to Puerto Peñasco, SON. WC: Playa El Coloradito, BC, to Punta Arena, BCS. IS: Isla Turner, ISG.

TYPE LOCALITY. Torquay, Devon, England, UK (Hamel, 1928; Woelkerling, 1972; Athanasiadis, 1996b). Although Kützing (1849:640) gave type locality as “In sinu neapolitano” (Silva et al., 1996, as Golfo di Napoli, Italy), there are no known type collections from the Bay of Naples (see Hamel, 1928; Guiry and Guiry, 2014).

*Acrochaetium secundatum* (Lyngbye) Nägeli, in Nägeli and Cramer, 1858:532

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía Bacochibampo, SON.

TYPE LOCALITY. Kivivig (Kvivik), Streymoy Island, Faroe Islands (Faeroe; Foroyar), Faro County, Denmark.

*Acrochaetium seriaspora* (E. Y. Dawson) J. N. Norris, 2014:43

GULF OF CALIFORNIA DISTRIBUTION. IS: Isla Turner, ISG.

TYPE LOCALITY. Epiphytic on *Sargassum*, intertidal rock reef; Isla Turner (off SE end of Isla Tiburón), Sonora, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

***Rhododrewia* S. L. Clayden  
et G. W. Saunders, 2014:229**

*Rhododrewia porphyrae* (K. M. Drew) S. L. Clayden et G. W. Saunders, 2014:230

GULF OF CALIFORNIA DISTRIBUTION. WC: Puerto Calamajué, BC.

TYPE LOCALITY. Endo-epiphytic on *Porphyra perforata* (now *Pyropia perforata*) (J. Agardh) S.C. Lindstrom; Land's End, Golden Gate National Recreational Area (westernmost entrance to San Francisco Bay), San Francisco, San Francisco County, northern California, USA.

REMARKS. Previously recorded in the Gulf as *Acrochaetium porphyrae* (K. M. Drew) G. M. Smith (1944).

**COLACONEMATALES J. HARPER ET  
G. W. SAUNDERS, 2002:471**

**COLACONEMATACEAE J. HARPER ET  
G. W. SAUNDERS, 2002:471**

***Colaconema* Batters, 1896:8**

*Colaconema daviesii* (Dillwyn) Stegenga, 1985:317

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON, to Puerto Vallarta, JAL. IS: Isla de la Piedra, SIN.

TYPE LOCALITY. Probably north Wales, UK (Dixon and Irvine, 1977b).

*Colaconema hancockii* (E. Y. Dawson) J. N. Norris, 2014:45

GULF OF CALIFORNIA DISTRIBUTION. WC: La Paz, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, ISG.

TYPE LOCALITY. On *Gelidium*, rocky shore; west side of Puerto Refugio, Isla Ángel de la Guarda, Baja California, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

*Colaconema pacificum* (Kyllin) Woelkerling, 1971:47

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Gorda, SON, to Mazatlán, SIN. WC: Bahía de La Paz, BCS.

TYPE LOCALITY. Brown Island (ENE of Friday Harbor, San Juan Island), San Juan County, Puget Sound, Washington, USA (Abbott and Hollenberg, 1976).

*Colaconema pectinatum* (Kyllin) J. T. Harper et G. W. Saunders, 2002:473

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz, BCS.

SYNTYPE LOCALITIES. Varberg, Hogardsgrund, and Kungsbackafjorden (Kungsbacka Fjord), Halland County, west coast of Sweden.

*Colaconema punctatum* (E. Y. Dawson) J. N. Norris, 2014:48

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Bahía Bacochibampo, SON.

TYPE LOCALITY. Southern shore, Bahía Bacochibampo, Sonora, Gulf of California, Mexico.

*Colaconema savianum* (Meneghini) R. Nielsen, 1994:715

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Pelicano, Puerto Peñasco, SON. WC: Puertecitos, BC, to Punta Arena, BCS.

TYPE LOCALITY. On seagrass, *Zostera*; Genoa (Genova), Gulf of Genoa, northern end of Ligurian Sea, Province of Genoa, Italy.

*Colaconema scinaiae* (E. Y. Dawson) J. N. Norris, 2014:48

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Ensenada de San Francisco, SON. WC: Bahía de Loreto to Punta Los Frailes, BCS.

TYPE LOCALITY. Epiphytic on *Scinaia articulata*, dredged to 30–40 m depths; off north end of Santa Barbara Island (33°30'58"N; 119°50'W), Santa Barbara County, California Channel Islands (Channel Islands National Marine Sanctuary), southern California, USA.

*Colaconema sinicola* (E. Y. Dawson) J. N. Norris, 2014:49

GULF OF CALIFORNIA DISTRIBUTION. IS: Isla Turner, ISG.

TYPE LOCALITY. Isla Turner (off SE end of Isla Tiburón), Sonora, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.



*Colaçonema tenuissimum* (Collins) Woelkerling, 1971:51

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Pelicano, Puerto Peñasco, SON.

TYPE LOCALITY. San Pedro Harbor entrance, San Pedro, Los Angeles County, southern California, USA.

*Colaçonema variabile* (K. M. Drew) J. N. Norris, 2014:50

GULF OF CALIFORNIA DISTRIBUTION. EC: Mazatlán, SIN.

TYPE LOCALITY. Epiphytic on *Laminaria andersonii* (now *L. setchellii* P. C. Silva); Cypress Point, Monterey County, central California, USA.

### NEMALIALES F. SCHMITZ, 1892:17

#### GALAXAURACEAE P. G. PARKINSON, 1983:606

##### *Dichotomaria* Lamarck, 1816:143

*Dichotomaria marginata* (J. Ellis et Solander) Lamarck, 1816:146

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Punta Cirio, SON. WC: Caleta Santa María to Punta Los Frailes, BCS. IS: Isla María Magdalena, NAY.

TYPE LOCALITY. “On the shore of one of the Bahama Islands” (Ellis and Solander, 1786:115); lectotype: illustration of Ellis and Solander (1786, pl. 22: fig. 6) selected by Papenfuss et al. (1982).

*Dichotomaria spathulata* (Kjellman) A. Kurihara et Huisman, in Huisman and Kurihara, 2006:21

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Punta Cirio, SON. WC: Loreto to Cabo San Lucas, BCS.

TYPE LOCALITY. Fremantle, Western Australia, Australia.

##### *Galaxaura* J. V. Lamouroux, 1812:185

*Galaxaura ramulosa* Kjellman, 1900:50

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to “Nuevo Guaymas,” Bahía de San Carlos, SON.

TYPE LOCALITY. [Probably Recife], state of Pernambuco, northeastern Brazil.

*Galaxaura rugosa* (J. Ellis et Solander) J. V. Lamouroux, 1816:263

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Bahía de San Carlos, SON. WC: Bahía Concepción to Cabeza Ballena, BCS.

TYPE LOCALITY. Coast of Jamaica, Greater Antilles, Caribbean Sea.

##### *Tricleocarpa* Huisman et Borowitzka, 1990:164

*Tricleocarpa cylindrica* (J. Ellis et Solander) Huisman et Borowitzka, 1990:164

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Bahía Kino, SON; Playa Guayabitos and Playa Las Peñas, NAY. WC: Bahía Concepción to Cabeza Ballena, BCS. IS: Isla Tiburón, ISG; Isla Tortuga, BCS; Isla María Madre, NAY.

TYPE LOCALITY. West Indies (Ellis and Solander, 1786); lectotype: illustration of Ellis and Solander (1786, pl. 22: fig. 4) selected by Papenfuss et al. (1982).

*Tricleocarpa fragilis* (Linnaeus) Huisman et R. A. Townsend, 1993:100

GULF OF CALIFORNIA DISTRIBUTION. EC: Mazatlán, SIN, to Lo de Marcos y Playa San Francisco, NAY. WC: El Faro de San Felipe, BC, to Bahía de La Paz, BCS.

TYPE LOCALITY. “Oceano Americano” (Linnaeus, 1758).

LECTOTYPE LOCALITY. Jamaica, Greater Antilles, Caribbean Sea (Huisman and Townsend, 1993).

#### LIAGORACEAE KÜTZING, 1843:321

##### *Dermonema* Harvey ex Heydrich, 1894:289

*Dermonema pulvinatum* (Grunow et Holmes) K.-C. Fan, 1962:336

GULF OF CALIFORNIA DISTRIBUTION. WC: Loreto to Bahía Agua Verde, BCS.

TYPE LOCALITY. “Ad litora Japoniae” (Holmes, 1896:259).

*Dermonema virens* (J. Agardh) Pedroche et Ávila-Ortiz, 1996:77

GULF OF CALIFORNIA DISTRIBUTION. EC: Mazatlán, SIN. WC: Bahía de La Paz to Cabeza Ballena, BCS. IS: Isla San Ildefonso, Isla Cholla, and Isla San Juan Nepomuceno, BCS.

TYPE LOCALITY. San Agustín (St. Agustín), Bahías de Huatulco, Oaxaca, Mexico.

##### *Ganonema* K.-C. Fan et Y.-C. Wang, 1974:492

*Ganonema farinosum* (J. V. Lamouroux) K.-C. Fan et Y.-C. Wang, 1974:492

GULF OF CALIFORNIA DISTRIBUTION. WC: Punta San Evaristo to Punta Los Frailes, BCS. IS: Isla San Diego, BCS.

TYPE LOCALITY. Near Suez, Egypt, Red Sea.

##### *Helminthora* J. Agardh, 1851:415, *nom. cons.*

*Helminthora* sp. of Mateo-Cid and Mendoza-González, 1992:19

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Guayabitos and Playa Las Peñas, NAY.

**Izziella Doty, 1978:34***Izziella orientalis* (J. Agardh) Huisman et Schils, 2002:247

GULF OF CALIFORNIA DISTRIBUTION. EC: Ensenada Lalo, SON; Playa Guayabitos, NAY, to Bahía de Banderas, JAL. WC: Bahía de La Paz, BCS.

TYPE LOCALITY. Sir Lanka (Ceylon), Indian Ocean.

**Liagora J. V. Lamouroux, 1812:185***Liagora abbottiae* E. Y. Dawson, 1953:41

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz, BCS.

TYPE LOCALITY. Punta Santa Rosalita ("Punta Santa Rosalía" of Dawson, 1953), Pacific coast of Baja California, Mexico.

*Liagora californica* Zeh, 1912:271

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz, BCS.

TYPE LOCALITY. Santa Catalina Island, Los Angeles County, California Channel Islands (Channel Islands National Marine Sanctuary), southern California, USA.

*Liagora ceranoides* J. V. Lamouroux, 1816:239

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Estación to Playa Las Conchas, Puerto Peñasco, SON. WC: Bahía de La Paz, BCS.

TYPE LOCALITY. St. Thomas, U.S. Virgin Islands, Leeward Islands, Lesser Antilles, Caribbean Sea.

*Liagora ceranoides* f. *leprosa* (J. Agardh) Yamada, 1938:155

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz, BCS.

TYPE LOCALITY. Veracruz [port city], Veracruz [state], Gulf of Mexico, Mexico.

*Liagora magniinvolucra* E. Y. Dawson, 1953:39

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Arenosa, Puerto Peñasco, SON. WC: Loreto to Cabeza Ballena, BCS. IS: Isla San Diego and Isla San Juan Nepomuceno, BCS.

TYPE LOCALITY. Cabeza Ballena, Baja California Sur, Gulf of California, Mexico.

**SCINAIACEAE HUISMAN, J. T. HARPER  
ET G. W. SAUNDERS, 2004:228****Scinaia Bivona-Bernardi, 1822:232***Scinaia confusa* (Setchell) Huisman, 1985:417

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Pelicano, Puerto Peñasco, SON, to Bahía de Banderas, JAL. EC: Bahía San Luis Gonzaga, BC, to Punta Los Frailes, BCS. IS: Isla Ángel de la Guarda, ISG; Isla Coronado, BC.

TYPE LOCALITY. Monterey, Monterey County, central California, USA.

*Scinaia interrupta* (A. P. de Candolle) M. J. Wynne, 1989:131

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Pericos, BCS.

TYPE LOCALITY. Rade de Brest, Department of Finistère, Brittany, northwest France.

REMARKS. *Scinaia interrupta*, described from Brittany, France, was recently reported in the southern Gulf of California (León-Cisneros et al., 2009), and its crustose-phase was reported from British Columbia (Le Gall and Saunders, 2010). Finding it in the eastern Pacific suggests the eastern Atlantic *S. interrupta* could be an introduced species or possibly has been overlooked in its natural range.*Scinaia johnstoniae* Setchell, 1914:97

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON, to Bahía de Banderas, JAL. WC: Playa El Coloradito, BC, to Punta Los Frailes, BCS. IS: Isla Mejía, Isla Ángel de la Guarda, Isla Tiburón, Isla San Esteban, and Isla San Pedro Mártir, ISG; Isla Coronado, BC; Isla Carmen, Isla Espíritu Santo, and Canal de San Lorenzo, BCS; Isla María Magdalena, NAY.

TYPE LOCALITY. San Pedro, Los Angeles County, southern California, USA.

*Scinaia latifrons* M. Howe, 1911:500

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Pelicano, Puerto Peñasco, SON, to Bahía de Banderas, JAL. WC: Bahía de Los Ángeles, BC, to Punta Perico, BCS. IS: Isla San Luis Gonzaga, Isla Coronado, Islas de Los Gemelos, and Isla La Ventana, BC; Puerto Refugio, Isla Ángel de la Guarda, and Isla Tiburón, ISG; Isla San José, BCS; Isla María Magdalena, NAY.

TYPE LOCALITY. Near La Paz, Baja California Sur, Gulf of California, Mexico.

**PALMARIALES GUIRY ET D. E. G. IRVINE,  
IN GUIRY, 1978:138****RHODOPHYSEMATAEAE G. W. SAUNDERS  
ET J. McLACHLAN, 1990:20****Rhodonematella Clayden et  
G. W. Saunders, 2010:297***Rhodonematella subimmersa* (Setchell et N. L. Gardner) Clayden et G. W. Saunders, 2010:297

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de Las Ánimas, BC. IS: Isla San Esteban, ISG.

TYPE LOCALITY. Endo-epiphyte on *Grateloupia doryphora* (Montagne) M. Howe; Whidbey (Whidby) Island, Island County, Puget Sound, Washington, USA.

**CORALLINOPHYCIDAE L. LE GALL ET  
G. W. SAUNDERS, 2007:1129**

**CORALLINALES P. C. SILVA ET JOHANSEN, 1986:250**

**CORALLINALES SUBORD. CORALLININEAE  
ATHANASIADIS, 2016A:272**

**CORALLINACEAE J. V. LAMOUROUX, 1812:185**

**CORALLINACEAE SUBFAM. CORALLINOIDEAE  
S. F. GRAY, 1821:318**

***Crusticorallina* K. R. Hind et P. W. Gabrielson,  
in Hind et al., 2016:[6](e-version)/932(print)**

REMARKS. *Crusticorallina* is the first crustose (nonarticulated) genus recognized to belong in C. subfam. Corallinoideae.

*Crusticorallina muricata* (Foslie) P. W. Gabrielson, Martone, K. R. Hind et C. P. Jensen, in Hind et al., 2016:[8](e-version)/934(print)

GULF OF CALIFORNIA DISTRIBUTION. EC: Mazatlán, SIN, to Bahía de Banderas, JAL. WC: Bahía Concepción, BCS.

TYPE LOCALITY. Botany Beach, Port Renfrew, Vancouver Island, British Columbia, Canada.

REMARKS. A northeast Pacific species, *Crusticorallina muricata* had been earlier recorded in the southern Gulf of California as *Pseudolithophyllum muricatum* (Foslie) Steneck et R. T. Paine (1986). Hind et al. (2016) noted specimens previously identified as *P. muricatum* may be this or possibly another species. It is unlikely that *Crusticorallina muricata* occurs in the Gulf, and the Gulf "*P. muricatum*" along with Gulf *Lithothamnion lichenare* need to be reexamined and molecularly analyzed to resolve their identities (see also Remarks under *Lithothamnion lichenare*).

**CORALLINOIDEAE TRIBE CORALLINEAE NACCARI, 1828:105**

***Corallina* Linnaeus, 1758:646, 805**

*Corallina officinalis* var. *chilensis* (Decaisne in Harvey) Kützing, 1858:32

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Bahía Kino, SON.

TYPE LOCALITY. Valparaiso, Valparaiso Province, central Chile.

*Corallina pinnatifolia* (Manza) E. Y. Dawson, 1953:124

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON. WC: San Felipe, BC, to Calerita, BCS. IS: Isla Alcatraz, SON.

TYPE LOCALITY. Rocky reef; Doheny State Beach, Dana Point, Orange County, southern California, USA.

*Corallina pinnatifolia* var. *digitata* E. Y. Dawson, 1953:125

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Punta Colorado (vic. Guaymas), SON. WC: El Solitario, Bahía Agua Verde to Calerita, BCS. IS: Isla Turner, ISG.

TYPE LOCALITY. Punta Colorado, vicinity of Guaymas, Sonora, Gulf of California, Mexico.

*Corallina polysticha* E. Y. Dawson, 1953:131

GULF OF CALIFORNIA DISTRIBUTION. IS: Isla Pelicano, Bahía Kino, SON.

TYPE LOCALITY. About 4 km N of South Bluff, Isla Guadalupe, off Pacific coast of Baja California, Mexico.

*Corallina vancouveriensis* Yendo, 1902b:719

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Guaymas, SON. WC: El Machorro, BC, to Bahía la Ventana, BCS. IS: Isla Pelicano, SON.

TYPE LOCALITY. Port Renfrew, Vancouver Island, British Columbia, Canada.

***Bossiella* P. C. Silva, 1957:46**

REMARKS. On the basis of our current understanding of Gulf of California species, it is doubtful that this genus occurs in the Gulf.

Uncertain Record: *Bossiella californica* (Decaisne) P. C. Silva, 1957:46

REMARKS. Although recorded in the upper Gulf from Puerto Peñasco, SON (Martínez-Lozano et al., 1991), and southeastern Gulf from Puerto Viejo, Bahía Mazatlán, SIN (Sánchez-Vargas and Hendrickx, 1987), its presence in the Gulf of California needs to be verified.

Excluded Species: *Bossiella orbigniana* (Decaisne) P. C. Silva, 1957:47

REMARKS. Riosmena-Rodríguez and Woelkerling (2000) noted that the Gulf of California report of *B. orbigniana* from La Paz was based on an incorrectly labeled specimen.

**CORALLINOIDEAE TRIBE JANIEAE H. W. JOHANSEN  
ET P. C. SILVA, 1978:414**

***Haliptilon* (Decaisne) Lindley, 1846:26**

*Haliptilon roseum* var. *verticillatum* (E. Y. Dawson) J. N. Norris, 2014:85

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz, BCS.

TYPE LOCALITY. On intertidal rocks; Isla Guadalupe, off Pacific coast of Baja California, Mexico.

**Jania J. V. Lamouroux, 1812:186***Jania adhaerens* J. V. Lamouroux, 1816:270

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON, to Yelapa, JAL. WC: Playa El Coloradito, BC, to Cabo Pulmo, BCS. IS: Isla Ángel de la Guarda and Isla Estanque, ISG; Isla Carmen and Isla Espíritu Santo, BCS; Isla de Venados, SIN.

TYPE LOCALITY. “Mediterranee?” (Lamouroux, 1816:270).

*Jania capillacea* Harvey, 1853:84

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON, to Bahía de Banderas, JAL. WC: Punta Bufeo, BC, to Cabo San Lucas, BCS. IS: Isla Ángel de la Guarda and Isla Turner, ISG; Isla Partida [sur], BCS.

TYPE LOCALITY. Bahía Honda Key (Bahía Honda State Park), Florida Keys, Monroe County, Florida, USA.

*Jania decussato-dichotoma* (Yendo) Yendo, 1905:37

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Guaymas, SON. WC: Bahía Concepción to Punta Los Frailes, BCS. IS: Isla Cholla and Isla Carmen, BCS.

SYNTYPE LOCALITIES. Three locales in Japan (Yendo, 1902): Misaki, Sagami Bay (Kanagawa Prefecture), and Chiba Prefecture (formerly Boshū Province), both Honshū Island; and Hyūga, Miyazaki Prefecture (formerly Hiuga Province), Kyūshū Island.

*Jania huertae* Chávez-Barrera, 1972:133

GULF OF CALIFORNIA DISTRIBUTION. IS: Isla Pelicano, SON.

TYPE LOCALITY. SE of Isla Pelicano, near Bahía Kino, Sonora, Gulf of California, Mexico.

REMARKS. Mateo-Cid et al. (2013) noted the type specimen of *J. huertae* is missing, and locating the type material and new collection of topotype specimens with its characteristics are needed to clarify its taxonomic status.

*Jania longiarthra* E. Y. Dawson, 1953:119

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Guaymas, SON. IS: Isla Carmen and Isla Espíritu Santo, BCS.

TYPE LOCALITY. Bahía San Gabriel, Isla Espíritu Santo, Baja California Sur, Gulf of California, Mexico.

*Jania mexicana* W. R. Taylor, 1945:197

GULF OF CALIFORNIA DISTRIBUTION. EC: Segundo Cerro Prieto, SON, to Bahía de Banderas, JAL. WC: Ensenada Ampe, BCS. IS: Isla Tiburón and Estero Punta Perla (on Isla Tiburón), ISG.

TYPE LOCALITY. Bahía de Petatlan, vicinity of Zihuatanejo, Guerrero, Mexico.

REMARKS. Although Silva et al. (1987) and Mateo-Cid et al. (2013) considered *J. mexicana* to be conspecific with

*J. pacifica*, Norris (2014) kept the two separate, commenting that critical comparisons were needed to test their phylogenetic and taxonomic status.

*Jania pacifica* Areschoug, 1852:556

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía de Banderas, NAY/JAL. WC: Punta Gallito, BCS. IS: Isla Estanque, ISG; Isla Espíritu Santo and Isla Partida, BCS.

TYPE LOCALITY. Huatulco (Guatulco), 15°78'N, 96°27'W, Oaxaca, Mexico.

REMARKS. The relationship of *Jania pacifica* to *J. mexicana* requires further molecular and morphological study (see also Remarks above under *J. mexicana*).

*Jania subpinnata* E. Y. Dawson, 1953:115

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz, BCS.

TYPE LOCALITY. On *Digenea simplex* (Wulfen) C. Agardh; Bahía de La Paz, Baja California Sur, Gulf of California, Mexico.

*Jania tenella* (Kützting) Grunow, 1874:42

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Gorda, SON, to Bahía de Banderas, JAL. WC: Playa Santa Teresa, BC, to Cabo San Lucas, BCS. IS: Isla Rasa, ISG; Isla San Ildefonso and Isla Espíritu Santo, BCS.

SYNTYPE LOCALITIES. “In sinu neapolitano et ad oras mexicanas” (Kützting, 1858:41).

LECTOTYPE LOCALITY. Golfo di Napoli, Italy (Dawson, 1953).

*Jania tenella* var. *zacae* E. Y. Dawson, 1953:121

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía de Banderas, JAL. WC: Punta Cabeza de Mechudo, BCS. IS: Isla San Ildefonso, BCS.

TYPE LOCALITY. Epiphytic on *Padina*; Bahía Piedra de Blanca, Cantón de Nicoya, Provincia Guanacaste, Pacific coast of Costa Rica.

*Jania ungulata* f. *brevior* (Yendo) Yendo, 1905:38

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa El Corral, JAL.

TYPE LOCALITY. Chiba Prefecture (formerly Boshū Province), east coast of Honshū Island, Japan.

**CORALLINACEAE SUBFAM. METAGONIOLITHOIDEAE**  
**H. W. JOHANSEN, 1969:47**

**Harveyolithon A. Rösler, Perfectti, V. Peña et**  
**J. Braga, 2016:424**

*Harveyolithon samoëense* (Foslie) A. Rösler, Perfectti, V. Peña et J. C. Braga, 2016:425

GULF OF CALIFORNIA DISTRIBUTION. IS: Isla Pelicano, SON; Punta Mita to Las Cuevas, NAY.

**TYPE LOCALITY.** Satana, Savai'i Island, Western Samoa.

**REMARKS.** Upper Gulf specimens referred to this species (Mendoza-González and Mateo-Cid, 1986, as *Lithophyllum samoëense* Foslie, 1906; =*Hydrolithon samoëense* (Foslie) Keats et Y. M. Chamberlain, 1994; Maneveldt et al., 2015) need to be reexamined to verify their identifications.

## LITHOPHYLLACEAE ATHANASIADIS, 2016a:292

### LITHOPHYLLACEAE SUBFAM. LITHOPHYLLOIDEAE SETCHELL, 1943:143

**REMARKS.** Recognition of Corallinaceae subfam. Amphiroideae H. W. Johansen (1969) is problematic (Norris, 2014). Cabioch (1972) and later Athanasiadis (2016a) considered this subfamily to be Lithophyllaceae subfam. Lithophylloideae and placed *Amphiroa* in L. tribe Amphiroeae Cabioch.

### LITHOPHYLLOIDEAE TRIBE AMPHIROEAE CABIOCH, 1972:266

#### *Amphiroa* J. V. Lamouroux, 1812:185

*Amphiroa beauvoisii* J. V. Lamouroux, 1816:299

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Piedras de la Salina, SON, to Bahía de Banderas, JAL. WC: Playa San Antonio, BC, to Cabo San Lucas, BCS. IS: Isla San Jorge, SON; Puerto Refugio, Isla Ángel de la Guarda, Isla Patos, Isla Tiburón, Isla Turner, and Isla San Pedro Mártir, ISG; Isla Colorado and Islas de Los Gemelos, BC; Isla Tortuga, Isla San Ildefonso, Isla Cholla, Isla Carmen, Isla Monserrate, Isla San Diego, Punta Prieta, Isla Partida, Bahía San Gabriel, Isla Espíritu Santo, and Isla Cerralvo, BCS; Isla Pelicano, SON; Isla de la Piedra, SIN; Isla María Magdalena, NAY.

**TYPE LOCALITY.** “Côtes du Portugal” (Lamouroux, 1816:299).

*Amphiroa brevianiceps* E. Y. Dawson, 1953:142

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Bahía Kino, SON, to Puerto Vallarta, JAL. WC: Playa El Coloradito, BC, to Punta Los Frailes, BCS.

**TYPE LOCALITY.** Rocky shore, E of Salina Cruz, Oaxaca, Mexico.

*Amphiroa compressa* var. *tenuis* W. R. Taylor, 1945:191

**GULF OF CALIFORNIA DISTRIBUTION.** IS: Isla María Magdalena, NAY.

**TYPE LOCALITY.** Isla María Magdalena, Islas Marías, Nayarit, Gulf of California, Mexico.

*Amphiroa foliacea* J. V. Lamouroux, in Quoy and Gaimard, 1824:628

**GULF OF CALIFORNIA DISTRIBUTION.** IS: Isla María Magdalena, NAY.

**TYPE LOCALITY.** Mariana Islands, Micronesia.

**EPITYPE LOCALITY.** Sanctuary, Ningaloo Marine Park, NW coast of Western Australia, Australia (Harvey et al., 2013).

*Amphiroa magdalenensis* E. Y. Dawson, 1953:143

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Mazatlán, SIN. WC: Punta Palmilla, BCS. IS: Isla Tortuga and Isla San Ildefonso, BCS.

**TYPE LOCALITY.** Rocky shore; Punta Entrada, Isla Magdalena (W side of Bahía Magdalena), Pacific coast of Baja California Sur, Mexico.

*Amphiroa mexicana* W. R. Taylor, 1945:189

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Roca Roja, Bahía Kino, SON, to Puerto Vallarta, JAL. WC: Bahía de La Paz, BCS. IS: Isla Pelicano, SON.

**TYPE LOCALITY.** Bahía Petatlan, Guerrero, Mexico.

*Amphiroa misakiensis* Yendo, 1902a:14

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Puerto Peñasco to Puerto Vallarta, JAL. WC: Playa El Coloradito, BC, to Cabo San Lucas, BCS. IS: Isla Patos, Isla Partida (Isla Cordonazo) and Isla San Pedro Mártir, ISG; Isla San Ildefonso, Isla Cholla, and Isla Espíritu Santo, BCS; Isla María Cleofas and Isla Isabel, NAY.

**TYPE LOCALITY.** Misaki, Sagami Bay, Kanagawa Prefecture, Honshū Island, central Japan.

*Amphiroa polymorpha* Me. Lemoine, 1930:74

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Playa Los Cerritos, SIN, to Puerto Vallarta, JAL. WC: Eureka, BCS.

**TYPE LOCALITY.** Bahía Correos (Post Office Bay), Isla Floreana (Charles Island; Isla Santa María), Galápagos Islands, Ecuador.

*Amphiroa rigida* J. V. Lamouroux, 1816:297

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Puerto Peñasco, SON, to Mazatlán, SIN. EC: Bahía Concepción to Cabeza Ballena, BCS. IS: Isote La Ballena, Isla Espíritu Santo, and Isla Cerralvo, BCS; Isla de la Piedra, SIN.

**TYPE LOCALITY.** Mediterranean Sea.

*Amphiroa taylorii* E. Y. Dawson, 1953:138

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Puerto Peñasco, SON, to Puerto Vallarta, JAL. WC: Puerto Escondido to Cabeza Ballena, BCS. IS: Isla María Magdalena, NAY.

**TYPE LOCALITY.** Intertidal rocks, Bahía Braithwaite, Isla Socorro, Islas Revillagigedo, Colima, Mexico.

*Amphiroa valonioides* Yendo, 1902a:5

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Puerto Peñasco, SON, to Bahía de Banderas, JAL. WC: Playa El Coloradito, BC, to Cabeza Ballena, BCS. IS: Isla Coronado, BC; Isla Patos and Isla Rasa, ISG; Isla Monserrate, Isla San Diego, Isla Partida, and Isla Espíritu Santo, BCS; Isla María Magdalena, NAY.

**SYNTYPE LOCALITIES.** Two locales in Japan (Yendo, 1920): Miyazaki Prefecture (formerly Hiuga Province; Hyūga),

Kyūshū Island, and Misaki, Sagami Bay, Kanagawa Prefecture, Honshū Island.

*Amphiroa subcylindrica* E. Y. Dawson, 1953:139

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Guaymas, SON. WC: Playa El Coloradito, BC, to Cabeza Ballena, BCS. IS: Isla San Luis Gonzaga, and Isla Coronado, BC; Isla Patos, Isla Tiburón, Isla Turner, Isla San Esteban, and Isla San Pedro Mártir, ISG; Isla San Pedro Nolasco, SON; Isla San Ildefonso, Isla Monserrate, Isla Espíritu Santo, and Isla Partida, BCS.

TYPE LOCALITY. Rocky shore; Punta Colorado (near Guaymas), Sonora, Gulf of California, Mexico.

REMARKS. Although treated as synonym of *A. vanbosseae* Me. Lemoine (1930; type locality: Isla Floreana, Galápagos; see Norris, 2014), the two are considered separate until genetic analysis of the types tests their species status.

Uncertain Record: *Amphiroa currae* Ganesan, 1971:155

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta de Mita, NAY.

REMARKS. Reported from Nayarit with a query (Mateo-Cid and Mendoza-González, 1992); its identification has also been questioned by Serviere-Zaragoza et al. (1993).

Uncertain Record: *Amphiroa franciscana* W. R. Taylor, 1945:187

GULF OF CALIFORNIA DISTRIBUTION. EC: Segundo Cerro Prieto, SON.

REMARKS. Reported in the northern Gulf from Bahía Kino (Mendoza-González and Mateo-Cid, 1986), its presence in the Gulf needs confirmation.

LITHOPHYLLOIDEAE TRIBE DERMATOLITHEAE CABIOCH,  
1972:266

***Titanoderma* Nägeli, in Nägeli  
and C. E. Cramer, 1858:532**

*Titanoderma canescens* (Foslie) Woelkerling, Y. M.

Chamberlain et P. C. Silva, 1985:333

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Colorado (vic. Guaymas), SON, to Mazatlán, SIN. IS: Isla Turner, ISG; Isla de Venados, SIN.

TYPE LOCALITY. On *Padina arborescens*; [Manazuru] Marine Laboratory, Kanagawa Prefecture (formerly Sagami Province), Honshū Island, Japan.

*Titanoderma dispar* (Foslie) Woelkerling, Y. M. Chamberlain et P. C. Silva, 1985:333

GULF OF CALIFORNIA DISTRIBUTION. EC: Guaymas, SON, to Bahía de Banderas, JAL. WC: Puertecitos, BC, to Cabeza Ballena, BCS.

TYPE LOCALITY. On *Abnfeltiopsis gigartinoides*; Whidbey (Whidby) Island, Island County, Puget Sound, Washington, USA.

*Titanoderma pustulatum* (J. V. Lamouroux) Nägeli, in Nägeli and C. E. Cramer, 1858:532

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía Kino, SON.

TYPE LOCALITY. France.

*Titanoderma confine* (P. Crouan et H. Crouan) Price, John et Lawson, 1986:86

*Titanoderma pustulatum* var. *confine* (P. Crouan et H. Crouan) Y. M. Chamberlain, 1991:50

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON.

TYPE LOCALITY. Presumably near Brest, Finistère, France (Chamberlain, 1991).

LITHOPHYLLOIDEAE TRIBE LITHOPHYLLEAE ZANARDINI,  
1844:1035

***Lithophyllum* Philippi, 1837:387**

*Lithophyllum? brachiatum* (Heydrich) Me. Lemoine, 1930:44

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz, BCS.

TYPE LOCALITY. La Paz, Bahía de La Paz, Baja California Sur, Gulf of California, Mexico.

REMARKS. A Gulf of California species, *Lithophyllum brachiatum* was excluded from the genus *Lithophyllum* by Riosmena-Rodríguez et al. (1999). Although its generic placement remains uncertain, Riosmena-Rodríguez and Woelkerling (2000) noted the species belongs in either the Spongitiaceae subfam. Mastophoroideae or Hapalidiaceae subfam. Melobesioideae.

*Lithophyllum? californiense* Heydrich, 1901:530

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz, BCS.

TYPE LOCALITY. La Paz, Bahía de La Paz, Baja California Sur, Gulf of California, Mexico.

REMARKS. A Gulf of California species, *Lithophyllum californiense* was excluded from the genus *Lithophyllum* by Riosmena-Rodríguez et al. (1999). Although Riosmena-Rodríguez and Woelkerling (2000) noted the species to be a member of the Hapalidiaceae subfam. Melobesioideae, its generic placement is unresolved.

*Lithophyllum corallinae* (P. Crouan et H. Crouan) Heydrich, 1897b:47

GULF OF CALIFORNIA DISTRIBUTION. EC: Sayulita, NAY, to Playa La Rumorosa, Bahía de Chamela, JAL. WC: Cabeza Ballena, BCS.

TYPE LOCALITY. Banc du Chateau et Baie de la Ninon, Rade de Brest, France (Chamberlain, 1991).

*Lithophyllum diguetii* (Harriot) Heydrich, 1901:532

GULF OF CALIFORNIA DISTRIBUTION. EC: Laguna de Agiabampo, SON/SIN. WC: Santa Rosalía to Bahía de

La Paz, BCS. IS: Canal Mejía and Puerto Refugio, Isla Ángel de la Guarda, ISG; Canal de San Lorenzo, Isla Espíritu Santo, and Isla Partida, BCS.

**TYPE LOCALITY.** La Paz, Bahía de La Paz, Baja California Sur, Gulf of California, Mexico.

*Lithophyllum hancockii* E. Y. Dawson, 1944:268

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Las Peñas, NAY, to Melaque, JAL. WC: Bahía de La Paz, BCS. IS: Bahía San Gabriel, Isla Espíritu Santo, BCS.

**TYPE LOCALITY.** Shallow water; Bahía San Gabriel, Isla Espíritu Santo, Baja California Sur, Gulf of California, Mexico.

*Lithophyllum imitans* Foslie, 1909:13

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Puerto Peñasco, SON, to Yelapa, JAL. WC: Campo Hawaii, BC, to Cabeza Ballena, BCS. IS: Isla Alcatraz, SON; Isla Patos, ISG; Isla Espíritu Santo, BCS; Isla Isabel, NAY.

**TYPE LOCALITY.** Pacific Beach (between La Jolla and Mission Beach), near San Diego, San Diego County, southern California, USA.

*Lithophyllum lichenare* L. R. Mason, 1953:339

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Mazatlán, SIN, to Puerto Vallarta, JAL. WC: Bahía Concepción, BCS.

**TYPE LOCALITY.** Lower intertidal; Kanaka Bay, southern coast of San Juan Island, San Juan County, Salish Sea, Washington, USA.

**REMARKS.** Hind et al. (2016) treated *Lithophyllum lichenarei* L. R. Mason as conspecific with *Crusticorallina muricata* (Foslie) P. W. Gabrielson, P. T. Martone, K. R. Hind et C. P. Jensen. Its identification in the southern Gulf needs to be verified.

*Lithophyllum margaritae* (Hariot) Heydrich, 1901:530

**GULF OF CALIFORNIA DISTRIBUTION.** WC: Punta Chivato to Bahía del Rincón, Bahía de La Paz, BCS. IS: Isla Ángel de la Guarda, ISG; Isla Carmen, Isla Danzante, Isla San José, Canal de San Lorenzo, Isla San Espíritu Santo, and Isla San Juan Nepomuceno, BCS; Isla María Magdalena, NAY.

**TYPE LOCALITY.** Subtidal bank; off Isla San Juan Nepomuceno (“Nepomezeino”), about 4 km east from Pichilínque, Baja California Sur, Gulf of California, Mexico.

**REMARKS.** In a reinterpretation of *L. margaritae* as broadly defined by Riosmena-Rodríguez et al. (1999), Norris (2014) concluded that among the several taxa considered to be synonyms, there were at least three separate species, that is, *L. margaritae*, *L. diguetii* (Hariot) Heydrich, and *L. pallescens* (Foslie) Foslie. Recently, Hernández-Kantún et al. (2015) found molecular diversity within “*L. margaritae* sensu Riosmena-Rodríguez et al., 1999” was also very high, with two well-supported clades: “*L. margaritae* A” that subdivided into five hypothetical species and “*L. margaritae* B” that subdivided into two hypothetical species.

*Lithophyllum pallescens* (Foslie) Foslie, 1900:20

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Puerto Peñasco, SON, to Laguna de Agiabampo, SIN. WC: El

Machorro, BC, to Cabeza Ballena, BCS. IS: Isla Pelicano, SON; Isla Mejía and Puerto Refugio, Isla Ángel de la Guarda, ISG; Isla Carmen, laguna, Bahía San Gabriel and Canal de San Lorenzo, Isla Espíritu Santo, and Isla Partida, BCS.

**TYPE LOCALITY.** Subtidal bank; off west shore of Isla Espíritu Santo, Baja California Sur, Gulf of California, Mexico.

*Lithophyllum proboscideum* (Foslie) Foslie, 1900:18

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Playa Arenosa, Puerto Peñasco, to Mazatlán, SIN. WC: Playa El Coloradito, BC, to Bahía de La Paz, BCS. IS: Isla Partida, BCS.

**TYPE LOCALITY.** Dredged off Monterey, Monterey County, central California, USA.

*Lithophyllum* sp. 1 of Hernández-Kantún et al., 2014:334

**GULF OF CALIFORNIA DISTRIBUTION.** WC: El Rquesón, BCS.

*Lithophyllum* sp. 2 of Hernández-Kantún et al., 2014:334

**GULF OF CALIFORNIA DISTRIBUTION.** IS: Isla Espíritu Santo, BCS.

***Litholepis* Foslie, 1905:5**

*Litholepis sonorensis* E. Y. Dawson, 1944:275

**GULF OF CALIFORNIA DISTRIBUTION.** WC: Bahía de La Paz to Calerita, BCS. IS: Canal de San Lorenzo, Isla Espíritu Santo, BCS.

**TYPE LOCALITY.** Dredged 12–25 m depths; Canal de San Lorenzo (off southern end of Isla Espíritu Santo), Baja California Sur, Gulf of California, Mexico.

**REMARKS.** A little-known southern Gulf species, *Litholepis sonorensis* was recently reported growing on *Lithophyllum* sp. from Calerita (Mendoza-González et al., 2015).

***Pseudolithophyllum* Me. Lemoine, 1913:45**

Uncertain Record: *Pseudolithophyllum neofarlowii* (Setchell et L. R. Mason) W. H. Adey, 1970:13

**REMARKS.** Although reported from San Felipe to Punta Palmilla (Norris, 2014), its presence in the Gulf of California is doubtful.

**SPONGITIDACEAE KÜTZING, 1843:XXIII, 382, 385**

**SPONGITIDACEAE SUBFAM. HYDROLITHOIDEAE  
A. KATO ET M. BABA, IN KATO ET AL., 2011:669**

***Hydrolithon* (Foslie) Foslie, 1909:55**

*Hydrolithon chamaedoris* (Foslie et M. Howe) M. J. Wynne, 2005:12, 81

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Bahía de La Paz, BCS.

TYPE LOCALITY. On *Chamaedoris*; Cave Cays, Exuma Chain, Bahamas.

*Hydrolithon farinosum* (J. V. Lamouroux) D. Penrose et Y. M. Chamberlain, 1993:295

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Gorda to Puerto Peñasco, SON. WC: Playa El Coloradito, BC, to Cabo San Lucas, BCS. IS: Isla Tiburón, ISG; Isla María Cleofas, NAY.

TYPE LOCALITY. Mediterranean.

*Hydrolithon reinboldii* (Weber-van Bosse et Foslie) Foslie, 1909:55

GULF OF CALIFORNIA DISTRIBUTION. IS: Isla Gallo and Isla Gallina (off W coast of Isla Espíritu Santo, BCS).

TYPE LOCALITY. Muaras Reef (Karana Muaras), atoll off coast of East Kalimantan (east Borneo), Indonesia.

### ***Fosliella* M. Howe, 1920:587**

*Fosliella?* *paschalis* (Me. Lemoine) Setchell et N. L. Gardner, 1930:176

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía Kino, SON, to Bahía de Banderas, JAL. WC: Bahía Concepción to Punta Palmilla, BCS. IS: Isla San Ildefonso, BCS.

TYPE LOCALITY. Hanga Piko, Rapa Nui (Easter Island), Province Isla de Pascua, Chile.

REMARKS. The generic placement of *F.?* *paschalis* need reinvestigation.

### ***Pneophyllum* Kützing, 1843:385**

*Pneophyllum confervicola* (Kützing) Y. M. Chamberlain, 1983:385

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz, BCS.

TYPE LOCALITY. On *Conferva vasta* (now *Chaetomorpha aerea*); Trieste, Gulf of Trieste (northern Adriatic Sea), northeast Italy.

*Pneophyllum conicum* (E. Y. Dawson) Keats, Y. M. Chamberlain et Baba, 1997:264

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta de Mita, NAY to Bahía de Banderas, JAL. WC: Calerita to Cabo Pulmo, BCS.

TYPE LOCALITY. Intertidal reef; Binners Cove, Isla Socorro, Islas Revillagigedo, Colima, Mexico.

*Pneophyllum fragile* Kützing, 1843:385

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON. WC: Punta Arena to Cabo Pulmo, BCS.

TYPE LOCALITY. On *Sphaerococcus coronopifolius*; unknown locale in Mediterranean Sea (Chamberlain, 1983); Mediterranean Sea (Silva et al., 1996).

*Pneophyllum nicholsii* (Setchell et L. R. Mason) P. C. Silva et P. W. Gabrielson, in Gabrielson et al., 2004:94

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON, to Bahía de Banderas, JAL. WC: Playa El Coloradito, BC, to La Paz, BCS. IS: Isla Tiburón, ISG; Isla San Pedro Nolasco, SON.

TYPE LOCALITY. On *Dictyota binghamiae*; La Jolla, San Diego County, southern California, USA.

### **SPONGITIDACEAE SUBFAM. MASTOPHOROIDEAE SETCHELL, 1943:134**

#### ***Heteroderma* Foslie, 1909:56**

*Heteroderma corallinicola* E. Y. Dawson, 1944:273

GULF OF CALIFORNIA DISTRIBUTION. EC: Cabo Arco, SON.

TYPE LOCALITY. On *Corallina*; cove north of Cabo Arco, vicinity of Guaymas, Sonora, Gulf of California, Mexico.

*Heteroderma gibbsii* (Setchell et Foslie) Foslie, 1909:56

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Guaymas, SON. WC: Bahía de los Ángeles, BC, to San José del Cabo, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, and Isla Turner, ISG; Isla Coronado, BC; Isla San Pedro Nolasco, SON; Isla San José and Isla Espíritu Santo, BCS.

SYNTYPE LOCALITIES. Two island locales, both east of Bahía de La Paz (Foslie, 1909): epiphytic on *Sargassum* at Isla San José (25°00'N; 110°38'W) and on Isla Espíritu Santo (24°30'N; 110°22'W), Baja California Sur, Gulf of California, Mexico.

*Heteroderma subtilissimum* (Foslie) Foslie, 1909:56

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Pelicano, Puerto Peñasco, SON. WC: Cabo Pulmo, BCS. IS: Bahía San Gabriel, Isla Espíritu Santo, BCS.

TYPE LOCALITY. On *Corallina pilifera* J. V. Lamouroux; reef off Atjatuning, west coast of New Guinea.

### **SPONGITIDACEAE SUBFAM. NEOGONOLITHOIDEAE A. KATO ET M. BABA, IN KATO ET AL., 2011:669**

#### ***Neogoniolithon* Setchell et L. R. Mason, 1943a:92**

*Neogoniolithon setchellii* (Foslie) W. H. Adey, 1970:9

GULF OF CALIFORNIA DISTRIBUTION. EC: Mazatlán, SIN, to Bahía de Banderas, JAL. WC: Las Tarabillas to Cabo Pulmo, BCS. IS: Isla Partida, BCS.

TYPE LOCALITY. Uppermost intertidal; White Point, White Point Park, San Pedro, Los Angeles County, southern California, USA.



*Neogoniolithon trichotomum* (Heydrich) Setchell et L. R.

Mason, 1943a:92

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON, to Bahía de Banderas, JAL. WC: Puertecitos, BC, to Cabeza Ballena, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, and Isla Estanque, ISG; Isla Colorado, BC; Isla Cholla, Isla Carmen, Isla Monserrate, Isla Partida, and Bahía San Gabriel, Isla Espíritu Santo, BCS; Isla de Venados, SIN; Isla María Magdalena, NAY.

TYPE LOCALITY. Near La Paz, Baja California Sur, Gulf of California, Mexico (Heydrich, 1901).

**SPONGITIDACEAE SUBFAM. POROLITHOIDEAE A. KATO ET M. BABA, IN KATO ET AL., 2011:669**

REMARKS. Although the subfamily Porolithoideae is generally recognized (e.g., Maneveldt and Keats, 2014; Guiry and Guiry, 2016), it has recently been treated as a synonym of C. subfam. Metagoniolithoideae by Rösler et al. (2016).

***Porolithon* Foslie, 1909:57**

*Porolithon onkodes* (Heydrich) Foslie, 1909:57

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON. WC: Bahía del Rincón, BCS.

TYPE LOCALITY. Tami Island, northwest side of Gulf of Huon, Solomon Sea, Papua New Guinea.

REMARKS. *Porolithon onkodes* is one of the most widely distributed and ecologically important species of crustose coralline algae. Although found in many areas of the subtropical-tropical Indo-Pacific, South Pacific, eastern and western Pacific, and eastern and western Atlantic (e.g., Maneveldt and Keats, 2014), current records suggest it is probably not widespread in the Gulf of California.

*Porolithon sonorensis* E. Y. Dawson, 1944:273

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Guaymas, SON. WC: Playa El Coloradito, BC to Bahía de La Paz, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, Isla Estanque, Isla Patos, Bahía Agua Dulce, Isla Tiburón, Isla San Esteban, and Isla Partida (Isla Cordonazo), ISG; Isla Partida [sur], BCS.

TYPE LOCALITY. Rocky shore; on west side of Puerto Refugio, Isla Ángel de la Guarda, Baja California, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

***Spongitis* Kützing, 1841:30**

*Spongitis decipiens* (Foslie) Y. M. Chamberlain, 1993:113

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON, to Bahía de Banderas, JAL. WC: Campo Hawaii to Bahía de Los Ángeles, BC. IS: Isla Ángel de la Guarda, ISG.

TYPE LOCALITY. On small stone; San Pedro, Los Angeles County, southern California, USA.

REMARKS. Most Gulf of California specimens referred to “*S. decipiens*” need to be reexamined (Norris, 2014). Chamberlain (1993) found some of Dawson’s (1960b) specimens were “*S. yendoi*.” Fragoso and Rodríguez (2002) later noted some of the Dawson specimens they studied were a *Hydrolithon*, and none belonged in the genus *Spongitis*.

*Spongitis yendoi* (Foslie) Y. M. Chamberlain, 1993:102

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON, to Mazatlán, SIN. WC: Puerto San Felipe, BC, to Cabo San Lucas, BCS. IS: Isla Alcatraz, SON; Isla Ángel de la Guarda and Isla San Esteban, ISG; Bahía Salinas, Isla Carmen, BCS.

TYPE LOCALITY. Shimoda, Izu Peninsula, Shizuoka Prefecture, Honshū Island, Japan.

REMARKS. See also Remarks above under *Spongitis decipiens*.

Uncertain Record: *Spongitis fruticulosa* Kützing, 1841:30

REMARKS. Southern Gulf specimens cited by Dawson (1960b, as *Lithothamnion fruticulosum*) from Punta Los Frailes and Isla Carmen were later identified by Johansen (1976) as *Lithothamnion crassiusculum* (Foslie) L. R. Mason (now *Mesophyllum crassiusculum* (Foslie) Lebednik, in Athanasiadis et al., 2004). The presence of *Spongitis fruticulosa* in the Gulf needs to be verified.

**CORALLINALES SUBORD. MESOPHYLLINEAE  
ATHANASIADIS, 2016A:213**

**LITHOTHAMNIACEAE H. J. HAAS, 1887 [1886]:213**

**LITHOTHAMNIACEAE SUBFAM. LITHOTHAMNIOIDEAE  
FOSLIE, 1908:19**

**LITHOTHAMNIOIDEAE TRIBE LITHOTHAMNIEAE  
FOSLIE, 1903:25**

***Lithothamnion* Heydrich, 1897a:412,  
nom. cons.**

*Lithothamnion australe* Foslie, in Weber-van Bosse and Foslie, 1904:24

GULF OF CALIFORNIA DISTRIBUTION. WC: Guaymas, SON, to Laguna de Agiabampo, SIN. WC: Bahía Coyote to Bahía de La Paz, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, ISG; Canal de San Lorenzo, Isla Espíritu Santo, and Isla San Juan Nepomuceno, BCS; Isla María Magdalena, NAY.

TYPE LOCALITY. “Gulf of California” (Weber-van Bosse and Foslie, 1904:24); “in the vicinity of La Paz, Baja California, probably on sublittoral banks” (Dawson, 1960b:11), Baja California Sur, Gulf of California, Mexico.

*Lithothamnion australe* f. *tualensis* Foslie, 1904:24

GULF OF CALIFORNIA DISTRIBUTION. IS: Isla María Magdalena, NAY.

**TYPE LOCALITY.** Tual (Kota Tual; Siboga Expedition station no. 258), Kai Kecil (Little Kai Island; Nuhu Roa), Kai Islands (Kei Islands; Nuhu Evav), SE part of Maluku Islands, Maluku Province, Indonesia.

*Lithothamnion microsporum* (Foslie) Foslie, 1929:51

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Puerto Peñasco to Guaymas, SON. WC: San Felipe, BC.

**TYPE LOCALITY.** On pebbles and sandstone; Pacific Beach (between La Jolla and Mission Beach), San Diego County, southern California, USA.

*Lithothamnion muelleri* Lenormand ex Rosanoff, in Rosanoff, 1866:101

**GULF OF CALIFORNIA DISTRIBUTION.** WC: Cabo Los Machos to Calerita, BCS. IS: El Pardito-La Lobera, Isla San José, BCS.

**TYPE LOCALITY.** Western Port Bay, Victoria, Australia.

**REMARKS.** Identification of “*Lithothamnion muelleri*” in the Gulf needs to be verified (Norris, 2014). In their analysis Hernández-Kantún et al. (2015: fig. 14) found southern Gulf of California “*L. muelleri*” grouped weakly with another *Lithothamnion* from Fiji.

*Lithothamnion phymatodeum* Foslie, 1902:3

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Punta de Mita, NAY.

**TYPE LOCALITY.** “On rocks, upper sublittoral zone” (Woelkerling et al., 2005:470); Whidbey (Whidby) Island, Island County, Puget Sound, Washington, USA (Johansen, 1976).

*Lithothamnion* sp. 1 of Hernández-Kantún et al., 2014:335

**GULF OF CALIFORNIA DISTRIBUTION.** WC: San Esteban, Bahía de La Paz, BCS. IS: Canal de San Lorenzo, Isla Espíritu Santo, BCS.

*Lithothamnion* sp. 2 of Hernández-Kantún et al., 2014:335

**GULF OF CALIFORNIA DISTRIBUTION.** IS: Isla San Pedro Mártir, ISG.

*Lithothamnion* sp. 3 of Hernández-Kantún et al., 2014:335

**GULF OF CALIFORNIA DISTRIBUTION.** WC: El Requesón, BCS.

*Lithothamnion* sp. 5 of Hernández-Kantún et al., 2014:335

**GULF OF CALIFORNIA DISTRIBUTION.** WC: San Esteban, Bahía de La Paz, BCS.

**LITHOTHAMNIOIDEAE TRIBE PHYMATOLITHEAE  
ADEY ET JOHANSEN, 1972:160**

***Phymatolithon* Foslie, 1898:4, nom. cons.**

*Phymatolithon* sp. of Hernández-Kantún et al., 2014:336

**GULF OF CALIFORNIA DISTRIBUTION.** IS: Isla San Pedro Mártir, ISG.

**MESOPHYLLACEAE ATHANASIDAS, 2016A:251**

***Mesophyllum* Me. Lemoine, 1928:251**

*Mesophyllum crassiusculum* (Foslie) Lebednik, in Athanasiadis et al., 2004:152

**GULF OF CALIFORNIA DISTRIBUTION.** WC: Bahía de Los Ángeles, BC, to Bahía de Loreto, BCS. IS: Isla Carmen, BCS.

**TYPE LOCALITY.** White Point Beach (below Whites Point), White Point–Royal Palms County Park, San Pedro, Los Angeles County, southern California, USA.

*Mesophyllum engelhartii* (Foslie) W. H. Adey, 1970:23

**GULF OF CALIFORNIA DISTRIBUTION.** WC: Punta Perico and La Paz, BCS. IS: Canal de San Lorenzo, Isla Espíritu Santo, BCS.

**TYPE LOCALITY.** Cape Jaffa, on SE coast of South Australia, Australia.

**REMARKS.** Southern Gulf specimens identified as *Mesophyllum engelhartii* and another species, *M. erubescens* (Foslie) Me. Lemoine (1928) from Tenerife (Canary Islands), were paraphyletic, grouping with lineages of *Lithothamnion* and *Synarthrophyton* R. A. Townsend (1979) without generic limits (Hernández-Kantún et al., 2015: table 1, figs. 1–3, 17, 19). Athanasiadis (2017), studying *Lithothamnion engelhartii* Foslie (1900a), found two taxa among the type specimens, selected a lectotype, clarified its description, and noted that its morphological characters excluded it from *Lithothamnion* or *Mesophyllum* and also that it was affiliated with *Leptophyllum* or may possibly belong to *Synarthrophyton*. The generic status of the lectotype of *L. engelhartii* remains uncertain and in need of further investigation.

Although identification of Gulf “*M. engelhartii*” remains unresolved, the Canary Islands *Mesophyllum erubescens* was included in a new genus as *Melyvonmea erubescens* (Foslie) Athanasiadis et D. L. Ballantine (2014).

**HAPALIDIALES W. E. NELSON, J. E. SUTHERLAND,  
T. J. FARR ET H. S. YOON,  
IN NELSON ET AL., 2015:464**

**HAPALIDIACEAE J. E. GRAY, 1865:22**

**HAPALIDIACEAE SUBFAM. CHOREONEMATOIDEAE  
WOELKERLING, 1987:125**

**CHOREONEMATOIDEAE TRIBE CHOREONEMATEAE  
FOSLIE EX SVEDELIUS, 1911:266**

***Choreonema* F. Schmitz, 1889:455**

*Choreonema thuretii* (Bornet) F. Schmitz, 1889:455

**GULF OF CALIFORNIA DISTRIBUTION.** WC: Bahía Agua Verde to Cabeza Ballena, BCS.

TYPE LOCALITY. “On *Corallina*; Atlantic France” (Dawson, 1960b:30).

LECTOTYPE LOCALITY. Endo-epiphytic on *Haliptilon squamatum* (Linnaeus) H. W. Johansen, L. M. Irvine et A. M. Webster; Pointe de Querqueville, WNW of Cherbourg, Normandy, France (Woelkerling, 1987; Chamberlain and Irvine, 1994).

**HAPALIDIACEAE SUBFAM. MELOBESIOIDEAE**  
**BIZZOZERO, 1885:109**

**MELOBESIOIDEAE TRIBE MELOBESIEAE**  
**ARESCHOUG, 1852:506**

***Melobesia* J. V. Lamouroux, 1812:186**

*Melobesia accola* (Foslie) Me. Lemoine, 1924:289

GULF OF CALIFORNIA DISTRIBUTION. EC: Barra de Navidad, JAL.

TYPE LOCALITY. Hao (Haorangi), coral atoll in central part of Tuamotu Archipelago (Tuamotus), east of Tahiti, French Polynesia, South Pacific.

REMARKS. A poorly known species (Dawson, 1960b, as *Litholepis accola*), *Melobesia accola* has not been recently collected in the Gulf. More collections are needed to study and confirm its identification in the Gulf of California.

*Melobesia marginata* Setchell et Foslie, in Foslie, 1902:10

GULF OF CALIFORNIA DISTRIBUTION. EC: Barra de Navidad, JAL. WC: Cabeza Ballena, BCS.

TYPE LOCALITY. On *Laurencia*; Bodega Bay, Sonoma County, northern California, USA.

*Melobesia mediocris* (Foslie) Setchell et L. R. Mason, 1943b:95

GULF OF CALIFORNIA DISTRIBUTION. EC: Laguna de Agiabampo, SON/SIN.

TYPE LOCALITY. On *Phyllospadix*; Santa Cruz, Santa Cruz County, northern California, USA.

*Melobesia membranacea* (Esper) J. V. Lamouroux, 1812:186

GULF OF CALIFORNIA DISTRIBUTION. EC: Barra de Navidad, JAL. WC: Cabeza Ballena, BCS.

TYPE LOCALITY. On red algae; west [Atlantic] coast of France.

*Melobesia polystromatica* E. Y. Dawson, 1960b:8

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía de Banderas, NAY, to Barra de Navidad, JAL.

TYPE LOCALITY. On *Sargassum liebmannii*; Bahía Tenacatita, southern Jalisco, Mexico.

**AHNFELTIOPHYCIDAE G. W. SAUNDERS**  
**ET HOMMERSAND, 2004:1504**

**AHNFELTIALES C. A. MAGGS ET PUESCHEL, 1989:349**

**AHNFELTIACEAE C. A. MAGGS ET PUESCHEL, 1989:348**

***Ahnfeltia* Fries, 1836:309, nom. cons.**

*Ahnfeltia plicata* (Hudson) Fries, 1836:310

GULF OF CALIFORNIA DISTRIBUTION. EC: El Colorado, SON, to Punta de Mita, NAY. WC: El Requesón to Cabo Pulmo, BCS. IS: Isla San José, BCS.

TYPE LOCALITY. “Habitat in littoribus marinis” (Hudson, 1762:470); dwells on marine shores, England, UK (Guiry and Guiry, 2014).

*Ahnfeltia svenssonii* W. R. Taylor, 1945:238

GULF OF CALIFORNIA DISTRIBUTION. EC: Segundo Cerro Prieto to Roca Roja, Bahía Kino, SON; Playa Guayabitos and Playa Las Peñas, NAY. WC: Loreto to Cabo San Lucas, BCS. IS: Isla Cholla, and Isla Espíritu Santo, BCS.

TYPE LOCALITY. Black Beach, Isla Floreana (Charles Island; Isla Santa María), Galápagos Islands, Ecuador.

**RHODYMENIOPHYCIDAE G. W. SAUNDERS**  
**ET HOMMERSAND, 2004:1504**

**GELIDIALES KYLIN, 1923:132**

**GELIDIACEAE KÜTZING, 1843:XXIV, 390, 405**

***Gelidium* J. V. Lamouroux, 1813:128,**  
**nom. cons.**

*Gelidium coronadense* E. Y. Dawson, 1953:67

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de Loreto, BCS.

TYPE LOCALITY. On mid intertidal rocks; east side of Isla Norte, Islas Los Coronados, off Pacific coast of Baja California, Mexico.

*Gelidium crinale* (Hare ex Turner) Gaillon, 1828:362

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Gorda to Cabo Arco, SON. WC: Campo Hawaii to Playa El Coloradito, BC.

LECTOTYPE LOCALITY. Ilfracombe, Devonshire, England, UK (Dixon and Irvine, 1977a).

*Gelidium decompositum* Setchell et N. L. Gardner, 1924a:743

GULF OF CALIFORNIA DISTRIBUTION. WC: Puerto Calamajué to Bahía San Francisquito, BC; Bahía de Loreto, BCS. IS: Isla Partida (Isla Cordonazo) and Isla Rasa, ISG.

TYPE LOCALITY. Bahía San Francisquito, Baja California, Gulf of California, Mexico.

*Gelidium johnstonii* Setchell et N. L. Gardner, 1924a:742

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Cabo Arco, SON. WC: El Machorro, BC, to

Cabo Pulmo, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, Isla Estanque, Isla Tiburón, Isla Turner, and Isla San Esteban, ISG; Isla Coronado, Isla La Ventana, Islas de Los Gemelos, BC; Isla San Marcos, Isla Carmen, and Caleta Partida (between Isla Partida and Isla Espíritu Santo), BCS.

TYPE LOCALITY. Bahía San Francisquito, Baja California, Gulf of California, Mexico.

*Gelidium mcnabbianum* (E. Y. Dawson) Santelices, 1998:245  
GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Pelicano to Punta Peñasco, Puerto Peñasco, SON.

TYPE LOCALITY. Bahía Golfito, southwest of Golfo Dulce, Puntarenas Province, Pacific coast of Costa Rica.

*Gelidium microdentatum* E. Y. Dawson, 1960a:36  
GULF OF CALIFORNIA DISTRIBUTION. EC: San Blas to Manzanillas, NAY. IS: Isla Larga, NAY.

TYPE LOCALITY. "Intertidal rocks across the river from the village" (Dawson, 1960a:37); San Blas, Nayarit, Gulf of California, Mexico.

*Gelidium microphysa* Setchell et N. L. Gardner, 1930:151  
GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía la Choya, Puerto Peñasco, SON. WC: Bahía de Los Ángeles, BC. IS: Isla Patos, Isla Tiburón, Isla Turner, and Isla Partida (Isla Cordonazo), ISG.

TYPE LOCALITY. On rocks; Bahía Sur (South Bay), Isla Guadalupe, off Pacific coast of Baja California, Mexico.

*Gelidium pusillum* (Stackhouse) Le Jolis, 1863:139  
GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Gorda, SON, to Puerto Vallarta, JAL. WC: Campo Hawaii, BC, to Cabo San Lucas, BCS. IS: Isla Alcatraz, SON; Puerto Refugio, Isla Ángel de la Guarda, Isla Patos, Isla Tiburón, Isla Turner, and Isla Partida (Isla Cordonazo), ISG; Isla San Juan Nepomuceno, BCS; Isla Larga, NAY.

TYPE LOCALITY. Sidmouth, Devon, England, UK (Dixon and Irvine, 1977a).

*Gelidium refugiense* (E. Y. Dawson) Santelices, 2007:298  
GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía San Carlos, SON. IS: Puerto Refugio, Isla Ángel de la Guarda, ISG.

TYPE LOCALITY. In beach drift; on north shore of Puerto Refugio, Isla Ángel de la Guarda, Baja California, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

*Gelidium sclerophyllum* W. R. Taylor, 1945:156  
GULF OF CALIFORNIA DISTRIBUTION. EC: Mazatlán, SIN, to Puerto Vallarta, JAL. WC: Bahía Concepción to Cabeza Ballena, BCS. IS: Isla Pelicano, SON.

TYPE LOCALITY. Dredged 5.4 m depth; near northeast side of Ensenada de San Francisco, Provincia de Esmeraldas, northern Ecuador.

Uncertain Record: *Gelidium coulteri* Harvey, 1853:117

GULF OF CALIFORNIA DISTRIBUTION. EC: Segundo Cerro Prieto, Bahía Kino, SON.

REMARKS. Reported from the upper Gulf by Mendoza-González and Mateo-Cid (1986), its presence in the northern Gulf needs to be verified.

## GELIDIACEAE K.-C. FAN, 1961:317

### *Gelidiella* J. Feldmann et G. Hamel, 1934:529

*Gelidiella acerosa* (Forsskål) Feldmann et G. Hamel, 1934:533  
GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Guayabitos and Playa Las Peñas, NAY, to Puerto Vallarta, JAL. WC: Puertecitos, BC, to Cabeza Ballena, BCS. IS: Bahía San Gabriel, Isla Espíritu Santo, BCS.

TYPE LOCALITY. "Ad Mochhae littoral" (Forsskål, 1775:190); Al Mukha, Yemen, Red Sea.

*Gelidiella hancockii* E. Y. Dawson, 1944:261  
GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía Kino, SON, to Sayulita, NAY. WC: Playa El Coloradito, BC, to Calerita, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, Isla Estanque, Isla Partida (Isla Cordonazo), and Isla Tiburón, ISG.

TYPE LOCALITY. On mid intertidal rocks; rocky point, about 4.8 km north of Bahía Kino, Sonora, Gulf of California, Mexico.

## PTEROCLADIACEAE FELICINI ET PERRONE, IN PERRONE ET AL., 2006:31

### *Pterocladia* J. Agardh, 1852a:485

*Pterocladia sonorensis* (E. Y. Dawson) J. S. Stewart et J. N. Norris, in Norris and Stewart, 2014:316  
GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Puerto San Carlos, SON.

TYPE LOCALITY. Intertidal rocks; near Puerto San Carlos on west side of Ensenada de San Francisco (northeast of Guaymas), Sonora, Gulf of California, Mexico.

### *Pteroclatiella* Santelices et Hommersand, 1997:117

*Pteroclatiella caloglossoides* (M. Howe) Santelices, 1998:244  
GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON, to Bahía de Banderas, JAL. WC: San Felipe to Bahía de Los Ángeles, BC.

TYPE LOCALITY. Isla de San Lorenzo, off the port of Callao (west of Lima), Peru.

*Pteroclatiella capillacea* (S. G. Gmelin) Santelices et Hommersand, 1997:118  
GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON, to Playa Los Muertos, NAY. WC: Puerto

Calamajué, BC, to Cabo San Lucas, BCS. IS: Isla Coronado, BC; Isla Rasa, ISG; Isla San Ildefonso, Isla Carmen, and Isla Partida, BCS.

TYPE LOCALITY. Mediterranean Sea.

*Pterocladia luxurians* (F. S. Collins) G. H. Boo et K. A. Miller, in Boo et al., 2016:5

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Tucson to Playa Arenosa, Puerto Peñasco, SON.

TYPE LOCALITY. Pacific Beach, San Diego County, southern California, USA (*Gelidium crinale* f. *luxurians* F. S. Collins, in Collins et al., 1903: *P.B.-A.* exsiccate no. 1138).

REMARKS. Although previously treated as synonym of *Pterocladia media* (e.g., Stewart, 1974; Norris and Stewart, 2014), Boo et al. (2016) provided molecular evidence *Gelidium crinale* f. *luxurians* was a distinct species belonging in *Pterocladia*, as *P. luxurians*.

*Pterocladia media* (E. Y. Dawson) G. H. Boo et K. A. Miller, in Boo et al., 2016:5

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía de Banderas, NAY/JAL.

TYPE LOCALITY. Rocky beach just north of Wind-and-Sea (“Windansea” surfing beach), La Jolla, San Diego County, southern California, USA.

REMARKS. Recently, molecular analysis of type specimens by Boo et al. (2016) supported placement of *Pterocladia media* E. Y. Dawson (1958) in the genus *Pterocladia*.

## GRACILARIALES FREDERICQ ET HOMMERSAND, 1989:225

### GRACILARIACEAE NÄGELI, 1847:240, 254

#### GRACILARIACEAE SUBFAM. GRACILARIOIDEAE STIZENBERGER, 1860:41

#### GRACILARIOIDEAE TRIBE GRACILARIEAE WILLKOMM, 1854:147

### *Gracilaria* Greville, 1830:ii, 121, *nom. cons.*

*Gracilaria ascidiicola* E. Y. Dawson, 1961a:203

GULF OF CALIFORNIA DISTRIBUTION. WC: Puerto Escondido to Bahía de Loreto, BCS.

TYPE LOCALITY. Growing in an ascidian (tunicate), on mud bottom; innermost lagoon, Puerto Escondido, Baja California Sur, Gulf of California, Mexico.

*Gracilaria cerrosiana* W. R. Taylor, 1945:232

GULF OF CALIFORNIA DISTRIBUTION. WC: La Paz, BCS.

TYPE LOCALITY. On rocks; Bahía Sur, Isla Cedros (Isla Cerros), Baja California, Mexico.

*Gracilaria crispata* Setchell et N. L. Gardner, 1924a:753

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Gorda, SON, to Bahía de Banderas, JAL. WC: Puertecitos, BC, to Cabeza Ballena, BCS. IS: Isla Coronado, BC; Isla Tiburón and Isla Turner, ISG; Isla San Pedro Nolasco, SON; Isla Cholla, Isla Carmen, Isla Monserrate, and Bahía San Gabriel, Isla Espíritu Santo, BCS; Isla de Venados, SIN.

TYPE LOCALITY. Rancho Eureka (near Punta Soledad), Bahía de Las Palmas, Baja California Sur, Gulf of California, Mexico.

*Gracilaria cunninghamii* Farlow ex J. Agardh, 1901:93

GULF OF CALIFORNIA DISTRIBUTION. EC: Guaymas, SON, to Mazatlán, SIN. WC: San Felipe, BC.

TYPE LOCALITY. Santa Barbara, Santa Barbara County, southern California, USA.

*Gracilaria marcialana* E. Y. Dawson, 1949a:15

GULF OF CALIFORNIA DISTRIBUTION. EC: Roca Rojo, Bahía Kino, SON. WC: Machorro, BC, to Bahía de La Paz, BCS. IS: Roca San Marcial, BCS; Canal de San Lorenzo, Isla Espíritu Santo, BCS.

TYPE LOCALITY. Dredged 16–30 m depths; reef, vicinity of Roca San Marcial, about 2.0 km north-northeast of Punta San Marcial, Baja California Sur, Gulf of California, Mexico.

*Gracilaria pachydermatica* Setchell et N. L. Gardner, 1924a:753

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Gorda, SON, to Puerto Vallarta, JAL. WC: El Coloradito, BC, to Cabeza Ballena, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, Isla Turner, and Isla San Esteban, ISG; Isla Espíritu Santo, BCS.

TYPE LOCALITY. On upper sublittoral rocks; Isla Tortuga (off Puerto Santa Rosalía), Baja California Sur, Gulf of California, Mexico.

*Gracilaria pacifica* I. A. Abbott, 1985:116

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON, to Playa Guayabitos and Playa las Peñas, NAY. WC: Bahía de Los Ángeles, BC, to Bahía de La Paz, BCS. IS: Isla Estanque, Isla Tiburón, Isla Rasa, and Isla San Pedro Mártir, ISG; Isla San Juan Nepomuceno, BCS. Isla de la Piedra, SIN.

TYPE LOCALITY. Intertidal (0.0 foot tide level); mid-way to southwest end of Stillwater Cove, Pebble Beach, Monterey County, central California, USA.

*Gracilaria papenfussii* I. A. Abbott, 1983:562

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz to Bahía Rincón, BCS.

TYPE LOCALITY. La Jolla, San Diego County, southern California, USA.

*Gracilaria parvispora* I. A. Abbott, 1985:119

GULF OF CALIFORNIA DISTRIBUTION. WC: San Juan de la Costa (Bahía de La Paz) to Playa La Concha (vicinity of La Paz), BCS. IS: Isla Huitussi, Bahía Navachiste, SIN.

TYPE LOCALITY. Kāneʻohe (Kaneohe) Bay, island of Oahu (Hawaiian Islands), Hawaii, USA.

REMARKS. *Gracilaria parvispora* is morphologically similar to another invasive species *G. vermicularophylla*. A non-native species in the Gulf, it has recently been identified in the southern Gulf primarily on the basis of genetic analyses (García-Rodríguez et al., 2013).

*Gracilaria pinnata* Setchell et N. L. Gardner, 1924a:751

GULF OF CALIFORNIA DISTRIBUTION. WC: Playa El Coloradito, BC, to Cabo Pulmo, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, ISG; Isla La Ventana, BC; Isla María Magdalena, NAY.

TYPE LOCALITY. Bahía de Los Ángeles, Baja California, Gulf of California, Mexico.

*Gracilaria ramisecunda* E. Y. Dawson, 1949a:17

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de Loreto to Cabeza Ballena, BCS. IS: Isla Cholla, BCS.

TYPE LOCALITY. Intertidal; Cabeza Ballena, Baja California Sur, Gulf of California, Mexico.

*Gracilaria rubrimembra* E. Y. Dawson, 1949a:32

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON, to Bahía de Banderas, JAL. IS: Isla San Pedro Mártir, ISG.

TYPE LOCALITY. South side of Ensenada de San Francisco (near Puerto San Carlos), Sonora, Gulf of California, Mexico.

*Gracilaria spinigera* E. Y. Dawson, 1949a:24

GULF OF CALIFORNIA DISTRIBUTION. EC: Ensenada de San Francisco, SON, to Punta de Mita, NAY. WC: Bahía de Los Ángeles, BC, to Arrecife de Cabo Pulmo, BCS. IS: Isla San Ildefonso, Isla Tortuga, Isla Carmen, and Isla Espíritu Santo, BCS.

TYPE LOCALITY. Upper sublittoral rocks; Ensenada de San Francisco (vicinity of Puerto San Carlos), Sonora, Gulf of California, Mexico.

*Gracilaria subsecundata* Setchell et N. L. Gardner, 1924a:755

GULF OF CALIFORNIA DISTRIBUTION. EC: Piedras del Burro to Guaymas, SON, to Laguna Ceuta, SIN. WC: Campo Hawaii, BC, to Cabeza Ballena, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, Isla Estanque, Isla Tiburón, ISG; Isla Espíritu Santo, BCS.

TYPE LOCALITY. Guaymas, Sonora, Gulf of California, Mexico.

REMARKS. Herein the selection of a lectotype specimen of another species, *G. hancockii* E. Y. Dawson, recognizes

that species to be a synonym of *G. subsecundata* (see Remarks below under *Gracilaria hancockii*).

*Gracilaria tepocensis* (E. Y. Dawson) E. Y. Dawson, 1961a:211

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía Tepoca, SON, to Cabo Corrientes, JAL. WC: San Felipe, BC, to Bahía de La Paz, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, and Isla Estanque, ISG.

TYPE LOCALITY. Dredged 21.6 m depth; Bahía Tepoca, Sonora, Gulf of California, Mexico.

*Gracilaria turgida* E. Y. Dawson, 1949a:14

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Gorda, SON, to Laguna Santa María y Laguna La Reforma, SIN. WC: Playa El Coloradito, BC, to Cabo Pulmo, BCS. IS: Isla Coronado, BC.

TYPE LOCALITY. Mudflat; upper Newport Harbor, Newport–Balboa, Orange County, southern California, USA.

*Gracilaria veleroae* E. Y. Dawson, 1944:297

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Peñasco, SON, to Bahía Banderas, NAY/JAL. WC: Campo Hawaii, BC, to Cabeza Ballena, BCS. IS: Isla Tiburón and Isla Turner, ISG; Isla Espíritu Santo, BCS; Isla Isabel, NAY.

TYPE LOCALITY. Dredged 4–30 m depths; off the southern shore of Isla Tiburón (near Isla Turner), Sonora, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

Invasive species: *Gracilaria vermiculophylla* (Ohmi) Papenfuss, 1967:101

GULF OF CALIFORNIA DISTRIBUTION. EC: El Colorado, SON; Bahía de Navachiste to Teacapán, SIN.

TYPE LOCALITY. Gomejima, Akkeshi-ko Lagoon (shallow estuary connected to shore of Akkeshi Bay), Kushiro Province (now Kushiro Subprefecture), Hokkaidō Island, Japan.

REMARKS. Apparently introduced and sometimes commercially harvested in the Gulf, it is a highly invasive species (Norris, 2014). Its spread and ecological effect on the native Gulf marine flora need to be studied. It has been reported on the Pacific coast of northern Baja California in the estero at Punta Banda (L. Aguilar-Rosas et al., 2014). Morphologically similar to *G. parvispora*, the two in the Gulf may be confused and sometimes could be misidentified [see also: Remarks under *G. parvispora*].

*Gracilaria vivesii* M. Howe, 1911:503

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Lobos to Guaymas, SON. WC: San Felipe, BC, to Bahía de La Paz, BCS. IS: Isla Patos, Isla Turner, and Isla San Esteban, ISG; Isla San Pedro Nolasco, SON; Isla San Ildefonso, Isla Carmen, and Isla Espíritu Santo, BCS.

TYPE LOCALITY. La Paz, Baja California Sur, Gulf of California, Mexico.

REMARKS. See also comments below under *Gracilaria textorii*.

**Uncertain Record: *Gracilaria textorii* (Suringar) Hariot, 1891:223**

REMARKS. The presence of the Japanese *G. textorii* in the northern Gulf of California seems unlikely and requires further study (Norris and Gurgel, 2014). Most specimens of Gulf “*G. textorii* sensu Dawson (1961a)” were referred to *G. vivesii*, and those of Mateo-Cid and Mendoza-González (1992) from Nayarit may also belong to *G. vivesii*.

**Resolved Status: *Gracilaria hancockii* E. Y. Dawson, 1944:297**

TYPE LOCALITY. Dredged 4–32 m depths; off southern shore of Isla Tiburón near Isla Turner, Sonora, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

REMARKS. The taxonomic status of *Gracilaria hancockii* E. Y. Dawson (1944) has been uncertain (Norris and Gurgel, 2014). Dawson (1949a) treated the taxon as a “*nomen confusum*” on the basis of his reexamination of the type collection of *G. hancockii* (AHFH-38), in which he found a mix of specimens of different species—that is, tetrasporophytes that were either a species of *Gracilaria* or a *Gracilariopsis*, a cystocarpic species of *Agardhiella*, or a sterile specimen he referred to *Gracilaria subsecundata*. We chose the specimen on the herbarium type sheet (EYD-149; AHFH-38, now UC) identified by Dawson (1949a:39) to be *G. subsecundata* Setchell et N. L. Gardner (1924a) as the lectotype of *G. hancockii* E. Y. Dawson (1944:297). The two are conspecific, with *G. subsecundata* Setchell et N. L. Gardner (1924a:755) being the older valid name.

**Excluded Species: *Gracilaria verrucosa* sensu Dawson, 1961b:214**

REMARKS. Gulf of California specimens previously identified as “*Gracilaria verrucosa*” are excluded from the Gulf marine flora (non *G. verrucosa* (Hudson) Papenfuss, 1950, *nom. rej.*, which is now *Gracilariopsis longissima* (S. G. Gmelin) Steentoft, L. M. Irvine et Farnham, 1995). Gulf of California specimens previously identified as “*Gracilaria verrucosa*” need to be reexamined and compared to the narrow, cylindrical species of Gracilariaceae reported in the Gulf (Norris and Gurgel, 2014)—that is, *Gracilaria* (*G. pacifica*, *G. papenfussii*, and *G. vermiculophylla*) and *Gracilariopsis* (*G. andersonii*, *G. animasensis*, *G. longissima*, *G. megaspora*, and *G. rhodotricha*)—to determine their identifications.

### ***Gracilariopsis* E. Y. Dawson, 1949a:40**

*Gracilariopsis andersonii* (Grunow) E. Y. Dawson, 1949a:43

GULF OF CALIFORNIA DISTRIBUTION. EC: El Tornillal to Guaymas, SON; Bahía Topolobampo, SIN (with query). WC: San Felipe, BC, to Bahía de La Paz; BCS.

TYPE LOCALITY. Santa Cruz, Santa Cruz County, central California, USA.

*Gracilariopsis animasensis* Gurgel et J. N. Norris, in Norris and Gurgel, 2014:398

GULF OF CALIFORNIA DISTRIBUTION. EC: Ensenada de San Francisco, SON. WC: Bahía de Los Ángeles, BC, to Bahía de La Paz, BCS. IS: Isla Angel de la Guarda, ISG.

TYPE LOCALITY. In fine-sediment sand, intertidal to 1.0 m depths; shallow channel near entrance to mangrove estero inside of Bahía de Las Ánimas (28°48'28"N, 113°21'39"W), Baja California, Gulf of California, Mexico.

*Gracilariopsis longissima* (S. G. Gmelin) Steentoft, L. M. Irvine et Farnham, 1995:117

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía de Navachiste, SIN.

SYNTYPE LOCALITIES. “Ad littoral *Belgii* nonnunquam proicitur, Dellenius haber, aquae ductum sequi, et lapillis adnasci ad canals et introitus maris pone *Sheernefs*” (Gmelin, 1768:134); littoral, Belgium and Sheerness [probably mouth of River Thames].

NEOTYPE LOCALITY. Sheerness, Kent, England, UK (Steentoft et al., 1995).

*Gracilariopsis megaspora* E. Y. Dawson, 1949a:45

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía San Carlos, SON.

TYPE LOCALITY. Lagoon, Bahía San Carlos, Sonora, Gulf of California, Mexico.

**Uncertain Record: *Gracilariopsis rhodotricha* E. Y. Dawson, 1949a:47**

REMARKS. A southern Gulf specimen from Bahía de San Lucas, BCS, was tentatively referred to *G. rhodotricha* (Norris, 1985; Norris and Gurgel, 2014); more collections are needed to verify its presence in the Gulf.

### ***Gracilariophila* Setchell et H. L. Wilson, in Wilson, 1910:81**

*Gracilariophila gardneri* Setchell, 1923:393

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Estación, Puerto Peñasco, to Bahía Bacochibampo, SON.

TYPE LOCALITY. On *Gracilaria cunninghamii*; Santa Monica, Los Angeles County, southern California, USA.

### **PTEROCLADIOPHILACEAE K.-C. FAN ET PAPERFUSS, 1959:38**

#### ***Gelidiocolax* N. L. Gardner, 1927b:340**

*Gelidiocolax microsphaericus* N. L. Gardner, 1927b:341

GULF OF CALIFORNIA DISTRIBUTION. WC: Playa El Coloradito, BC, to Punta Arena, BCS.

TYPE LOCALITY. On *Gelidium pulchrum*; ~3.2 km south of Balboa Beach, Orange County, southern California, USA.

**BONNEMAISONIALES FELDMANN ET  
FELDMANN-MAZOYER, 1943:163**

**BONNEMAISONIACEAE F. SCHMITZ, 1892:20**

***Asparagopsis* Montagne, 1841:xv**

*Asparagopsis taxiformis* (Delile) Trevisan, 1845:45  
(gametophytes); and *Falkenbergia*-phase (sporophyte)

GULF OF CALIFORNIA DISTRIBUTION. *Asparagopsis taxiformis* (gametophytes)—EC: Puerto Peñasco, SON, to Bahía de Banderas, JAL. WC: San Felipe, BC, to Punta Los Frailes, BCS. IS: Rocas Consag, SON; Isla Coronado and Islas de Los Gemelos, BC; Isla Mejía, Roca Blanca, and Puerto Refugio, Isla Ángel de la Guarda, Isla Estanque, and Isla Rasa, ISG; Isla Tortuga, Isla San Ildefonso, Isla Cholla, Isla Carmen, Isla Monserrate, Isla San Diego, Isla San Francisco, Isla Partida, Isla Espíritu Santo, and Isla San Juan Nepomuceno, BCS. *Falkenbergia*-phase (sporophyte)—EC: Puerto Peñasco, SON, to Miramar, NAY. WC: Bahía de Los Ángeles, BC, to Cabeza Ballena, BCS. IS: Isla Coronado and Isla La Ventana, BC; Isla Partida and Isla Espíritu Santo, BCS.

REMARKS. Both gametophytes and presumed sporophytes in the life history of *Asparagopsis taxiformis* have been collected in the Gulf of California. However, the two phases are not always found at the same time or at the same locales.

***Bonnemaisonia* C. Agardh, 1822:196**

*Bonnemaisonia hamifera* Hariot, 1891:223

GULF OF CALIFORNIA DISTRIBUTION. WC: Puerto Calamajué to Bahía de Los Ángeles, BC. IS: Roca Blanca and Puerto Refugio, Isla Ángel de la Guarda, and Isla Estanque, ISG; Isla La Ventana, BC.

TYPE LOCALITY. Yokosuka, Kanagawa Prefecture, southeast Honshū Island, Japan.

REMARKS. Only the gametophytes of *Bonnemaisonia hamifera* are known in the Gulf of California. The presumed sporophyte, *Trilliella*-phase, has not yet been collected in the Gulf.

**CERAMIALES NÄGELI, 1847:196, 253**

**CERAMIALES SUBORD. CERAMIINEAE  
ATHANASIADIAS, 2016B:764**

**CALLITHAMNIACEAE KÜTZING, 1843:370**

**CALLITHAMNIACEAE SUBFAM. CALLITHAMNIOIDEAE  
DE TONI, 1903:1252**

**CALLITHAMNIOIDEAE TRIBE CALLITHAMNIEAE  
J. AGARDH, 1851:4**

***Aglaothamnion* Feldmann-Mazoyer, 1940:451**

*Aglaothamnion endovagum* (Setchell et N. L. Gardner) I. A. Abbott, 1972:262

GULF OF CALIFORNIA DISTRIBUTION. EC: Ensenada de San Francisco to Bahía Catalina, SON. IS: Isla San Esteban and Isla Turner, ISG; Isla San Ildefonso, BCS.

TYPE LOCALITY. Endo-epiphytic in fronds of *Grateloupia prolongata* J. Agardh; Isla San Esteban, Sonora, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

***Callithamnion* Lyngbye, 1819:xxxii, 123**

*Callithamnion bisporum* var. *australe* E. Y. Dawson, 1962a:26

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de Los Ángeles, BC, to Puerto Escondido, BCS.

TYPE LOCALITY. Dredged 6–9 m depths; outer bay, Puerto Escondido, Baja California Sur, Gulf of California, Mexico.

*Callithamnion catalinense* E. Y. Dawson, 1962a:28

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz, BCS.

TYPE LOCALITY. Dredged 15–30 m depths; on Farnsworth Bank, sea mount off west side of Santa Catalina Island, Los Angeles County, California Channel Islands (Channel Islands National Marine Sanctuary), southern California, USA.

*Callithamnion compactum* E. Y. Dawson, 1962a:29

GULF OF CALIFORNIA DISTRIBUTION. EC: Guaymas, SON.

TYPE LOCALITY. Intertidal, on *Prionitis delicatula*; Bahía Asunción, Pacific coast of Baja California Sur, Mexico.

REMARKS. Dawson (1962a) noted the vicinity of Guaymas specimen was sterile and may possibly be referable to this species. Its presence in the Gulf needs verification.

*Callithamnion marshallense* E. Y. Dawson, 1957:117

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Pelicano, SON. WC: Bahía de La Paz, BCS.

TYPE LOCALITY. At 1.6–3.0 m depths, lagoon; south end of Parry Island, Enewetak Atoll (Eniwetok), Republic of the Marshall Islands.

*Callithamnion paschale* Børgesen, 1924a:294

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Tucson, Bahía la Choya, Puerto Peñasco, to Bahía Bacocho-bampo, SON. WC: Faro de San Felipe, BC, to Punta Los Frailes, BCS. IS: Isla San Jorge and Isla San Pedro Nolasco, SON; Puerto Refugio, Isla Ángel de la Guarda, Isla Patos, and Isla Partida, ISG; Isla Carmen, Isla Monserrate, and Isla Espíritu Santo, BCS; Isla de la Piedra, SIN.

TYPE LOCALITY. Hanga Piko, Rapa Nui (Easter Island), Province Isla de Pascua (Valparaiso Region), Chile.

*Callithamnion ramosissimum* N. L. Gardner, 1927c:404

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON. WC: Loreto to Bahía de La Paz, BCS.

TYPE LOCALITY. Epiphytic on *Hypnea*; La Jolla, San Diego County, southern California, USA.



*Callithamnion rupicola* C. L. Anderson, 1894:360

GULF OF CALIFORNIA DISTRIBUTION. EC: Guaymas, SON, to Bahía de Banderas, JAL. WC: Puertecitos, BC, to Bahía de La Paz, BCS.

TYPE LOCALITY. On rocks; Monterey Bay, Monterey County, central California, USA.

**CALLITHAMNACEAE SUBFAM. CROUANIOIDEAE DE TONI,  
1903:1252**

**CROUANIOIDEAE TRIBE CROUANIEAE F. SCHMITZ  
ET HAUPTFLEISCH, 1897B:484, 497**

***Crouania* J. Agardh, 1842:83**

*Crouania attenuata* (C. Agardh) J. Agardh, 1842:83

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Punta Robinson, SON. WC: Bahía de La Paz to Cabeza Ballena, BCS.

TYPE LOCALITY. “Atlantic Ocean” (Agardh, 1824).

LECTOTYPE LOCALITY. Brittany, northwest France (Dixon, 1962).

***Crouanophycus* Athanasiadis, 1998:517**

*Crouanophycus mcNabbii* (E. Y. Dawson) Athanasiadis, 1998:517

GULF OF CALIFORNIA DISTRIBUTION. WC: Caleta Santa María to Roca El Solitario, BCS.

TYPE LOCALITY. On rocks; Roca El Solitario, Bahía Agua Verde, Baja California Sur, Gulf of California, Mexico.

**CERAMIACEAE DUMORTIER, 1822:71, 100**

**CERAMIACEAE SUBFAM. CERAMIOIDEAE  
S. F. GRAY, 1821:317**

**CERAMIOIDEAE TRIBE ANTITHAMNIEAE  
HOMMERSAND, 1963:330**

***Antithamnion* Nägeli, 1847:202**

*Antithamnion antillanum* Børgesen, 1917:226

GULF OF CALIFORNIA DISTRIBUTION. WC: Cabo Pulmo, BCS.

TYPE LOCALITY. Charlotte Amalie Harbor, near Charlotte Amalie, St. Thomas, US Virgin Islands.

*Antithamnion decipiens* (J. Agardh) Athanasiadis, 1996a:151

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Pelicano, Puerto Peñasco, to El Desemboque de los Seris, SON. WC: Caleta Santa María to Cabeza Ballena, BCS.

TYPE LOCALITY. Nice, Provence-Alpes-Côte d’Azur, SE France, western Mediterranean Sea.

*Antithamnion defectum* Kylin, 1925:46

GULF OF CALIFORNIA DISTRIBUTION. IS: Isla Ángel de la Guarda, ISG; Islas de Los Gemelos, BC; Canal de San Lorenzo, Isla Espíritu Santo, BCS.

SYNTYPE LOCALITIES. Three locales were given by Kylin (1925): Friday Harbor (San Juan Island), Canoe Island, and Peavine Pass (channel between Orcas Island and Blakely Island), all San Juan County, Washington, USA.

LECTOTYPE LOCALITIES. Friday Harbor, San Juan Island, San Juan County, Washington, USA (Smith, 1944); and, Canoe Island (off SE of Shaw Island and NW end of Lopez Island), San Juan County, Washington, USA (Lindstrom and Gabrielson, 1989; Athanasiadis, 1996a).

*Antithamnion hubbsii* E. Y. Dawson, 1962a:17

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de Loreto to Bahía de La Paz, BCS.

TYPE LOCALITY. On *Codium*, dredged 70 m depth; Melpomene Cove, Isla Guadalupe, off Pacific coast of Baja California, Mexico.

REMARKS. *Antithamnion hubbsii* E. Y. Dawson was treated as a “provisional synonym” of *A. nipponicum* Yamada et Inagaki (1935) by Cho et al. (2005:333). Further genetic analyses of type material of *A. hubbsii* are needed to verify its taxonomic status and the identify of Gulf of California specimens of “*A. hubbsii*.”

*Antithamnion kylinii* N. L. Gardner, 1927c:411

GULF OF CALIFORNIA DISTRIBUTION. EC: Canal de Infiernillo, SON.

TYPE LOCALITY. On “log floats”; Victoria Harbor, Victoria, Vancouver Island, British Columbia, Canada.

Uncertain Record: *Antithamnion plumulum* (Ellis et Solander)

Thuret ex Le Jolis, 1863:112

REMARKS. Athanasiadis (1996a) noted the Isla Guadalupe specimen referred to “*A. plumulum* var. *plumulum*” by Dawson (1962a) was probably a species of *Pterothamnion*. The southern Gulf record of “*Antithamnion plumulum*” from Isla Santa Cruz, BCS (Dawson, 1966b), should also be reinvestigated.

**CERAMIOIDEAE TRIBE CERAMIEAE F. SCHMITZ  
ET HAUPTFLEISCH, 1897B:501**

***Centroceras* Kützing, 1842:731**

*Centroceras clavulatum* (C. Agardh) Montagne, 1846:140

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON, to Bahía de Banderas, JAL. WC: Faro de San Felipe, BC, to Cabo San Lucas, BCS. IS: Isla Pelicano, SON; Isla Coronado, BC; Isla Partida, Isla Tortuga, Isla San Ildefonso, Isla Cholla, Isla Carmen, and Isla San Juan Nepomuceno, BCS; Isla de la Piedra, SIN; Isla Isabel and Isla María Magdalena, NAY.

TYPE LOCALITY. Callao (seaport W of Lima), Provincia Constitucional, central Peru.

REMARKS. “*Centroceras clavulatum*” is now recognized to be a complex that includes several distinct species (Won et al., 2009; Schneider et al., 2015); thus, Gulf of California specimens referred to “*C. clavulatum*” should be reexamined to verify their identification.

*Centroceras gasparrinii* (Meneghini) Kützing, 1849:689

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Nueva Guaymas, SON. WC: El Tecolote to Cabeza Ballena, BCS.

TYPE LOCALITY. Palermo, NW coast of island of Sicily, Mediterranean Sea, southern Italy.

***Ceramium* Roth, 1797:146, nom. cons.**

*Ceramium aduncum* Y. Nakamura, 1950:158

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Pelicano, Puerto Peñasco, SON, to Miramar, NAY. WC: Bahía de Loreto to Cabeza Ballena, BCS. IS: Isla San Jorge, SON; Isla Patos, ISG; Isla Partida and Isla Espíritu Santo, BCS; Isla María Magdalena, NAY.

TYPE LOCALITY. Gôza, southeastern Shima Peninsula, Mie Prefecture (formerly Shima Province), Honshû Island, Japan.

*Ceramium affine* var. *affine* Setchell et N. L. Gardner, 1930:172

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía la Choya, Puerto Peñasco, SON, to Playa Guayabitos and Playa Las Peñas, NAY. WC: Bahía de Los Ángeles to Punta Los Frailes, BCS. IS: Isla Coronado, BC; Puerto Refugio, Isla Ángel de la Guarda, ISG.

TYPE LOCALITY. Epiphytic on *Codium simulans*; Isla Guadalupe, off Pacific coast of Baja California, Mexico.

*Ceramium affine* var. *peninsularis* E. Y. Dawson, 1950a:132

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Hermosa, Puerto Peñasco, SON. WC: Punta Los Frailes to Bahía de San Lucas, BCS.

TYPE LOCALITY. Dredged 4–6 m depths; Isla Concha, Laguna Ojo de Liebre (Scammon’s Lagoon), El Vizcaíno Biosphere Reserve (UNESCO World Heritage Site), Pacific coast of northwestern Baja California Sur, Mexico.

*Ceramium camouii* E. Y. Dawson, 1944:319

GULF OF CALIFORNIA DISTRIBUTION. EC: Ensenada Bacochibampo, SON, to Playa Guayabitos and Playa Las Peñas, NAY. WC: Faro de San Felipe, BC, to Punta Arena, BCS. IS: Isla Turner, ISG.

TYPE LOCALITY. Intertidal rocks; Isla Turner (off southeast end of Isla Tiburón), Sonora, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

*Ceramium caudatum* Setchell et N. L. Gardner, 1924a:776

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Gorda, SON, to Bahía Topolobampo, SIN. WC: Puertecitos, BC,

to Cabeza Ballena, BCS. IS: Isla San Jorge, SON; Isla Ángel de la Guarda and Isla Turner, ISG; Isla Coronado, BC; Isla de La Piedra, SIN

TYPE LOCALITY. Floating among other algae; Eureka, near La Paz, Baja California Sur, Gulf of California, Mexico.

*Ceramium clarionense* Setchell et N. L. Gardner, 1930:130

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz, BCS. IS: Isla San Juan Nepomuceno, BCS.

TYPE LOCALITY. On *Codium*; Isla Clarión, Islas Revillagigedo, Colima, Mexico.

REMARKS. Northern Gulf specimens identified as “*C. clarionense*” (US Alg. Coll.) were found to be *C. aduncum* (Bucher and Norris, 2014a). Other southern Gulf specimens identified as “*C. clarionense*” following Dawson (1962a) should also be reexamined to verify their identification.

*Ceramium codicola* J. Agardh, 1894:23

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz to San José del Cabo, BCS.

TYPE LOCALITY. On *Codium*; Santa Cruz, Santa Cruz County, northern California, USA.

*Ceramium codii* (H. Richards) Feldmann-Mazoyer, 1938:324

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz, BCS.

TYPE LOCALITY. Bermuda.

REMARKS. Although Geneviève Feldmann-Mazoyer (Dorr and Nicolson, 2009) has sometimes published and is listed in the references as “G. Mazoyer,” her citation as the author of algal names is “Feldmann-Mazoyer” (see Brummitt and Powell, 1992).

*Ceramium comptum* Børgesen, 1924b:28

GULF OF CALIFORNIA DISTRIBUTION. EC: El Colorado, SON.

TYPE LOCALITY. Beata Island, Dominican Republic, Hispanola Island, Caribbean Sea.

REMARKS. *Ceramium comptum* was recorded in the northern Gulf by Serviere-Zaragoza et al. (2012).

*Ceramium equisetoides* E. Y. Dawson, 1944:320

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Estación, Puerto Peñasco, SON, to Playa Guayabitos and Playa Las Peñas, NAY. WC: Bahía Concepción to Punta Arena, BCS. IS: Isla Espíritu Santo, BCS; Isla de La Piedra, SIN.

TYPE LOCALITY. Upper intertidal, on rock-shingle beach; Puerto San Carlos, Sonora, Gulf of California, Mexico.

*Ceramium giacconeii* Cormaci et G. Furnari, 1991:45

GULF OF CALIFORNIA DISTRIBUTION. WC: Punta Perico, BCS.

TYPE LOCALITY. Lachea Island, archipelago of Cyclops, Gulf of Aci Trezza, Province of Catania, Sicily, Italy.

*Ceramium hamatispinum* E. Y. Dawson, 1950a:122

GULF OF CALIFORNIA DISTRIBUTION. EC: inner lagoon, Bahía San Carlos, SON, to Bahía de Banderas, JAL.

TYPE LOCALITY. Intertidal; Miramar, south of San Blas, Nayarit, Gulf of California, Mexico.

*Ceramium horridulum* P. C. Silva, 1972:204

GULF OF CALIFORNIA DISTRIBUTION. EC: Guaymas, SON, to Puerto Viejo, Bahía Mazatlán, SIN. WC: Bahía de los Ángeles, BC, to San Juan de la Costa, BCS. IS: Roca Blanca and Puerto Refugio, Isla Ángel de la Guarda, Isla Estanque, and Isla Tiburón, ISG; Puerto Ballandra, Isla Carmen, and Canal de San Lorenzo, Isla Espíritu Santo, BCS.

TYPE LOCALITY. Cast ashore; Guaymas, Sonora, Gulf of California, Mexico.

*Ceramium howellii* Setchell et N. L. Gardner, 1937:88

GULF OF CALIFORNIA DISTRIBUTION. WC: Punta La Gringa, BC. IS: Bahía Salinas, Isla Carmen, BCS.

TYPE LOCALITY. On rocks; SE side of Isla Fernandina (Narborough Island), Galápagos Islands, Ecuador.

*Ceramium interruptum* Setchell et N. L. Gardner, 1924a:775

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Estación, Puerto Peñasco, to Bahía Tepoca, SON. WC: Bahía Agua Verde to Eureka, BCS. IS: Isla Coronado, BC.

TYPE LOCALITY. Eureka, near La Paz, Baja California Sur, Gulf of California, Mexico.

*Ceramium mazatlanense* E. Y. Dawson, 1950a:130

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía Kino, SON, to Mazatlán, SIN.

TYPE LOCALITY. Epiphytic on *Codium*; small reef, about 3.22 km N of Mazatlán, Sinaloa, Gulf of California, Mexico.

*Ceramium monacanthum* J. Agardh, 1894:29

GULF OF CALIFORNIA DISTRIBUTION. EC: Mazatlán, SIN, to Playa Guayabitos and Playa Las Peñas, NAY. WC: Punta Arena, BCS.

TYPE LOCALITY. “Ad oras Tamaniae” (Agardh, 1894); George Town [on east bank of mouth of Tamar River], NE Tasmania (Womersley, 1978).

*Ceramium obesum* E. Y. Dawson, 1950a:119

GULF OF CALIFORNIA DISTRIBUTION. IS: Bahía Agua Dulce, Isla Tiburón, ISG.

TYPE LOCALITY. Intertidal rocky shore; Bahía Agua Dulce, Isla Tiburón, Sonora, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

*Ceramium pacificum* (Collins) Kylin, 1925:61

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía de La Paz, BCS.

LECTOTYPE LOCALITY. Monterey, Monterey County, central California, USA (Smith, 1944).

REMARKS. Some Gulf of California specimens referred to “*C. pacificum*” were later found to be *C. horridulum* (Bucher and Norris, 2014a). Other Gulf records referred to “*C. pacificum*” should also be reexamined to verify its presence in the Gulf.

*Ceramium paniculatum* Okamura, 1896:36

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Arenosa, Puerto Peñasco, SON, to Mazatlán, SIN. WC: Bahía San Francisquito, BC, to Cabeza Ballena, BCS. IS: Isla San Pedro Nolasco, SON; Isla Espíritu Santo, BCS.

TYPE LOCALITY. On *Corallina*; “Kamahara, Iwaki Province [now Fukushima Prefecture]” (Dawson, 1962a:62), northeast coast of Honshū Island, Japan.

*Ceramium periconicum* T. O. Cho et Riosmena-Rodríguez, 2008:307

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Estación, Puerto Peñasco, SON. WC: Punta Perico to Bahía de San Lucas, BCS. IS: Isla la Ventana, BC.

TYPE LOCALITY. Depth of 2–3 m; Punta Perico (north of Bahía de los Muertos), Baja California Sur, Gulf of California, Mexico.

*Ceramium personatum* Setchell et N. L. Gardner, 1930:171

GULF OF CALIFORNIA DISTRIBUTION. EC: Laguna de Agiabampo, SON/SIN.

TYPE LOCALITY. Epiphyte; Isla Guadalupe, off Pacific coast of Baja California, Mexico.

*Ceramium procumbens* Setchell et N. L. Gardner, 1924a:772

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Estación, Puerto Peñasco, to Bahía San Carlos, SON. WC: Bahía de Los Ángeles, BC, to Cabo Pulmo, BCS. IS: Isla Partida (Isla Cordonazo), ISG; Isla Tortuga and Isla San Ildefonso, BCS.

TYPE LOCALITY. Epiphytic on *Grateloupia proloungata* J. Agardh; Isla Partida [sur] (off north end of Isla Espíritu Santo), Baja California Sur, Gulf of California, Mexico.

*Ceramium serpens* Setchell et N. L. Gardner, 1924a:775

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz to Punta Palmilla, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, ISG.

TYPE LOCALITY. Epiphytic on *Laurencia*; La Paz, Baja California Sur, Gulf of California, Mexico.

*Ceramium sinicola* Setchell et N. L. Gardner, 1924a:773

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Arenosa, Puerto Peñasco, SON, to Bahía Topolobampo, SIN. WC: Bahía de Loreto to Cabeza Ballena, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, Isla Turner, Isla San Esteban, and Isla Partida (Isla Cordonazo), ISG; Isla Coronado, BC; Isla San Pedro Nolasco, SON; Isla San Ildefonso and Isla Gaviota, BCS.

**TYPE LOCALITY.** Bahía de Todos Santos, Ensenada, Pacific coast of Baja California, Mexico.

**REMARKS.** The original species name "*sinicola*" was chosen by Setchell and Gardner (1924a) on the mistaken assumption that "Ensenada Bay" was in the Gulf of California (Dawson, 1962a). Ensenada Bay is not in the Gulf, but on the Pacific coast of northern Baja California.

*Ceramium sinicola* var. *johnstonii* (Setchell et N. L. Gardner)

E. Y. Dawson, 1944:316

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Bahía Tepoca, SON, to Bahía Topolobampo, SIN. WC: La Paz, BCS. IS: Isla San Esteban and Isla San Pedro Mártir, ISG.

**TYPE LOCALITY.** Epiphytic on other algae; Isla San Pedro Mártir, Baja California, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

*Ceramium vagans* P. C. Silva, in Silva et al., 1987:56

**GULF OF CALIFORNIA DISTRIBUTION.** IS: Isla Turner, ISG.

**TYPE LOCALITY.** Within tufts of *Ectocarpus breviar-ticulatus* (now *Asteronema breviar-ticulatum*), near the margin of seaward reef opposite the Enewetak Marine Biology Laboratory, Parry Island, Enewetak (Eniwetok) Atoll, Ralik Archipelago, northwestern Republic of the Marshall Islands.

*Ceramium zacaе* Setchell et N. L. Gardner, 1937:89

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Punta Pelicano, Puerto Peñasco, to Segundo Cerro Prieto, Bahía Kino, SON. WC: Puertecitos, BC, to Punta Arena, BCS.

**TYPE LOCALITY.** Epiphytic on *Codium fragile*; Bahía Tortuga, on southeast side of Bahía San Bartolomé, Pacific coast of Baja California Sur, Mexico.

### ***Corallophila* Weber-van Bosse, 1923:339**

*Corallophila bella* (Setchell et N. L. Gardner) R. E. Norris, 1993:395

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Guaymas, SON.

**TYPE LOCALITY.** Cast ashore; Guaymas, Sonora, Gulf of California, Mexico.

### ***Gayliella* T. O. Cho, L. McIvor et S. M. Boo, in Cho et al., 2008:723**

*Gayliella fimbriata* (Setchell et N. L. Gardner) T. O. Cho et S. M. Boo, in Cho et al., 2008:723

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Punta Pelicano, Puerto Peñasco, SON, to Bahía de Banderas, JAL. WC: Bahía de Los Ángeles, BC, to Cabeza Ballena, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, Isla Estanque, Isla Tiburón, and Isla Turner, ISG; Isla San José, Isla Monserrate, Isla Espíritu Santo, and Isla San Juan Nepomuceno, BCS.

**TYPE LOCALITY.** Floating; Eureka, near La Paz, Baja California Sur, Gulf of California, Mexico.

*Gayliella* species A of Bucher and Norris, 2014a:196

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Playa Estación, Puerto Peñasco to Ensenada de San Francisco, SON. WC: Bahía Agua Verde to Cabeza Ballena, BCS. IS: Isla Coronado, BC; Isla Carmen, Isla Monserrate, and Isla San Juan Nepomuceno, BCS.

**REMARKS.** Specimens identified "*Ceramium gracillimum* var. *byssoideum*" by Dawson (1962a; non *C. gracillimum* var. *byssoideum* (Harvey) Feldmann-Mazoyer, 1938) were found to be the same species of *Gayliella* species A (Bucher and Norris, 2014a) and may be an undescribed species.

*Gayliella recticortica* (E. Y. Dawson) T. O. Cho et S. M. Boo, in Cho et al., 2008:736

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Bahía Bacoahibampo, SON, to Mazatlán, SIN. WC: Bahía Balandra to Punta Perico, BCS. IS: Isla la Ventana, BC.

**TYPE LOCALITY.** Epiphytic on *Coeloseira pacifica* (now *Gastroclonium pacificum*); Bahía Bacoahibampo (west of Guaymas), Sonora, Gulf of California, Mexico.

*Gayliella taylorii* (E. Y. Dawson) T. O. Cho et S. M. Boo, in Cho et al., 2008:727

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Puerto Peñasco, SON, to Puerto Vallarta, JAL. WC: Puerto Escondido to Cabeza Ballena, BCS. IS: Isla Patos, Isla Partida (Isla Cordonazo), and Isla Rasa, ISG; Isla San Idefonso and Isla Carmen, BCS.

**TYPE LOCALITY.** Cabeza Ballena, Baja California Sur, Gulf of California, Mexico.

### **CERAMIOIDEAE TRIBE DELESSERIOPSIEAE ITONO ET TAK. TANAKA, 1973:251**

#### ***Balliella* Itono et Tak. Tanaka, 1973:249**

*Balliella pseudocorticata* (E. Y. Dawson) D. N. Young, 1981:94

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Bahía de Loreto to Bahía de La Paz, BCS. IS: Canal de San Lorenzo, Isla Espíritu Santo, BCS.

**TYPE LOCALITY.** Dredged 7.3–18.3 m depths; Canal de San Lorenzo (channel between south end of Isla Espíritu Santo and coastal peninsula from Punta Coyote to Punta San Lorenzo), near the entrance to Bahía de La Paz, Baja California Sur, Gulf of California, Mexico.

### **CERAMIOIDEAE TRIBE DOHRNIELLEAE FELDMANN-MAZOYER, 1940:241**

#### ***Antithamnionella* Lyle, 1922:347**

*Antithamnionella breviramosa* (E. Y. Dawson) E. M. Wollaston, in Womersley and Bailey, 1970:322

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Punta Gorda, SON, to Puerto Vallarta, JAL. WC: Faro de San Felipe, BC, to Cabo San Lucas, BCS. IS: Isla la Ventana, BC; Isla San Pedro Nolasco, SON; Isla Las Ánimas, ISG; Isla Cholla and Isla Espíritu Santo, BCS; Isla de la Piedra, SIN.

**TYPE LOCALITY.** Drift, epiphytic on *Sargassum palmeri* Grunow; Pebbly Beach, SE of Avalon, Santa Catalina Island, Los Angeles County, California Channel Islands (Channel Islands National Marine Sanctuary), southern California, USA.

*Antithamnionella cf. spirographidis* (Schiffner) E. M. Wollaston, 1968:345

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Puerto Peñasco to Canal de Infernillo, SON. IS: Isla Salsipuedes, ISG.

**TYPE LOCALITY.** Sacchetta, Gulf of Trieste, Adriatic Sea, Italy.

*Antithamnionella sublittoralis* (Setchell et N. L. Gardner) Athanasiadis, 1996a:119

**GULF OF CALIFORNIA DISTRIBUTION.** WC: Punta Los Frailes to San José del Cabo, BCS. IS: Bahía Salinas, Isla Carmen, and Canal de San Lorenzo, Isla Espíritu Santo, BCS.

**TYPE LOCALITY.** Epiphytic, dredged at 37 m depth; San José del Cabo, Baja California Sur, Gulf of California, Mexico.

### ***Irtugovia* Perestenko, 1996:204**

**REMARKS.** Placement of the genus *Irtugovia* in tribe Dohrnilleae is tentative and requires further study.

*Irtugovia pacifica* (Harvey) Perestenko, 1996:142

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Bahía Tepoca to Guaymas, SON.

**SYNTYPE LOCALITIES.** Two locales were given by Harvey (1862): Orcas Island, San Juan Islands, Washington, USA, and Esquimalt, British Columbia, Canada.

**LECTOTYPE LOCALITY.** Orcas Island, San Juan Islands, San Juan County, Salish Sea, Washington, USA (Lindstrom and Gabrielson, 1989).

**REMARKS.** Dawson (1962a, as *Antithamnion pacificum*; =*Antithamnionella pacifica* (Harvey) Wollaston) noted his earlier collections (Dawson, 1944) were missing. Unless the misplaced Gulf specimens can be found, new collections of *I. pacifica* are needed to verify its presence in the Gulf of California.

### **CERAMIOIDEAE TRIBE PTEROTHAMNIEAE ATHANASIADIS, 1996A:44**

#### ***Pterothamnion* Nägeli, in Nägeli et Cramer, 1855:66**

*Pterothamnion orbignianum* (Montagne) Nägeli, 1862:376

**GULF OF CALIFORNIA DISTRIBUTION.** IS: Puerto Refugio, Isla Ángel de la Guarda, and Isla San Esteban, ISG.

**TYPE LOCALITY.** [Puerto] Callao, Constitutional Province of Callao, Peru.

*Pterothamnion pectinatum* (Kyllin) Athanasiadis et Kraft, 1994:130

**GULF OF CALIFORNIA DISTRIBUTION.** WC: Bahía de San Lucas, BCS. IS: Isla Mejía, Roca Blanco, and Puerto Refugio, Isla Ángel de la Guarda, Isla Estanque, and Isla Las Ánimas, ISG.

**TYPE LOCALITY.** On piles at docks; Friday Harbor, San Juan Island, San Juan County, Washington, USA.

*Pterothamnion plumula* (J. Ellis) Nägeli in Nägeli et Cramer, 1855:66

**GULF OF CALIFORNIA DISTRIBUTION.** IS: Isla Santa Cruz, BCS.

**TYPE LOCALITY.** No locale was given by Ellis (1768, as *Conferva plumula*); Brighton [east Sussex], England, UK (Dawson, 1962a); probably Sussex, England, UK (Maggs and Hommersand, 1993).

*Pterothamnion tepocense* (E. Y. Dawson) Athanasiadis et Kraft, 1994:130

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Bahía Tepoca, SON.

**TYPE LOCALITY.** Dredged 22 m depth on sandy bottom with abundant worm tubes; Bahía Tepoca, Sonora, Gulf of California, Mexico.

### **CERAMIACEAE SUBFAM. SPONGOCLONIOIDEAE DE TONI, 1903:1252**

#### **SPONGOCLONIOIDEAE TRIBE SPONGOCLONIEAE F. SCHMITZ ET HAUPTFLEISCH, 1897B:484, 491**

#### ***Pleonosporium* Nägeli, 1862:326, 339, nom. cons.**

*Pleonosporium globuliferum* Levring, 1941:647

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Puerto Peñasco, SON. WC: Punta Arena to Cabeza Ballena, BCS.

**TYPE LOCALITY.** “Ausserhalb Sanchez, Masafuera [Island]” (Levring, 1960:604, 647); Quebrada Sánchez, Isla Alejandro Selkirk (Isla Más Afuera), Islas Juan Fernández, Valparaíso Region, Chile.

*Pleonosporium mexicanum* E. Y. Dawson, 1962a:41

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Puerto Peñasco, SON, to Miramar, NAY. WC: Bahía de Loreto to Bahía de La Paz, BCS. IS: Isla San Jorge, SON; Isla Patos and Isla Partida (Isla Cordonazo), ISG; Isla Santa Cruz, BCS.

**TYPE LOCALITY.** Lowermost intertidal on small reef (3 km north of Belmar Hotel); Playa de Olas Atlas, vicinity of Mazatlán, Sinaloa, Gulf of California, Mexico.

*Pleonosporium rhizoideum* E. Y. Dawson, 1962a:42

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Pelicano, Puerto Peñasco, SON, to Punta de Mita, NAY. TYPE LOCALITY. Salina Cruz, Oaxaca, Pacific Mexico.

*Pleonosporium squarulosum* (Harvey) I. A. Abbott, 1972:262

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de Loreto to Bahía de La Paz, BCS.

TYPE LOCALITY. “Golden Gate, California” (Harvey, 1853:233) [entrance to San Francisco Bay; probably at westernmost entrance Land’s End or either Fort Point or below the Presidio, in the vicinity of the Golden Gate Bridge]; “San Francisco” (Abbott and Hollenberg, 1976:618), San Francisco County, northern California, USA.

*Pleonosporium vancouverianum* (J. Agardh) J. Agardh, 1892:37

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía Chacala to Lo de Marcos, NAY. IS: Isla Coronado and Islas de Los Gemelos, BC.

TYPE LOCALITY. Vancouver Island, British Columbia, Canada.

### SPYRIDIAEAE J. AGARDH, 1851:vii, 337

#### SPYRIDIAEAE TRIBE SPYRIDEAE F. SCHMITZ ET P. HAUPTFLEISCH, 1897b:484, 499

#### *Spyridia* Harvey, 1833:259, 336

*Spyridia* cf. *filamentosa* [non *S. filamentosa* (Wulfen) Harvey, 1833:337]

GULF OF CALIFORNIA DISTRIBUTION. EC: El Tornillal, SON, to Bahía de Banderas, JAL. WC: Faro de San Felipe, BC, to Cabo San Lucas, BCS. IS: Isla Tiburón and Isla Turner, ISG; Isla San José, Isla Partida, Isla Espíritu Santo, and Isla San Juan Nepomuceno, BCS.

TYPE LOCALITY. *Spyridia filamentosa* (Wulfen) Harvey: Vienna? (Maggs and Hommersand, 1993); Adriatic Sea (Silva et al., 1996).

REMARKS. Apparently introduced into the upper Gulf in the 1970s (Norris, 2014), Gulf specimens tentatively referred to as “*S. cf. filamentosa*” need comparisons to see if they can be identified with one of the lineages of Zuccarello et al. (2002, 2004) or of Conklin and Sherwood (2012) or if they are one or more different species or possibly a new species.

### CERAMIALES SUBORD. SPERMOTHAMNIINEAE FARLOW, 1881:107, 118

#### WRANGELIAEAE J. AGARDH, 1851:x, 701

#### WRANGELIAEAE TRIBE GRIFFITHSIEAE F. SCHMITZ ET HAUPTFLEISCH, 1897b:483, 487

#### *Anotrichium* Nägeli, 1862:397

*Anotrichium anthericephalum* (E. Y. Dawson) Baldock, 1976:560

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to El Desemboque de los Seris, SON.

TYPE LOCALITY. Intertidal, north side of reef; on southwest tip of Isla Guadalupe, off Pacific coast of northern Baja California, Mexico.

*Anotrichium furcellatum* (J. Agardh) Baldock, 1976:560

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON. WC: Punta Gorda to San José del Cabo, BCS. IS: Islas de Los Gemelos, BC.

TYPE LOCALITY. Near Amalfi, Sorrentine Peninsula, province of Naples, Tyrrhenian Sea, Italy.

*Anotrichium multiramum* (Setchell et N. L. Gardner)

Baldock, 1976:560

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Ensenada San Francisco, SON. WC: Bahía de Los Ángeles, BC, to Bahía de San Lucas, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, ISG.

TYPE LOCALITY. Dredged 36.6 m depth; San José del Cabo, Baja California Sur, Gulf of California, Mexico.

*Anotrichium secundum* (Harvey ex J. Agardh) G. Furnari, in

Cormaci et al., 1994:635

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON, to Mazatlán, SIN. WC: Santa Teresa, BC, to Cabo Pulmo, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, Isla Estanque, and Isla Tiburón, ISG; Isla Coronado, BC; Isla San Pedro Nolasco, SON; Isla Tortuga, I. San Ildefonso, Isla Cholla, Isla Carmen, and Isla Espíritu Santo, BCS.

TYPE LOCALITY. “Ad oras Capenses” (Agardh, 1851:85); Muizenberg, False Bay, Cape Province, South Africa (Silva et al., 1996).

#### *Griffithsia* C. Agardh, 1817:xxviii, nom. cons.

*Griffithsia pacifica* Kylin, 1925:58

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON, to Bahía Topolobampo, SIN. WC: San Felipe to Santa Teresa, BC. IS: Isla Pelicano, SON; Isla Tiburón, ISG.

TYPE LOCALITY. Dredged; off Turn Island, east of Friday Harbor, San Juan Island, San Juan County, Washington, USA.

### WRANGELIAEAE TRIBE LEJOLISIEAE FELDMANN-MAZOYER, 1940:240, 371

#### *Lejolisia* Bornet, 1859:91

*Lejolisia colombiana* W. R. Taylor, 1945:265

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON. WC: Cabo Pulmo to Cabeza Ballena, BCS.

**TYPE LOCALITY.** Isla Gorgona (Parque Nacional Natural Isla Gorgona), off the Pacific coast of Departamento de Valle del Cauca, Colombia.

*Lejolisia hoshawii* E. Y. Dawson, 1966b:64

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Puerto Peñasco, SON. WC: Bahía de Loreto, BCS.

**TYPE LOCALITY.** On *Sargassum* in drift; Playa Hermosa, Puerto Peñasco, Sonora, Gulf of California, Mexico.

**WRANGELIACEAE TRIBE SPERMOTHAMNIEAE**  
**F. SCHMITZ ET HAUPTFLEISCH, 1897B:483, 485**

***Spermothamnion* Areschoug, 1847:334**

*Spermothamnion* sp. of Ortega et al., 1987:[90]

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Laguna de Agiabampo, SON/SIN.

**REMARKS.** Specimen of "*Spermothamnion* sp." from Ortega et al. (1987:[90], table 3) needs reexamination to determine its identification; it may be a species of *Spermothamnion* or possibly of *Tiffaniella*.

***Tiffaniella* Doty et Meñez, 1960:135**

*Tiffaniella phycophila* (W. R. Taylor) E. M. Gordon, 1972:125

**GULF OF CALIFORNIA DISTRIBUTION.** WC: Bahía de Loreto to Bahía de La Paz, BCS.

**TYPE LOCALITY.** Black Beach, Isla Floreana (Charles Island; Isla Santa María), Galápagos Islands, Ecuador.

*Tiffaniella saccorhiza* (Setchell et N. L. Gardner) Doty et Meñez, 1960:138

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Playa Arenosa, Puerto Peñasco, SON, to Punta de Mita, NAY. WC: Bahía de Los Ángeles, BC, to Bahía Concepción, BCS.

**TYPE LOCALITY.** On *Codium* sp.; Isla Guadalupe, off Pacific coast of northern Baja California, Mexico.

*Tiffaniella snyderae* (Farlow) I. A. Abbott, 1971:352

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Puerto Peñasco to Ensenada de San Francisco, SON. IS: Isla San Jorge, SON; Isla Patos, ISG.

**SYNTYPE LOCALITIES.** Santa Cruz, Santa Barbara, and San Diego, California (Farlow, 1899).

**LECTOTYPE LOCALITY.** Santa Cruz, Santa Cruz County, northern California, USA (Smith, 1944).

**DASYACEAE KÜTZING, 1843:413**

**DASYACEAE SUBFAM. DASYOIDEAE DE TONI, 1903:776**

***Dasya* C. Agardh, 1824:xxxiv, 211, nom. cons.**

*Dasya pedicellata* subsp. *stanfordiana* (Farlow) J. N. Norris et Bucher, in Bucher and Norris, 2014a:204

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Playa Hermosa, Puerto Peñasco, SON, to Bahía Topolobampo, SIN. WC: Punta La Gringa, BC, to Caleta Santa María, BCS. IS: Isla Mejía, Puerto Refugio, Isla Ángel de la Guarda, Isla Patos, Bahía Agua Dulce, Isla Tiburón, and Isla Partida (Isla Cordonazo), ISG; Canal de Infiernillo, SON; Isla Carmen and Isla Espíritu Santo, BCS; Isla María Magdalena, NAY.

**SYNTYPE LOCALITIES.** Isla Wolf (Isla Wainman; Wenman Island) and Punta Tortuga, Isla Isabela (Albemarle Island), both Galápagos Islands, Ecuador.

*Dasya pedicellata* subsp. *stanfordiana* var. *nudicaulis* (E. Y. Dawson) J. N. Norris et Bucher, in Bucher and Norris, 2014a:206

**GULF OF CALIFORNIA DISTRIBUTION.** WC: Bahía de Los Ángeles, BC, to Puerto Escondido, BCS. IS: Roca Blanca and Puerto Refugio, Isla Ángel de la Guarda, ISG.

**TYPE LOCALITY.** "Taken by shrimp trawler from the south arm" of Bahía de Los Ángeles, Baja California, Gulf of California, Mexico (Dawson, 1963b:407).

*Dasya sinicola* var. *sinicola* (Setchell et N. L. Gardner) E. Y. Dawson, 1959a:32

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Punta Gorda, SON, to Mazatlán, SIN. WC: Playa El Coloradito, BC, to Cabeza Ballena, BCS. IS: Isla Ángel de la Guarda, Isla Partida, Isla San Esteban, and Isla Las Ánimas, ISG; Isla San Pedro Nolasco, SON; Isla San Ildefonso, Isla Monserrate, and Isla San Juan Nepomuceno, BCS.

**TYPE LOCALITY.** La Paz, Baja California Sur, Gulf of California, Mexico.

*Dasya sinicola* var. *abyssicola* (E. Y. Dawson) E. Y. Dawson, 1963b:410

**GULF OF CALIFORNIA DISTRIBUTION.** WC: Punta Los Frailes, BCS.

**TYPE LOCALITY.** Dredged 41 m depth; Northwest Anchorage, San Clemente Island, Los Angeles County, California Channel Islands (Channel Islands National Marine Sanctuary), southern California, USA.

*Dasya sinicola* var. *californica* (N. L. Gardner) E. Y. Dawson, 1963b:409

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Playa Hermosa, Puerto Peñasco, SON. WC: Bahía Concepción, BCS.

**TYPE LOCALITY.** La Jolla, San Diego County, southern California, USA.

*Dasya spinigera* E. Y. Dawson, 1963b:410

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Bahía Tepoca, SON. WC: Bahía de San Lucas, BCS.

**TYPE LOCALITY.** Dredged on sand bottom, 20 m depth, Bahía de San Lucas, Baja California Sur, Gulf of California, Mexico.

**DASYACEAE SUBFAM. HETEROSIPHONIOIDEAE H.-G. CHOI,  
KRAFT, I. K. LEE ET G. W. SAUNDERS, 2002:564*****Heterosiphonia* Montagne, 1842c:4**

*Heterosiphonia crispella* var. *laxa* (Børgesen) M. J. Wynne, 1985b:87

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON, to Playa Los Cerritos, SIN. WC: Punta Arena to Bahía de San Lucas, BCS. IS: Caleta Partida, in channel (canal) between S end of Isla Partida and NW end of Isla Espíritu Santo, BCS.

TYPE LOCALITY. St. Croix, U.S. Virgin Islands, Caribbean Sea.

*Heterosiphonia erecta* N. L. Gardner, 1927d:99

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de Los Ángeles, BC, to Bahía de La Paz, BCS. IS: Isla Coronado and Islas de Los Gemelos, BC.

TYPE LOCALITY. Epiphytic on the seagrass *Phyllospadix*; La Jolla, San Diego County, southern California, USA.

**DELESSERiaceae BORY DE SAINT-VINCENT,  
1828:181****DELESSERiaceae SUBFAM. DELESSERIOIDEAE  
STIZENBERGER, 1860:40****DELESSERIOIDEAE TRIBE APOGLOSSEAE S.-M. LIN,  
FREDERICQ ET HOMMERSAND, 2012:379*****Apoglossum* J. Agardh, 1898:190**

*Apoglossum gregarium* (E. Y. Dawson) M. J. Wynne, 1985a:169

GULF OF CALIFORNIA DISTRIBUTION. IS: Isla Patos and Isla Las Ánimas, ISG.

TYPE LOCALITY. Isla Las Ánimas (Isla San Lorenzo del Norte), Islas de San Lorenzo, Baja California, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

**DELESSERIOIDEAE TRIBE CALOGLOSSEAE  
M. J. WYNNE, 2001:411*****Caloglossa* (Harvey) G. Martens,  
1869:234, 237**

*Caloglossa apomeiotica* J. A. West et Zuccarello, in West et al., 1994:383

GULF OF CALIFORNIA DISTRIBUTION. EC: Teacapán, SIN, to San Blas, NAY. WC: Bahía Balandra, Estero Zacatecas, and Ensenada de La Paz, Bahía de La Paz, BCS. IS: Isla Espíritu Santo, BCS.

TYPE LOCALITY. On prop roots of the red mangrove, *Rhizophora mangle*; Puerto San Carlos, within Bahía Magdalena, Pacific coast of Baja California Sur, Mexico.

*Caloglossa leprieurii*? (Montagne) G. Martens, 1869:234

GULF OF CALIFORNIA DISTRIBUTION. EC: Laguna de Agiabampo, SON/SIN.

TYPE LOCALITY. Sinnamary, northwest of Cayenne, Préfecture de la Région Guyane, French Guiana.

REMARKS. The identification of northern Gulf specimens with the western Atlantic *C. leprieurii* was queried by Norris and Kraysky (2014).

***Taenioma* J. Agardh, 1863:1256**

*Taenioma perpusillum* (J. Agardh) J. Agardh, 1863:1257

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía Tepoca, SON, to Punta de Mita, NAY. WC: Bahía San Luis Gonzága, BC, to Bahía de La Paz, BCS. IS: Isla Estanque and Isla Tiburón, ISG; Isla Espíritu Santo, BCS.

TYPE LOCALITY. San Agustín, “presumably along coast of Oaxaca in Isthmus of Tehuantepec region” (Dawson, 1962a:83), Oaxaca, Mexico.

**DELESSERIOIDEAE TRIBE GRINNELLIEAE  
M. J. WYNNE, 2011:409*****Grinnellia* Harvey, 1853:91**

*Grinnellia lanceolata* E. Y. Dawson, 1944:322

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de Los Ángeles, BC, to Punta Gorda, BCS. IS: Isla Salsipuedes, ISG.

TYPE LOCALITY. Dredged 34–50 m depths; off Punta Gorda, NE end of Bahía San José del Cabo, Baja California Sur, Gulf of California, Mexico.

**DELESSERIOIDEAE TRIBE HYPOGLOSSEAE  
M. J. WYNNE, 2001:408*****Branchioglossum* Kylin, 1924:8**

*Branchioglossum bipinnatifidum* (Montagne) M. J. Wynne, 1983:442

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Pelicano, Puerto Peñasco, to Ensenada de San Francisco, SON. IS: Isla Estanque, Isla Patos, Isla Tiburón, and Isla San Esteban, ISG; Islas de Los Gemelos, BC; Isla San Ildefonso, BCS.

TYPE LOCALITY. Valparaíso, Valparaíso Province, central Chile.

*Branchioglossum undulatum* E. Y. Dawson, 1949b:17

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Hermosa, Puerto Peñasco, to Punta Cirio, SON. IS: Isla San Ildefonso, BCS.

TYPE LOCALITY. On a floating *Macrocystis* hold-fast; San Miguel Passage, off northwest end of Santa Rosa



Island, Santa Barbara County, California Channel Islands (Channel Islands National Marine Sanctuary), southern California, USA.

***Hypoglossum* Kützing, 1843:444**

*Hypoglossum attenuatum* N. L. Gardner, 1927d:104 var. *attenuatum*

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Pelicano, Puerto Peñasco, to Guaymas, SON. WC: Bahía San Luis Gonzága, BC, to Arrecife de Cabo Pulmo, BCS. IS: Rocas Consag and Isla La Ventana, BC; Puerto Refugio, Isla Ángel de la Guarda, ISG.

TYPE LOCALITY. Epiphytic on *Sargassum*; Puerto Libertad, Sonora, Gulf of California, Mexico.

*Hypoglossum attenuatum* var. *abyssicolum* (W. R. Taylor)

E. Y. Dawson, 1962a:77

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Piaxtla, SIN, to Playa Guayabitos and Playa Las Peñas, NAY. WC: Bahía San Francisquito, BC, to Bahía de San Lucas, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, Isla Tiburón, and Isla San Esteban, ISG; Bahía Salinas, Isla Carmen, and Canal de San Lorenzo, Isla Espíritu Santo, BCS; Isla Isabel and Isla María Magdalena, NAY.

TYPE LOCALITY. Dredged 56 m depth; off Bahía Correo Postal (Post Office Bay), Isla Floreana (Charles Island; Isla Santa María), Galápagos Islands, Ecuador.

**DELESSERIACEAE SUBFAM. NITOPHYLLOIDEAE  
STIZENBERGER, 1860:40**

**NITOPHYLLOIDEAE TRIBE VALERIEMAYAEAE  
M. J. WYNNE ET A. J. K. MILLAR,  
IN WYNNE, 2001:414**

***Polyneurella* E. Y. Dawson, 1944:322**

*Polyneurella hancockii* var. *hancockii* E. Y. Dawson, 1944:323

GULF OF CALIFORNIA DISTRIBUTION. WC: Arrecife de Cabo Pulmo to Punta Los Frailes, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, Isla San Lorenzo, and Canal de Infiernillo (midway in channel between east coast of Isla Tiburón and Campo Víboras on Sonora coast), ISG.

TYPE LOCALITY. Dredged 22–44 m depths; Puerto Refugio, Isla Ángel de la Guarda, Baja California, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

*Polyneurella hancockii* var. *rhizoidea* E. Y. Dawson, 1962a:86

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de San Lucas, BCS.

TYPE LOCALITY. Dredged ~36.6 m depth; Bahía de San Lucas, Baja California Sur, Gulf of California, Mexico.

**DELESSERIACEAE SUBFAM. PHYCODRYOIDEAE S.-M. LIN,  
FREDERICQ ET HOMMERSAND, 2001:896**

**PHYCODRYOIDEAE TRIBE MYRIOGRAMMEAE HOMMERSAND  
ET FREDERICQ, 1997A:119**

***Myriogramme* Kylin, 1924:55**

*Myriogramme auricularis* E. Y. Dawson, 1966b:66

GULF OF CALIFORNIA DISTRIBUTION. IS: Isla Rasa and Isla San Lorenzo, ISG.

TYPE LOCALITY. Isla San Lorenzo (Isla San Lorenzo del Sur), Islas de San Lorenzo, Baja California, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

*Myriogramme caespitosa* E. Y. Dawson, 1949b:19

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON. WC: Puertecitos, BC, to Bahía de La Paz, BCS. IS: Isla Coronado, BC; Isla Estanque, Isla Patos, Isla Par-tida (Isla Cordonazo), and Isla San Lorenzo, ISG.

TYPE LOCALITY. On floating holdfast of *Macrocystis*; San Miguel Passage, off Santa Rosa Island, Santa Barbara County, California Channel Islands (Channel Islands National Marine Sanctuary), southern California, USA.

*Myriogramme divaricata* E. Y. Dawson, 1944:323

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON. IS: Roca Consag, Isla Coronado, and Isla la Ventana, BC; Puerto Refugio, Isla Ángel de la Guarda, and Isla Estanque, ISG.

TYPE LOCALITY. Dredged 22–44 m depths; Puerto Refugio, Isla Ángel de la Guarda, Baja California, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

**PHYCODRYOIDEAE TRIBE PHYCODRYEAE  
M. J. WYNNE, 2001:413**

***ErythroglOSSum* J. Agardh, 1898:176**

*ErythroglOSSum californicum* (J. Agardh) J. Agardh, 1898:176

GULF OF CALIFORNIA DISTRIBUTION. EC: El Desemboque de los Seris, SON. IS: Puerto Refugio, Isla Ángel de la Guarda, Isla Estanque, and Isla San Esteban, ISG.

TYPE LOCALITY. Santa Barbara, Santa Barbara County, southern California, USA.

***Phycodrys* Kützing, 1843:444**

*Phycodrys amplissima* E. Y. Dawson, 1962a:91

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to El Desemboque de los Seris, SON. IS: Isla San Esteban, ISG.

TYPE LOCALITY. Depth of 10–36 m; off Isla San Esteban, Sonora, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

*Phycodrys lucasana* E. Y. Dawson, 1962a:88

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de San Lucas, BCS. IS: Isla Salsipuedes, ISG.

TYPE LOCALITY. Dredged 36 m depth; Bahía de San Lucas, Baja California Sur, Gulf of California, Mexico.

*Phycodrys simplex* E. Y. Dawson, 1962a:90

GULF OF CALIFORNIA DISTRIBUTION. IS: Canal Mejía (between Isla Mejía and Isla División) and Puerto Refugio, Isla Ángel de la Guarda, and Isla San Lorenzo, ISG.

TYPE LOCALITY. Dredged 22–44 m depths; Puerto Refugio, Isla Ángel de la Guarda, Baja California, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

### ***Sorella* Hollenberg, 1943:577**

*Sorella delicatula* (N. L. Gardner) Hollenberg, 1943:577

GULF OF CALIFORNIA DISTRIBUTION. IS: Isla Coronado and Islas de Los Gemelos, BC.

TYPE LOCALITY. Cast ashore; San Pedro, Los Angeles County, southern California, USA.

*Sorella pinnata* Hollenberg, 1943:578

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Libertad to El Desemboque de los Seris, SON. IS: Isla San Jorge, SON; Rocas Consag and Islas de Los Gemelos, BC; Puerto Refugio, Isla Ángel de la Guarda, ISG.

TYPE LOCALITY. Intertidal rocks; Laguna Beach, Orange County, southern California, USA.

### **PHYCODYOIDEAE TRIBE SCHIZOSERIDEAE HOMMERSAND ET FREDERICQ, 1997B:488**

#### ***Schizoseris* Kylin, 1924:67**

*Schizoseris pygmaea* E. Y. Dawson, 1950c:157

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Tucson, Bahía de la Choya, to Playa Estación, Puerto Peñasco, SON. WC: Puertecitos, BC, to Bahía de La Paz, BCS. IS: Isla San Jorge and Isla San Pedro Nolasco, SON; Isla Patos and Isla Partida (Isla Cordonazo), ISG; Isla la Ventana, BC; Isla Cholla, BCS.

TYPE LOCALITY. Intertidal rocks; Isla Partida [norte] (Isla Cordonazo), Baja California, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

### **SARCOMENIACEAE WOMERSLEY, 2003:148**

#### ***Platysiphonia* Børgesen, 1931:28**

*Platysiphonia decumbens* M. J. Wynne, 1969:190

GULF OF CALIFORNIA DISTRIBUTION. IS: Puerto Refugio, Isla Ángel de la Guarda, and Isla Las Ánimas, ISG.

TYPE LOCALITY. West Beach, Whidbey (Whidby) Island, Island County, Puget Sound, Washington, USA.

### **RHODOMELACEAE ARESCHOUG, 1847:260**

#### **RHODOMELACEAE TRIBE ALSIDIEAE ARDISSONE, 1883:352**

#### ***Bryothamnion* Kützing, 1843:433**

REMARKS. *Bryothamnion* has been treated as member of this tribe or as being of uncertain tribe classification. Its placement into a tribe needs further elucidation.

*Bryothamnion pacificum* W. R. Taylor, 1945:296

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta de Mita, NAY. IS: Isla María Magdalena, NAY.

TYPE LOCALITY. Dredged 5.5–9.0 m depth; near Isla María Magdalena, Islas Mariás, Nayarit, Mexico.

#### ***Digenea* C. Agardh, 1822:388**

*Digenea simplex* (Wulfen) C. Agardh, 1822:389

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Guaymas, SON. WC: Punta Aguja, Bahía Concepción to Cabo Pulmo, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda and Isla Turner, ISG; Isla Tortuga, Isla Monserrate, and Bahía San Gabriel, Isla Espíritu Santo, BCS.

TYPE LOCALITY. Trieste, Gulf of Trieste (in northern Adriatic Sea, near border with Slovenia), northeast Italy.

### **RHODOMELACEAE TRIBE BOSTRYCHIEAE FALKENBERG, 1901:504, 732, 747**

#### ***Bostrychia* Montagne, 1842a:39**

*Bostrychia moritziana* (Sonder ex Kützing) J. Agardh, 1863:862

GULF OF CALIFORNIA DISTRIBUTION. EC: Miramar, NAY, to Barra de Navidad, JAL. WC: Bahía de La Paz, BCS.

SYNTYPE LOCALITIES. Antilles, West Indies [archipelago in Caribbean Sea composed of the islands of the Greater Antilles and the Lesser Antilles], and French Guiana (Silva et al., 1996); Venezuela, St. Lucia, and French Guiana (Womersley, 2003).

LECTOTYPE LOCALITY. Cumaná, mouth of Rio Manzanares, Sucre State, Venezuela (Womersley, 2003).

*Bostrychia radicans* (Montagne) Montagne, 1842b:661

GULF OF CALIFORNIA DISTRIBUTION. EC: Río Mayo on N side of Yavaros (22 km SE of Municipio de Huatabampo), SON; Bahía de Banderas, NAY/JAL. WC: Bahía de La Paz, BCS.

TYPE LOCALITY. Probably an estuary of the Cayenne River; near Cayenne, French Guiana.

**RHODOMELACEAE TRIBE LOPHOTHALIEAE F. SCHMITZ  
ET FALKENBERG, 1897:421, 427, 445**

***Veleroa* E. Y. Dawson, 1944:335**

*Veleroa subulata* E. Y. Dawson, 1944:335

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía Tepoca, SON. WC: Playa El Coloradito, BC; Punta Los Frailes to Cabo Pulmo, BCS.

TYPE LOCALITY. Epizoic on a small hydroid, dredged 22 m depth; Bahía Tepoca, Sonora, Gulf of California, Mexico.

***Murrayellopsis* E. Post, 1962:[3]**

REMARKS. The taxonomic status of the genus *Murrayellopsis* is problematic. Stewart (1989, 1991) considered it cogenetic with *Veleroa*, whereas others continued to recognize the two as distinct genera (e.g., Millar, 2000). Its taxonomic status and relationship to *Veleroa* requires further investigation.

*Murrayellopsis dawsonii* E. Post, 1962: [3]

TYPE LOCALITY. Among turf algae in garibaldi fish (*Hypsypops rubicundus*) nests, 6–12 m depths; New Hope Rock, off Point Loma, San Diego County, southern California, USA.

REMARKS. *Murrayellopsis dawsonii* has been reported by Hernández-Herrera et al. (2005) on intertidal rocky platforms of La Mora and El Tamarindo, vicinity of Bahía Tenacatita, southern Jalisco. Gulf of California specimens referred to *Murrayellopsis* and *Veleroa* need further study to verify their identities and their relationship.

**RHODOMELACEAE TRIBE LOPHOSIPHONIEAE  
KYLIN EX ATHANASIADIS, 2016b:1238**

≡*Lophosiphonia* *gruppe* Kylin, 1956:498, 538, 586, 591

***Lophosiphonia* Falkenberg, in Schmitz  
et Falkenberg, 1897:459**

*Lophosiphonia?* *mexicana* E. Y. Dawson, 1944:333

GULF OF CALIFORNIA DISTRIBUTION. IS: Isla Estanque, ISG.

TYPE LOCALITY. Isla Estanque (Pond Island), off southeastern end of Isla Ángel de la Guarda, Baja California, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

REMARKS. Norris (2014) tentatively transferred this species to *Neosiphonia* as *N. mexicana* (E. Y. Dawson) Norris. Díaz-Tapia et al. (2017) indicated in their study of the type of *Lophosiphonia mexicana* that it was probably not a member of the Polysiphonieae. They also proposed leaving the species in *Lophosiphonia* until further studies can clarify its generic placement.

**RHODOMELACEAE TRIBE STREBLOCLADIEAE DÍAZ-TAPIA  
ET MAGGS, IN DÍAZ-TAPIA ET AL., 2017A:141**

***Melanothamnus* Bornet et Falkenberg,  
in Falkenberg, 1901:684, 688**

REMARKS. On the basis of phylogenetic analysis and morphological features, Díaz-Tapia et al. (2017) treated the genus *Neosiphonia* M.-S. Kim et I. K. Lee (1999) as a synonym of *Melanothamnus* Bornet et Falkenberg.

*Melanothamnus bajacali* (Hollenberg) Díaz-Tapia et Maggs, in Díaz-Tapia et al., 2017:6

*Neosiphonia bajacali* (Hollenberg) Mamoozadeh et Freshwater, 2011:274

GULF OF CALIFORNIA DISTRIBUTION. EC: Laguna de Agiabampo, SON/SIN.

TYPE LOCALITY. Outer reef tide pools; south tip of Isla Guadalupe, off Pacific coast of northern Baja California, Mexico.

*Melanothamnus cheloniae* (Hollenberg et J. N. Norris) Díaz-Tapia et Maggs, in Díaz-Tapia et al., 2017:6

*Neosiphonia cheloniae* (Hollenberg et J. N. Norris) J. N. Norris, 2014:263

GULF OF CALIFORNIA DISTRIBUTION. EC: Canal de Infiernillo (between coast of Sonora and E coast of Isla Tiburón), SON.

TYPE LOCALITY. Epizoic on a black sea turtle, *Chelonia mydas agassizii*; in Canal de Infiernillo (between Campo Víboras and Campo Oona on Sonora coast and opposite east coast of Isla Tiburón), Sonora, Gulf of California, Mexico.

*Melanothamnus concinnus* (Hollenberg) Díaz-Tapia et Maggs, in Díaz-Tapia et al., 2017:6

*Neosiphonia concinna* (Hollenberg) J. N. Norris, 2014:270

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Tucson, Puerto Peñasco, SON, to Mazatlán, SIN. WC: Puerto Calamajué, BC, to Bahía Agua Verde, BCS. IS: Isla San Jorge, SON; Islas de los Gemelos, BC; Roca Blanca and Puerto Refugio, Isla Ángel de la Guarda, Isla Estanque, and Isla San Esteban, ISG; Isla Tortuga, BCS; Isla de Venados, SIN.

TYPE LOCALITY. Epiphytic on other algae; near Scripps Institution of Oceanography (University California, San Diego), La Jolla, San Diego County, southern California, USA.

*Melanothamnus eastwoodiae* (Setchell et N. L. Gardner) Díaz-Tapia et Maggs, in Díaz-Tapia et al., 2017:6

*Neosiphonia eastwoodiae* (Setchell et N. L. Gardner) S.-D. Xiang, 2004:94.

*Neosiphonia eastwoodiae* (Setchell et N. L. Gardner) J. N. Norris, 2014:264, *nom. inval.*

**GULF OF CALIFORNIA DISTRIBUTION.** EC: El Tornillal, SON, to Bahía Chacala, NAY. WC: Bahía San Francisco, BC, to Bahía de San Lucas, BCS. IS: Isla Alcatraz, SON; Bahía Agua Dulce, Isla Tiburón, ISG; Isla la Ventana, BC; Isla Monserrate, Isla San Francisco, Isla Cholla, Bahía Salinas and Puerto Ballandra, Isla Carmen, and Bahía San Gabriel, Isla Espíritu Santo, BCS.

**TYPE LOCALITY.** On rocks; South Anchorage, Isla Guadalupe, off Pacific coast of Baja California, Mexico.

*Melanothamnus johnstonii* (Setchell et N. L. Gardner) Díaz-Tapia et Maggs, in Díaz-Tapia et al., 2017:8

*Neosiphonia johnstonii* (Setchell et N. L. Gardner) J. N. Norris, 2014:271

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Punta Pelicano, Puerto Peñasco, to Punta Prieta, Bahía Topolobampo, SIN. WC: Punta la Gringa, Bahía de Los Ángeles, BC, to Punta Los Frailes, BCS. IS: Roca Blanca and Puerto Refugio, Isla Ángel de la Guarda, Isla Estanque, Bahía Agua Dulce, Isla Tiburón, Isla San Esteban, and Isla Partida (Isla Cordonazo), ISG; Isla Carmen, Isla San Ildefonso, and Isla Espíritu Santo, BCS.

**TYPE LOCALITY.** On *Gracilaria* sp.; Isla San Esteban, Sonora, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

*Melanothamnus masonii* (Setchell et N. L. Gardner) Díaz-Tapia et Maggs, in Díaz-Tapia et al., 2017:10

*Neosiphonia masonii* (Setchell et N. L. Gardner) J. N. Norris, 2014:267

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Playa Estación, Puerto Peñasco, SON.

**TYPE LOCALITY.** Epiphytic on the seagrass *Zostera*; Isla Guadalupe, off Pacific coast of northern Baja California, Mexico.

*Melanothamnus savatieri* (Hariot) Díaz-Tapia et Maggs, in Díaz-Tapia et al., 2017:10

*Neosiphonia savatieri* (Hariot) M.-S. Kim et I. K. Lee, 1999:279

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Punta Pelicano, Puerto Peñasco, to Nueva Guaymas, Bahía San Carlos, SON. WC: Puertecitos to Bahía de Las Ánimas, BC. IS: Rocas Consag and Isla la Ventana, BC.

**TYPE LOCALITY.** Epiphytic on larger algae; Yokosuka, on Tokyo Bay, Kanagawa Prefecture, Honshū Island, Japan.

*Melanothamnus simplex* (Hollenberg) Díaz-Tapia et Maggs, in Díaz-Tapia et al., 2017:9

*Neosiphonia simplex* (Hollenberg) Y.-P. Lee, 2008:316

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Bahía la Choya, Puerto Peñasco, SON, to Lo de Marcos y Playa San Francisco, NAY. WC: Bahía San Luis Gonzaga, BC, to Cabeza Ballena, BCS. IS: Isla San Jorge, SON; Isla Estanque, Isla Turner, and Isla Partida (Isla Cordonazo), ISG; Isla San Ildefonso and Isla Espíritu Santo, BCS; Isla de Venados, SIN.

**TYPE LOCALITY.** On intertidal rocks; Laguna Beach, Orange County, southern California, USA.

**REMARKS.** McIvor et al. (2001) found that “*Neosiphonia simplex*” in San Diego, California, had been incorrectly identified and was actually an introduced species, *N. harveyi* (J. W. Bailey) M.-S. Kim, H.-G. Choi, Guiry et G. W. Saunders, in Choi et al. (2001), which is now *Melanothamnus harveyi* (Bailey) Díaz-Tapia et Maggs, in Díaz-Tapia et al. (2017). Gulf of California specimens identified as “*N. simplex*” should be reexamined and morphologically and molecularly compared to type locality *M. simplex* and *M. harveyi* to determine if one or both are in the Gulf (Norris, 2014).

*Melanothamnus sphaerocarpus* (Børgesen) Díaz-Tapia et Maggs, in Díaz-Tapia et al., 2017:9

*Neosiphonia sphaerocarpa* (Børgesen) M.-S. Kim et I. K. Lee, 1999:280

**GULF OF CALIFORNIA DISTRIBUTION.** EC: La Cruz de Huanacastle, NAY, to Careyes, JAL.

**TYPE LOCALITY.** Magens Bay (Store Nordsidebugt), St. Thomas, U.S. Virgin Islands.

#### RHODOMELACEAE TRIBE POLYSIPHONIEAE ARDISSONE, 1883:357

#### *Polysiphonia* Greville, 1823: pl. 90

*Polysiphonia beaudettei* Hollenberg, 1961:348

*Neosiphonia beaudettei* (Hollenberg) M.-S. Kim et I. A. Abbott, 2006:33

**GULF OF CALIFORNIA DISTRIBUTION.** WC: Bahía de La Paz, BCS.

**TYPE LOCALITY.** On sand bottom, 4–6 m depth; Isla Ixtapa (Isla Grande), northwest of Zihuatanejo, Guerrero, Mexico.

**REMARKS.** Described from Pacific Mexico it has been recorded in the Gulf of California as *N. beaudettei*. Díaz-Tapia et al. (2017) recommend referral of the species to *P. beaudettei* until its phylogenetic affinities and generic assignment can be elucidated.

*Polysiphonia bifurcata* Hollenberg, in Taylor, 1945:301

**GULF OF CALIFORNIA DISTRIBUTION.** WC: Bahía de La Paz, BCS.

**TYPE LOCALITY.** Dredged 92 m depth off sandy bottom; Bahía Gardner, Isla Española, Galápagos Islands, Ecuador.

*Polysiphonia confusa* Hollenberg, 1961:350

*Neosiphonia confusa* (Hollenberg) J. N. Norris, 2014:271

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Bahía la Choya, Puerto Peñasco, to El Desemboque de los Seris, SON.

**TYPE LOCALITY.** Mid-intertidal rocks; Corona del Mar, Orange County, southern California, USA.

***Polysiphonia decussata* Hollenberg, 1942:780**

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz, BCS.

TYPE LOCALITY. On intertidal boulders; near mouth of Topanga Canyon (northwest of Santa Monica and east of Malibu), Los Angeles County, southern California, USA.

***Polysiphonia flaccidissima* Hollenberg, 1942:783**

*Neosiphonia flaccidissima* (Hollenberg) M.-S. Kim et I. K. Lee, 1999:279

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Gorda to Bahía Bacochibampo, SON; Playa Guayabitos and Playa Las Peñas, NAY. WC: Santa Rosalía to Puerto Escondido, BCS. IS: Canal de San Lorenzo, Isla Espíritu Santo, BCS.

TYPE LOCALITY. On a coralline alga; rocky point, Laguna Beach, Orange County, California, USA.

REMARKS. Although treated as conspecific with *Neosiphonia sertularioides* (Grateloup) M.-S. Kim et I. K. Lee by Mamoozadeh and Freshwater (2012) and Nam and Kang (2012), the phylogenetic relationship of the eastern Pacific *P. flaccidissima* and the European *P. sertularioides* (Grateloup) J. Agardh (1863) needs further study.

***Polysiphonia hendryi* N. L. Gardner, 1927d:101**

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz, BCS.

TYPE LOCALITY. Cast ashore; Santo Domingo (about 30°40'N), Pacific coast of northern Baja California, Mexico.

***Polysiphonia hollenbergii* J. N. Norris, 2014:275**

GULF OF CALIFORNIA DISTRIBUTION. IS: Isla la Ventana, BC.

TYPE LOCALITY. Isla la Ventana, Bahía de Los Ángeles, Baja California, Gulf of California, Mexico.

***Polysiphonia homoia* Setchell et N. L. Gardner, 1930:162**

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz, BCS.

TYPE LOCALITY. Epiphytic on *Codium*; Isla Guadalupe, off Pacific coast of northern Baja California, Mexico.

***Polysiphonia nathanielii* Hollenberg, 1958:63**

TYPE LOCALITY. On rocks, low tide level; 3 miles (4.8 km) north of Santa Monica, Los Angeles County, southern California, USA (Hollenberg, 1958:63; see also Hollenberg, 1944:479, as *Polysiphonia dictyurus*; non *P. dictyurus* J. Agardh, 1847).

REMARKS. *Polysiphonia nathanielii* is reported from Tenacatita (Senties, 1995), which is about 128 km (80 miles) south of Cabo Corrientes, the southeastern entrance to the Gulf of California. It is listed here to call attention to its possible presence in the Gulf.

***Polysiphonia pacifica* Hollenberg, 1942:777**

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Chueca to Estero Santa Rosa, SON; Mazatlán, SIN. WC: Estero Zacatecas (Ensenada de La Paz) to Bahía de La Paz and Cabo Pulmo to Los Frailes, BCS.

TYPE LOCALITY. Santa Cruz, Santa Cruz County, central California, USA.

***Polysiphonia pacifica* var. *delicatula* Hollenberg, 1942:778**

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Estación, Puerto Peñasco, SON, to Lo de Marcos y Playa San Francisco, NAY. WC: San Felipe, BC, to Bahía de San Lucas, BCS. IS: Isla Cholla, BCS.

TYPE LOCALITY. Low-tide level on wharf pilings; Monterey Municipal Wharf, Monterey, Monterey County, central California, USA.

***Polysiphonia pacifica* var. *gracilis* Hollenberg, 1942:778**

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz, BCS.

TYPE LOCALITY. Dredged; Orcas Island, San Juan Islands, San Juan County, northwest Washington, USA.

***Polysiphonia paniculata* Montagne, 1842:254**

*Neosiphonia paniculata* (Montagne) J. N. Norris, 2014:273

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Gorda to Guaymas, SON. WC: San Felipe, BC. IS: Isla Alcatraz, SON; Canal de Infiernillo (between Campo Víboras and Campo Oona on Sonora coast and E coast of Isla Tiburón) and Bahía Agua Dulce, Isla Tiburón, ISG.

TYPE LOCALITY. Intertidal, on *Ulva nematoidea*; Peru.

***Polysiphonia scopulorum* var. *villum* (J. Agardh) Hollenberg, 1968:81**

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Estación, Puerto Peñasco, SON. EC: Punta Arena to Cabo Pulmo, BCS. IS: Isla Ángel de la Guarda, Isla Partida (Isla Cordozo), Isla Turner, and Isla Estanque, ISG.

TYPE LOCALITY. “Ad littus americae tropicae” (Agardh, 1863:941); “probably on the central coast of [Pacific] México” (Dawson, 1944:333).

***Polysiphonia sonorensis* Hollenberg, 1942:779**

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía Empalme to Guaymas, SON.

TYPE LOCALITY. Afloat along southeastern shore of bay; Bahía Empalme, Sonora, Gulf of California, Mexico.

***Polysiphonia* sp. of Hollenberg and Norris, 1977:16**

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía San Francisquito, BC.

REMARKS. The characteristics of *Polysiphonia* sp. (see: Norris, 2014:275–276) suggest it may be a new species and probably belongs in another genus, possibly *Melanothamnus*.

*Polysiphonia subtilissima* Montagne, 1840:199

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Peñasco, Puerto Peñasco, SON.

TYPE LOCALITY. Cayenne, Arrondissement of Cayenne, French Guiana (Guyane).

Uncertain Record: *Polysiphonia scopulorum* Harvey, 1855a:540

REMARKS. Recorded in the southern Gulf from Mazatlán with a taxonomic query (Mendoza-González et al., 1994), its taxonomic identification should be reinvestigated.

**RHODOMELACEAE TRIBE PTEROSIPHONIEAE  
FALKENBERG, 1901:261, 723, 752**

***Amplisiphonia* Hollenberg, 1939:380**

REMARKS. *Amplisiphonia* had been placed in the “*Placophora* Group” sensu Kylin (1956:497, 528) (e.g., Womersley, 2003; Norris, 2014), but the genus was recently supported as a member of tribe Pterosiphonieae (Savoie and Saunders, 2016).

*Amplisiphonia?* *pacifica* Hollenberg, 1939:382

GULF OF CALIFORNIA DISTRIBUTION. WC: Puerto Calamajué, BC.

TYPE LOCALITY. On lower intertidal rocky shore; Corona Del Mar, Orange County, southern California, USA.

REMARKS. The generic placement of the Gulf specimens has been queried by Norris (2014, as *Amplisiphonia?* *pacifica*).

***Pterosiphonia* Falkenberg, in F. Schmitz  
and Falkenberg, 1897:443**

*Pterosiphonia californica* Kylin, 1941:39

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Guaymas, SON. WC: Cabeza Ballena to Cabo San Lucas, BCS.

TYPE LOCALITY. La Jolla, San Diego County, southern California, USA.

***Pterosiphoniella* E. Y. Dawson, 1963b:422***Pterosiphoniella williamsii* E. Y. Dawson, 1963b:423

GULF OF CALIFORNIA DISTRIBUTION. WC: Cabeza Ballena, BCS.

TYPE LOCALITY. On fine sand and rock bottom, dredged 6 m depth; Isla Concha, Laguna Ojo de Liebre (Scammon’s Lagoon), El Vizcaíno Biosphere Reserve (UNESCO World Heritage Site), Pacific coast of Baja California Sur, Mexico.

***Symphyclocladia* Falkenberg, in Schmitz  
and Falkenberg, 1897:443**

*Symphyclocladia dendroidea* (Montagne) Savoie et G. W. Saunders, 2016:929

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Gorda to Guaymas, SON. WC: San José del Cabo,

BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, and Isla Tiburón, ISG.

TYPE LOCALITY. Callao (city), Bahía Callao, Provincia Callao, Peru.

REMARKS. Previously reported in the Gulf of California as *Pterosiphonia dendroidea* (Montagne) Falkenberg (1901), the species was recently shown to belong in the genus *Symphyclocladia* (Savoie and Saunders, 2016).

***Tayloriella* Kylin, 1938:18***Tayloriella dictyurus* (J. Agardh) Kylin, 1956:505

GULF OF CALIFORNIA DISTRIBUTION. EC: Segundo Cerro Prieto (N of Kino Nuevo), Bahía Kino, SON; Lo de Marcos y Playa San Francisco, NAY. WC: La Paz, BCS.

TYPE LOCALITY. “Pochetti” (Agardh, 1847:16); “presumably in the Isthmus of Tehuantepec, Oaxaca” (Dawson, 1963b:417); probably near Pochutla, Oaxaca, Mexico.

REMARKS. Gulf of California specimens referred to *T. dictyurus* need to be genetically compared to the Pacific Mexico type with the South Africa generitype, *Tayloriella tenebrosa* (Harvey) Kylin (see Savoie and Saunders, 2016).

**RHODOMELACEAE TRIBE HERPOSIPHONIEAE F. SCHMITZ  
ET FALKENBERG, 1897:421, 428, 457**

***Herposiphonia* Nägeli, 1846:238***Herposiphonia hollenbergii* E. Y. Dawson, 1963b:430

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía Concepción to Cabo San Lucas, BCS.

TYPE LOCALITY. “Surf-dashed” granite headland; Salina Cruz, Oaxaca, Mexico.

*Herposiphonia littoralis* Hollenberg, 1970:69

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Guaymas, SON; Punta de Mita, NAY. WC: Puerto Escondido to Cabo San Lucas, BCS. IS: Isla Patos, ISG; Isla Espíritu Santo, BCS; Isla María Magdalena, NAY.

TYPE LOCALITY. Corona del Mar, Orange County, southern California, USA.

*Herposiphonia plumula* (J. Agardh) Hollenberg, 1970:68

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON. WC: Bahía Agua Verde to San José del Cabo, BCS. IS: Isla San Jorge, SON; Isla Patos and Isla San Esteban, ISG; Isla Carmen and Isla San Ildefonso, BCS.

TYPE LOCALITY. Santa Barbara, Santa Barbara County, southern California, USA.

*Herposiphonia plumula* var. *parva* (Hollenberg) Hollenberg, 1970:69

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON.

**TYPE LOCALITY.** Lady's Harbor, Santa Cruz Island, Santa Barbara County, California Channel Islands (Channel Islands National Marine Sanctuary), southern California, USA.

*Herposiphonia spinosa* E. Y. Dawson, 1959a:34

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Puerto Peñasco, SON. WC: Bahía de Los Ángeles, BC, to Cabo San Lucas, BCS. IS: Bahía Agua Dulce, Isla Tiburón, ISG; Isla Partida, BCS.

**TYPE LOCALITY.** Isla Partida [sur] (off N end of Isla Espíritu Santo), Baja California Sur, Gulf of California, Mexico.

*Herposiphonia verticillata* (Harvey) Kylin, 1925:74

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Punta de Mita, NAY. WC: Bahía Concepción, BCS.

**TYPE LOCALITY.** "California" (Harvey, 1833:165); "either San Francisco or Monterey" (Dawson, 1963b:437); "probably Monterey" (Abbott and Hollenberg, 1976:720), Monterey County, central California, USA.

#### **RHODOMELACEAE TRIBE CHONDRIEAE** **J. AGARDH, 1841:20**

#### ***Acanthophora* J. V. Lamouroux, 1813:132**

*Acanthophora spicifera* (M. Vahl) Børgesen, 1910:201

**GULF OF CALIFORNIA DISTRIBUTION.** WC: Playa El Caimancito, Bahía de La Paz, BCS.

**TYPE LOCALITY.** St. Croix, U.S. Virgin Islands.

**REMARKS.** Native to the Caribbean Sea, *Acanthophora spicifera* is a highly invasive species. First recorded in the Pacific from Hawaii (Russell, 1992), more recently, *A. spicifera* has been recognized in the southern Gulf on *Sargassum* in Bahía de La Paz (Ávila et al., 2012). Méndez-Trejo et al. (2014) studied the effects of *A. spicifera* on the epibiotia of the southern Gulf. Its potential spread elsewhere in the Gulf should be monitored.

#### ***Chondria* C. Agardh, 1817: xviii, 443**

*Chondria acrorhizophora* Setchell et N. L. Gardner, 1924a:766

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Puerto Peñasco, SON, to Bahía de Banderas, JAL. WC: Bahía Agua Verde to Bahía de San Lucas, BCS. IS: Isla Patos and Isla Partida (Isla Cordonazo), ISG.

**TYPE LOCALITY.** Eureka, near La Paz, Baja California Sur, Gulf of California, Mexico.

*Chondria arcuata* Hollenberg, 1945:447

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Mazatlán, SIN, to Yelapa, JAL.

**TYPE LOCALITY.** In algal turf, on low intertidal rocks; Laguna Beach, Orange County, southern California, USA.

*Chondria decipiens* Kylin, 1941:41

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Bahía de Banderas, NAY/JAL.

**TYPE LOCALITY.** On low intertidal rocks; Pacific Grove, Monterey County, central California, USA.

**REMARKS.** A California species, specimens of *C. decipiens* from the southernmost end of the Gulf should be reexamined to verify their identification.

*Chondria repens* Børgesen, 1924a:299

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Puerto Peñasco, SON, to Bahía de Banderas, JAL. WC: Bahía de La Paz, BCS.

**TYPE LOCALITY.** Rapa Nui (Easter Island), Province Isla de Pascua (Valparaíso Region), Chile.

*Chondria* species A of Bucher and Norris, 2014a:242

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Punta Gorda, SON, to Bahía Topolobampo, SIN. WC: Playa El Coloradito to Bahía San Luis Gonzaga, BC; Bahía Coyote to Bahía de La Paz, BCS. IS: Isla Patos and Isla Tiburón, ISG.

**REMARKS.** Morphologically, *Chondria* species A is in general agreement with the Gulf of California specimens identified as "*Chondria dasyphylla*" following Dawson (1963b), but it appears closer to *C. pacifica* Setchell et N. L. Gardner (Bucher and Norris, 2014a) or may possibly be a new taxon.

#### **RHODOMELACEAE TRIBE LAURENCIEAE** **F. SCHMITZ, 1889:447**

#### ***Erythrocyctis* J. Agardh, 1876:638**

*Erythrocyctis saccata* (J. Agardh) P. C. Silva, 1952:308

**GULF OF CALIFORNIA DISTRIBUTION.** WC: Punta Palmilla to Cabeza Ballena, BCS.

**TYPE LOCALITY.** "Hab. ad oras Californiae" (Agardh, 1849:89); "probably in vicinity of Monterey" (Smith, 1944:380; Dawson, 1963b:441), Monterey County, central California, USA.

#### ***Laurencia* J. V. Lamouroux, 1813:130**

*Laurencia aguilar-rosasorum* J. N. Norris, 2014:250

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Playa Estación to Playa Las Conchas, Puerto Peñasco, SON.

**TYPE LOCALITY.** On intertidal platform; Playa Estación, Puerto Peñasco, Sonora, Gulf of California, Mexico.

*Laurencia decidua* E. Y. Dawson, 1954a:8

**GULF OF CALIFORNIA DISTRIBUTION.** WC: Bahía de La Paz, BCS.

**TYPE LOCALITY.** Intertidal rocks; Isla San Benedicto, Islas Revillagigedo, Colima, Mexico.

*Laurencia fenicalii* J. N. Norris, 2014:252

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Estación to Playa Las Conchas, Puerto Peñasco, to Bahía San Carlos, SON.

TYPE LOCALITY. On intertidal platform; Cupleaños Tide Pool, Playa Estación, Puerto Peñasco, Sonora, Gulf of California, Mexico.

*Laurencia hancockii* E. Y. Dawson, 1944:328

GULF OF CALIFORNIA DISTRIBUTION. EC: Ensenada de San Francisco, SON, to Punta de Mita, NAY. WC: Bahía Agua Verde to Cabeza Ballena, BCS.

TYPE LOCALITY. Low intertidal rocks; Bahía Agua Verde, Baja California Sur, Gulf of California, Mexico.

*Laurencia iriei* J. N. Norris et Fenical, in Norris, 2014:253

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Estación to Playa Las Conchas, Puerto Peñasco, SON. WC: Bahía Concepción, BCS.

TYPE LOCALITY. Intertidal; attached to sides of Cupleaños Tide Pool, Playa Estación, Puerto Peñasco, Sonora, Gulf of California, Mexico.

*Laurencia johnstonii* Setchell et N. L. Gardner, 1924a:764

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON, to Bahía Topolobampo, SIN. WC: Bahía de Los Ángeles, BC, to Cabeza Ballena, BCS. IS: Bahía Agua Dulce, Isla Tiburón, and Isla Turner, ISG; Isla San Marcos, Isla Carmen, Isla San Diego, and Isla Espíritu Santo, BCS.

TYPE LOCALITY. Isla San Marcos (southeast of Santa Rosalía), Baja California Sur, Gulf of California, Mexico.

*Laurencia lajolla* E. Y. Dawson, 1958:77

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON; Mazatlán, SIN. WC: Bahía Concepción to Cabo Pulmo, BCS. IS: Isla Bargo, BCS.

TYPE LOCALITY. Among coralline algal turf; reef flat below north end of Neptune Place, Wind-and-Sea Beach (“Windansea” surfing beach), La Jolla, San Diego County, southern California, USA.

*Laurencia masonii* Setchell et N. L. Gardner, 1930:155

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz, BCS.

TYPE LOCALITY. Cast ashore, epiphytic on *Sargassum palmeri*; South Anchorage, Isla Guadalupe, off Pacific coast of northern Baja California, Mexico.

REMARKS. Known in the southern Gulf only from the report of Huerta-Múzquiz and Mendoza-González (1985), the finding of additional specimens will be helpful to verify its presence in the Gulf of California.

*Laurencia richardsii* E. Y. Dawson, 1954a:7

GULF OF CALIFORNIA DISTRIBUTION. EC: Mazatlán, SIN.

TYPE LOCALITY. Intertidal rocks exposed to heavy surf; NE side of Isla San Benedicto, Islas Revillagigedo, Colima, Mexico.

*Laurencia subcorymbosa* E. Y. Dawson, 1963a:467

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz to Punta Palmilla, BCS.

TYPE LOCALITY. Beach drift, epiphytic on *Sargassum*; 5 km north of Cabo Pulmo, Baja California Sur, Gulf of California, Mexico.

*Laurencia voragina* W. R. Taylor, 1945:290

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Arena, BCS.

TYPE LOCALITY. Forming turfs, low intertidal exposed to severe surf; Morros del Potosí (White Friars Islands or White Friars Rocks), 15 km east of Zihuatanejo, Guerrero, Mexico.

Uncertain Record: *Laurencia glandulifera* (Kützinger) Kützinger, 1849:855

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON. IS: Isla Tiburón, ISG.

TYPE LOCALITY. Trieste, Gulf of Trieste (in northern Adriatic Sea, near border with Slovenia), northeastern Italy.

REMARKS. Mateo-Cid et al. (2006, as *L. glandulifera*) recorded “*Chondrophyucus glandulifera*” in the upper Gulf. There has been much confusion and misapplication of the species name and its generic placement. Although Yamada (1931), Saito (1985), and Cecere et al. (1996) recognized *L. glandulifera* (Kützinger) Kützinger and *L. paniculata* Kützinger (1849) as distinct taxa, others considered the two conspecific (e.g., Silva et al., 1996; Abbott, 1999; Lipkin and Silva, 2002; Lobban and Tsuda, 2003; Norris, 2014). Recently, Furnari et al. (2016) provided support that *L. glandulifera* and *L. paniculata* were taxonomically different taxa. Gulf specimens need critical studies to determine their generic placement and species identification (Norris, 2014).

Excluded Species: *Laurencia pacifica* Kylin, 1941:42

REMARKS. Northern Gulf of California specimens identified as “*L. pacifica*” (Dawson, 1963b) were shown to be three new species, each distinct from the northeastern Pacific *L. pacifica* Kylin (Fenical and Norris, 1975; Norris, 2014), and it was excluded from the Gulf of California marine flora (Norris, 2014).

***Osmundea Stackhouse*, 1809:56, 79**

*Osmundea blinksii* (Hollenberg et I. A. Abbott) K. W. Nam, in Nam et al., 1994:393

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de Los Ángeles, BC.

TYPE LOCALITY. Exposed rocky shores; just south of Malpas Creek, Monterey County, central California, USA.



*Osmundea estebaniana* (Setchell et N. L. Gardner) J. N.

Norris, 2014:257

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta de Mita, NAY, to Bahía de Banderas, JAL. WC: Bahía de Los Ángeles, BC, to Bahía de Loreto, BCS; IS: Isla Patos, Bahía Agua Dulce, Isla Tiburón, and Isla San Esteban, ISG; Isla Coronado, BC.

TYPE LOCALITY. On rocks; Isla San Esteban, Sonora, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

*Osmundea sinicola* (Setchell et N. L. Gardner) K. W. Nam, in

Nam et al., 1994:393

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Guaymas, SON. WC: Bahía Concepción to Bahía San José del Cabo, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, Isla Patos, Isla Turner, and Isla San Esteban, ISG; Isla San Marcos, Isla Cholla, and Isla San Ildefonso, BCS.

TYPE LOCALITY. Epiphytic on *Sargassum*; Eureka (23°36'N, 109°36'W), vicinity of La Paz, Baja California Sur, Gulf of California, Mexico.

***Palisada* K. W. Nam, 2007:53***Palisada paniculata* (Kützinger) J. N. Norris, 2014:259

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON, to Guaymas, SON. WC: Bahía de Los Ángeles, BC, to Cabeza Ballena, BCS. IS: Isla San Jorge, SON; Puerto Refugio, Isla Ángel de la Guarda, Isla Patos, Bahía Agua Verde, Isla Tiburón, Isla San Esteban, and Isla Partida (Isla Cordonazo), ISG.

SYNTYPE LOCALITIES. In Adriatic and Mediterranean Seas (Kützinger, 1849).

LECTOTYPE LOCALITY. “Mari mediterraneo” (Kützinger, 1865:22).

*Palisada pedrochei* J. N. Norris, 2014:261

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Bahía Topolobampo, SIN; Punta de Mita, NAY. WC: Playa El Coloradito, BC, to Punta Palmilla, BCS. IS: Isla Turner, ISG; Isla Tortuga, Isla San Marcos, Isla San Ildefonso, Isla Carmen, and Isla Espíritu Santo, BCS.

TYPE LOCALITY. On tidal platform; Playa Estación, Puerto Peñasco, Sonora, Gulf of California, Mexico.

REMARKS. Norris (2014) recognized the southern Gulf *Laurencia papillosa* var. *pacifica* Setchell et N. L. Gardner (1924a) to belong in the genus *Palisada*. Since there is no priority outside of rank (*International Code of Nomenclature* . . . [ICN], McNeill et al., 2012), he described it as a new species, *Palisada pedrochei*, to avoid confusion in using the name “*pacifica*,” an epithet already used not only for the variety, *L. papillosa* var. *pacifica*, but also in a different species, *L. pacifica* Kylin (1941).

*Palisada perforata* (Bory de Saint-Vincent) K. W. Nam, 2007:54

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz, BCS.

TYPE LOCALITY. Rade de Sainte-Croix (Santa Cruz de Tenerife), Islas Canarias, Spain.

REMARKS. An Atlantic species, *Palisada perforata* has been reported in the southern Gulf (Cruz-Ayala et al., 2001). More collections will be helpful to verify its identification in the Gulf of California.

**GIGARTINALES F. SCHMITZ, 1892:18****CAULACANTHACEAE KÜTZINGER, 1843:389*****Caulacanthus* Kützinger, 1843:395***Caulacanthus okamurae* Yamada, 1933:278

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Estación, Puerto Peñasco, to Punta San Pedro, SON. WC: Bahía Agua Verde, BCS. IS: Isla Turner, ISG.

SYNTYPE LOCALITIES. “Hokkaidô to Formosa” (Yamada, 1933:278); although not specifically designated by Yamada (1933), type locality is probably Hokkaidô Island, Hokkaidô Prefecture, Japan.

REMARKS. Recorded in Pacific Mexico and the Gulf of California, it is considered to be an introduced species (L. Aguilar-Rosas et al., 2014, as *C. ustulatus*). Although genetically separable, the morphological distinction between the western Pacific *C. okamurae* and the European *C. ustulatus*, remains problematic (see Norris, 2014). Gulf of California specimens referred to *C. okamurae*, as well as those of Pacific Mexico, need further comparisons with type materials to verify their identification.

**CYSTOCLONIACEAE KÜTZINGER, 1843:390, 404*****Hypnea* J. V. Lamouroux, 1813:131***Hypnea cervicornis* J. Agardh, 1852a:451

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Tucson, Puerto Peñasco, SON, to Playa Norte and Punta Derecha, SIN. WC: San Felipe, BC, to Bahía de San Lucas, BCS. IS: San Jorge, SON; Isla San Pedro Mártir, ISG; Isla San Juan Nepomuceno, Isla Partida, and Isla Espíritu Santo, BCS.

SYNTYPE LOCALITIES. Warm Atlantic from Brazil, West Indies, and Mexico and Indian Ocean from Mauritius (Agardh, 1852a).

LECTOTYPE LOCALITY. Near Bahia (city; now Salvador), Bahia (state), northeastern Brazil (Haroun and Prud'homme van Reine, 1993; Yamagishi and Masuda, 1997:140).

*Hypnea johnstonii* Setchell et N. L. Gardner, 1924a:758

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON, to Bahía de Banderas, JAL. WC: Bahía Concepción to Arrecife de Cabo Pulmo, BCS. IS: Isla Ángel de la Guarda, Isla Estanque, Isla Tiburón, Isla Turner, and Isla San Esteban, ISG; Isla San Pedro Nolasco, SON; Isla Tortuga, BCS.

**TYPE LOCALITY.** On upper sublittoral rocks; Isla Ángel de la Guarda (Setchell and Gardner, 1924a); Isla Estanque (Pond Island), off southeastern end of Isla Ángel de la Guarda (Dawson, 1961a), Baja California, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

*Hypnea nidulans* Setchell, 1924:161

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Bahía Catalina (near Guaymas), SON. WC: Bahía Agua Verde, BCS. IS: Isla Estanque and Isla Turner, ISG.

**TYPE LOCALITY.** Forming dense clumps among staghorn corals (*Acropora pharaonis*); Aua Reef, Tutuila Island, Samoan Islands, American Samoa.

**REMARKS.** Although considered conspecific with *H. pannosa* by Dawson (1961a), Geraldino et al. (2010) showed type locality *H. nidulans* Setchell and *H. pannosa* J. Agardh were distinct species. Later Norris (2014) treated Gulf “*H. nidulans*” sensu Dawson (1944; non *H. nidulans* Setchell, 1924) as *H. pannosa*. Reexamination of Gulf records and genetic studies of new specimens are required to confirm the presence of *H. nidulans* in the Gulf.

*Hypnea pannosa* J. Agardh, 1847:14

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Puerto Peñasco, SON, to Bahía de Banderas, JAL. WC: Bahía San Luis Gonzaga, BC, to Cabeza Ballena, BCS. IS: Isla Estanque and Isla Turner, ISG; Isla San Pedro Nolasco, SON; Isla Cholla, Isla San Ildefonso, Isla San Diego, and Isla Espíritu Santo, BCS; Isla de Venados, SIN; Isla Isabel, Isla Larga, and Isla María Magdalena, NAY.

**TYPE LOCALITY.** San Agustín (St. Augustín), Bahías de Huatulco, Oaxaca, Mexico.

*Hypnea spicifera* (Suhr) Harvey, in J. Agardh, 1847:14

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Mazatlán, SIN.

**TYPE LOCALITY.** “Algoa-Bai” (Suhr, 1834:731); Algoa Bay, Cape Province, South Africa.

**REMARKS.** Specimens were referred to the South African *Hypnea spicifera* by Dawson (1961a) with a taxonomic query. Additional collections are needed to verify its presence in the Gulf of California.

*Hypnea spinella* (C. Agardh) Kützing, 1847:23

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Piedras del Burro, SON, to Bahía de Banderas, JAL. WC: El Machorro, BC, to Cabeza Ballena, BCS. IS: Isla San Juan Nepomuceno, BCS.

**TYPE LOCALITY.** “Indiae occidentalis” (Agardh, 1822:323); collected in coral, West Indies, Caribbean Sea (Dawson, 1961a).

**LECTOTYPE.** Dansk “Vestindien” [Danish West Indies; now U.S. Virgin Islands] (Haroun and Prud’homme van Reine, 1993:122).

*Hypnea valentiae* (Turner) Montagne, 1841:161

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Playa Hermosa, Puerto Peñasco, SON, to Tecapán, SIN. WC: Playa

El Coloradito, BC, to Cabeza Ballena, BCS. IS: Isla Ángel de la Guarda, Isla Patos, Isla Tiburón, Isla Turner, and Canal de Infernillo (channel between Isla Tiburón and Campo VÍboras on Sonora coast), ISG; Isla San Diego, Isla Carmen, Isla Monserrate, Isla San Juan Nepomuceno, Isla Partida, and Isla Espíritu Santo, BCS.

**TYPE LOCALITY.** Red Sea.

*Hypnea variabilis* Okamura, 1909:21

**GULF OF CALIFORNIA DISTRIBUTION.** WC: Cabo San Lucas, BCS.

**REMARKS.** A Japanese species, it has been reported from the Pacific coast of Baja California (Dawson, 1961a). There is also one record of *Hypnea variabilis* in the southern Gulf of California (Martínez-Lozano et al., 1991). Additional collections are needed to verify its presence in the Gulf of California.

*Hypnea volubilis* Searles, in Schneider and Searles, 1976:53

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Playa Estación, Puerto Peñasco, SON.

**TYPE LOCALITY.** At 23–24 m depths; offshore reef, North Carolina, USA.

**DICRANEMATACEAE KYLIN, 1932:65**

***Dicranema* Sonder, 1845:56**

*Dicranema rosaliae* Setchell et N. L. Gardner, 1924a:745

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Playa Hermosa, Puerto Peñasco, SON, to Topolobampo, SIN. WC: Santa Rosalía to Bahía de La Paz, BCS. IS: Isla Ángel de la Guarda, ISG; Isla Espíritu Santo, BCS.

**TYPE LOCALITY.** Santa Rosalía, Baja California Sur, Gulf of California, Mexico.

**REMARKS.** The generic placement of the Gulf endemic *Dicranema rosaliae* is uncertain and requires further morphological and genetic analyses to resolve its status (Norris, 2014).

**DUMONTIACEAE BORY DE SAINT-VINCENT, 1828:197**

***Dudresnaya* P. Crouan et H. Crouan, 1835:98, nom. cons.**

*Dudresnaya colombiana* W. R. Taylor, 1945:162

**GULF OF CALIFORNIA DISTRIBUTION.** WC: Playa Santa Teresa, BC. IS: Isla Mejía, and Isla Estanque, ISG.

**TYPE LOCALITY.** Intertidal; Isla Gorgona (Parque Nacional Natural Isla Gorgona), off the Pacific coast of Departamento de Valle del Cauca, Colombia.

**GIGARTINACEAE BORY DE SAINT-VINCENT, 1828:149**

***Chondracanthus* Kützing, 1843:399**

*Chondracanthus acicularis*? (Roth) Fredericq, in Hommersand et al., 1993:117

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Punta Pelicano, Puerto Peñasco, to Puerto Lobos, SON. WC: Bahía de Los Ángeles, BC. IS: Isla La Ventana, BC.

**SYNTYPE LOCALITIES.** “In variis submarinis corporibus” (Wulfen, 1803:63).

**LECTOTYPE LOCALITY.** Adriatic Sea (Dixon and Irvine, 1977b:237).

**REMARKS.** Northern Gulf of California specimens were tentatively referred to *C. acicularis* by Norris and Fredericq (2014a). Hughey and Hommersand (2008) noted that their Gulf *G. acicularis* differed molecularly from the Atlantic *C. acicularis* and suggested that herbarium specimens of Gulf *C. acicularis* sensu Dawson (1961a) may possibly be ecological forms of *C. squarulosus*. It is also possible it may be another species.

*Chondracanthus chamissoi* (C. Agardh) Kützing, 1843:399

**GULF OF CALIFORNIA DISTRIBUTION.** WC: La Paz, BCS. IS: Isla San Jorge, SON; Isla San Esteban, ISG.

**TYPE LOCALITY.** Chile.

*Chondracanthus exasperatus* (Harvey et Bailey) Hughey, in Hughey et al., 1996:23

**GULF OF CALIFORNIA DISTRIBUTION.** WC: Punta Los Frailes, BCS.

**TYPE LOCALITY.** Opposite Fort Nisqually (near DuPont, Pierce County), Puget Sound, Washington, USA (Hughey and Hommersand, 2008).

*Chondracanthus intermedius* (Suringar) Hommersand, in Hommersand et al., 1993:115

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Playa Los Algodones, SON, to Mazatlán, SIN. WC: Playa Santa Teresa, BC, to Cabo Pulmo, BCS.

**TYPE LOCALITY.** Sea of Japan (East Sea), on west coast of Japan.

*Chondracanthus squarulosus* (Setchell et N. L. Gardner)

Hughey, P. C. Silva et Hommersand, 2001:1105

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Punta Gorda to Bahía Bacoahibampo, SON. WC: El Machorro, BC, to Bahía de Loreto, BCS. IS: Isla San Jorge, SON; Isla Coronado, BC; Puerto Refugio, Isla Ángel de la Guarda, Isla Patos, Bahía Agua Dulce, Isla Tiburón, Isla Turner, and Isla San Esteban, ISG.

**TYPE LOCALITY.** Isla Coronado (Isla Smith), north-east of Bahía de Los Ángeles, Baja California, Gulf of California, Mexico.

**REMARKS.** A Gulf endemic (Norris, 2014), it was apparently accidentally introduced with Gulf of California clams transported into Bahía San Quintin, Pacific coast of Baja California (L. Aguilar-Rosas et al., 2014).

*Chondracanthus tepidus* (Hollenberg) Guiry, in Hommersand et al., 1993:115

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Puerto Peñasco, SON, to Bahía Topolobampo, SIN. WC: Playa

El Coloradito, BC, to La Paz, BCS. IS: Isla San Jorge and Isla San Pedro Nolasco, SON; Puerto Refugio, Isla Ángel de la Guarda, Isla Patos, Bahía Agua Dulce, Isla Tiburón, and Isla Rasa, ISG; Islas de Los Gemelos, BC.

**TYPE LOCALITY.** Balboa, upper Newport Bay, Orange County, southern California, USA.

*Chondracanthus zertucheii* J. N. Norris et Fredericq, in Norris and Fredericq, 2014a:333

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Puerto Peñasco, SON. WC: Bahía San Francisquito, BC. IS: Isla Las Ánimas, ISG; Isla Tortuga, BCS.

**TYPE LOCALITY.** Bahía San Francisquito, Baja California, Gulf of California, Mexico.

**Uncertain Record:** *Chondracanthus canaliculatus* (Harvey) Guiry, in Hommersand et al., 1993:115

**REMARKS.** Recorded in the northern Gulf from Segundo Cerro Prieto, Bahía Kino, SON, with a taxonomic query by Mendoza-González and Mateo-Cid (1986); its presence in the upper Gulf of California is doubtful.

**Uncertain Record:** *Chondracanthus harveyanus* (Kützing) Guiry, in Hommersand et al., 1993:115

**REMARKS.** A temperate species known in northern Pacific Baja California (Dawson, 1961a; Hughey and Hommersand, 2008), there is only one record for the Gulf of California from Cabo Corrientes, JAL (Huerta-Múzquiz, 1978, as *Gigartina harveyana*). Additional collections are needed to verify its presence in the Gulf of California.

### **Mazzaella G. De Toni, 1936:[4]**

*Mazzaella diffusa* (E. Y. Dawson) J. N. Norris et Fredericq, in Norris and Fredericq, 2014a:335

**GULF OF CALIFORNIA DISTRIBUTION.** IS: Puerto Refugio, Isla Ángel de la Guarda, ISG; Isla la Ventana, BC.

**TYPE LOCALITY.** Intertidal rocky shore; Puerto Refugio, Isla Ángel de la Guarda, Baja California, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

*Mazzaella digitata* (E. Y. Dawson) J. N. Norris et Fredericq, in Norris and Fredericq, 2014a:336

**GULF OF CALIFORNIA DISTRIBUTION.** IS: Isla Partida and Isla Rasa, ISG.

**TYPE LOCALITY.** On rocky shore in lower intertidal; Isla Partida (Isla Cordonazo), Baja California, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

*Mazzaella hancockii* (E. Y. Dawson) Fredericq, in Hommersand et al., 1993:110

**GULF OF CALIFORNIA DISTRIBUTION.** IS: Isla Patos and Isla San Esteban, ISG; Isla San Pedro Nolasco, SON.

**TYPE LOCALITY.** On rocks, low intertidal; Isla San Esteban, Sonora, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

**Uncertain Record:** *Mazzaella affinis* (Harvey) Fredericq, in Hommersand et al., 1993:110

REMARKS. Recorded in the northern Gulf from Roca Rojo, Bahía Kino, SON, by Mendoza-González and Mateo-Cid (1986), more collections are needed to verify its presence.

**Uncertain Record:** *Mazzaella leptorhynchos* Leister, in Hommersand et al., 1993:110

REMARKS. Recorded from Roca Rojo, Bahía Kino, SON, with uncertainty as to its identification (Mendoza-González and Mateo-Cid, 1986), its occurrence in the Gulf of California is doubtful.

### KALLYMENIACEAE KYLIN, 1928:56

#### *Kallymenia* J. Agardh, 1842:98

*Kallymenia baldwinii* E. Y. Dawson, 1966b:62

GULF OF CALIFORNIA DISTRIBUTION. IS: Islas Santa Inés, BCS.

TYPE LOCALITY. On subtidal rocks, from trawl at about 20 m depth; off Islas Santa Inés (Islas Santa Inez), about 6.4 km southeast of Punta Chivato (Bahía Concepción), Baja California Sur, Gulf of California, Mexico.

*Kallymenia bleckii* E. Y. Dawson, 1966b:59

GULF OF CALIFORNIA DISTRIBUTION. WC: Punta El Púlpito, BCS. IS: Isla San Pedro Nolasco, SON.

TYPE LOCALITY. Subtidal, 15 m depth; Punta El Púlpito, Baja California Sur, Gulf of California, Mexico.

*Kallymenia norrisii* Hollenberg et I. A. Abbott, 1965:1183

GULF OF CALIFORNIA DISTRIBUTION. IS: Isla San José and Isla Santo Espíritu, BCS.

TYPE LOCALITY. Dredged on shale, 5–10 fathoms (9.1–18.3 m) deep; south end of Monterey Bay, off Monterey [city], Monterey County, central California, USA.

*Kallymenia pertusa* Setchell et N. L. Gardner, 1924a:746

GULF OF CALIFORNIA DISTRIBUTION. WC: Punta La Gringa, BC. IS: Isla Mejía, Roca Blanca and Puerto Refugio, Isla Ángel de la Guarda, Canal de Ballenas (between W coast of Isla Ángel de la Guarda and E coast of Baja California), Isla San Esteban, and Isla San Pedro Mártir, ISG; Isla San José, BCS.

TYPE LOCALITY. Isla San Pedro Mártir (about 35 km south of Punto de Monumento on southern end of Isla Tiburón), Baja California, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

#### *Pugetia* Kylin, 1925:30

*Pugetia mexicana* E. Y. Dawson, 1966b:62

GULF OF CALIFORNIA DISTRIBUTION. WC: Punta La Gringa to Bahía San Francisquito, BC. IS: Isla Mejía,

Roca Blanca and Puerto Refugio, Isla Ángel de la Guarda, Isla Estanque, Isla San Esteban, and Isla San Lorenzo, ISG.

TYPE LOCALITY. Dredged 19–30 m depth; off Isla San Lorenzo (Isla San Lorenzo Sur), Islas San Lorenzo, Baja California, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

### *Erythrophyllum* J. Agardh, 1872:10

*Erythrophyllum oblongifractum* (Setchell) Saunders, in Saunders et al., 2017:92

GULF OF CALIFORNIA DISTRIBUTION. IS: Isla San Pedro Nolasco, SON.

TYPE LOCALITY. Cast ashore, on stipes of kelp; Whidbey (Whidby) Island, Island County, Puget Sound, Washington, USA.

REMARKS. Previously recorded in the Gulf of California as *Kallymeniopsis oblongifracta* (Setchell) G. I. Hansen (1997). Saunders et al. (2017) provided phylogenetic evidence that *K. oblongifracta* belongs in the genus *Erythrophyllum* and relegated the Crossocarpaceae Perestenko (1975, 1977) to synonymy with Kallymeniaceae. Its presence in the Gulf needs to be reexamined.

**Excluded Species:** *Callophyllis violacea* J. Agardh, 1885:34

REMARKS. Its report from Bahía Bacoichibampo (Norris, 1973) was based on an incorrectly labeled locality of the specimen (Norris, 2014). Although also reported from Guaymas (Mendoza-González and Mateo-Cid, 1986), its presence in the northern Gulf is doubtful.

### PHYLLOPHORACEAE WILKOMM, 1854:148

#### *Ahnfeltiopsis* P. C. Silva et DeCew, 1992:576

*Ahnfeltiopsis gigartinooides* (J. Agardh) P. C. Silva et DeCew, 1992:577

GULF OF CALIFORNIA DISTRIBUTION. EC: Sa-yulita, NAY, to Playitas, JAL.

TYPE LOCALITY. San Agustín (St. Agustín), Bahías de Huatulco, Oaxaca, Mexico.

REMARKS. Gametangial and tetrasporic phases were described from Bahía de Banderas in the vicinity of southeastern entrance to the Gulf (León-Álvarez et al., 1997).

*Ahnfeltiopsis hancockii* (E. Y. Dawson) J. N. Norris et Fredericq, in Norris and Fredericq, 2014b:347

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Lobos, SON, to Mazatlán, SIN. WC: San Felipe, BC, to Santa Rosalía, BCS. IS: Isla Alcatraz and Isla Ardilla, SON; Isla Patos and Isla Tiburón, ISG.

TYPE LOCALITY. “Point approximately 3 miles [~4.8 km] north of Kino” (Dawson, 1944:300); probably in the vicinity of Kino Nuevo (north of Kino Viejo), Bahía Kino, Sonora, Gulf of California, Mexico.

*Abmfeltiopsis serenei* (E. Y. Dawson) Masuda, 1993:3

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía de Banderas, NAY/JAL. WC: Cabo San Lucas, BCS.

TYPE LOCALITY. On “roches noires” (rhyolite rock); north end of Con Se Tre Island (Île de Tre), off Nha Trang, Khanh Hoa Province, south central Vietnam.

### **Besa Setchell, 1912:237**

*Besa divaricata* (Holmes) M. S. Calderon et S. M. Boo, in Calderon et al., 2016:3(e-version)/433(print)

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Lobos, SON. IS: Isla Turner, ISG.

TYPE LOCALITY. Shimoda, southern Izu Peninsula, Shizuoka Prefecture, Honshū Island, Japan.

REMARKS. *Besa divaricata* has been reported in the northern Gulf as *Abmfeltiopsis divaricata* (Holmes) Masuda (1993).

*Besa leptophylla* (J. Agardh) M. S. Calderon et K. A. Miller, in Calderon et al., 2016:3(e-version)/433(print)

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Chueca to Segundo Cerro Prieto, SON; Punta de Mita, NAY, to Cabo Corrientes, JAL. IS: Isla Pelicano and Roca Rojo, Bahía Kino, SON.

TYPE LOCALITY. Santa Cruz, Santa Cruz County, central California, USA.

REMARKS. *Besa leptophylla* was recorded in the northern Gulf as *Abmfeltiopsis leptophylla* (J. Agardh) P. C. Silva et DeCew (1992). Gulf of California specimens need critical study to confirm its identification in the Gulf.

### **Gymnogongrus Martius, 1833:27**

*Gymnogongrus? carnosus* Setchell et N. L. Gardner, 1924a:745

GULF OF CALIFORNIA DISTRIBUTION. IS: Isla San Pedro Mártir, ISG.

TYPE LOCALITY. Cast ashore; Isla San Pedro Mártir, Baja California, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

*Gymnogongrus guadalupensis* E. Y. Dawson, 1961a:249

GULF OF CALIFORNIA DISTRIBUTION. EC: Mazatlán, SIN. WC: Cabeza Ballena to Cabo San Lucas, BCS. IS: Isla de la Piedra, SIN.

TYPE LOCALITY. Outer reef and pools; southernmost tip of Isla Guadalupe, off Pacific coast of Baja California, Mexico.

*Gymnogongrus johnstonii* (Setchell et N. L. Gardner) E. Y. Dawson, 1954b:294

GULF OF CALIFORNIA DISTRIBUTION. EC: Mazatlán, SIN, to Lo de Marcos, NAY. WC: Campo Hawaii, BC, to Cabo Pulmo, BCS. IS: Puerto Refugio, Isla Ángel de la

Guarda, and Isla San Esteban, ISG; Isla Coronado, BC; Isla Tortuga, BCS.

TYPE LOCALITY. Isla Tortuga (off Puerto Santa Rosalía), Baja California Sur, Gulf of California, Mexico.

*Gymnogongrus martinensis* Setchell et Gardner, 1937:78

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía de Banderas, NAY/JAL.

TYPE LOCALITY. Isla San Martín, off Pacific coast of Baja California, Mexico.

*Gymnogongrus tenuis* J. Agardh, 1849:88

GULF OF CALIFORNIA DISTRIBUTION. EC: Lo de Marco and Playa San Francisco, NAY.

TYPE LOCALITY. “Hab. ad insulae Indiae occidentalis” (Agardh, 1849:88); West Indies, Caribbean Sea.

REMARKS. A Caribbean species (Wynne, 2011), *Gymnogongrus tenuis* has also been reported in the southern Gulf from Nayarit (Mateo-Cid and Mendoza-González, 1992).

### **Petroglossum Hollenberg, 1943:571**

*Petroglossum parvum* Hollenberg, 1945:450

GULF OF CALIFORNIA DISTRIBUTION. IS: Isla Salsipuedes, ISG.

TYPE LOCALITY. Intertidal; Laguna Beach, Orange County, southern California, USA.

### **SOLIERIACEAE J. AGARDH, 1876:502**

#### **SOLIERIACEAE TRIBE AGARDHIELLEAE P. W. GABRIELSON ET HOMMERSAND, 1982:57**

#### **Agardhiella F. Schmitz, in Schmitz et Hauptfleisch, 1896:371**

*Agardhiella mexicana* E. Y. Dawson, 1944:288

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía la Choya, Puerto Peñasco, to Ensenada de San Francisco, SON. WC: Bahía San Luis Gonzaga, BC, to Bahía de San Lucas, BCS. IS: Canal Mejía (channel off Isla Mejía) and Puerto Refugio, Isla Ángel de la Guarda, ISG.

TYPE LOCALITY. Dredged 4 m depth; south shore of Puerto Refugio, Isla Ángel de la Guarda, Baja California, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

#### **SOLIERIACEAE TRIBE SOLIERIEAE J. AGARDH, 1852b:721**

#### **Sarcoditheca Kylin, 1932:15**

*Sarcoditheca dichotoma* (M. Howe) E. Y. Dawson, 1944:290

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Libertad to Bahía Bacoichampo, SON. WC: Bahía de

Los Ángeles, BC, to Bahía de La Paz, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, Isla San Esteban, and Isla San Pedro Mártir, ISG; Isla La Ventana, BC; Isla Tortuga, Isla Carmen, and Canal de San Lorenzo, off Isla Espíritu Santo, BCS.

TYPE LOCALITY. Vicinity of La Paz, Baja California Sur, Gulf of California, Mexico.

*Sarcodiotheca furcata* (Setchell et N. L. Gardner) Kylin, 1932:16

GULF OF CALIFORNIA DISTRIBUTION. EC: Ensenada Grande, Bahía San Pedro (between Bahía San Carlos and Tastiota), SON. WC: Punta La Gringa, Bahía de Los Ángeles, BC. IS: Puerto Refugio, Isla Ángel de la Guarda, and Isla San Esteban, ISG; Isla María Magdalena, NAY.

TYPE LOCALITY. West coast of Whidbey (Whidby) Island, Island County, Puget Sound, Washington, USA.

*Sarcodiotheca gaudichaudii* (Montagne) P. W. Gabrielson, 1982:93

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía La Choya (?) to Guaymas, SON. WC: Bahía de Los Ángeles, BC, to San Jose del Cabo, BCS. IS: Isla Coronado and Isla La Ventana, BC; Puerto Refugio, Isla Ángel de la Guarda, ISG.

TYPE LOCALITY. Paita (seaport on south side of Bahía de Paita), Paita Province, northwestern Peru.

*Sarcodiotheca linearis* Setchell et N. L. Gardner, 1937:80

GULF OF CALIFORNIA DISTRIBUTION. WC: Punta Gorda to Bahía de San Lucas, BCS. IS: Isla Tiburón (?), ISG.

TYPE LOCALITY. Bahía de San Lucas, Baja California Sur, Gulf of California, Mexico.

*Sarcodiotheca taylorii* E. Y. Dawson, 1961a:227

GULF OF CALIFORNIA DISTRIBUTION. WC: Punta Los Frailes, BCS. IS: Isla Estanque, ISG; Isla La Ventana, BC; Isla María Magdalena, NAY.

TYPE LOCALITY. Isla María Magdalena, Islas Marías, off Nayarit, Gulf of California, Mexico.

**Tacanoosca J. N. Norris, P. W. Gabrielson et D. P. Cheney, in Norris, 2014:360**

*Tacanoosca uncinata* (Setchell et N. L. Gardner) J. N. Norris, P. W. Gabrielson et D. P. Cheney, in Norris, 2014:361

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON, to Mazatlán, SIN. WC: Playa El Colorado to Bahía San Francisquito, BC. IS: Puerto Refugio, Isla Ángel de la Guarda, Isla Estanque, Isla Tiburón, Isla Turner, Isla San Esteban, Isla Las Ánimas, Isla San Lorenzo, and Isla San Pedro Mártir, ISG; Isla Coronado, and Isla de Los Gemelos.

TYPE LOCALITY. On rocks; Isla Las Ánimas (Isla San Lorenzo Norte), Islas de San Lorenzo, Baja California, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

**Wurdemannia Harvey, 1853:245**

*Wurdemannia miniata* (Sprengel) J. Feldmann et G. Hamel, 1934:544

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía San Carlos, SON. WC: Bahía de Loreto to Bahía La Paz, BCS. IS: Isla Carmen, BCS.

TYPE LOCALITY. Vicinity of Montpellier, Hérault Department, France, Mediterranean Sea.

**WEEKSIACEAE I. A. ABBOTT, 1968:181**

***Weeksia* Setchell, 1901:128**

*Weeksia coccinea* (Harvey) S. C. Lindstrom, 1986:531

GULF OF CALIFORNIA DISTRIBUTION. EC: El Desemboque de los Seris, SON. EC: Bahía de Los Ángeles, BC. WC: Bahía de San Lucas, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, and Isla Tiburón, ISG; Islas de Los Gemelos, BC.

TYPE LOCALITY. Griffin Bay (south of Friday Harbor), San Juan Island, San Juan County, Washington, USA.

*Weeksia templetonii* Setchell et N. L. Gardner, 1937:76

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de Loreto to Punta Los Frailes, BCS. IS: Isla Coronado, BC; Canal de San Lorenzo, off Isla Espíritu Santo, BCS.

TYPE LOCALITY. Dredged 38 m depth; off Isla Cedros, off Pacific coast of Baja California, Mexico.

**PEYSSONNELIALES KRAYESKY, FREDERICQ ET J. N. NORRIS, IN KRAYESKY ET AL., 2009:384**

**PEYSSONNELIACEAE DENIZOT, 1968:86, 308**

***Cruoriella* P. Crouan et H. Crouan, 1859:289**

*Cruoriella fissurata* E. Y. Dawson, 1953:109

GULF OF CALIFORNIA DISTRIBUTION. EC: Guaymas, SON. WC: Punta Aguja to Cabeza Ballena, BCS. IS: Isla San Lorenzo, ISG.

TYPE LOCALITY. On intertidal rocks; Cabeza Ballena, Baja California Sur, Gulf of California, Mexico.

*Cruoriella mexicana* (E. Y. Dawson) Denizot, 1968:149

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Estación, Puerto Peñasco, SON, to Punta de Mita, NAY. WC: San Felipe, BC, to Bahía de Loreto, BCS.

TYPE LOCALITY. On mollusk shells, dredged 13–15 m depths; Isla Coronado Sur (South Island; 32°24.5'N, 117°13.8'W), Islas Los Coronados, off Pacific coast of northern Baja California, Mexico.

***Metapeyssonnella Boudouresque,  
Coppejans et Marcot, 1976:288***

*Metapeyssonnella mexicana* (E. Y. Dawson) D. L. Ballantine et H. Ruíz, 2011:50

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Peñasco, Puerto Peñasco, SON, to Manzanillas, NAY.

TYPE LOCALITY. On granite outcrop; southeast side of Bahía de Acapulco, Guerrero, Mexico.

*Metapeyssonnella* sp. A of Krayesky and Norris, 2014:370

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Estación to Playa Las Conchas, Puerto Peñasco, SON.

***Peyssonnella Decaisne, 1841:168***

*Peyssonnella conchicola* Piccone et Grunow, in Piccone, 1884b:317

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía Concepción to Cabo San Lucas, BCS.

TYPE LOCALITY. Massawa, Eritrea, Ethiopia, Red Sea.

*Peyssonnella dubyi* P. Crouan et H. Crouan, 1844:368

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Pelicano, SON, to Miramar, NAY. IS: Isla Isabel, NAY.

TYPE LOCALITY. Brest, Finistère Département, Brittany, northwest France.

*Peyssonnella hancockii* (E. Y. Dawson) Denizot, 1968:135, 310

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de Loreto to Cabeza Ballena, BCS.

TYPE LOCALITY. South shore, Isla Benito del Este (East Island or East Benito), Islas San Benito (~25 km west of Isla Cedros), off Pacific coast of Baja California, Mexico.

*Peyssonnella japonica* (Segawa) Yoneshigue, 1984:134

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Estación to Playa Las Conchas, Puerto Peñasco, SON.

TYPE LOCALITY. Crusts on gastropod mollusk shell, *Omphalius rusticus* (= *Tegula rustica*); Sirahama, Miyake-jima, Izu Islands (Fuji-Hakone-Izu National Park), Japan, Philippine Sea.

*Peyssonnella mexicana* E. Y. Dawson, 1953:106

GULF OF CALIFORNIA DISTRIBUTION. EC: Manzanillas, NAY. IS: Isla Las Ánimas, ISG.

TYPE LOCALITY. Granite rock outcrop; southeast side of Bahía de Acapulco, Guerrero, Mexico.

*Peyssonnella orientalis* (Weber-van Bosse) Cormaci et G. Furnari, 1987:757

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON, to Cabo Corrientes, JAL. WC: San Felipe, BC, to Punta Palmilla, BCS. IS: Isla San Jorge, Isla Pelicano,

and Isla San Pedro Nolasco, SON; Isla Cholla, Bahía Salinas, Isla Carmen, Isla Monserrate, Isla San Francisco, and Bahía San Gabriel and Canal de San Lorenzo, Isla Espiritu Santo, BCS; Isla Larga, NAY.

SYNTYPE LOCALITIES. “None specifically designated, seventeen Dutch East Indian localities [were] indicated from intertidal to 120 m depth” (Dawson, 1953:104); “Philippine Islands and various locales in Indonesia, including Semau and Solor” (Silva et al., 1996:213).

*Peyssonnella pacifica* Kylin, 1925:25

GULF OF CALIFORNIA DISTRIBUTION. EC: Mazatlán, SIN.

TYPE LOCALITY. On shell of limpet, *Patella* (mollusk); south of False Bay, southwest coast of San Juan Island, San Juan County, Washington, USA.

*Peyssonnella rubra* (Greville) J. Agardh, 1851:502

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Norte and Punta Derecha, SIN. WC: Bahía de La Paz, BCS.

TYPE LOCALITY. Ionian Islands (seven principal islands and numerous smaller islands), Ionian Sea, six off west coast and one off the southern tip of Greece.

*Peyssonnella squamaria* (S. G. Gmelin) Decaisne ex J. Agardh, 1842:93

GULF OF CALIFORNIA DISTRIBUTION. WC: San José del Cabo, BCS. IS: Isla San Ildefonso and Islas Santa Inés (Islas Santa Inez), BCS.

TYPE LOCALITY. Mediterranean Sea.

**CRYPTONEMIALES F. SCHMITZ, 1892:21**

**HALYMENIACEAE BORY DE SAINT-VINCENT, 1828:158**

***Cryptonemia* J. Agardh, 1842:100**

*Cryptonemia angustata* (Setchell et N. L. Gardner)

E. Y. Dawson, 1954b:261

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Guaymas, SON. WC: Punta La Gringa, Bahía de Los Ángeles, BC, to Bahía de San Lucas, BCS. IS: Isla Coronado and Isla de Los Gemelos, BC.

TYPE LOCALITY. Dredged 30 m depth; Bahía Santa María, west coast of Isla Magdalena (outside of Bahía Magdalena), Pacific Coast of Baja California Sur, Mexico.

*Cryptonemia borealis* Kylin, 1925:19

GULF OF CALIFORNIA DISTRIBUTION. WC: El Colorado, SON.

SYNTYPE LOCALITIES. Two locales (Kylin, 1925): Canoe Island and Peavine Pass (channel between Orcas Island and Blakely Island), Washington.

**LECTOTYPE LOCALITY.** Canoe Island (off SE of Shaw Island and NW end of Lopez Island), San Juan County, Washington, USA (Abbott and Hollenberg, 1976).

**REMARKS.** Gabrielson et al. (2004) noted difficulty in separating NE Pacific *Cryptonemia borealis*, *C. angustata*, and *C. obovata*. Should molecular systematic studies reveal them to be a single species, the oldest validly published name is *C. obovata*. Northern Gulf specimens referred to *Cryptonemia borealis* (Serviere-Zaragoza et al., 2012) should be compared to the type as well as northern Gulf specimens of *C. obovata*.

*Cryptonemia decolorata* W. R. Taylor, 1945:202

**GULF OF CALIFORNIA DISTRIBUTION.** WC: Bahía Concepción, BCS. IS: Isla María Magdalena, NAY.

**TYPE LOCALITY.** Dredged on coralline algal bottom 22 m depth; AHF sta. 970 (106°21'10"W, 21°25'40"N), off Isla María Magdalena, Islas Marías, Nayarit, Gulf of California, Mexico.

*Cryptonemia guaymasensis* (E. Y. Dawson) E. Y. Dawson, 1954b:263

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Playa Estación, Puerto Peñasco, to Guaymas, SON. WC: Playa El Coloradito, BC, to Bahía de San Lucas, BCS. IS: Isla Patos, ISG; Canal de San Lorenzo, Isla Espíritu Santo, BCS.

**TYPE LOCALITY.** At 4–6 m depths on muddy bottom; outer harbor, Guaymas, Sonora, Gulf of California, Mexico.

*Cryptonemia obovata* J. Agardh, 1876:681

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Canal de Infiernillo (channel between E coast of Isla Tiburón and El Desemboque de los Seris), SON. IS: Isla San Esteban, ISG.

**TYPE LOCALITY.** San Francisco Bay entrance (probably the westernmost entrance at Land's End or Fort Point or below the Presidio, in vicinity of Golden Gate Bridge), San Francisco, San Francisco County, northern California, USA.

*Cryptonemia opuntioides* E. Y. Dawson, 1966b:59

**GULF OF CALIFORNIA DISTRIBUTION.** IS: Isla La Ventana, BC; Isla Salsipuedes, ISG.

**TYPE LOCALITY.** At 12–18 m depths; Isla Salsipuedes, Islas de San Lorenzo, Baja California, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

*Cryptonemia veleroae* (E. Y. Dawson) E. Y. Dawson, 1954b:262

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Guaymas, SON. WC: Rocas Consag, BC.

**TYPE LOCALITY.** On broken shell and mud at 12–20 m depths; outside Guaymas Harbor entrance, Guaymas, Sonora, Gulf of California, Mexico.

***Grateloupia* C. Agardh, 1822:221, nom. cons.**

*Grateloupia catenata* Yendo, 1920:9

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Playa Arenosa, Puerto Peñasco, SON, to San Blas, NAY. IS: Isla Tiburón, ISG.

**SYNTYPE LOCALITIES.** Six locales in Japan (Yendo, 1920): five on Honshū Island—Tsugaru, [Cape] Tappi-zaki, Shimofuro, and Ajigasawa (all four Aomori Prefecture) and Fukuyama (Hiroshima Prefecture)—and one on Hokkaidō Island, Hakodate (Hokkaidō Prefecture).

**LECTOTYPE LOCALITY.** Ajigasawa, Aomori Prefecture, Honshū Island, Japan (Wang et al., 2000).

*Grateloupia dactylifera* E. Y. Dawson, 1954b:257

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Ensenada de San Francisco, SON. IS: Bahía San Gabriel, Isla Espíritu Santo, BCS.

**TYPE LOCALITY.** Ensenada de San Francisco (vicinity of Puerto San Carlos), Sonora, Gulf of California, Mexico.

*Grateloupia filicina* (Lamouroux) C. Agardh, 1822:223

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Ensenada de San Francisco, SON, to Puerto Vallarta, JAL. WC: Campo Hawaii, BC, to Bahía de La Paz, BCS. IS: Isla Pelicano, SON; Isla Coronado, BC.

**TYPE LOCALITY.** Trieste, Gulf of Trieste, northeast Italy (De Clerck et al., 2005:392).

**REMARKS.** Most Gulf of California of "*Grateloupia filicina*," including *G. filicina* var. *lomentaria* (Dawson, 1954b), were referred to *G. catenata* (Norris, 2014). Other Gulf records need to be reexamined to verify their identification.

*Grateloupia hancockii* E. Y. Dawson, 1944:280

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Bahía la Choya, SON, to Bahía de Banderas, JAL. IS: Isla Estanque and Isla Turner, ISG.

**TYPE LOCALITY.** "Rocky headland about 3 miles [~4.8 km] north of Kino [Bahía Kino (town)]" (Dawson, 1944:280), Bahía Kino (bay), Sonora, Gulf of California, Mexico.

*Grateloupia howei* Setchell et N. L. Gardner, 1924b:782

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Punta Robinson, SON, to Puerto Vallarta, JAL. WC: Bahía de Los Ángeles, BC, to Roca El Solitario, BCS. IS: Isla Alcatraz, SON; Isla Patos, Isla Tiburón, Isla Turner, Isla San Esteban, and Isla San Pedro Mártir, ISG; Isla Coronado, BC.

**TYPE LOCALITY.** Cast ashore; Isla San Esteban, Sonora, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

*Grateloupia prolongata* J. Agardh, 1847:10

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Puerto Lobos, SON, to Mazatlán, SIN. WC: Bahía de Los Ángeles, BC, to Bahía de La Paz, BCS. IS: Isla Angel de la Guarda, Isla Patos, Isla San Esteban, Isla Partida (Isla Cordonazo), and Isla Rasa, ISG; Isla San Pedro Nolasco, SON; Isla Coronado, BC; Isla San Francisco, BCS.

**TYPE LOCALITY.** "Pochetti" (Agardh, 1847:10); "Guatulco (Mexico)" (Kützing, 1849:730), probably Huatulco, Oaxaca; "probably on the coast of Oaxaca" (Dawson, 1954b); "Pochutla," Oaxaca, Mexico (De Clerck et al.,



2005:392; Pochutla District is in the east of the Costa Region, Oaxaca).

*Grateloupia versicolor* (J. Agardh) J. Agardh, 1851:181

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Arenosa, Puerto Peñasco, SON, to Puerto Vallarta, JAL. WC: Bahía San Francisquito, BC, to Cabeza Ballena, BCS. IS: Isla Pelicano, SON; Isla Turner and Isla San Esteban, ISG; Isla San Ildefonso, BCS; Isla Larga, NAY.

TYPE LOCALITY. “St. Agustín in littore Mexicano Oceani Pacifici, Liebman” (Agardh, 1851); San Agustín, Bahías de Huatulco, Oaxaca, Mexico.

*Grateloupia violacea* (Setchell et N. L. Gardner) E. Y. Dawson, 1961a:200

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de Los Ángeles to Bahía San Francisquito, BC. IS: Isla Patos, Bahía Agua Dulce, Isla Tiburón, Isla San Esteban, and Isla Partida (Isla Cordonazo), ISG.

TYPE LOCALITY. On upper sublittoral rocks; Isla San Esteban, Sonora, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

Uncertain Record: *Grateloupia abbreviata* Kylin, 1941:10

REMARKS. Reported from Isla Pelicano in the upper Gulf by Mendoza-González and Mateo-Cid (1986) with a query. *Grateloupia abbreviata* was described from La Jolla, southern California, and is generally accepted as a synonym of *G. doryphora* (Montagne) M. Howe (Abbott and Hollenberg, 1976); its presence in the Gulf of California needs to be verified.

Uncertain Record: *Grateloupia doryphora* (Montagne) M. Howe, 1914:169

REMARKS. A common species on the Pacific coast of Baja California. The Gulf record from Cabo Corrientes, Jalisco (Mendoza-González and Mateo-Cid, 1992), needs to be verified. *Grateloupia doryphora* as identified in the NE Pacific appears to be confused with the Japanese *G. turuturu* Yamada (1941). In the Atlantic off the U.S. coast “*G. doryphora*” was found to be *G. turuturu* by Gavio and Fredericq (2002), who also noted that distribution of *G. doryphora* was probably restricted to waters off of Chile and Peru. On the Pacific coast of northern Baja California *G. turuturu* has been reported as an introduced species (Miller et al., 2011; L. Aguilar-Rosas, et al. 2014).

### ***Halymenia* C. Agardh, 1817:xix, nom. cons.**

*Halymenia actinophysa* M. Howe, 1911:509

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Peñasco, Puerto Peñasco, to Ensenada de San Francisco, SON. WC: Playa El Coloradito, BC, to Bahía de La Paz, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, and Bahía Agua Dulce, Isla Tiburón, ISG; Isla La Ventana and Isla de Los Gemelos, BC; Bahía Salinas, Isla Carmen, Isla San José, and Canal de San Lorenzo, Isla Espíritu Santo, BCS.

TYPE LOCALITY. La Paz, Baja California Sur, Gulf of California, Mexico.

*Halymenia bifida* E. Y. Dawson, 1954b:269

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Pelicano, Puerto Peñasco, SON. WC: Punta Los Frailes to Bahía de San Lucas, BCS.

TYPE LOCALITY. Rock and sand bottom, 8–15 m depths; Bahía Los Frailes adjoining Punta Los Frailes, Baja California Sur, Gulf of California, Mexico.

*Halymenia californica* G. M. Smith et Hollenberg, 1943:216

GULF OF CALIFORNIA DISTRIBUTION. EC: Ensenada de San Francisco, SON. WC: Bahía de Loreto to Arrecife de Cabo Pulmo, BCS. IS: Isla San Esteban and Isla Tiburón, ISG; Isla Partida [sur], BCS.

TYPE LOCALITY. Moss Beach, San Mateo County, central California, USA.

*Halymenia megaspora* E. Y. Dawson, 1954b:272

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía Los Frailes, BCS. IS: Canal de San Lorenzo, Isla Espíritu Santo, BCS.

TYPE LOCALITY. Rock-sand bottom, 8–15 m depths; south side of Punta Los Frailes, Bahía Los Frailes, Baja California Sur, Gulf of California, Mexico.

*Halymenia refugiensis* E. Y. Dawson, 1944:278

GULF OF CALIFORNIA DISTRIBUTION. IS: Puerto Refugio, Isla Ángel de la Guarda, ISG.

TYPE LOCALITY. Dredged 22–44 m depths; Puerto Refugio, Isla Ángel de la Guarda, Baja California, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

REMARKS. Dawson (1954b) and Abbott (1967) considered *H. refugiensis* conspecific with *H. actinophysa*. Apparently resurrecting the species but without comment, Littler and Littler (2010) reported it in Pacific Panama. Thus far, the northern Gulf *H. refugiensis* is known only from the type specimen, and its taxonomic status should be further investigated and molecularly tested (Norris, 2014).

Excluded Species: *Halymenia gardneri* (Kylin) P. G. Parkinson, 1980:12

REMARKS. Mistakenly recorded in the northern Gulf of California from Bahía de Los Ángeles, BC, by Pacheco-Ruíz et al. (2008).

### ***Prionitis* J. Agardh, 1851:185, nom. cons.**

*Prionitis abbreviata* Setchell et N. L. Gardner, 1924a:785

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Peñasco, SON, to Bahía Topolobampo, SIN. WC: Campo Hawaii, BC, to Cabeza Ballena, BCS. IS: Isla San Jorge and Isla Alcatraz, SON; Puerto Refugio, Isla Ángel de la

Guarda, Isla Patos, Bahía Agua Dulce, Isla Tiburón, Isla Turner, Isla San Esteban, and Isla Rasa, ISG; Isla Coronado, BC; Isla Tortuga, Isla Cholla, Isla Carmen, and Bahía San Gabriel, Isla Espíritu Santo, BCS.

**TYPE LOCALITY.** On rocks; Isla San Esteban, Sonora, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

*Prionitis abbreviata* var. *guaymasensis* (E. Y. Dawson) E. Y.

Dawson, 1959a:25

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Puerto Peñasco to Guaymas, SON. IS: Puerto Refugio, Isla Ángel de la Guarda, ISG; Isla Alcatraz and Isla San Pedro Nolasco, SON.

**TYPE LOCALITY.** On rocks intertidal tide pools; Punta San Pedro (about 41 km north of Guaymas), Sonora, Gulf of California, Mexico.

*Prionitis acroidalea* (Setchell et N. L. Gardner) E. Y. Dawson, 1961a:424

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Bahía Kino to Guaymas, SON. WC: Bahía de La Paz, BCS. IS: Isla Alcatraz, SON; Isla Tiburón and Isla Turner, ISG; Isla Tortuga, BCS.

**TYPE LOCALITY.** On rock, upper sublittoral; Isla Tortuga (off Puerto Santa Rosalía), Baja California Sur, Gulf of California, Mexico.

*Prionitis cornea* (Okamura) E. Y. Dawson, 1958:71

**GULF OF CALIFORNIA DISTRIBUTION.** WC: Bahía de Los Ángeles, BC, to Mulegé, BCS.

**TYPE LOCALITY.** Kazusa, Bōsō Peninsula, Chiba Prefecture, Honshū Island, Japan.

*Prionitis delicatula* (W. R. Taylor) E. Y. Dawson, 1961a:424

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Puerto Peñasco, SON.

**TYPE LOCALITY.** On rocks; Bahía Sur (“South Bay”), Isla Cedros (“Isla Cerros”), off Pacific coast of Baja California, Mexico.

**REMARKS.** Dawson’s (1966a) upper Gulf specimens of *Prionitis delicatula* were noted to differ from those of Pacific Baja California (Norris, 2014:426). More Gulf specimens are needed to be confirm its identification.

*Prionitis mexicana* E. Y. Dawson, 1944:283

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Bahía de Banderas, NAY/JAL. WC: San José del Cabo to Cabeza Ballena, BCS.

**TYPE LOCALITY.** Middle littoral on rocky reef; San José del Cabo, Baja California, Gulf of California, Mexico.

*Prionitis sternbergii* (C. Agardh) J. Agardh, 1851:190

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Ensenada de San Francisco, SON, to Mazatlán, SIN. IS: Isla San Jorge, SON; Isla Tortuga and Isla San Marcos, BCS.

**TYPE LOCALITY.** Uncertain. Note that Gabrielson (2008:96) gave two possible locales: Nootka Sound, Vancouver Island, British Columbia, Canada, or Monterey, California, USA.

**REMARKS.** Gabrielson (2008) stated *Prionitis sternbergii* was a temperate species distributed from British Columbia to northern Pacific coast of Baja California and noted it was not possible that *P. sternbergii* could have been collected at these previously cited locales: “in mari Australi” (Agardh, 1822; see also Silva, 1996); Acapulco, Guerrero, Mexico (Kylin, 1941); and Punta St. Agustín, Oaxaca, Mexico (Dawson, 1954b). Gulf specimens referred to this species need to be reexamined to verify their identification.

**Uncertain Record:** *Prionitis australis* (J. Agardh) J. Agardh, 1851:188

**REMARKS.** Reported from Segundo Cerro Prieta, Bahía Kino, in the upper Gulf (Mendoza-González and Mateo-Cid, 1986), it has not been recently collected, and their specimen should be reexamined to verify its identity.

### ***Norrissia* Balakrishnan, 1980:284**

**Uncertain Record:** *Norrissia setchellii* (Kylin) Balakrishnan, 1980:284

**REMARKS.** *Norrissia setchellii* was reported from Segundo Cerro Prieta, Bahía Kino, by Mendoza-González and Mateo-Cid (1986, as “*Grateloupia setchellii*”). Until upper Gulf specimens can be reexamined, the presence of *Norrissia* Balakrishnan remains unconfirmed.

### ***Pachymenia* J. Agardh, 1876:145**

**Uncertain Record:** *Pachymenia saxicola* W. R. Taylor, 1945:207

**REMARKS.** In recording “*Pachymenia saxicola*” from Punta de Mita, Nayarit, Mateo-Cid and Mendoza-González (1992) queried its identification. Further studies and more collections are need to verify its presence in the Gulf of California.

### **TSENGIACEAE G. W. SAUNDERS ET KRAFT, 2002:1259**

#### ***Tsengia* K.-C. Fan et Y.-P. Fan, 1962:191**

*Tsengia abbotiana* (J. N. Norris et Bucher) J. N. Norris et Bucher, in Bucher and Norris, 2014b:426

**GULF OF CALIFORNIA DISTRIBUTION.** IS: Canal Mejía, channel off Isla Mejía, ISG.

**TYPE LOCALITY.** On rock at 23 m depth; in narrow, deep channel off SE side of Isla Mejía (29°33′07″N, 113°35′19″W) on the NW side of Puerto Refugio, Isla Ángel de la Guarda, Baja California, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

**NEMASTOMATALES KYLIN, 1925:39****NEMASTOMATACEAE F. SCHMITZ, 1892:22*****Predaea* G. De Toni, 1936:[5]**

*Predaea japonica* T. Yoshida, 1980:69

GULF OF CALIFORNIA DISTRIBUTION. WC: Puerto Calamajué, BCS. IS: Isla Ángel de la Guarda and Isla Estanque, ISG; Islas de Los Gemelos, BC.

TYPE LOCALITY. Mitsuse, near Cape Nomo, Nagasaki Prefecture, Kyūshū Island, Japan.

*Predaea masonii* (Setchell et N. L. Gardner) G. De Toni, 1936:[5]

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de Loreto to Bahía de La Paz, BCS. IS: Isla Carmen and Canal de San Lorenzo, Isla Espíritu Santo, BCS.

TYPE LOCALITY. On a crustose coralline; dredged, off Isla Clarión, *Islas Revillagigedo*, west of Colima, Mexico.

**SCHIZYMENIACEAE MASUDA ET GUIRY, 1995:66*****Platoma* Schousboe ex F. Schmitz, 1894:627**

*Platoma?* *fanii* E. Y. Dawson, 1961a:197

GULF OF CALIFORNIA DISTRIBUTION. IS: Isla San Esteban, ISG.

TYPE LOCALITY. Isla San Esteban, Sonora, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

REMARKS. The type of *Platoma fanii* needs to be molecularly tested to verify its generic placement (Bucher and Norris, 2014c).

***Schizymania* J. Agardh, 1851:158**

*Schizymania pacifica* (Kyllin) Kylin, 1932:10

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía Willard to Bahía de Las Ánimas, BC. IS: Puerto Refugio, Isla Ángel de la Guarda, and Bahía Agua Dulce, Isla Tiburón, ISG.

SYNTYPE LOCALITIES. Five locales listed by Kylin (1925:21, as *Turnerella pacifica*): two on San Juan Island—on pilings of Friday Harbor's docks, Friday Harbor, and south of False Bay—and three on other islands, Brown Island, Turn Island (Turn Rock), and Canoe Island.

LECTOTYPE LOCALITY. Friday Harbor, Washington (Smith, 1944); San Juan Island (Dawson, 1961a); on intertidal rocks, near pilings of Friday Harbor dock, Friday Harbor, San Juan Island, San Juan Islands, San Juan County, Washington, USA.

***Haematocelis* J. Agardh, 1851:492**

REMARKS. The genus *Haematocelis* has been treated as a synonym of *Schizymania* (e.g., Guiry and Guiry, 2015) on

the basis of culture studies of Ardré (1977) that showed the genotype *H. rubens* J. Agardh to be the sporophyte phase of *Schizymania dubyi* (Chauvin ex Duby) J. Agardh.

*Haematocelis zonalis* E. Y. Dawson et Neushul, 1966:176

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía Agua Verde, BCS.

TYPE LOCALITY. On living mollusk shell, 28–30 m depth; Anacapa Island, Ventura County, California Channel Islands (Channel Islands National Marine Sanctuary), southern California, USA.

REMARKS. Culture and genetic studies are needed to determine if tetrasporophytic specimens of Gulf *H. zonalis* are involved in the life history of Gulf *Schizymania*, if they could possibly be a different species, or if they are the tetrasporophyte/*Haematocelis*-phase of another genus.

**PLOCAMIALES G. W. SAUNDERS ET KRAFT, 1994:1260****PLOCAMIACEAE KÜTZING, 1843:442, 449,  
NOM. CONS.*****Plocamium* J. V. Lamouroux,  
1813:137, nom. cons.**

*Plocamium katinae* J. N. Norris, 2014:437

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Pelicano, Puerto Peñasco, to El Desemboque de los Seris, SON. WC: Cabeza Ballena, BCS.

TYPE LOCALITY. Mid intertidal; Cumpelanos Tide Pool (on tidal platform), Playa Estación, Puerto Peñasco, Sonora, Gulf of California, Mexico.

Uncertain Record: *Plocamium violaceum* Farlow, 1877:240

REMARKS. Specimens from Puerto Peñasco, SON, referred to "*P. violaceum*" (Mendoza-González and Mateo-Cid, 1986) are probably not this species and should be reexamined.

Excluded Species: *Plocamium pacificum* Kylin, 1925:42

REMARKS. Only the Gulf of California specimens referred to *Plocamium pacificum*, *P. coccineum*, and *P. coccineum* var. *pacificum* sensu Dawson (1961a, 1966a; US Alg. Coll.) were identified to be *P. katinae* (Norris, 2014). The presence of *P. pacificum* in the upper Gulf remains doubtful.

**SEBDENIALES WITHALL ET G. W. SAUNDERS, 2007:388****SEBDENIACEAE KYLIN, 1932:12*****Sebdenia* (J. Agardh) Berthold, 1882:530**

*Sebdenia flabellata* (J. Agardh) P. G. Parkinson, 1980:12

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON, to Punta de Mita, NAY. WC: Bahía de Los Ángeles, BC, to Caleta Santa María, BCS. IS: Isla Coronado, Isla La Ventana, and Islas de Los Gemelos, BC; Isla Mejía, Puerto

Refugio, Isla Ángel de la Guarda, Isla Estanque, and Isla San Esteban, ISG; Isla María Magdalena, NAY.

TYPE LOCALITY. Guadeloupe, French West Indies, Lesser Antilles, Caribbean Sea.

### **RHODYMENIALES NÄGELI, 1847:226, 239, 254**

#### **CHAMPIACEAE KÜTZING, 1843:438**

#### ***Champia Desvoux, 1809:245***

*Champia caespitosa* E. Y. Dawson, 1944:311

GULF OF CALIFORNIA DISTRIBUTION. IS: Puerto Refugio, Isla Ángel de la Guarda, and Isla Estanque, ISG.

TYPE LOCALITY. on articulated corallines, mid-intertidal rocky shore; Isla Estanque (Pond Island; off SE end of Isla Ángel de la Guarda), Baja California, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

*Champia disticha* E. Y. Dawson, 1944:310

GULF OF CALIFORNIA DISTRIBUTION. IS: Puerto Refugio, Isla Ángel de la Guarda, and Isla San Esteban, ISG.

TYPE LOCALITY. Epiphytic on *Laurencia*, mid intertidal; Isla San Esteban, Sonora, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

*Champia cf. parvula* (C. Agardh) Harvey, 1853:76

GULF OF CALIFORNIA DISTRIBUTION. EC: El Tornillal, SON, to Punta de Mita, NAY. WC: Playa Santa Teresa, BC, to Cabeza Ballena, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, Isla Estanque, Isla Patos, Isla Turner, and Isla San Esteban, ISG; Isla Coronado, BC; Isla San Juan Nepomuceno and Isla Monserrate, BCS.

TYPE LOCALITY. “Ad Gades” (Agardh, 1824:207); Cádiz, Iberian Peninsula, southwestern Spain.

REMARKS. Widely reported in subtropical to tropical seas, its presence in the Gulf of California needs verification.

#### ***Gastroclonium* Kützing, 1843:441, nom. cons.**

*Gastroclonium compressum* (Hollenberg) C. F. Chang et B.-M. Xia, 1978:209, 213

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Estación, Puerto Peñasco, SON. WC: Arrecife de Cabo Pulmo, BCS. IS: Isla Estanque, ISG.

TYPE LOCALITY. On intertidal rock; ~0.8 km east of Corona del Mar, Orange County, southern California, USA.

*Gastroclonium pacificum* (E. Y. Dawson) C. F. Chang et B.-M. Xia, 1978:209

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía la Choya, Puerto Peñasco, to Bahía Bacochibampo, SON. WC: Bahía de Los Ángeles, BC; Punta Los Frailes (?), BCS. IS: Bahía Agua Dulce, Isla Tiburón, Isla Estanque, Isla Patos, and Isla San Esteban, ISG.

TYPE LOCALITY. Cobble shore; south side of Bahía Bacochibampo, near Guaymas, Sonora, Gulf of California, Mexico.

*Gastroclonium parvum* (Hollenberg) C. F. Chang et B.-M. Xia, 1978:209

GULF OF CALIFORNIA DISTRIBUTION. EC: Roca Rojo, Bahía Kino, SON. WC: Puertecitos, BC.

TYPE LOCALITY. On large intertidal rock; Redondo Beach, Los Angeles County, southern California, USA.

### **FAUCHEACEAE I. M. STRACHAN, G. W. SAUNDERS ET KRAFT, IN SAUNDERS ET AL., 1999:36**

#### ***Gloiocladia* J. Agardh, 1842:87**

*Gloiocladia boshawii* (E. Y. Dawson) J. N. Norris, 2014:450

GULF OF CALIFORNIA DISTRIBUTION. IS: Islas de Los Gemelos, BC; Isla San Pedro Nolasco, SON.

TYPE LOCALITY. Subtidal, ~15 m depth; Isla San Pedro Nolasco (“Seal Island”), Sonora, Gulf of California, Mexico.

*Gloiocladia mollis* (M. Howe) J. N. Norris, 2014:450

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz, BCS. IS: Isla San Esteban, ISG.

TYPE LOCALITY. “Apparently dredged”; vicinity of La Paz, Baja California Sur, Gulf of California, Mexico (Dawson, 1963a:441).

*Gloiocladia sefferi* (M. Howe) J. N. Norris, 2014:450

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de Loreto to Bahía de La Paz, BCS. IS: Isla Estanque, Isla San Esteban, and Isla San Lorenzo, ISG; Isla Coronado, BC.

TYPE LOCALITY. “Apparently dredged”; vicinity of La Paz, Baja California Sur, Gulf of California, Mexico (Dawson, 1963a:441).

#### ***Gloioderma* J. Agardh, 1851:243**

*Gloioderma conjuncta* (Setchell et N. L. Gardner) E. Y. Dawson, 1959a:26

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Ensenada Bacochibampo, SON. WC: Bahía de Los Ángeles, BC, to La Paz, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, Isla Patos, Bahía Agua Dulce, Isla Tiburón, Isla San Esteban, and Isla San Pedro Mártir, ISG; Isla Tortuga, BCS.

TYPE LOCALITY. Floating and entangled with other algae; Isla San Esteban, Sonora, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

REMARKS. Although some have treated it as *Gloiocladia conjunctata* (Setchell et N. L. Gardner) R. E. Norris (1991), Rodríguez-Prieto et al. (2007) and Dalen and Saunders (2007) concluded that the genus *Gloioderma* should be reinstated (see also Norris, 2014:452).

**LOMENTARIACEAE J. AGARDH, 1876:606, 630****LOMENTARIACEAE TRIBE CERATODICTYEAEE F. SCHMITZ  
ET HAUPTFLEISCH, 1897A:384, 388*****Ceratodictyon Zanardini*, 1878:36**

*Ceratodictyon tenue* (Setchell et N. L. Gardner) J. N. Norris,  
2014:455

GULF OF CALIFORNIA DISTRIBUTION. EC: Ensenada San Francisco, SON, to Puerto Vallarta, JAL. WC: Santa Rosalía to Cabeza Ballena, BCS. IS: Isla Cholla, Isla San Francisco, and Isla San Juan Nepomuceno, BCS.

TYPE LOCALITY. Cast ashore; Santa Rosalía, Baja California Sur, Gulf of California, Mexico (Dawson, 1953).

*Ceratodictyon variable* (Greville ex J. Agardh) R. E. Norris,  
1987:243

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON, to Puerto Vallarta, JAL. WC: Puertecitos, BC, to Cabeza Ballena, BCS. IS: Isla San Pedro Nolasco, SON; Isla Tortuga, BCS.

TYPE LOCALITY. Chennai (formerly Madras), Tamil Nadu, Bay of Bengal, southeastern India.

**LOMENTARIACEAE TRIBE LOMENTARIEAE  
ENDLICHER, 1843:42*****Fushitsunagia Filloramo*  
et G. W. Saunders, 2016:348**

*Fushitsunagia catenata* (Harvey) Filloramo et G. W. Saunders,  
2016:348

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Cabo Arco, SON. WC: Playa El Coloradito, BC, to Bahía de La Paz, BCS. IS: Isla San Jorge, SON; Isla Ángel de la Guarda, Isla Estanque, Isla Patos, Bahía Agua Dulce, Isla Tiburón, Isla Turner, Isla San Esteban, and Isla Partida (Isla Cordonazo), ISG; Isla Coronado, BC; Isla Tortuga and Isla San Marcos, BCS.

TYPE LOCALITY. Shimoda (near southern end of Izu Peninsula), Shizuoka Prefecture, Honshū Island, Japan (Harvey, 1860; Dawson, 1959b).

REMARKS. Previously reported in the Gulf of California as *Lomentaria catenata* Harvey (1857), Filloramo and Saunders (2016:344, fig. 1) found the western Pacific *L. catenata* to be allied with species of *Ceratodictyon* and described it as a new genus *Fushitsunagia*.

***Lomentaria Lyngbye*, 1819:101**

*Lomentaria? bakodatensis* Yendo, 1920:6

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Libertad, SON, to Miramar, NAY. WC: Bahía Concepción

to Cabo Pulmo, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, Isla Patos, and Isla Tiburón, ISG; Isla Espiritu Santo, BCS.

SYNTYPE LOCALITIES. Seven locales (Yendo, 1920:6): “Hakodate, Otaru, insulam Rishiri, prov. Hidaka, prov. Inaba, prov. Bōshū, [and] prov. Owari.”

LECTOTYPE LOCALITY. Hakodate, Hokkaidō Prefecture (Oshima Subprefecture), Hokkaidō Island, Japan (Lee, 1978).

REMARKS. Filloramo and Saunders (2016: fig. 1) found the western Pacific *Lomentaria bakodatensis* did not group with the *Lomentaria* lineage that included the genericity but resolved to be a sister to *Binghamiopsis* I. K. Lee, J. A. West et Hommersand (1988) and noted its generic placement could not be determined at that time.

**RHODYMENIACEAE HARVEY, 1846:VIII*****Botryocladia* (J. Agardh) Kylin, 1931:17**

*Botryocladia datilensis* (E. Y. Dawson) J. N. Norris, 2014:462

GULF OF CALIFORNIA DISTRIBUTION. EC: Ensenada de San Francisco, SON. IS: Isla Turner, ISG; Isla La Ventana, BC.

TYPE LOCALITY. On lower intertidal rocks; Isla Turner (El Dátil), off southeast end of Isla Tiburón, Sonora, Islas Grandes (Islas de la Cintura), Sonora, Gulf of California, Mexico.

*Botryocladia guaymasensis* E. Y. Dawson, 1963a:451

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Estación, Puerto Peñasco, to Ensenada de San Francisco, SON.

TYPE LOCALITY. Beach drift; Bahía San Francisco, within eastern shore of Bahía San Carlos (~11 km northwest of Guaymas), Sonora, Gulf of California, Mexico.

*Botryocladia uvarioides* E. Y. Dawson, 1944:306

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON, to Puerto Vallarta, JAL. WC: Puertecitos, BC, to Bahía San Lucas, BCS. IS: Isla Ángel de la Guarda and Isla Turner, ISG; Isla Coronado and Isla La Ventana, BC; Isla San Pedro Nolasco, SON; Isla San Ildefonso, BCS; Isla María Magdalena, NAY.

TYPE LOCALITY. Dredged 40 m depth; off San José del Cabo, Baja California Sur, Gulf of California, Mexico.

Uncertain Record: *Botryocladia pseudodichotoma* (Farlow)  
Kylin, 1931:18

REMARKS. Recorded from estero Punta Perla, Isla Tiburón (Mendoza-González and Mateo-Cid, 1986), the species needs to be reexamined to verify its presence in the Gulf.

Excluded Species: *Botryocladia pyriformis* (Børgesen) Kylin,  
1931:18

REMARKS. Recorded from Puerto Refugio, Isla Ángel de la Guarda (Norris, 1973), when reexamined, the specimens were found to be *B. uvarioides* (Norris, 2014:463).

***Irvinea Guiry, in Saunders et al., 1999:36***

*Irvinea hancockii* (E. Y. Dawson) R. Wilkes, L. McIvor et Guiry, 2006:488

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de Los Ángeles, BC, to Punta Perico, Bahía Los Frailes, BCS. IS: Isla Mejía and Isla Estanque, ISG; Bahía Salinas, Isla Carmen, and Isla Espíritu Santo, BCS.

TYPE LOCALITY. Dredged 20–40 m depths; Bahía Agua Verde, Baja California Sur, Gulf of California, Mexico.

***Rhodymenia Greville, 1830:xlviii, 84, nom. cons.***

*Rhodymenia arborescens* E. Y. Dawson, 1941:149

GULF OF CALIFORNIA DISTRIBUTION. IS: Isla Isabel, NAY.

TYPE LOCALITY. Cast ashore on a barnacle; Laguna Beach, Orange County, southern California, USA.

REMARKS. The southern Gulf record originally reported as “*Rhodymenia lobata*” (Dawson, 1944) was later re-identified to be *R. arborescens* (Dawson, 1963a).

*Rhodymenia californica* Kylin, 1931:21

GULF OF CALIFORNIA DISTRIBUTION. WC: Punta Arena to Cabeza Ballena, BCS. IS: Isla María Magdalena (identification queried by Dawson, 1963a), NAY.

TYPE LOCALITY. Near “Biological Station” (Kylin, 1931:31); low intertidal, Mussel Point (Cabrillo Point), Hopkins Marine Station of Stanford University, Pacific Grove, Monterey County, central California, USA (Smith, 1944).

*Rhodymenia dawsonii* W. R. Taylor, 1945:251

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía Agua Verde, BCS. IS: Isla San Francisco and Isla Cholla, BCS.

TYPE LOCALITY. Dredged; off Punta Hughes, about 5.6 km southeast of Cabo San Lázaro, Pacific coast of Baja California Sur, Mexico.

*Rhodymenia divaricata* E. Y. Dawson, 1941:141

GULF OF CALIFORNIA DISTRIBUTION. EC: El Desemboque de los Seris to Bahía Guaymas, SON. WC: Bahía Coyote to Puerto Escondido, BCS. IS: Isla Mejía and Puerto Refugio, Isla Ángel de la Guarda, ISG; Canal de San Lorenzo, Isla Espíritu Santo, BCS.

TYPE LOCALITY. Dredged 3.7–5.5 m depths on mud bottom; Bahía Guaymas, Sonora, Gulf of California, Mexico.

*Rhodymenia hancockii* E. Y. Dawson, 1941:146

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Hermosa, Puerto Peñasco, to El Desemboque de los Seris, SON. IS: Puerto Refugio, Isla Ángel de la Guarda, ISG; Isla Coronado, BC.

TYPE LOCALITY. Dredged on shell bottom, 42 m depth on shell bottom; west side of Puerto Refugio, Isla Ángel de

la Guarda, Baja California, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

*Rhodymenia buertae* J. N. Norris, 2014:469

GULF OF CALIFORNIA DISTRIBUTION. IS: Isla Mejía, Puerto Refugio, Isla Ángel de la Guarda, and Isla Tiburón, ISG.

TYPE LOCALITY. Dredged 10.9–20.1 m depths; Isla Mejía (off northwest side of Puerto Refugio, Isla Ángel de la Guarda), Baja California, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

**SYNOPSIS OF BROWN ALGAL TAXA**

The synoptic list below of Phaeophyceae of the Gulf of California is of the phylum, classes, orders, families, and genera of brown algae presented in the accounts following this list.

## STRAMENOPILES

## OCHROPHYTA

## PHAEOPHYCEAE

## ISHIGEOPHYCIDAE

## Ishigeales

## Ishigeaceae

*Ishige* Yendo

## DICTYOTOPHYCIDAE

## Dictyotales

## Dictyotaceae

## Dictyotaceae tribe Dictyoteae

*Canistrocarpus* De Paula et

De Clerck

*Dictyota* J. V. Lamouroux

*Rugulopteryx* De Clerck et

Coppejans

*Dictyopteris* J. V. Lamouroux

*Lobophora* J. Agardh

*Padina* Adanson

*Spatoglossum* Kützing

## Sphacelariales

## Sphacelariaceae

*Sphacelaria* Lyngbye

## Lithodermataceae

*Pseudolithoderma* Svedelius

## FUCOPHYCIDAE

## Desmarestiales

## Desmarestiaceae

*Desmarestia* J. V. Lamouroux

## Ectocarpales

## Acinetosporaceae

*Feldmannia* Hamel

*Hincksia* J. E. Gray

## Pylaiellaceae

*Pylaiella* Bory de Saint-Vincent

- Chordariaceae  
*Compsonema* Kuckuck  
*Haplogloia* Levring  
*Hecatonema* Sauvageau  
*Myriactula* Kuntze  
*Nemacystus* Derbès et Solier  
*Streblonema* Derbès et Solier
- Leathesiaceae  
*Leathesia* S. F. Gray
- Ectocarpaceae  
*Ectocarpus* Lyngbye
- Chnoosporaceae  
*Chnoospora* J. Agardh
- Scytosiphonaceae  
*Colpomenia* (Endlicher)  
 Derbès et Solier  
*Hapterophycus* Setchell et  
 N. L. Gardner  
*Hydroclathrus* Bory de Saint-  
 Vincent  
*Rosenvingea* Børgesen  
*Petalonia* Derbès et Solier  
*Stragularia* Strömfelt
- Ralfsiales
- Hapalospongiaceae  
*Hapalospongidion*  
 De A. Saunders
- Neoralfsiaceae  
*Neoralfsia* P.-E. Lim et  
 H. Kawai
- Ralfsiaceae  
*Endoplura* Hollenberg  
*Ralfsia* Berkeley
- Scytothamnales
- Asteronemataceae  
*Asteronema* Delépine et Asensi
- Sporochnales
- Sporochnaceae  
*Sporochnus* C. Agardh
- Tilopteridales
- Cutleriaceae  
*Cutleria* Greville
- Fucales
- Sargassaceae  
*Sargassum* C. Agardh

EXCLUDED PHAEOPHYCEAE (Laminariales)

**STRAMENOPILES D. J. PATTERSON, 1989:372**

**OCHROPHYTA CAVALIER-SMITH, IN CAVALIER-SMITH  
 AND CHAO, 1996:508**

REMARKS. Heterokontophyta Hoek (1978) and Heterokontophyta Moestrup (1992) are also used as the name for

the phylum; however, both have been noted to be invalid (Guiry and Guiry, 2017). Ochrophyta Cavalier-Smith (in Cavalier-Smith and Chao, 1996; Cavalier-Smith, 1998) is used herein.

**PHAEOPHYCEAE KJELLMAN, 1891:196**

**ISHIGEOPHYCIDAE SILBERFELD, F. ROUSSEAU  
 ET REVIERS, 2014:124, 140**

**ISHIGEALES G. Y. CHO ET S. M. BOO,  
 IN G. Y. CHO ET AL., 2004:934**

**ISHIGEACEAE OKAMURA, IN SEGAWA, 1935:65**

***Ishige* Yendo, 1907:154**

*Ishige sinicola* (Setchell et N. L. Gardner) Chihara, 1969:3

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON, to Sistema Lagunar Navachiste–San Ignacio, Macapule, SIN. WC: Playa El Coloradito, BC, to Bahía de La Paz, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, Isla Patos, Isla Tiburón, Isla Partida, and Isla San Esteban, ISG.

TYPE LOCALITY. On rocks; Isla Partida [norte] (Isla Cordonazo), Baja California, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

**DICTYOTOPHYCIDAE SILBERFELD, F. ROUSSEAU  
 ET REVIERS, 2014:125, 140**

**DICTYOTALES BORY DE SAINT-VINCENT,  
 1828:142**

**DICTYOTACEAE J. V. LAMOUROUX  
 EX DUMORTIER, 1822:72, 101**

**DICTYOTACEAE TRIBE DICTYOTEAE GREVILLE,  
 1833:252, 275**

REMARKS. Although the infrafamilial tribes Dictyoteae and Zonarieae O. C. Schmidt (1938) were divided on morphological characters, phylogenetic analyses did not support their separation, and Bittner et al. (2008) concluded they should be merged (see also Silberfeld et al. (2014).

***Canistrocarpus* De Paula et De Clerck,  
 in De Clerck et al., 2006:1285**

*Canistrocarpus cervicornis* (Kützting) De Paula et De Clerck, in De Clerck et al., 2006:1285

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía Concepción to Punta Arena, BCS.

TYPE LOCALITY. Key West, Florida Keys, Monroe County, Florida, USA.

***Dictyota* J. V. Lamouroux, 1809a:38,  
nom. cons.***Dictyota bartayresiana* J. V. Lamouroux, 1809a:43

GULF OF CALIFORNIA DISTRIBUTION. EC: Sa-yulita, NAY, to Bahía de Banderas, JAL. WC: Faro de San Felipe, BC, to Punta Los Frailes, BCS. IS: Isla San José, BCS.

TYPE LOCALITY. Antilles, West Indies [archipelago in Caribbean Sea composed of the islands of the Greater Antilles and the Lesser Antilles].

*Dictyota conrescens* W. R. Taylor, 1945:89

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Pelicano, Puerto Peñasco, to El Colorado, SON. WC: Bahía de La Paz to Cabo Pulmo, BCS.

TYPE LOCALITY. Punta Hughes (vicinity of Bahía Magdalena), about 5.6 km southeast of Cabo San Lázaro, Pacific coast of Baja California Sur, Mexico.

*Dictyota coriacea* (Holmes) Hwang, H.-S. Kim et W. J. Lee, 2004:189

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Guaymas, SON. WC: Punta La Gringa, Bahía de Los Ángeles, BC, to Cabo San Lucas, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, Isla Tiburón, Isla Turner, Isla Partida (Isla Cordonazo), and Isla San Esteban, ISG; Isla San Marcos, Isla San Ildefonso, and Isla Espíritu Santo, BCS.

TYPE LOCALITY. "Neighborhood of Tokio [Tokyo]" (Holmes, 1896:149); Enoura, Sagami Bay, Kanagawa Prefecture, Honshū Island, Japan.

*Dictyota crenulata* J. Agardh, 1847:7

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía de Banderas, NAY/JAL. WC: Los Pocitos (vic. La Concha), SW Bahía Concepción, to Cabo San Lucas, BCS. IS: Isla San Diego and Isla Espíritu Santo, BCS.

TYPE LOCALITY. "St. Augustin, Stilla Oceanen" (Agardh, 1847:7); San Agustín, Oaxaca, Mexico.

*Dictyota dichotoma* var. *intricata* (C. Agardh) Greville, 1830:58

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Bahía Kino, SON. WC: Faro de San Felipe, BC, to Cabo San Lucas, BCS. IS: Isla San Pedro Nolasco, SON; Isla Tortuga, Isla San Diego, Isla San Ildefonso, Isla San Juan Nepomuceno, and Isla Espíritu Santo, BCS.

TYPE LOCALITY. Cádiz, Bahía de Cádiz, Andalusia region, Cádiz Province, southwestern Spain.

*Dictyota flabellata* (Collins) Setchell et N. L. Gardner, 1924b:12

GULF OF CALIFORNIA DISTRIBUTION. EC: El Tornillal to Guaymas, SON. WC: Faro de San Felipe, BC, to Arrecife de Cabo Pulmo, BCS. IS: Isla Tiburón and Isla Turner, ISG; Isla San Pedro Nolasco, SON; Isla Tortuga, Isla San Marcos, Isla San Juan Nepomuceno, and Isla Espíritu Santo, BCS.

TYPE LOCALITY. La Jolla, San Diego County, southern California, USA.

*Dictyota pinnata* (E. Y. Dawson) Hörnig, Schnetter et Prud'homme van Reine, 1993:170

GULF OF CALIFORNIA DISTRIBUTION. EC: Sa-yulita, NAY, to Bahía de Banderas, JAL. WC: Punta Arena to Cabo Pulmo, BCS.

TYPE LOCALITY. Miramar, Nayarit, Gulf of California, Mexico.

*Dictyota stolonifera* E. Y. Dawson, 1962b:392

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON. WC: San José del Cabo to Cabo San Lucas, BCS.

TYPE LOCALITY. Intertidal; volcanic reef, Masachapa, Managua (department), Pacific coast of Nicaragua.

*Dictyota vivesii* M. Howe, 1911:497

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Bahía San Francisco, SON. WC: Playa El Coloradito, BC, to Cabo San Lucas, BCS. IS: Isla Tiburón, ISG; Isla Partida and Isla Espíritu Santo, BCS; Isla María Magdalena, NAY.

TYPE LOCALITY. La Paz, Baja California Sur, Gulf of California, Mexico.

Uncertain Record: *Dictyota binghamiae* J. Agardh, 1894:72REMARKS. Described from southern California (Abbott and Hollenberg, 1976, as *Pachydictyon binghamiae* (J. Agardh) E. Y. Dawson), it was recorded in the southern Gulf from Cabo San Lucas (Martínez-Lozano et al., 1991). More collections are necessary to verify its presence in the Gulf of California.Uncertain Record: *Dictyota dichotoma* (Hudson) J. V. Lamouroux, 1809a:42REMARKS. Gulf specimens referred to as "*Dictyota dichotoma*" need to be reinvestigated (Pedroche et al., 2008; Norris, 2010). *Dictyota dichotoma* sensu stricto is probably restricted to the NE Atlantic and Mediterranean Sea (De Clerck, 2003). Norris (2010) referred some Gulf specimens previously identified as "*D. dichotoma*" to *D. vivesii*.Uncertain Record: *Dictyota volubilis* Kützing, 1849:445REMARKS. "*Dictyota volubilis*" as identified in the Gulf also needs to be reinvestigated (Pedroche et al., 2008; Norris, 2010). De Clerck (2003) considered *D. volubilis* to be conspecific with *D. dichotoma*.***Rugulopteryx* De Clerck et Coppejans,  
in De Clerck et al., 2006:1286***Rugulopteryx okamurae* (E. Y. Dawson) I.-K. Hwang, W. J. Lee et H.-S. Kim, in Hwang et al., 2009:5

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON. WC: Cabeza Ballena to Bahía de San Lucas, BCS.



**TYPE LOCALITY.** Enoshima [island], Kanagawa Prefecture, offshore in Sagami Bay, Honshū Island, Japan.

### ***Dictyopteris* J. V. Lamouroux, 1809b:332**

*Dictyopteris delicatula* J. V. Lamouroux, 1809b:332

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Bahía de Banderas, NAY/JAL. WC: Bahía de La Paz to Arrecife de Cabo Pulmo, BCS.

**TYPE LOCALITY.** Antilles, West Indies [archipelago in Caribbean Sea composed of the islands of the Greater Antilles and the Lesser Antilles].

*Dictyopteris repens* (Okamura) Børgesen, 1924a:265

**GULF OF CALIFORNIA DISTRIBUTION.** IS: Isla Cholla, BCS.

**TYPE LOCALITY.** Chuuk (Turk) Islands, part of the Caroline Islands group, Federated States of Micronesia.

*Dictyopteris undulata* Holmes, 1896:251

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Punta Peñasco to Bahía Tepoca, SON. WC: Bahía de Los Ángeles to Cabo San Lucas, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, and Isla Partida (Isla Cordonazo), ISG; Isla Conchas and Isla San Pedro Nolasco, SON; Isla Tortuga, Isla Partida, and Isla San Ildefonso, BCS.

**TYPE LOCALITY.** Misaki, Kanagawa Prefecture, Honshū Island, central Japan.

**Uncertain Record:** *Dictyopteris johnstonei* N. L. Gardner, 1940:270

**REMARKS.** *Dictyopteris johnstonei* has been recorded as “possibly into the Gulf of California” (Abbott and Hollenberg, 1976:212). Its taxonomic status is problematic, and the southern California *D. johnstonei* (type locality: Santa Cruz Island, California Channel Islands [Channel Islands National Marine Sanctuary]) needs to be reinvestigated (Silva, 1957). Until the phylogenetic relationships of Gulf specimens referable to “*D. johnstonei*” are comparatively tested with type specimens of *D. johnstonei*, Japanese *D. undulata* Holmes, and California *D. zornarioides* Farlow, its taxonomic status and presence in the Gulf remain uncertain (Norris, 2014).

### ***Lobophora* J. Agardh, 1894:21**

*Lobophora variegata?* (J. V. Lamouroux) Womersley ex E. C. Oliveira, 1977:217

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Sa-yulita, NAY, to Bahía de Banderas, JAL. WC: Punta Arena to Cabo Pulmo, BCS. IS: Isla San Diego, Isla Partida, Isla Espíritu Santo, and Isla San Francisco, BCS.

**TYPE LOCALITY.** Antilles, West Indies [archipelago in Caribbean Sea composed of the islands of the Greater Antilles and the Lesser Antilles].

**REMARKS.** Recent molecular systematic studies of specimens assumed to be a broadly defined “*Lobophora variegata*” (Sun et al., 2012; Vieira et al., 2014, 2016; Schultz et al., 2015) have revealed numerous new species that were previously misidentified or unrecognized. The species *L. variegata* is likely restricted to the Caribbean Sea (Schultz et al., 2015; Vieira et al., 2016). Vieira et al. (2016, 2017) estimated there are more than 100 species of *Lobophora*, of which only 21–30 species are currently recognized. The Gulf of California specimens referred to “*L. variegata*” should be critically studied and molecularly compared to determine their correct identity and if there is possibly more than one species in the Gulf.

### ***Padina* Adanson, 1763:13, 586, nom. cons.**

*Padina arborescens* Holmes, 1896:251

**GULF OF CALIFORNIA DISTRIBUTION.** WC: El Huerfanito to Bahía de Los Ángeles, BC; Santa Rosalía, BCS. IS: Isla San Pedro Mártir, ISG.

**TYPE LOCALITY.** Enoshima [island], Fujisawa, Kanagawa Prefecture, offshore in Sagami Bay, Honshū Island, Japan.

**REMARKS.** Molecular data of Díaz-Martínez et al. (2016:679) indicated their Gulf specimens were probably this species.

*Padina caulescens* Thivy, in Taylor, 1945:99

**GULF OF CALIFORNIA DISTRIBUTION.** WC: Playa La Concha, Ensenada de La Paz, BCS. IS: Isla María Magdalena, NAY.

**TYPE LOCALITY.** Isla María Magdalena, Islas Mariás, Nayarit, Gulf of California, Mexico.

**REMARKS.** *Padina caulescens* has been treated as a synonym of *P. durvillei* by Riosmena-Rodríguez et al. (2009).

*Padina concrescens* Thivy, in Taylor, 1945:102

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Golfo de Santa Clara, SON, to Bahía de Banderas, NAY/JAL. WC: Bahía de los Muertos to Cabo San Lucas, BCS. IS: Isla Espíritu Santo, BCS.

**TYPE LOCALITY.** Anchorage, Black Beach, Isla Floreana (Charles Island; Isla Santa María), Galápagos Islands, Ecuador.

**REMARKS.** Díaz-Martínez et al. (2016) noted that *P. concrescens* may possibly be a procumbent growth form of *P. durvillei*, but type material of the Galápagos *P. concrescens* must be analyzed to resolve their relationship and taxonomic status.

*Padina crispata* Thivy, in Taylor, 1945:100

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Estero Tastiota, SON, to Puerto Vallarta, JAL. WC: Playa El Coloradito, BC, to San José del Cabo, BCS. IS: Isla Monserrat and Isla Partida, BCS; Isla María Madre, NAY.

**TYPE LOCALITY.** Gulfo Dulce, Puntarenas Province, Pacific coast of Costa Rica.

REMARKS. Although Riosmena-Rodríguez et al. (2009) treated *Padina crispata* as a synonym of *P. mexicana*, molecular analysis by Díaz-Martínez et al. (2016) supported it being a distinct species from *P. mexicana*.

***Padina durvillei* Bory de Saint-Vincent, 1827a:591**

GULF OF CALIFORNIA DISTRIBUTION. EC: El Tornillal, SON, to Bahía de Banderas, JAL. WC: Playa El Colorado, BC, to Cabo San Lucas, BCS. IS: Isla San Jorge, Isla Alcatraz, and Isla San Pedro Nolasco, SON; Puerto Refugio, Isla Ángel de la Guarda, Isla Estanque, Isla Patos, Isla Tiburón, Isla Turner, Isla Partida (Isla Cordonazo), Isla San Esteban, and Isla San Pedro Mártir, ISG; Isla Tortuga, Isla San Marcos, Isla San Ildefonso, Isla Cholla, Isla Danzante, and Isla San Juan Nepomuceno, BCS; Isla de Venados and Isla de la Piedra, SIN; Isla Larga, Isla María Madre, and Isla María Magdalena, NAY.

TYPE LOCALITY. Concepción, Bío Bío Region, Province Concepción, Chile (Bory de Saint-Vincent, 1827a).

REMARKS. Dawson et al. (1964:22) suspected the type locality of *P. durvillei* was incorrect, noting “from the present known distribution of the species it is questionable whether the alga was taken from such cool southern waters.” However, Concepción, Chile, is generally accepted as the type locality (Ramírez and Santelices, 1991; Guiry and Guiry, 2014).

***Padina glabra* Gaillard, 1966:226**

GULF OF CALIFORNIA DISTRIBUTION. IS: Isla Espíritu Santo, BCS.

TYPE LOCALITY. Punta de Fann, Dakar, Senegal.

REMARKS. Molecular analyses by Díaz-Martínez et al. (2016:679) indicated their Gulf specimen was possibly this species.

***Padina mexicana* E. Y. Dawson, 1944:231**

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON, to Punta de Mita, NAY. WC: Playa Santa Teresa, BC, to Arrecife de Cabo Pulmo, BCS. IS: Isla Tiburón and Isla Turner, ISG; Isla San Diego, Isla San Juan Nepomuceno, and Isla Espíritu Santo, BCS.

TYPE LOCALITY. Reef; Isla Turner, off southeast end of Isla Tiburón, Sonora, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

***Padina mexicana* var. *erecta* Ávila-Ortiz, 2003:70**

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON, to Puerto Vallarta, JAL. WC: Bahía Concepción to Punta Arena, BCS.

TYPE LOCALITY. Puerto Vicente Guerrero, Guerrero, Mexico.

REMARKS. Separated primarily by their different thallus habits; that is, *P. mexicana* var. *erecta* has an erect habit versus a procumbent habit of *P. mexicana* var. *mexicana*. It was treated as a synonym of *P. mexicana* by Riosmena-Rodríguez et al. (2009). Subsequently, Díaz-Martínez et al. (2016) found

no genetic differences between the two varieties and recognized them as morphological varieties.

***Padina ramonribae* Ávila-Ortiz, Pedroche et Díaz-Martínez, in Díaz-Martínez et al., 2016:667**

GULF OF CALIFORNIA DISTRIBUTION. WC: Los Tornados, BCS.

TYPE LOCALITY. Cayaquitos, Guerrero, Mexico.

REMARKS. Described from Guerrero, tropical Pacific Mexico, *Padina ramonribae* has also been reported in the southern Gulf from Los Tornados (Ávila-Ortiz and Pedroche, 2005; Pedroche et al., 2008).

**Uncertain Record: *Padina sanctae-crucis* Børgesen, 1914:45**

REMARKS. Further investigation of southern Gulf specimens referred to *P. sanctae-crucis* from Bahía del Rincón is required to verify their identification (Pedroche et al., 2008).

**Excluded Species: *Padina tetrastromatica* Hauck, 1887:43**

REMARKS. Ávila-Ortiz and Pedroche (1999), Pedroche et al. (2008), and Norris (2010) concluded Pacific Mexico specimens of “*Padina tetrastromatica*” were misidentified and were actually *P. crispata* (see also Remarks above under *P. crispata*).

**Excluded Species: *Padina gymnospora* (Kützinger) Sonder, 1871:47**

REMARKS. Ávila-Ortiz and Pedroche (2005) found that tropical Pacific Mexico specimens identified as “*Padina gymnospora*” were either *P. crispata* or *P. mexicana* and noted *P. gymnospora* should be applied only to material from the Atlantic. Riosmena-Rodríguez et al. (2009) also concluded Gulf of California records of “*P. gymnospora*” and “*P. vickersiae*” (note *P. vickersiae* Hoyt in Howe, 1920, is a synonym of *P. gymnospora*; see Allender and Kraft, 1983) were misidentified and referred them to *P. mexicana*.

## ***Spatoglossum* Kützinger, 1843:339**

***Spatoglossum howellii* Setchell et N. L. Gardner, 1937:74**

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía de Banderas, NAY/JAL.

TYPE LOCALITY. Isla Isabela (Isla Albemarle), Galápagos Islands, Ecuador.

***Spatoglossum lanceolatum* E. Y. Dawson, 1954c:328**

GULF OF CALIFORNIA DISTRIBUTION. EC: Ensenada de San Francisco, SON.

TYPE LOCALITY. In beach drift; north shore of Ensenada de San Francisco, Sonora, Gulf of California, Mexico.

***Spatoglossum schroederi* (C. Agardh) Kützinger, 1859:21**

GULF OF CALIFORNIA DISTRIBUTION. IS: Isla San Pedro Nolasco, SON.

TYPE LOCALITY. Brazil.

**REMARKS.** The species concept of *Spatoglossum schroederi* (C. Agardh) Kützing (1859:21) is based on a specimen (*Liebmann*; Herb. Sonder) that was illustrated from Veracruz, Gulf of Mexico (Kützing, 1859: table 51, fig. 1). That specimen was not from the type locality in Brazil. Gulf of California *S. schroederi* needs to be compared with the type materials of *Zonaria schroederi* C. Agardh (1823) from Brazil to verify its identification in the Gulf of California.

*Spatoglossum subflabellatum* E. Y. Dawson, 1954c:326

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Punta Pelicano, Puerto Peñasco, to Ensenada de San Francisco, SON.

**TYPE LOCALITY.** Dredged 11–18 m depths; near Punta de Las Cuevitas, Ensenada de San Francisco, Sonora, Gulf of California, Mexico.

### **SPHACELARIALES MIGULA, 1908:173, 237**

### **SPHACELARIACEAE DECAISNE, 1842A:329, 341**

#### ***Sphacelaria* Lyngbye, in Hornemann, 1818:8, pl. MDC**

*Sphacelaria brevicornis* Setchell et N. L. Gardner, 1924a:725

**GULF OF CALIFORNIA DISTRIBUTION.** WC: Bahía de La Paz, BCS. IS: Bahía San Gabriel, Isla Espíritu Santo, and Isla San Juan Nepomuceno, BCS.

**TYPE LOCALITY.** On *Sargassum polyacanthum* f. *americanum* Setchell et N. L. Gardner (1924a; now *S. sinicola* Setchell et N. L. Gardner); La Paz, Baja California Sur, Gulf of California, Mexico.

*Sphacelaria californica* (Sauvageau) Setchell et N. L. Gardner, 1925:395

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Mazatlán, SIN, to Bahía de Banderas, JAL. WC: Puertecitos, BC, to San José del Cabo, BCS.

**TYPE LOCALITY.** San Diego, San Diego County, southern California, USA (Setchell and Gardner, 1925).

*Sphacelaria hancockii* E. Y. Dawson, 1944:225

**GULF OF CALIFORNIA DISTRIBUTION.** WC: Bahía Balandra to Cabeza Ballena, BCS. IS: Isla Turner, ISG; Isla Carmen, BCS.

**TYPE LOCALITY.** On mid-intertidal rocks; San José del Cabo, Baja California Sur, Gulf of California, Mexico.

*Sphacelaria rigidula* Kützing, 1843:292

**GULF OF CALIFORNIA DISTRIBUTION.** EC: El Tornillal, SON, to Bahía de Banderas, JAL. WC: Playa El Coloradito, BC, to Cabeza Ballena, BCS. IS: Isla Tiburón, ISG; Isla San Francisco and Isla Espíritu Santo, BCS.

**TYPE LOCALITY.** On *Hormophysa cuneiformis* (J. F. Gmelin) P. C. Silva; Nuweiba, Sinai, Gulf of Aqaba, Red Sea, Egypt.

*Sphacelaria* sp. of Rocha-Ramírez and Siqueiros-Beltrones, 1991

**GULF OF CALIFORNIA DISTRIBUTION.** WC: Bahía Balandra, BCS.

*Sphacelaria tribuloides* Meneghini, 1840:[2]

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Puerto Peñasco, SON. WC: Playa Santa Teresa, BC, to Bahía de La Paz, BCS. IS: Isla San Diego and Isla San Juan Nepomuceno, BCS.

**TYPE LOCALITY.** On submerged rocks; La Spezia, Gulf of Spezia, Ligurian Sea, northern Italy.

### **LITHODERMATAEAE HAUCK, 1883:188, 318**

#### ***Pseudolithoderma* Svedelius, in Kjellman and Svedelius, 1910:175**

*Pseudolithoderma nigrum* Hollenberg, 1969:297

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Playa Los Muertos, NAY, to Bahía de Banderas, JAL. WC: Bahía de La Paz, BCS.

**TYPE LOCALITY.** Corona del Mar, Orange County, southern California, USA.

### **FUCOPHYCIDAE CAVALIER-SMITH, 1986:341**

#### **DESMARESTIALES SETCHELL ET N. L. GARDNER, 1925:554**

### **DESMARESTIACEAE (THURET) KJELLMAN, 1880:10**

#### ***Desmarestia* J. V. Lamouroux, 1813:43**

*Desmarestia filamentosa* E. Y. Dawson, 1944:236

**GULF OF CALIFORNIA DISTRIBUTION.** WC: Punta La Gringa, Bahía de Los Ángeles, BC. IS: Isla Mejía, Roca Blanca, and Puerto Refugio, Isla Ángel de la Guarda, and Isla San Esteban, ISG.

**TYPE LOCALITY.** Dredged 27.4 m (15 fathoms) depth; Puerto Refugio, Isla Ángel de la Guarda, Baja California, Islas Grandes (Islas de la Cintura), Baja California, Gulf of California, Mexico.

*Desmarestia munda* subsp. *mexicana* (E. Y. Dawson) J. N. Norris, 2010:146

**GULF OF CALIFORNIA DISTRIBUTION.** IS: Roca Blanca and Puerto Refugio, Isla Ángel de la Guarda, and Isla Estanque, ISG.

**TYPE LOCALITY.** Dredged 27.4 m (15 fathoms) depth; Puerto Refugio, Isla Ángel de la Guarda, Baja California, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

**ECTOCARPALES SETCHELL ET N. L. GARDNER, 1922c:403****ACINETOSPORACEAE HAMEL, 1931:8*****Feldmannia* Hamel, 1939:xli**

*Feldmannia indica* (Sonder) Womersley et A. Bailey, 1970:288  
 GULF OF CALIFORNIA DISTRIBUTION. EC: Isla María Magdalena, NAY.  
 TYPE LOCALITY. Pulo Kambing, Bima Bay, Sum-bawa (Bima Island), Indonesia.

*Feldmannia irregularis* (Kützting) Hamel, 1939:xvii  
 GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Canal de Infernillo, SON.  
 TYPE LOCALITY. On *Laurencia obtusa*; Adriatic Sea.

*Feldmannia mitchelliae* (Harvey) H.-S. Kim, 2010:51  
 GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON, to Playa Los Cerritos, SIN. WC: Playa Santa Teresa to Puertecitos, BC; Bahía Concepción to San José del Cabo, BCS. IS: Isla San Diego, BCS.  
 TYPE LOCALITY. Nantucket, Nantucket County, Massachusetts, USA.  
 REMARKS. Previously, *Feldmannia mitchelliae* has been reported as *Hincksia mitchelliae* (Harvey) P. C. Silva (in Silva et al., 1987) in the Gulf of California (Pedroche et al., 2008).

***Hincksia* J. E. Gray, 1865:12**

*Hincksia bryantii* (Setchell et N. L. Gardner) J. N. Norris, 2010:169  
 GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON. WC: Bahía de La Paz, BCS. IS: Isla San Juan Nepomuceno and Isla Espíritu Santo, BCS.  
 TYPE LOCALITY. Epiphytic on *Codium brandegeei*; La Paz, Baja California Sur, Gulf of California, Mexico.

*Hincksia granulosa* (J. E. Smith) P. C. Silva, in Silva et al., 1987:130  
 GULF OF CALIFORNIA DISTRIBUTION. IS: Isla Pelicano and Isla Alcatraz, SON.  
 SYNTYPE LOCALITIES. Brighton (Brighthelmston) [East Sussex] and Shoreham [West Sussex], England, UK (Silva et al., 1996).  
 REMARKS. Womersley (1987) noted the type was from England, but it has not been located (Clayton, 1974; see Guiry and Guiry, 2015).

**PYLAIELLACEAE P. M. PEDERSEN, 1984:50*****Pylaiella* Bory de Saint-Vincent, 1823:393**

REMARKS. More recently *Pylaiella* has been treated as a member of the Acinetosporaceae (see Silberfeld et al., 2014).

*Pylaiella* sp. A of Norris, 2010:187  
 GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Pelicano, Puerto Peñasco, SON.

**CHORDARIACEAE GREVILLE, 1830:44*****Compsonema* Kuckuck, 1899:58**

*Compsonema immixtum* Setchell et N. L. Gardner, 1924a:724  
 GULF OF CALIFORNIA DISTRIBUTION. IS: Isla Partida [norte], ISG.  
 TYPE LOCALITY. On *Colpomenia sinuosa* f. *deformans*—now *C. phaeodactyla* (M. J. Wynne et J. N. Norris); Isla Partida (Isla Cordonazo), Baja California, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

*Compsonema intricatum* Setchell et N. L. Gardner, 1922a:354  
 GULF OF CALIFORNIA DISTRIBUTION. EC: Mazatlán, SIN.  
 TYPE LOCALITY. On *Fucus gardneri*; Carmel Bay, Monterey County, central California, USA.

*Compsonema serpens* Setchell et N. L. Gardner, 1922a:363  
 GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Vallarta, JAL. WC: Playa El Coloradito to Puertecitos, BC.  
 TYPE LOCALITY. Carmel Bay, Monterey County, central California, USA.

***Haplogloia* Levring, 1939:48**

*Haplogloia andersonii* (Farlow) Levring, 1939:50  
 GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía Concepción, BCS.  
 TYPE LOCALITY. Santa Cruz, Santa Cruz County, California, USA.

***Hecatonema* Sauvageau, 1898:248**

*Hecatonema streblonematoides* (Setchell et N. L. Gardner) Loiseaux, 1970:253  
 GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Segundo Cerro Prieto, Bahía Kino, SON; Playa de Guayabitos and Las Peñas, NAY, to Puerto Vallarta, JAL. IS: Isla Pelicano, SON.  
 TYPE LOCALITY. On *Nereocystis luetkeana* (K. Mertens) Postels et Ruprecht; Tomales Bay, Marin County, northern California, USA.

***Myriactula* Kuntze, 1898:74, 415**

*Myriactula johnstonii* (Setchell et N. L. Gardner) Feldmann, 1945:223  
 GULF OF CALIFORNIA DISTRIBUTION. IS: Isla San Marcos, BCS.

**TYPE LOCALITY.** On *Sargassum insulare* Setchell et N. L. Gardner (now *S. lapazeanum* Setchell et N. L. Gardner); Isla San Marcos, northern Baja California Sur, Gulf of California, Mexico.

*Myriactula marchantiae* (Setchell et N. L. Gardner) Feldmann, 1945:223

**GULF OF CALIFORNIA DISTRIBUTION.** WC: La Paz, BCS.

**TYPE LOCALITY.** On *Sargassum horridum* Setchell et N. L. Gardner; La Paz, Baja California, Gulf of California, Mexico.

### **Nemacystus Derbès et Solier, 1850:269**

*Nemacystus brandegeei* (Setchell et N. L. Gardner) Kylin, 1940:49

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Puerto Peñasco, SON. WC: Playa El Coloradito, BC, to Bahía de La Paz, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, and Bahía Agua Dulce, Isla Tiburón, ISG; Isla San Juan Nepomuceno, BCS.

**TYPE LOCALITY.** La Paz, Baja California Sur, Gulf of California, Mexico.

### **Streblonema Derbès et Solier, 1851:100**

*Streblonema transfixum* Setchell et N. L. Gardner, 1922b:391

**GULF OF CALIFORNIA DISTRIBUTION.** IS: Isla Coronado, BC.

**TYPE LOCALITY.** On *Desmarestia herbacea* (Turner) J. V. Lamouroux; San Pedro, Los Angeles County, southern California, USA.

*Streblonema* sp. A of Norris, 2010:180

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Punta Pelicano, Puerto Peñasco, SON.

**REMARKS.** Record is from the finding of filaments of *Streblonema* sp. on intertidal *Cutleria hancockii* in the upper Gulf (La Claire and West, 1977).

### **LEATHESIACEAE FARLOW, 1881:16, 79**

#### **Leathesia S. F. Gray, 1821:279, 301**

**REMARKS.** *Leathesia* has also been treated as a member of the Chordariaceae (see Peters and Ramírez, 2001; Silberfeld et al., 2014).

*Leathesia nana* Setchell et N. L. Gardner, 1924b:3

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Puerto Peñasco, SON. WC: Playa El Coloradito, BC.

**TYPE LOCALITY.** Monterey, Monterey County, central California, USA.

### **ECTOCARPACEAE C. AGARDH, 1828:9**

#### **Ectocarpus Lyngbye, 1819:130**

*Ectocarpus acutus* Setchell et N. L. Gardner, 1922c:404

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Puerto Peñasco, SON. WC: Bahía de La Paz, BCS. IS: Isla Espíritu Santo, BCS.

**TYPE LOCALITY.** Carmel, Monterey County, central California, USA.

*Ectocarpus chantransioides* Setchell et N. L. Gardner, 1922c:406

**GULF OF CALIFORNIA DISTRIBUTION.** WC: Cabo Pulmo, BCS.

**TYPE LOCALITY.** Santa Monica, Los Angeles County, southern California, USA.

*Ectocarpus commensalis* Setchell et N. L. Gardner, 1922c:407

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Playa Carelleros (Careyeros), NAY, to Bahía de Banderas, JAL. IS: Isla Alcatraz, SON; Isla Turner, ISG; Isla Larga, NAY.

**LECTOTYPE LOCALITY.** On *Codium setchellii* N. L. Gardner; Carmel Bay, Monterey County, central California, USA.

*Ectocarpus corticulatus* De A. Saunders, 1898:152

**GULF OF CALIFORNIA DISTRIBUTION.** WC: Bahía de La Paz, BCS. IS: Isla de la Piedra, SIN.

**TYPE LOCALITY.** Pacific Grove, Monterey County, central California, USA.

*Ectocarpus gonodioides* Setchell et N. L. Gardner, 1924a:721

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Puerto Peñasco, SON. WC: Bahía de Los Ángeles, BC; Bahía Agua Verde to Punta Arena, BCS. IS: Isla Coronado, BC; Isla Espíritu Santo, BCS.

**TYPE LOCALITY.** On *Codium cuneatum* Setchell et N. L. Gardner (now *C. simulans* Setchell et N. L. Gardner); Isla Coronado (Isla Smith), north of Bahía de Los Ángeles, Baja California, Gulf of California, Mexico.

*Ectocarpus hancockii* E. Y. Dawson, 1944:222

**GULF OF CALIFORNIA DISTRIBUTION.** WC: El Faro de San Felipe, BC. IS: Isla Turner, ISG.

**TYPE LOCALITY.** Reef; Isla Turner (off southeast end of Isla Tiburón), Sonora, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

*Ectocarpus parvus* (De A. Saunders) Hollenberg, 1971:283

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Puerto Peñasco, SON, to Playa Norte and Punta Derecha, SIN, to Bahía de Banderas, JAL. WC: Bahía de La Paz, BCS. IS: Isla Pelicano, SON.

**TYPE LOCALITY.** On “sand-colored rocks;” San Pedro, Los Angeles County, southern California, USA.

*Ectocarpus rallsiae* Vickers, 1905:59

**GULF OF CALIFORNIA DISTRIBUTION.** WC: Bahía de los Muertos to Punta Arena, BCS.

**TYPE LOCALITY.** Barbados, Lesser Antilles, Caribbean Sea.

REMARKS. *Ectocarpus rallsiae* was recorded in the southern Gulf of California by Mateo-Cid et al. (2000, as *Hinckesia rallsiae* (Vickers) P. C. Silva).

*Ectocarpus siliculosus* (Dillwyn) Lyngbye, 1819:131

GULF OF CALIFORNIA DISTRIBUTION. EC: El Tornillal to Punta Gorda, SON; Playa de Guayabitos and Playa Las Peñas, NAY. WC: Playa Santa Teresa to Puertecitos, BC.

SYNTYPE LOCALITIES. Cromer, Norfolk [county], and Hastings, East Sussex [county], England, UK.

REMARKS. Phylogenetic analyses by Montecinos et al. (2017) of specimens identified as *E. siliculosus* revealed at least 15 cryptic species within the “*E. siliculosi*-group.” Four of these, including *E. siliculosus*, were found in the North and South Pacific. They noted it was impossible in the field to distinguish between species of this *E. siliculosi*-group. Molecular analyses of Gulf of California specimens will help elucidate their identifications.

*Ectocarpus simulans* Setchell et N. L. Gardner, 1922c:412

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa de Guayabitos and Playa Las Peñas, NAY, to Bahía de Banderas, JAL. WC: Bahía de La Paz to Cabo Pulmo, BCS.

TYPE LOCALITY. Cypress Point, Monterey County, central California, USA.

*Ectocarpus sonorensis* E. Y. Dawson, 1944:221

GULF OF CALIFORNIA DISTRIBUTION. EC: Guaymas, SON.

TYPE LOCALITY. On rocks in tidal stream; 3 km east of Guaymas, Sonora, Gulf of California, Mexico.

**CHNOOSPORACEAE SETCHELL ET N. L. GARDNER,  
1925:400, 552**

REMARKS. This family has also been treated as being synonymous with the Scytosiphonaceae (e.g., Silberfeld et al., 2014).

***Chnoospora* J. Agardh, 1847:7**

*Chnoospora implexa* J. Agardh, 1848:172

GULF OF CALIFORNIA DISTRIBUTION. WC: Santa Rosalía to Punta San Evaristo, BCS. IS: Isla Mejía and Isla Ángel de la Guarda, ISG; Isla Cholla and Isla San Francisco, BCS.

TYPE LOCALITY. Near El-Tor, Sinai Peninsula, Gulf of Suez, Egypt.

*Chnoospora minima* (K. Hering) Papenfuss, 1956:69

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Carelleros (Careyeros), NAY, to Bahía de Banderas, JAL. WC: Bahía Concepción to Bahía de La Paz, BCS. IS: Isla Cholla and Isla Espíritu Santo, BCS; Isla Larga, NAY.

TYPE LOCALITY. Port Natal, Durban, South Africa.

REMARKS. Some Gulf of California records of *C. minima* may be *C. pacifica*; they need to be critically compared

with *Fucus minimus* K. Hering (1841), the type of South African *C. minima*.

*Chnoospora pacifica* J. Agardh, 1847:7

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía San Pedro, SON, to Bahía de Banderas, JAL. WC: Bahía de La Paz, BCS. IS: Isla María Magdalena, NAY.

TYPE LOCALITY. San Agustín, Oaxaca, Mexico.

**SCYTOSIPHONACEAE FARLOW, 1881:15, 62**

***Colpomenia* (Endlicher)  
Derbès et Solier, 1851:95**

*Colpomenia durvillei* (Bory de Saint-Vincent) M. E. Ramírez,  
in Ramírez and Rojas, 1991:17

GULF OF CALIFORNIA DISTRIBUTION. EC: “Las Cuevas, SON” (Lee et al., 2012:371, table 1).

TYPE LOCALITY. Concepción, Bío Bío Region, Province Concepción, Chile.

REMARKS. Specimens from “Las Cuevas, Sonora” (probably Punta Las Cuevas, SON; note there is also a Las Cuevas near Sayulita, NAY) were found to be genetically identical to the Chilean *C. durvillei* (Lee et al., 2012:371, fig. 2). The South American *C. durvillei* may be a species recently introduced to the northern Gulf or it possibly has been overlooked. Similar in appearance to some *C. phaeodactyla*, the phylogenetic relationship of these two needs further elucidation (see also Remarks under *C. phaeodactyla*).

*Colpomenia peregrina* Sauvageau, 1927:321

GULF OF CALIFORNIA DISTRIBUTION. WC: Tarabillas to Punta León, Bahía de La Paz, BCS.

LECTOTYPE LOCALITY. Brittany, northwest France.

*Colpomenia phaeodactyla* M. J. Wynne et J. N. Norris, 1976:5

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Pelicano, Puerto Peñasco, to Bahía Kino, SON. WC: El Huerfanito to Bahía San Francisco, BC. IS: Isla Mejía, Puerto Refugio, Isla Ángel de la Guarda, Isla Turner, and Isla San Esteban, ISG.

TYPE LOCALITY. On tidal platform; Playa Estación, Puerto Peñasco, Sonora, Gulf of California, Mexico.

REMARKS. Specimens resembling *C. phaeodactyla* from “Las Cuervas” were genetically identified as *C. durvillei* by Lee et al. (2012). The two are distinct morphologically (Wynne and Norris, 1976; Norris, 2010; Lee et al., 2012), with both now recognized in the northern Gulf of California. The type of upper Gulf *C. phaeodactyla* should be molecularly analyzed to further elucidate its relationship to Chilean type of *C. durvillei* (note that if the locale is Punta Las Cuevas, Sonora, it is about 444 km south of Puerto Peñasco, type locality of *C. phaeodactyla*; see also Remarks under *Colpomenia durvillei*).

*Colpomenia ramosa* W. R. Taylor, 1945:84

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía Tepoca, SON, to Mazatlán, SIN. WC: Bahía San Luis

Gonzaga to Bahía de Los Ángeles, BC; Bahía de La Paz, BCS. IS: Isla San Luis Gonzaga, BC; Bahía San Gabriel, Isla Espíritu Santo, BCS; Isla de la Piedra, SIN.

**TYPE LOCALITY.** Bahía Sur, Isla Cedros, off Pacific coast of Baja California, Mexico.

***Colpomenia sinuosa* (Mertens ex Roth) Derbès et Solier, 1851:95**

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Puerto Peñasco, SON, to Mazatlán, SIN. WC: Puerto San Felipe, BC, to Cabo San Lucas, BCS. IS: Isla San Luis Gonzaga, BC; Isla Mejía, Puerto Refugio, Isla Ángel de la Guarda, and Isla Tiburón, ISG; Isla San Pedro Nolasco, SON; Isla Espíritu Santo, BCS.

**TYPE LOCALITY.** Near Cádiz, Bahía de Cádiz, Andalusia region, southwestern Spain.

***Colpomenia sinuosa* f. *expansissima* Setchell et N. L. Gardner, 1924a:726**

**GULF OF CALIFORNIA DISTRIBUTION.** WC: Bahía San Francisquito, BC.

**TYPE LOCALITY.** “Floating in large billowy masses out in the bay” (I. M. Johnson, in Setchell and Gardner, 1924a:726); Bahía San Francisquito, Baja California, Gulf of California, Mexico.

**REMARKS.** *Colpomenia sinuosa* f. *expansissima* was described by Setchell and Gardner (1924a) as large, thin fronds that were very similar to *C. sinuosa* f. *expansa* De A. Saunders (1898). Although it was later considered a form of *C. tuberculata* by Dawson (1944, as *C. sinuosa* f. *tuberculata*), its taxonomic status needs to be reinvestigated.

***Colpomenia* sp. A of Norris, 2010:193**

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Ensenada de San Francisco, SON. WC: Puerto Calamajué to Punta La Gringa, BC; Puerto Escondido, BCS. IS: Isla La Ventana, BC; Isla San Esteban, ISG; Bahía Salinas, Isla Carmen, BCS.

**REMARKS.** *Colpomenia* sp. A is morphologically the same as “*C. sinuosa*? open-expanded sheet form” of Wynne and Norris (1976:5) and “*C. sinuosa* f. *expansa*” of Pedroche et al. (2008). The minute, spine-like projections of *Colpomenia sinuosa* f. *expansissima* are lacking on the expanded sheet-like *Colpomenia* sp. A (Wynne and Norris, 1976; Norris, 2010; see also Remarks under *Colpomenia sinuosa* f. *expansissima*).

***Colpomenia tuberculata* De A. Saunders, 1898:164**

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Puerto Peñasco, SON, to Mazatlán, SIN. WC: El Machorro, BC, to San José del Cabo, BCS. IS: Isla Alcatraz, SON; Isla San Luis Gonzaga and Islas de Los Gemelos, BC; Isla Mejía and Puerto Refugio, Isla Ángel de la Guarda, Isla Estanque, Isla Turner, and Isla Partida (Isla Cordonazo), ISG; Isla Espíritu Santo and Isla Partida [sur], BCS.

**TYPE LOCALITY.** Near San Pedro, Los Angeles County, southern California, USA.

***Hapterophycus* Setchell et N. L. Gardner, in Setchell, 1912:233**

**REMARKS.** Kogame (1996) considered the genus synonymous with *Scytosiphon* (see also Silberfeld et al., 2014). Although Hollenberg (1941) concluded *Hapterophycus* was close to Ralfsiaceae, others treat the genus as belonging in the Scytosiphonaceae. Phylogenetic analyses will help resolve familial placement of the genus (Norris, 2014).

***Hapterophycus?* *anastomosans* E. Y. Dawson, 1966b:56**

**GULF OF CALIFORNIA DISTRIBUTION.** IS: Isla San Lorenzo and Isla Rasa, ISG.

**TYPE LOCALITY.** Isla Rasa, Baja California, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

**REMARKS.** The taxonomic placement of this endemic species was queried by Norris (2014). Molecular phylogenetic analyses will help resolve its generic and familial placement.

***Hydroclathrus* Bory de Saint-Vincent, 1825:419**

***Hydroclathrus clathratus* (C. Agardh) M. Howe, 1920:590**

**GULF OF CALIFORNIA DISTRIBUTION.** WC: Playa El Coloradito, BC, to Cabeza Ballena, BCS. IS: Punta Perla, Isla Tiburón, ISG; Isla San José, Isla San Francisco, Isla San Juan Nepomuceno, and Isla Espíritu Santo, BCS.

**SYNTYPE LOCALITIES.** Three locales for the basionym, *Encoelium clathratum* C. Agardh (1823): Belle-Île, Brittany, France; Rauki, Waigeo Island, Moluccas, Indonesia; and Shark Bay, Western Australia.

**LECTOTYPE LOCALITY.** Belle-Île, Brittany, France (Howe, 1920; Womersley, 1987); however, this locale may be incorrect since the mollusk shells found associated with the lectotype collection are not known from this locality (Hamel, 1937; Silva et al., 1996).

***Roseningea* Børgesen, 1914:22**

***Roseningea antillarum* (P. Crouan et H. Crouan) M. J. Wynne, 1997:334**

**GULF OF CALIFORNIA DISTRIBUTION.** EC: El Tornillal to Punta Gorda, SON.

**TYPE LOCALITY.** Le Moule, Grande-Terre, Guadeloupe, French West Indies.

***Roseningea floridana* (W. R. Taylor) W. R. Taylor, 1955:72**

**GULF OF CALIFORNIA DISTRIBUTION.** EC: El Tornillal to Punta Gorda, SON. WC: Punta La Gringa, Bahía de Los Ángeles, BC. IS: Puerto Refugio, Isla Ángel de la Guarda, and Estanque (?), ISG.

**TYPE LOCALITY.** East Cay, Dry Tortugas (Dry Tortugas National Park), Florida Keys, Monroe County, Gulf of Mexico, Florida, USA.

*Rosenvingea intricata* (J. Agardh) Børgesen, 1914:26

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía Tepoca, SON. WC: Punta Bufeo to Bahía San Luis Gonzaga, BC; Bahía Concepción to Punta Arena, BCS.

TYPE LOCALITY. Veracruz [city], Veracruz [state], Gulf of Mexico, Mexico.

***Petalonia* Derbès et Solier, 1850:266**

REMARKS. The recorded presence of the two species of *Petalonia* below in the Gulf of California requires further investigation (see also Remarks under *Stragularia clavata*).

Uncertain Record: *Petalonia binghamiae* (J. Agardh)

Vinogradova, 1973:31

GULF OF CALIFORNIA DISTRIBUTION. EC: Cabo Tepoca, SON.

Uncertain Record: *Petalonia fascia* (O. F. Müller) Kuntze, 1898:419

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Libertad, SON; Mazatlán, SIN.

***Stragularia* Strömfelt, 1886:49**

REMARKS. The generic status of species of *Stragularia* requires further investigation. Culture studies on some encrusting species of *Stragularia*, *Ralfsia*, or “*Ralfsia*-like” found them to be a phase in heteromorphic life history of an erect blade-like thallus such as those of *Petalonia* (e.g., Wynne, 1969, 1972; Nakamura and Tatewaki, 1975; Fletcher, 1978). Many are probably life history phases of members of the Scytosiphoniaceae (Guiry and Guiry, 2016).

*Stragularia clavata* (Harvey) Hamel, 1939:70

GULF OF CALIFORNIA DISTRIBUTION. EC: Las Cuevas, NAY. IS: Isla Larga, NAY.

REMARKS. A prostrate species recorded in the southeastern Gulf of California (León-Alvarez and González-González, 1993). Culture and genetic studies will elucidate what genus/species is part of the life history of the Gulf taxon.

**RALFSIALES NAKAMURA EX P.-E. LIM ET H. KAWAI,  
IN LIM ET AL., 2007:464****HAPALOSPONGIACEAE REYES-GÓMEZ ET LEÓN-ÁLVAREZ,  
IN LEÓN-ÁLVAREZ ET AL., 2017:13*****Hapalospongidion* De A. Saunders, 1899:7***Hapalospongidion gelatinosum* De A. Saunders, 1899:37

GULF OF CALIFORNIA DISTRIBUTION. EC: Cabo Corrientes to Bahía de Banderas, JAL. WC: Punta Santa Rosalía, BC; Cabo Pulmo and Punta Frailes to Cabeza de Ballena, BCS.

TYPE LOCALITY. Point Aulon (Lover’s Point), Pacific Grove, Monterey County, central California, USA. Lectotype and epitype were selected by León-Alvarez et al. (2017: 4, 5, fig. 2).

**NEORALFSIACEAE P.-E. LIM ET H. KAWAI,  
IN LIM ET AL., 2007:464*****Neoralfsia* P.-E. Lim et H. Kawai,  
in Lim et al., 2007:464***Neoralfsia hancockii* León-Álvarez et Núñez-Reséndiz, in León-Álvarez et al., 2014a:145

GULF OF CALIFORNIA DISTRIBUTION. EC: Sayulita, NAY, to Bahía de Banderas, JAL. WC: Puertecitos, BC, to San José del Cabo, BCS. IS: Isla Larga, NAY.

TYPE LOCALITY. Southern end of San José del Cabo, Baja California Sur, Gulf of California, Mexico.

REMARKS. Previous Gulf of California records of *Neoralfsia hancockii* were referred to as “morph A” sensu León-Álvarez and González-González (1995), “*Ralfsia expansa*” (León-Álvarez and González-González, 2003), and “*Ralfsia hancockii*” (León-Álvarez and Norris, 2010).

**RALFSIACEAE FARLOW, 1881:17, 86*****Endoplura* Hollenberg, 1969:298***Endoplura aurea* Hollenberg, 1969:300

GULF OF CALIFORNIA DISTRIBUTION. WC: La Paz to Punta Los Frailes, BCS.

TYPE LOCALITY. Laguna Beach, Orange County, southern California, USA.

***Ralfsia* Berkeley, in Smith and Sowerby,  
1843:pl. 2866+[2]pp.***Ralfsia confusa* Hollenberg, 1969:291

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto San Carlos, SON, to Bahía de Banderas, JAL. WC: Bahía Concepción to Cabo Pulmo, BCS. IS: Isla Espíritu Santo, BCS; Isla Larga, NAY.

TYPE LOCALITY. Corona del Mar, Orange County, southern California, USA.

*Ralfsia fungiformis* (Gunnerus) Setchell et N. L. Gardner, 1924b:11

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa de Guayabitos and Playa Las Peñas, NAY.

TYPE LOCALITY. Iceland.

*Ralfsia hesperia* Setchell et N. L. Gardner, 1924b:2

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Los Cerritos, Punta Chile, and Cerro El Crestón (Isla El Crestón), SIN. IS: Isla Los Lobos, SIN.



TYPE LOCALITY. Carmel Bay, Monterey County, central California, USA.

*Ralfsia integra* Hollenberg, 1969:295–296

GULF OF CALIFORNIA DISTRIBUTION. EC: Manzanillas, NAY.

TYPE LOCALITY. Laguna Beach, Orange County, southern California, USA.

*Ralfsia pacifica* Hollenberg, in Smith, 1944:95

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Pelicano, Puerta Peñasco, SON, to Bahía de Banderas, JAL. WC: Playa Santa Teresa, BC, to Cabo Pulmo, BCS. IS: Isla Turner and Isla San Esteban, ISG.

SYNTYPE LOCALITIES. Three locales given by Hollenberg (in Smith, 1944:96): “along the shore near: Bird Rock [largest of Seal Rocks], Pebble Beach, and north end of Carmel Beach,” all Monterey County, central California, USA.

REMARKS. The publication of *R. pacifica* Hollenberg (in Smith, 1944:95) supercedes the publication of Hollenberg (1969), which included another choice for its type and type locality. Therefore a lectotype specimen in agreement with the original protologue of Hollenberg (in Smith, 1944:95–96) needs to be chosen from the listed syntype localities of Hollenberg’s Monterey Peninsula collections of that time.

*Ralfsia*-like crust 1 of Dawson, 1966a:9, as “*Ralfsia* spp.”

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON.

*Ralfsia*-like crust 2 of Dawson, 1966a:9, as “*Ralfsia* spp.”

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON.

Uncertain Record: *Ralfsia californica* Setchell et N. L. Gardner, 1924b:2

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto San Carlos, SON. IS: Isla Turner, ISG; Bahía San Gabriel, Isla Espíritu Santo, BCS.

REMARKS. The nonfertile northern Gulf (Dawson, 1944) and the Jalisco specimens (Taylor, 1945) referred to “*R. californica*” need reinvestigation (Pedroche et al., 2008; León-Álvarez and Norris, 2010).

### SCYTOTHAMNALES A. F. PETERS ET M. N. CLAYTON, 1988:111

#### ASTERONEMATACEAE SILBERFELD, RACAULT, R. L. FLETCHER, F. ROUSSEAU ET B. DE REVIERS, IN SILBERFELD ET AL., 2011:375

#### *Asteronema* Delépine et Asensi, 1975:296

*Asteronema breviarticulatum* (J. Agardh) Ouriques et Bouzon, 2000:271

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz, BCS.

TYPE LOCALITY. San Agustín, Oaxaca, Mexico.

REMARKS. It has also been reported outside the entrance to the Gulf to the south from Playa Mezcales, Jalisco (Mendoza-González and Mateo-Cid, 1992).

### SPOROCHNALES SAUVAGEAU, 1926:364

#### SPOROCHNACEAE GREVILLE, 1830:36

#### *Sporochnus* C. Agardh, 1817:xii

*Sporochnus anomalus* (Pallas) M. J. Wynne, 2003:78

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de Los Ángeles, BC. IS: Roca Blanca and Puerto Refugio, Isla Ángel de la Guarda, ISG.

TYPE LOCALITY. Not given by Pallas (1766, as *Fucus anomalus*); Mediterranean (Gmelin, 1768).

*Sporochnus neushulii* J. N. Norris, 2010:153

GULF OF CALIFORNIA DISTRIBUTION. IS: Roca Blanca and Puerto Refugio, Isla Ángel de la Guarda, ISG.

TYPE LOCALITY. At 20–30 m depths; off west side of Roca Blanca, Puerto Refugio, Isla Ángel de la Guarda, Baja California, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

### TILOPTERIA DALES BESSEY, 1907:290

REMARKS. Cuteriales Oltmann (1922) is also used for this order, but see comments of Silberfeld et al. (2014) and Guiry and Guiry (2014–2017).

### CUTLERIACEAE GRIFFITH ET HENFREY, 1856:179

REMARKS. Although usually cited as Cutleriaceae Hauck (1883), Griffith and Henfrey (1856) is an older publication of the family name.

#### *Cutleria* Greville, 1830:xliv, 59

*Cutleria hancockii* E. Y. Dawson, 1944:226 (gametophytes) and *Aglaozonia*-phase of *C. hancockii* (sporophyte)

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON, to Mazatlán, SIN. WC: Playa El Colodado, BC, to Punta Arena, BCS. IS: Isla Alcatraz and Isla San Pedro Nolasco, SON; Isla San Luis Gonzaga, BC; Isla Estanque, Isla Tiburón, and Isla Turner, ISG.

TYPE LOCALITY. *Cutleria hancockii* (gametophyte): low intertidal on rocky reef; Isla Turner (off SE end of Isla Tiburón), Sonora, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico; [and] *Aglaozonia*-phase (sporophyte): low intertidal on rock-shingle beach; SW shore of Isla Tiburón (opposite Isla Turner), Sonora, Islas Grandes, Gulf of California, Mexico.

**FUCALES BORY DE SAINT-VINCENT, 1827B:62****SARGASSACEAE KÜTZING, 1843:349, 359*****Sargassum* C. Agardh, 1820:1**

*Sargassum acinacifolium* Setchell et N. L. Gardner, 1924a:732

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Guaymas, SON. WC: Bahía San Francisquito, BC. IS: Isla Tiburón, ISG.

TYPE LOCALITY. Cast ashore; “Guaymas (?)” (locality questioned by Setchell and Gardner, 1924a:732), Sonora, Gulf of California, Mexico.

*Sargassum brandegeei* Setchell et N. L. Gardner, 1924a:736

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Norse, Puerto Peñasco, to Guaymas, SON. IS: Puerto Refugio, Isla Ángel de la Guarda, Isla Patos, Isla Tiburón, and Isla San Esteban, ISG; Isla San Pedro Nolasco, SON.

TYPE LOCALITY. Cast ashore; “Guaymas (?)” (locality questioned by Setchell and Gardner, 1924a:736), Sonora, Gulf of California, Mexico.

REMARKS. *Sargassum brandegeei* was treated as a synonym of *S. herporhizum* by Andrade-Sorcía et al. (2014).

*Sargassum herporhizum* Setchell et N. L. Gardner, 1924a:739

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Punta Las Cuevitas, SON. WC: Puertecitos, BC, to Bahía de La Paz, BCS. IS: Isla San Jorge, SON; Isla San Pedro Mártir, ISG.

TYPE LOCALITY. Isla San Jorge (“Georges Island,” Setchell and Gardner, 1924a:739), about 40 km southeast of Puerto Peñasco, Sonora, Gulf of California, Mexico.

*Sargassum horridum* Setchell et N. L. Gardner, 1924a:734

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON, to Mazatlán, SIN. WC: Bahía Concepción to Cabo San Lucas, BCS. IS: Isla Tiburón and Isla San Esteban, ISG; Isla Cholla, Isla San José, and Isla Espíritu Santo, BCS.

TYPE LOCALITY. Cast ashore; La Paz, Baja California Sur, Gulf of California, Mexico.

REMARKS. Andrade-Sorcía et al. (2014) considered the Gulf endemic species, *S. camouii* E. Y. Dawson (1944; *S. sinicola* subsp. *camouii* (E. Y. Dawson) J. N. Norris et Yensen, in Norris, 2010), to be a synonym of *S. horridum* and selected *S. horridum* as the type for *S. sect. Horridum* Andrade-Sorcía et S.-M. Boo.

*Sargassum howelli* Setchell, 1937:132

GULF OF CALIFORNIA DISTRIBUTION. EC: Rincón de Guayabitos, NAY, to Puerto Vallarta, JAL. WC: Bahía de La Paz, BCS.

TYPE LOCALITY. Isla Clarión, Islas Revillagigedo, Colima, Mexico.

*Sargassum johnstonii* Setchell et N. L. Gardner, 1924a:737

GULF OF CALIFORNIA DISTRIBUTION. EC: El Tornillal to Ensenada de San Francisco, SON. WC: Playa Santa Teresa to San José, BC; Bahía Agua Verde to Bahía de La Paz, BCS. IS: Isla San Jorge and Isla Alcatraz, SON.

TYPE LOCALITY. Isla San Jorge (“Georges Island,” Setchell and Gardner, 1924a), about 40 km southeast of Puerto Peñasco, Sonora, Gulf of California, Mexico.

REMARKS. *Sargassum johnstonii*, the type of *S. sect. Johnstonii* E. Y. Dawson ex J. N. Norris (in Norris, 2010), was treated by Andrade-Sorcía et al. (2014) as a synonym of *S. sect. Lapazeanum* E. Y. Dawson ex J. N. Norris (in Norris, 2010).

*Sargassum johnstonii* f. *gracile* Setchell et N. L. Gardner, 1924a:738

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Guaymas, SON. WC: Bahía San Francisquito, BC.

TYPE LOCALITY. Cast ashore; Guaymas, Sonora, Gulf of California, Mexico.

REMARKS. Dawson (1944) noted that *S. johnstonii* f. *gracile* and *S. johnstonii* f. *laxius* were possibly only variants of a single polymorphic *S. johnstonii* (Pedroche et al., 2008). Andrade-Sorcía et al. (2014) commented specimens of *S. johnstonii* f. *gracile* either lacked mature reproductive structures or were incomplete and could not be separated from *S. johnstonii* f. *johnstonii*.

*Sargassum lapazeanum* Setchell et N. L. Gardner, 1924a:734

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Guaymas, SON. WC: Puertecitos, BC, to Cabo San Lucas, BCS. IS: Isla Alcatraz and Isla San Pedro Nolasco, SON; Isla Mejía and Puerto Refugio, Isla Ángel de la Guarda, Isla Patos, Isla Turner, Isla Tiburón, and Isla Partida (Isla Cordonazo), ISG; Isla Coronado and Isla la Ventana, BC; Isla Tortuga, Isla San Marcos, Isla San José, Isla Danzante, Isla San Juan Nepomuceno, and Isla Espíritu Santo, BCS.

TYPE LOCALITY. Cast ashore; near La Paz, Baja California Sur, Gulf of California, Mexico.

REMARKS. *Sargassum macdougalii* E. Y. Dawson (1944), a previously recognized Gulf endemic species, was treated as a synonym of *S. lapazeanum* by Andrade-Sorcía et al. (2014).

*Sargassum liebmanni* J. Agardh, 1847:8

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Los Cerritos, SIN, to Bahía de Banderas, JAL. WC: Bahía de La Paz to San José del Cabo, BCS. IS: Isla San Juan Nepomuceno, BCS; Isla María Magdalena, NAY.

TYPE LOCALITY. Bahía de San Agustín, Oaxaca, Mexico.

*Sargassum pacificum* Bory de Saint-Vincent, 1828:123

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta de Mita, NAY, to Puerto Vallarta, JAL. WC: Bahía de La Paz, BCS.

SYNTYPE LOCALITIES. Three locales: Chile; Port Praslin, New Ireland [Latanga Island, Papua New Guinea]; and Tahiti (Bory de Saint-Vincent, 1828).

LECTOTYPE LOCALITY. Concepción, Bío Bío Region, Province Concepción, Chile (Howe, 1914).

*Sargassum pacificum* var. *megaphyllum* W. R. Taylor, 1945:122

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía de Banderas, NAY/JAL.

TYPE LOCALITY. Shore drift; Punta Albemarle, Isla Isabela, Galápagos Islands, Ecuador.

*Sargassum palmeri* Grunow, 1915:338

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz, BCS. IS: Isla Turner, ISG; Isla San Juan Nepomuceno, BCS.

TYPE LOCALITY. Isla Guadalupe, off Pacific coast of Baja California, Mexico.

*Sargassum sinicola* Setchell et N. L. Gardner, 1924a:736

GULF OF CALIFORNIA DISTRIBUTION. EC: Piedras de La Salina, SON, to Sistema Lagunar Altata-Ensenada del Pabellón, SIN. WC: Faro de San Felipe, BC, to Cabo San Lucas, BCS. IS: Isla Alcatraz and Isla San Pedro Nolasco, SON; Isla Estanque, Isla Patos, Isla Turner, and Isla San Pedro Mártir, ISG; Isla Tortuga, Isla San Ildefonso, Isla Carmen, Isla Danzante, and Isla San Juan Nepomuceno, BCS.

TYPE LOCALITY. Cast ashore; Eureka, near La Paz, Baja California Sur, Gulf of California, Mexico.

REMARKS. *Sargassum sinicola*, the type of *S.* sect. *Sinicola* E. Y. Dawson ex J. N. Norris (in Norris, 2010), was later treated by Andrade-Sorcía et al. (2014:216, table 6) as a member of another section, *S.* sect. *Sargassum*.

*Sargassum sonorensis* E. Y. Dawson, 1960a:36

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Guaymas, SON.

TYPE LOCALITY. On shore; southern end of Isla Tiburón (opposite Isla Turner), Sonora, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

REMARKS. Although it was originally described as *Sargassum asymmetricum* E. Y. Dawson (1944), a homonym of *S. asymmetricum* Yamada (1942), Dawson (1960a) gave it a replacement name. *Sargassum sonorensis* was treated as a synonym of *S. lapazeanum* by Andrade-Sorcía et al. (2014).

*Sargassum ulixei* Andrade-Sorcía et S.-M. Boo, in Andrade-Sorcía et al., 2014:212

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Bahía Kino, SON.

TYPE LOCALITY. On subtidal rocks; Playa Las Conchas, Puerto Peñasco, Sonora, Gulf of California, Mexico.

Invasive Species: *Sargassum muticum* (Yendo) Fensholt, 1955:306

REMARKS. Since its introduction in the 1950s to the northeastern Pacific, the Japanese *S. muticum* has been found from Alaska to Baja California. It has continued to spread

southward along the Pacific Mexico coasts of Baja California to Baja California Sur (R. Aguilar-Rosas and Machado-Galindo, 1990; Pedroche et al., 2008; L. Aguilar-Rosas et al., 2014). The distribution of this highly invasive species should be monitored; if its expansion continues southward, it could potentially invade the Gulf of California (Riosmena-Rodríguez et al., 1992; Norris, 2010).

Uncertain Record: *Sargassum agardhianum* Farlow ex J.

Agardh, 1889:93

GULF OF CALIFORNIA DISTRIBUTION. EC: Guaymas, SON; Puerto Vallarta, JAL. EC: Cabo San Lucas, BCS.

REMARKS. Described from San Diego, California, *Sargassum agardhianum* is known on the Pacific coast from southern California to central Baja California (Dawson et al., 1960; Abbott and Hollenberg, 1976; Pacheco-Ruiz, 1982; R. Aguilar-Rosas et al., 1990). The reported presence of this species in the Gulf of California needs to be verified.

### EXCLUDED PHAEOPHYCEAE (LAMINARIALES)

Excluded Species: *Egregia laevigata* Setchell, 1896:44

REMARKS. Dawson (1949b) noted that his earlier report of *E. laevigata* in the Gulf of California (Dawson, 1946) was erroneous (Pedroche et al., 2008; Norris, 2010).

Excluded Species: *Macrocystis pyrifera* (Linnaeus) C. Agardh, 1820:47

REMARKS. Since the early report of *M. pyrifera*, apparently adrift, in the Gulf (Setchell and Gardner, 1924a; Dawson, 1944), there has been no further mention of it in published accounts, nor has it been collected by others in the Gulf (Pedroche et al., 2008; Norris, 2010).

### SYNOPSIS OF GREEN ALGAL TAXA

The synoptic list below of Chlorophyta of the Gulf of California is of the phylum, classes, orders, families, and genera of green algae presented in the accounts following this list.

#### CHLOROPHYTA

#### CHLOROPHYTINA

#### ULVOPHYCEAE

#### Ulvales

#### Kornmanniaceae

*Blidingia* Kylin

*Stromatella* Kornmann et

Sahling

#### Phaeophilaceae

*Phaeophila* Hauck

#### Ulvaceae

*Ulva* Linnaeus

*Ulva* sect. *Ulva*

- Ulva* sect. *Enteromorpha*  
(Link in Nees)  
Endlicher
- Ulvellaceae  
*Entocladia* Reinke  
*Epicladia* Reinke  
*Uvella* P. Crouan et H. Crouan
- CLADOPHOROPHYCEAE
- Cladophorales  
Cladophoraceae  
*Chaetomorpha* Kützing  
*Cladophora* Kützing  
*Rhizoclonium* Kützing  
*Willella* Børgesen
- Siphonocladales  
Boodleaceae  
*Boodlea* (Dickie) G. Murray  
et De Toni  
*Cladophoropsis* Børgesen  
*Phyllodictyon* J. E. Gray  
*Struvea* Sonder
- Siphonocladaceae  
*Dictyosphaeria* Decaisne ex  
Endlicher  
*Ernodesmis* Børgesen
- Valoniaceae  
*Valonia* C. Agardh  
*Valoniopsis* Børgesen
- BRYOPSIDOPHYCEAE
- Bryopsidales  
Bryopsidaceae  
*Bryopsis* J. V. Lamouroux
- Derbesiaceae  
*Derbesia* Solier  
*Halicystis*-phase
- Codiaceae  
*Codium* Stackhouse  
*Geppella* Børgesen
- Caulerpaceae  
*Caulerpa* J. V. Lamouroux
- Halimedaceae  
*Halimeda* J. V. Lamouroux
- Udoteaceae  
*Chlorodesmis* Harvey et Bailey
- DASYCLADOPHYCEAE
- Dasycladales  
Dasycladaceae  
*Batophora* J. Agardh  
*Neomeris* J. V. Lamouroux
- Polyphysaceae  
*Acetabularia* J. V. Lamouroux  
*Parvocaulis* S. Berger,  
Fettweiss, Gleissberg,  
Liddle, U. Richter,  
Sawitzky et Zuccarello

**CHLOROPHYTA PASCHER, 1914:158****CHLOROPHYTINA CAVALIER-SMITH, 1998:450****ULVOPHYCEAE MATTOX ET K. D. STEWART,  
1984:41, 66, NOM. INVALID.****ULVALES BLACKMAN ET TANSLEY, 1902:136****KORNMANNIACEAE L. GOLDEN ET K. COLE, 1986:272*****Blidingia* Kylin, 1947:181**

*Blidingia marginata* (J. Agardh) P. J. L. Dangeard ex Bliding,  
1963:32

GULF OF CALIFORNIA DISTRIBUTION. WC:  
Calerita, Bahía de La Paz, BCS.

TYPE LOCALITY. “Ad Nizzam” (Agardh, 1842:146);  
Nice, Alpes-Maritimes, France.

*Blidingia minima* (Nägeli ex Kützing) Kylin, 1947:181

GULF OF CALIFORNIA DISTRIBUTION. WC:  
Calerita, Bahía de La Paz, BCS.

TYPE LOCALITY. Helgoland (Heligoland), small ar-  
chipelago in North Sea, Germany.

***Stromatella* Kornmann et Sahling, 1985:223**

*Stromatella monostromatica* (P. J. L. Dangeard) Kornmann et  
Sahling, 1985:223

GULF OF CALIFORNIA DISTRIBUTION. IS: Isla  
Coronado and Isla la Ventana, BC.

TYPE LOCALITY. Collioure, Pyrénées-Orientales,  
southern France.

**PHAEOPHILACEAE CHAPPELL, O’KELLY, L. W. WILLCOX  
ET G. L. FLOYD, 1990:516**

REMARKS. The Phaeophilaceae, originally de-  
scribed within Phaeophiales Chappell, O’Kelly, L. W. Willcox et  
G. L. Floyd (1990), is now generally placed in the Ulvales (e.g.,  
Brodie et al., 2007).

***Phaeophila* Hauck, 1876:56**

*Phaeophila dendroides* (P. Crouan et H. Crouan) Batters,  
1902:13

GULF OF CALIFORNIA DISTRIBUTION. EC:  
Puerto Peñasco, SON, to Puerto Vallarta, JAL. IS: Isla María  
Magdalena, NAY.

TYPE LOCALITY. Brest, Finistère, France.

**ULVACEAE J. V. LAMOUROUX EX DUMORTIER, 1822:71*****Ulva* Linnaeus, 1753:1163, nom. cons.**

REMARKS. O’Kelly et al. (2010) suggested that spe-  
cies of *Ulva* in tropical and subtropical regions are largely unique

to those areas, and the use of names based on types from temperate and boreal European and North American is probably misapplied (Guiry and Guiry, 2014).

### ***Ulva* sect. *Ulva***

*Ulva californica* Wille, in Collins et al., 1899: *P.B.-A.* Exsiccata no. 611

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON, to Bahía de Banderas, JAL. WC: Bahía de La Paz, BCS. IS: Isla San Luis Gonzaga, BC.

TYPE LOCALITY. La Jolla, San Diego County, southern California, USA.

REMARKS. Mora-Valdés and Riosmena-Rodríguez (2016) mistakenly stated that Norris (2010) cited *U. taeniata* as a synonym of *U. californica*. Only “*U. taeniata* sensu Dawson, 1945b:59” was cited (Norris, 2010:34; i.e., only specimens of Dawson, 1945, were referred to *U. californica*; and *U. taeniata* (Setchell) Setchell et N. L. Gardner, 1920, was not treated as being conspecific).

*Ulva expansa* (Setchell) Setchell et N. L. Gardner, 1920:25

GULF OF CALIFORNIA DISTRIBUTION. EC: Estero del Urías, SIN, to Bahía de Banderas, JAL. WC: Bahía de La Paz, BCS. IS: Isla Espíritu Santo, BCS; Isla Larga, NAY.

TYPE LOCALITY. Monterey, Monterey County, central California, USA.

*Ulva fasciata* Delile, 1813:297

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa El Sábalo, SIN, to Cabo Corrientes, JAL.

TYPE LOCALITY. Alexandria, Mediterranean Sea, Egypt.

REMARKS. *Ulva fasciata* has been identified in the southern Gulf and on the Pacific coast of Baja California (R. Aguilar-Rosas et al., 2005; L. Aguilar-Rosas et al., 2014). A potential invasive, its distribution in the Gulf should be monitored. O’Kelly et al. (2010) treated *U. fasciata* as a synonym of *U. lactuca*, and Pacific Mexico and Gulf of California materials need to be comparatively studied with type and type locality specimens to verify their identity.

*Ulva lactuca* Linnaeus, 1753:1163

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON, to Bahía de Banderas, JAL. WC: Punta Bufeo, BC, to Arrecife de Cabo Pulmo, BCS. IS: Isla San Pedro Nolasco, SON; Isla Carmen, Isla San Idefonso, Isla Espíritu Santo, Isla Partida, and Isla San Juan Nepomuceno, BCS; Isla de la Piedra, SIN.

TYPE LOCALITY. “In Oceano” [Atlantic Ocean] (Linnaeus, 1753:1163).

LECTOTYPE LOCALITY. West coast of Sweden (Pantuff, 1960; Womersley, 1984).

REMARKS. Gulf of California specimens referred to “*U. lactuca*” need to be investigated to clarify their relationship to type material of *Ulva lactuca* Linnaeus.

*Ulva lobata* (Kützting) Harvey, 1855b:265

GULF OF CALIFORNIA DISTRIBUTION. EC: Mazatlán, SIN, to Bahía de Banderas, JAL. WC: Playa Santa Teresa, BC, to Bahía de La Paz, BCS. IS: Isla Espíritu Santo and Isla Partida, BCS.

TYPE LOCALITY. Chile.

*Ulva nematoidea* Bory de Saint-Vincent, 1828:190

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Chueca, SON, to Bahía de Banderas, JAL. WC: Playa Santa Teresa, BC, to Bahía de La Paz, BCS.

TYPE LOCALITY. Concepción, Bío Bío Region, Province Concepción, Chile.

REMARKS. Wynne (2002) placed *U. fasciata* f. *costata* M. Howe (1914; =*U. costata* (M. Howe) Hollenberg, 1971, *nom. illeg.*) in synonymy with *Ulva nematoidea*.

*Ulva rigida* C. Agardh, 1823:410

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Estación, Puerto Peñasco, SON. WC: Bahía San Felipe to Bahía de La Paz, BCS. IS: Isla San Jorge, SON; Isla Patos and Isla Turner, ISG; Isla San Juan Nepomuceno, BCS; Isla María Madre, NAY.

TYPE LOCALITY. Cádiz, Bahía de Cádiz, Andalusia region, Cádiz Province, southwestern Spain.

*Ulva taeniata* (Setchell) Setchell et N. L. Gardner, 1920:286

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía de Banderas, NAY/JAL. WC: El Malecón to Calerita, Bahía de La Paz, BCS. IS: Isla San Gabriel, Isla Espíritu Santo, and Isla Partida, BCS; Isla de la Piedra, SIN.

TYPE LOCALITY. Monterey, Monterey County, central California, USA.

REMARKS. Although this species is sometimes treated as being conspecific with *U. nematoidea* (e.g., Norris, 2010), it is probable they are distinct, and studies are needed to see if one or both may be present in the Gulf. Although *U. dactylifera* Setchell et N. L. Gardner (1920) was listed as the currently accepted name (Guiry and Guiry, 2015), Haden and Waaland (2004) had previously placed it in synonymy with *U. taeniata*.

**Invasive Species: *Ulva pertusa* Kjellman, 1897:4**

SYNTYPE LOCALITIES. Three locales in Japan, “Hakodate, Yenoshima et Yokohama, Japoniae” (Kjellman, 1897:4): (1) Hakodate, Hōkkaido Island; (2) Enoshima Island (Yenoshima), offshore in Sagami Bay; and (3) Yokohama, Tokyo Bay, Kanagawa Prefecture, both Honshū Island.

REMARKS. A western Pacific species, *Ulva pertusa* is also recorded in the eastern Pacific from northern Baja California (R. Aguilar-Rosas et al., 2008; L. Aguilar-Rosas et al., 2014). It is invasive, and should it spread into the Gulf of California, it could become a problem (Norris, 2010). Kraft et al. (2010) reinstated the South Australian *U. australis* Areschoug (1854) and found it was related to California material referred to “*U. pertusa*.” Couceiro et al. (2011) concluded the Iberian Peninsula

“*U. pertusa*” was also related to those from California and likely conspecific with *U. australis*. The relationship of Baja California “*U. pertusa*” to Japanese *U. pertusa* and South Australian *U. australis* needs to be elucidated.

***Ulva* sect. *Enteromorpha* (Link in Nees)  
Endlicher, 1843:19**

*Ulva acanthophora* (Kützinger) Hayden, Blomster, Maggs, P. C. Silva, Stanhope et Waaland, 2003:288

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía Tepoca to Guaymas, SON. WC: Bahía San Luis Gonzaga to Bahía de La Paz, BCS. IS: Isla Estanque, ISG; Isla San Juan Nepomuceno, Isla Partida, and Isla Espíritu Santo, BCS.

TYPE LOCALITY. Bay of Islands, northeast coast of North Island, New Zealand.

REMARKS. Gulf of California specimens referred to *Ulva acanthophora* need to be genetically compared to New Zealand type locality material. Mora-Valdés and Riosmena-Rodríguez (2016) mistakenly stated Norris (2010) treated *Enteromorpha ramulosa* as a synonym of *U. acanthophora*. Only “*E. ramulosa* sensu Adams, 1994” and not *E. ramulosa* (J. E. Smith) Carmichael in W. J. Hooker (1833) was listed by (Norris, 2010:41). (The latter had been noted to be conspecific with *U. clathrata*; Norris, 2010:43.)

*Ulva clathrata* (Roth) C. Agardh, 1811:23

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON, to Laguna de Agua Brava, NAY. EC: Bahía Concepción to Punta Arena, BCS. IS: Isla Espíritu Santo and Isla La Partida, BCS; Isla de la Piedra, SIN.

TYPE LOCALITY. Fehmarn, SW Baltic Sea (Roth, 1806; type missing [Hayden et al., 2003:288, table 4]).

NEOTYPE LOCALITY. Landskoma, Baltic Oresund (neotype, an illustration of Bliding [1963: fig. 69a,b] was selected by Blomster et al., 1999; Hayden et al., 2003).

REMARKS. Brodie et al. (2007) noted reports of the European *U. clathrata* from the Pacific Ocean require reassessment. Gulf of California and European type materials should be molecularly compared to resolve their relationships and the identity of Gulf specimens.

*Ulva compressa* Linnaeus, 1753:1163

GULF OF CALIFORNIA DISTRIBUTION. EC: Piedras del Burro, SON, to Puerto Vallarta, JAL. WC: Bahía San Francisco, BC, to Bahía de La Paz, BCS. IS: Isla Espíritu Santo and Isla La Partida, BCS.

TYPE LOCALITY. “Habitat in Europae mari & tectis maritimis” (Linnaeus, 1753:1163; probably Bognor, West Sussex, England, UK [Hayden et al., 2003:289]).

*Ulva flexuosa* Wulfen, 1803:1

GULF OF CALIFORNIA DISTRIBUTION. EC: El Tornillal, SON, to Bahía de Banderas, JAL. WC: Bahía

Concepción to Bahía de La Paz, BCS. IS: Isla Espíritu Santo, BCS; Isla Larga, NAY.

TYPE LOCALITY. Duino, near Trieste, Adriatic Sea, Italy.

*Ulva flexuosa* subsp. *paradoxa* (C. Agardh) M. J. Wynne, 2005:107

GULF OF CALIFORNIA DISTRIBUTION. EC: Laguna de Agua Brava, NAY.

TYPE LOCALITY. Bangor, Gwynedd, Wales, UK (Berger et al., 2003).

SYNTYPE LOCALITIES. Bangor, Wales, and Brighton, England, UK (O’Kelly et al., 2010).

REMARKS. *Ulva flexuosa* subsp. *paradoxa* (= *Enteromorpha flexuosa* subsp. *paradoxa* (C. Agardh) Bliding, 1963) was reported in the southern Gulf from Nayarit as *Ulva paradoxa* C. Agardh (1817).

*Ulva intestinalis* Linnaeus, 1753:1163

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Gorda, SON, to Bahía de Banderas, JAL. WC: Punta San Felipe, BC, to Cabo Pulmo, BCS. IS: Isla Tiburón, ISG.

TYPE LOCALITY. “Woolwich, London, England?” (Hayden et al., 2003:289); “in Mari omni” (South and Skelton, 2003).

LECTOTYPE LOCALITY. “In ditches near Woolwich,” River Thames, London; locale, lectotype specimen, and illustration of Dillenius (1742: pl. 9, fig. 7, as “*Tremella marina tubulosa, intestinorum figura . . .*”) were selected by Blomster et al. (1998:332, fig. 49).

REMARKS. Mora-Valdés and Riosmena-Rodríguez (2016) mistakenly stated Pedroche et al. (2005:26) treated *U. intestinalis* as a synonym of *U. flexuosa* Wulfen (1803); they cited only the subspecific taxon “*E. [Enteromorpha] intestinalis* var. *tubulosa* Kützinger, 1845,” and not the species, *U. intestinalis* Linnaeus (1753). Also, one forma listed in the Gulf by Mora-Valdés and Riosmena-Rodríguez (2016), *E. intestinalis* f. *maxima* J. Agardh (1883), is a taxonomic synonym of *U. intestinalis*.

*Enteromorpha marchantiae* Setchell et N. L. Gardner (1924a; type locality: La Paz, Baja California Sur) was treated as a synonym of *U. intestinalis* by Dawson (1944, as *E. intestinalis*), Pedroche et al. (2005), and Norris (2010). However, some recognize *E. marchantiae* as a distinct species (e.g., Guiry and Guiry, 2015; Mora-Valdés and Riosmena-Rodríguez, 2016). Its generic placement, taxonomic status, and relationship to *U. intestinalis* need to be tested.

*Ulva linza* Linnaeus, 1753:1163

GULF OF CALIFORNIA DISTRIBUTION. EC: Las Piedras del Burro to Puerto Peñasco, SON, to Bahía de Banderas, JAL. WC: Faro de San Felipe, BC, to Bahía de La Paz, BCS.

TYPE LOCALITY. “In Oceano” (Linnaeus, 1753:1163).

LECTOTYPE LOCALITY. Sheerness, Kent, England, UK (Hayden et al., 2003:289).

*Ulva radiata* (J. Agardh) Hayden, Blomster, Maggs, P. C. Silva, Stanhope et Waaland, 2003:290

GULF OF CALIFORNIA DISTRIBUTION. EC: Guaymas, SON, to NAY. WC: Bahía de Los Ángeles, BC, to Bahía de La Paz, BCS. IS: Isla Tiburón, ISG.

TYPE LOCALITY. Arctic Norway (Hayden et al. 2003:290, table 4).

REMARKS. Mora-Valdés and Riosmena-Rodríguez (2016) mistakenly stated *U. prolifera* was listed as a synonym of *U. radiata* by Norris (2010). Only “*E. [Enteromorpha] prolifera* sensu Setchell et N. L. Gardner, 1920, 1924, . . .” was cited, and it was noted not to be *Ulva prolifera* O. F. Müller (1778; Norris, 2010:48–49).

Uncertain Status and Record: *Enteromorpha? intestinalis* var. *clavata* (J. Agardh) Scagel, 1966:50

REMARKS. Listed in the Gulf of California as “*E. intestinalis* f. *clavata*” (Mora-Valdés and Riosmena-Rodríguez, 2016), its correct name is *E. intestinalis* var. *clavata* (J. Agardh) Scagel (Guiry and Guiry, 2015). Pedroche et al. (2005) noted that some have cited names of forms to “*U. intestinalis*” (e.g., Dawson, 1946, 1961c), but Setchell and Gardner (1920, as *U. intestinalis*) did not refer the La Paz specimen to a form. If *Enteromorpha intestinalis* var. *clavata* is recognized, the taxon probably belongs in *Ulva*, and its generic status is queried until molecular analysis of type materials is performed to verify its taxonomic placement.

Excluded Species: *Ulva intestinalis* f. *attenuata* (Ahlner) M. J. Wynne, 2014, in Cormaci et al., 2014:393

REMARKS. *Ulva intestinalis* f. *attenuata* was recorded in the Gulf by Mora-Valdés and Riosmena-Rodríguez (2016, as “*E. [Enteromorpha] intestinalis* f. *cylindracea*”), but with no specific Gulf locales. Both *E. intestinalis* f. *cylindracea* J. Agardh (1883) and *U. intestinalis* var. *cylindracea* (J. Agardh) M. J. Wynne (2005) are *nom. illeg.* (see Cormaci et al., 2014). Pedroche et al. (2005) earlier noted “*U. intestinalis* f. *cylindracea*” was misinterpreted by Dawson (1946) and is not in Gulf flora.

## ULVELLACEAE SCHMIDLE, 1899:57

### *Entocladia* Reinke, 1879:476

*Entocladia polysiphoniae* Setchell et N. L. Gardner, 1924a:718

GULF OF CALIFORNIA DISTRIBUTION. EC: El Desemboque de los Seris to Guaymas, SON. WC: Bahía de La Paz, BCS.

TYPE LOCALITY. In cell wall of *Polysiphonia marchantiae* (now *Melanothamus johnstonii*); Guaymas, Sonora, Gulf of California, Mexico.

*Entocladia* sp. A of Norris, 2010:23

GULF OF CALIFORNIA DISTRIBUTION. IS: west island (isla oeste), Islas de Los Gemelos, BC.

REMARKS. An endophyte, found in shallow subtidal *Cladophora* in the northern Gulf (Norris, 2010).

### *Epicladia* Reinke, 1889:31

*Epicladia condensata* (Setchell et N. L. Gardner) J. N. Norris, 2010:25

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Libertad, SON. WC: Bahía San Francisquito, BC. IS: Isla San Esteban, ISG.

TYPE LOCALITY. In utricles of *Codium*; Bahía San Francisquito, Baja California, Gulf of California, Mexico.

*Epicladia mexicana* (Setchell et N. L. Gardner) J. N. Norris, 2010:26

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, ISG.

TYPE LOCALITY. Endophytic in cell walls of *Chaetomorpha*; La Paz, Baja California Sur, Gulf of California, Mexico.

### *Ulvella* P. Crouan et H. Crouan, 1859:288

*Ulvella lens* P. Crouan et H. Crouan, 1859:288

GULF OF CALIFORNIA DISTRIBUTION. IS: Puerto Refugio, Isla Ángel de la Guarda, ISG.

TYPE LOCALITY. Rade de Brest, Finistère, Atlantic coast of France.

*Ulvella marchantiae* (Setchell et N. L. Gardner) R. Nielsen, O’Kelly et Wysor, in Nielsen et al., 2013:51

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz, BCS. IS: Isla Coronado, BC.

TYPE LOCALITY. Epiphytic on *Laurencia*; La Paz, Baja California Sur, Gulf of California, Mexico.

REMARKS. A Gulf of California endemic originally described as *Pringsheimia marchantiae* Setchell et N. L. Gardner (1924a), *Ulvella marchantiae* has also been reported in the Gulf as *Entocladia marchantiae* (Setchell et N. L. Gardner) Cribb (1995; Norris, 2010).

*Ulvella setchellii* Dangeard, 1931: 317

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía Kino, SON; Playa Los Cerritos, SIN. IS: Bahía de Agua Dulce, Isla Tiburón, ISG; Isla María Magdalena, NAY.

SYNTYPE LOCALITIES. Three locales given by Dangeard (1931): on *Polysiphonia*, Roscoff, Finistère, France; on *Phyllophora*, Croisic, Loire Inférieure, France; and on *Laurencia*, Pacific Grove, California.

LECTOTYPE LOCALITY. Pacific Grove, Monterey County, central California, USA (Nielsen et al., 2013:52, selected lectotype illustration and an epitype).

*Ulvella viridis* (Reinke) R. Nielsen, O'Kelly et Wysor, in Nielsen et al., 2013:53

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Estero de Bacorehuis, Laguna de Agiabampo, SON; Playa Los Cerritos, SIN. WC: Bahía de La Paz to Bahía Balandra, BCS.

TYPE LOCALITY. Napoli (Naples), Golfo di Napoli, Campania, Mar Tirreno, Italy.

REMARKS. *Ulvella viridis* was previously reported in the Gulf of California as *Entocladia viridis* Reinke (1879; Norris, 2010).

**CLADOPHOROPHYCEAE C. HOEK, D. G. MANN  
ET JAHNS, 1995:408, NOM. INVALID.**

**CLADOPHORALES HAECKEL, 1894:302**

REMARKS. Some phycologists place the Cladophorales within the class Ulvophyceae Mattox et Stewart (1984), but future studies are needed to resolve the class placement of the order (Rindi and Verbruggen, 2016).

**CLADOPHORACEAE W. WILLE, IN WARMING, 1884:30**

***Chaetomorpha* Kützing, 1845:203**

*Chaetomorpha aerea* (Dillwyn) Kützing, 1849:379

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía Tepoca, SON, to Bahía Chacala, NAY. WC: Puertecitos to Bahía de Los Ángeles, BC. IS: Puerto Refugio, Isla Ángel de la Guarda, ISG.

TYPE LOCALITY. Cromer, Norfolk, England, UK.

*Chaetomorpha antennina* (Bory de Saint-Vincent) Kützing, 1847:166

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía Kino, SON, to Bahía de Banderas, JAL. WC: Bahía San Luis Gonzaga, BC, to Cabeza Ballena, BCS. IS: Isla Turner, ISG; Isla San Ildefonso, BCS; Isla María Magdalena and Isla Larga, NAY.

TYPE LOCALITY. Réunion (Bourbon Island), Mascarene Islands (Mascarenhas Archipelago), Indian Ocean.

*Chaetomorpha bangioides* E. Y. Dawson, 1950b:149

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta de Mita, NAY, to Bahía de Banderas, JAL. WC: Puerto Escondido, BCS. IS: Isla Patos, ISG.

TYPE LOCALITY. Isla Patos (off N end of Isla Tiburón), Sonora, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

*Chaetomorpha clavata* Kützing, 1847:166

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Los Cerritos, SIN, to Punta de Mita, NAY.

TYPE LOCALITY. West Indies (Silva et al., 1996).

*Chaetomorpha javanica* Kützing, 1849:773

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz, BCS.

TYPE LOCALITY. Java (Jawa), Greater Sunda Islands, Indonesia.

*Chaetomorpha ligustica* (Kützing) Kützing, 1849:376

GULF OF CALIFORNIA DISTRIBUTION. EC: Guaymas to Laguna de Agiabampo, SON/SIN. IS: Bahía San Gabriel, Isla Espíritu Santo, BCS.

TYPE LOCALITY. Golfo di Genova, northernmost Mar Ligure, Italy.

REMARKS. Previously recorded in the Gulf of California as *Lola lubrica* (Setchell et N. L. Gardner) A. Hamel et G. Hamel (1929), which is now considered a synonym of *C. ligustica* (Kützing) Kützing (e.g., Brodie et al., 2007).

*Chaetomorpha linoidea* Kützing, 1847:167

GULF OF CALIFORNIA DISTRIBUTION. EC: Mazatlán, SIN. WC: Cabo San Lucas, BCS.

TYPE LOCALITY. Cumaná, state of Sucre, Venezuela.

*Chaetomorpha linum* (O. F. Müller) Kützing, 1845:204

GULF OF CALIFORNIA DISTRIBUTION. EC: Piedras de La Salina, SON, to Bahía de Banderas, JAL. WC: Puertecitos, BC, to Bahía de La Paz, BCS. IS: Isla Carmen, BCS.

SYNTYPE LOCALITIES. Nakskov Fjord and Rødby Fjord [both on island of Lolland], Denmark.

LECTOTYPE LOCALITY. Nakskov Fjord, Lolland [municipality], Region Sjælland, island of Lolland, south Denmark (Lipkin and Silva, 2002).

*Chaetomorpha minima* Collins et Hervey, 1917:41

GULF OF CALIFORNIA DISTRIBUTION. WC: San Juan de la Costa, Bahía de La Paz, BCS.

TYPE LOCALITY. "On fronds of *Codium*, *Cladophora* etc.; Bermuda" (Collins and Hervey, 1917:41).

*Chaetomorpha pachynema* (Montagne) Kützing, 1847:166

GULF OF CALIFORNIA DISTRIBUTION. WC: Punta Palmilla, BCS.

TYPE LOCALITY. "In littore; Islas Canarias" (Montagne, 1841:184); Canary Islands, Spain.

***Cladophora* Kützing, 1843:262**

*Cladophora albida* (Nees) Kützing, 1843:267

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía Kino, SON, to Puerto Vallarta, JAL. WC: Bahía de Los Ángeles, BC, to Cabo San Lucas, BCS.

TYPE LOCALITY. Isle of Selsey, southwestern England, UK.



*Cladophora coelothrix* Kützing, 1843:272

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa La Rumorosa, JAL.

TYPE LOCALITY. “Golf von Genua” (Kützing, 1843:272); Livorno, Province of Livorno, Ligurian Sea, west coast of Italy (Womersley, 1984).

*Cladophora columbiana* Collins, in Setchell and Gardner, 1903:226

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía Kino to Guaymas, SON. WC: Bahía de La Paz to Bahía del Rincón, BCS. IS: Isla Espíritu Santo, Isla Partida, and Isla San Juan Nepomuceno, BCS.

TYPE LOCALITY. Port Renfrew, Vancouver Island, British Columbia, Canada.

REMARKS. Mora-Valdés and Riosmena-Rodríguez (2016) incorrectly stated that Norris (2010) had listed *C. columbiana* as a synonym of *C. trichotoma*, but actually Norris (2010:56) cited only “*C. trichotoma* sensu Collins 1909” and not *C. trichotoma* (*C. Agardh*) Kützing (1849; now *Acrocladus pellucidus* (Hudson) Boedeker, in Boedeker et al., 2016).

*Cladophora flexuosa* (O. F. Müller) Kützing, 1843:270

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía de Banderas, NAY/JAL.

TYPE LOCALITY. Denmark.

REMARKS. Some consider *Cladophora flexuosa* and *C. sericea* (Hudson) Kützing to be synonyms (Hoek, 1963; John et al., 2004). Herein we follow others in maintaining them as separate species (Pedroche et al., 2005; Guiry and Guiry, 2014) until studies can resolve their relationship and the identity of Gulf specimens can be verified.

*Cladophora glomerata* (Linnaeus) Kützing, 1843:266

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz, BCS.

TYPE LOCALITY. Europe.

*Cladophora glomerata* var. *crassior* (*C. Agardh*) van den Hoek, 1963:163

GULF OF CALIFORNIA DISTRIBUTION. WC: Ensenada Ampe, BCS.

TYPE LOCALITY. Sussex, England, UK.

REMARKS. Reported in the southern Gulf as *Cladophora crispata* (Roth) Kützing, which is now a synonym of *C. glomerata* var. *crassior*.

*Cladophora graminea* Collins, 1909:19

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Guaymas, SON. WC: Punta Bufo, BC, to Cabeza Ballena, BCS. IS: Isla Tiburón, ISG.

TYPE LOCALITY. Pacific Grove, Monterey County, central California, USA.

*Cladophora hesperia* Setchell et N. L. Gardner, 1924a:713

GULF OF CALIFORNIA DISTRIBUTION. EC: Piedras de La Salina, SON, to Mazatlán, SIN. WC: Faro de San Felipe, BC, to Cabo San Lucas, BCS. IS: Bahía San Gabriel, Isla Espíritu Santo, and Isla Partida, BCS.

TYPE LOCALITY. “Muddy habitat, at the southern extremity of Lower California” (Setchell and Gardner, 1924a:714); “Distrito de Cabo San Lucas” (Pedroche et al., 2005:44), Baja California Sur, Gulf of California, Mexico.

*Cladophora laetevirens* (Dillwyn) Kützing, 1843:267

GULF OF CALIFORNIA DISTRIBUTION. EC: Sayulita, NAY, to Bahía de Banderas, JAL.

TYPE LOCALITY. Swansea, Glamorgan, Wales, UK.

*Cladophora lehmanniana* (Lindenberg) Kützing, 1843:268

GULF OF CALIFORNIA DISTRIBUTION. IS: Isla San Francisco, BCS.

TYPE LOCALITY. Helgoland (Heligoland), small archipelago in the North Sea, Germany.

*Cladophora liebethuthii* Grunow, in Piccone, 1884a:53

GULF OF CALIFORNIA DISTRIBUTION. EC: Lo de Marcos and Playa San Francisco, NAY.

TYPE LOCALITY. Gran Canaria, Islas Canarias (Canary Islands), Spain.

*Cladophora macdougallii* M. Howe, 1911:491

GULF OF CALIFORNIA DISTRIBUTION. WC: El Machorro, SON. EC: San Felipe to Puertecitos, BC.

TYPE LOCALITY. Bahía San Felipe, Baja California, Gulf of California, Mexico.

REMARKS. An endemic species, apparently restricted in distribution to the Upper Gulf of California.

*Cladophora microcladioides* Collins, 1909:17

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Gorda, SON, to Bahía de Banderas, JAL. WC: Playa Santa Teresa, BC, to Cabeza Ballena, BCS. IS: Isla Tiburón, ISG; Isla Espíritu Santo and Isla Partida, BCS.

TYPE LOCALITY. San Pedro, Los Angeles County, southern California, USA.

*Cladophora prolifera* (Roth) Kützing, 1843:271

GULF OF CALIFORNIA DISTRIBUTION. EC: El Tornillal, SON, to Puerto Vallarta, JAL. WC: Campo Hawaii (N of San Felipe), BC, to Cabo Pulmo, BCS.

TYPE LOCALITY. “In mare Corsicam” (Roth, 1797:183). Type from Mediterranean lost.

NEOTYPE LOCALITY. Miramare, near Trieste, Adriatic Sea, Italy (Hoek, 1963:208).

*Cladophora rivularis* (Linnaeus) van den Hoek, 1963:113

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz, BCS.

TYPE LOCALITY. Europe.

REMARKS. Reported in the southern Gulf as "*Cladophora insignis*" (Huerta-Múzquiz and Mendoza-González, 1985). Although *C. rivularis* has been reported in brackish water (Kamenarska et al., 2004), it is generally considered to be a fresh-water species (Hoek and Chihara, 2000; Boedeker et al., 2016).

*Cladophora sericea* (Hudson) Kützing, 1843:264

GULF OF CALIFORNIA DISTRIBUTION. EC: Em-palme, Guaymas, SON; Mazatlán, SIN, to Playa de Guayabitos, NAY. EC: Punta Arena to Cabo Pulmo, BCS.

SYNTYPE LOCALITIES. "Coast near Sheerness, and '*Rivus Novus*,' near London, are both mentioned by Dillenius (1741: 31)" (Hoek, 1963:77).

LECTOTYPE LOCALITY. Isle of Sheppey, Kent, Eng-land, UK.

*Cladophora stimpsonii* Harvey, 1860:334

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz, BCS.

TYPE LOCALITY. Hakodate Bay, Oshima Subprefecture, Hokkaido [island], Japan.

*Cladophora tiburonensis* E. Y. Dawson, 1944:211

GULF OF CALIFORNIA DISTRIBUTION. EC: Mazatlán, SIN. IS: Isla Turner, ISG.

TYPE LOCALITY. Isla Turner, off southeast end of Isla Tiburón, Sonora, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

*Cladophora vagabunda* (Linnaeus) van den Hoek, 1963:144

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Gorda to Puerto Peñasco, SON; Playa Guayabitos, NAY, to Bahía de Banderas, JAL.

LECTOTYPE LOCALITY. Salt marsh; on island of Selsey, Sussex, England, UK.

***Rhizoclonium* Kützing, 1843:261**

*Rhizoclonium hieroglyphicum* (C. Agardh) Kützing, 1845:206

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz, BCS.

TYPE LOCALITY. "Carlsbad in udis speluncis ru-pium" (Agardh, 1827:636), Czech Republic.

REMARKS. Pedroche et al. (2005) questioned its record in the southern Gulf, and its presence needs to be verified.

*Rhizoclonium lubricum* Setchell et Gardner in Gardner, 1919:492

GULF OF CALIFORNIA DISTRIBUTION. EC: Guaymas, SON, to Laguna de Agiabampo, SON/SIN. IS: Isla Partida and Bahía San Gabriel, Isla Espíritu Santo, BCS.

SYNTYPE LOCALITIES. Three localities given by Gardner (1919): Roche Harbor, NW San Juan Island, San Juan County, Washington, USA; and Berkeley and Alameda (both Alameda County), California, USA.

LECTOTYPE LOCALITY. Oakland, Alameda County, northern California, USA (Abbott and Hollenberg, 1976).

REMARKS. Reported in the Gulf as *Lola lubrica* (Setchell et N. L. Gardner) A. Hamel et Hamel (1929; Dawson, 1944). Pedroche et al. (2005) have questioned its generic placement. Norris (2010) later referred some Gulf *Rhizoclonium lubricum* to *R. tortuosum*. However, the latter two are considered to be distinct taxa (Guiry and Guiry, 2014; Mora-Valdés and Riosmena-Rodríguez, 2016). The taxonomic status of *R. lubricum* (Silva, 1979) and its identification in the Gulf are in need of clarification (Norris, 2010).

*Rhizoclonium riparium* (Roth) Harvey, 1849:238

GULF OF CALIFORNIA DISTRIBUTION. EC: Guaymas, SON, to Punta de Mita, NAY. WC: Puertecitos, BC, to Punta Arena, BCS. IS: Isla Espíritu Santo, BCS.

TYPE LOCALITY. Norderney Island, East Frisian Is-lands, Wadden Sea, Germany.

REMARKS. *Rhizoclonium riparium* has been recog-nized to be a "species-complex" that contains several cryptic, misidentified, or unrecognized species (Brodie et al., 2007).

*Rhizoclonium riparium* var. *implexum* (Dillwyn) Rosenvinge, 1894:915

GULF OF CALIFORNIA DISTRIBUTION. EC: Guaymas, SON, to Bahía de Banderas, JAL. EC: Puerto Escon-dido to Punta Arena, BCS.

TYPE LOCALITY. Bantry, County Cork, Ireland.

REMARKS. Pedroche et al. (2005) and Norris (2010:66) recognized the variety, *R. riparium* var. *implexum*, and did not treat it as a synonym of *R. implexum* as incorrectly stated by Mora-Valdés and Riosmena-Rodríguez (2016).

*Rhizoclonium tortuosum* (Dillwyn) Kützing, 1845:205

GULF OF CALIFORNIA DISTRIBUTION. EC: Guaymas, SON, to Laguna de Agiabampo, SON/SIN. IS: Bahía San Gabriel, Isla Espíritu Santo, and Isla Partida, BCS.

TYPE LOCALITY. Not designated and apparently lost (Chapman, 1939).

LECTOTYPE LOCALITY. Swansea, Glamorgan, Wales, UK (Chapman, 1939; Blair, 1983).

REMARKS. *Rhizoclonium tortuosum* is tentatively recognized in the Gulf until its relationship with type locality material can be elucidated (Norris, 2010). Silva et al. (1996) and Pedroche et al. (2005) have discussed its complex nomenclature and taxonomy.

***Willella* Børgesen, 1930:155**

*Willella brachyclados* (Montagne) M. J. Wynne, 2016:1

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Río Mayo, SON.

TYPE LOCALITY. Havana, Cuba.

REMARKS. *Cladophora montagneana* Kützing (1849) was recently shown to belong in *Willella* by Boedeker et al.

(2016, as *W. montagneana* (Kützing) Boedeker); a taxon found *nom. illeg.* and subsequently treated as *W. brachyclados* (Montagne) M. J. Wynne (2016).

**SIPHONOCLADALES (BLACKMAN ET TANSLEY)  
OLTMANN'S, 1904:134, SENSU STRICTO**

**BOODLEACEAE BØRGESEN, 1925:19**

***Boodlea* (Dickie) G. Murray et De Toni,  
in Murray, 1889:245**

*Boodlea composita* (Harvey) F. Brand, 1904:187

GULF OF CALIFORNIA DISTRIBUTION. EC: Mazatlán, SIN, to Bahía de Banderas, JAL. WC: Bahía Concepción, BCS. IS: Isla María Magdalena, NAY.

TYPE LOCALITY. Mauritius, Republic of Mauritius, Mascarene Islands, Indian Ocean.

***Cladophoropsis* Børgesen, 1905:288**

*Cladophoropsis gracillima* E. Y. Dawson, 1950b:149

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON. WC: Calerita to Punta Palmilla, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, ISG.

TYPE LOCALITY. Punta Palmilla, Baja California Sur, Gulf of California, Mexico.

*Cladophoropsis macromeres* W. R. Taylor, 1928:64

GULF OF CALIFORNIA DISTRIBUTION. EC: Guaymas, SON.

TYPE LOCALITY. Fort Jefferson, Garden Key, Dry Tortugas (Dry Tortugas National Park), Monroe County, Gulf of Mexico, Florida, USA.

REMARKS. The northern Gulf record of Mendoza-González and Mateo-Cid (1986) is the only known report of *C. macromeres* outside of the western Atlantic (Pedroche et al., 2005).

*Cladophoropsis membranacea* (Hofman Bang ex C. Agardh)  
Børgesen, 1905:289

GULF OF CALIFORNIA DISTRIBUTION. WC: Ensenada Ampe, BCS.

TYPE LOCALITY. Saint Croix, U.S. Virgin Islands, Leeward Islands, Caribbean Sea.

***Phyllodictyon* J. E. Gray, 1866:70**

*Phyllodictyon anastomosans* (Harvey) Kraft et M. J. Wynne,  
1996:139

GULF OF CALIFORNIA DISTRIBUTION. WC: Playa de Guayabitos to Playa Las Peñas, NAY. WC: Bahía de La Paz to Punta Arena, BCS.

TYPE LOCALITY. Fremantle, Western Australia, Australia.

*Phyllodictyon pulcherrimum* J. E. Gray, 1866:70

GULF OF CALIFORNIA DISTRIBUTION. WC: Punta Concepción, BCS.

TYPE LOCALITY. Gulf of Mexico.

*Phyllodictyon robustum* (Setchell et N. L. Gardner) Leliaert et  
Wysor, in Leliaert et al., 2008:230

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Gorda, SON, to Bahía de Banderas, JAL. WC: El Machorro, BC, to Cabo Pulmo, BCS. IS: Isla Alcatraz and Isla San Pedro Nolasco, SON; Isla Tortuga and Isla San Idefonso, BCS.

TYPE LOCALITY. On upper intertidal rocks; Isla Tortuga (off Puerto Santa Rosalía), Baja California Sur, Gulf of California, Mexico.

***Struvea* Sonder, 1845:49**

*Struvea* sp. of Huerta-Múzquiz and Mendoza-Gonzalez, 1985

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz, BCS.

**SIPHONOCLADACEAE F. SCHMITZ, 1879:20**

***Dictyosphaeria* Decaisne  
ex Endlicher, 1843:18**

*Dictyosphaeria australis* Setchell, 1926:79

GULF OF CALIFORNIA DISTRIBUTION. WC: Punta Palmilla to Cabeza Ballena, BCS.

TYPE LOCALITY. Arue Reef, Tahiti, French Polynesia.

*Dictyosphaeria cavernosa* (Forsskål) Børgesen, 1932:2

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz to Cabo Pulmo, BCS.

SYNTYPE LOCALITIES. Two locales: Gomfodae (Al-Qunfudhah), Saudi Arabia, and Mokha, Yemen.

LECTOTYPE LOCALITY. Mokha, Yemen (Leliaert and Coppejans, 2004).

*Dictyosphaeria versluysii* Weber-van Bosse, 1905:144

GULF OF CALIFORNIA DISTRIBUTION. WC: Calerita, Bahía de La Paz, BCS. IS: Bahía San Gabriel, Isla Espíritu Santo, and Isla Partida, BCS.

SYNTYPE LOCALITIES. “Plusieurs récifs dans l'Archipel Malaisien” (Weber-van Bosse, 1905:144) [many reefs in the Malay Archipelago].

***Ernodesmis* Børgesen, 1912:259**

*Ernodesmis verticillata* (Kützing) Børgesen, 1912:259

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON. WC: Bahía Concepción to Cabeza Ballena, BCS. IS: Isla Cholla, Isla Partida, and Isla Espíritu Santo, BCS.

TYPE LOCALITY. St. Croix, U.S. Virgin Islands, Leeward Islands, Caribbean Sea.

**VALONIACEAE KÜTZING, 1849:507*****Valonia* C. Agardh, 1823:428***Valonia macrophysa* Kützing, 1843:307

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz to Calerita, BCS.

TYPE LOCALITY. Leesina [Hvar Island], Adriatic Sea, Croatia.

***Valoniopsis* Børgesen, 1934:10***Valoniopsis hancockii* E. Y. Dawson, 1944:207

GULF OF CALIFORNIA DISTRIBUTION. IS: Puerto Refugio, Isla Ángel de la Guarda, ISG.

TYPE LOCALITY. Rocky shore, in low intertidal; Puerto Refugio, Isla Ángel de la Guarda, Baja California, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

*Valoniopsis pachynema* (G. Martens) Børgesen, 1934:10

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco to Guaymas, SON. WC: Puertecitos, BC, to Bahía de La Paz, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, Isla Tiburón, and Isla Turner, ISG; Isla Espíritu Santo, BCS; Isla Isabel, NAY.

SYNTYPE LOCALITIES. Benkulen (Bengkulu) and Pulau Tikus (near Bengkulu), Sumatra, Indonesia.

**BRYOPSIDOPHYCEAE BESSEY, 1907:287****BRYOPSIDALES J. H. SCHAFFNER, 1922:133****BRYOPSIDACEAE BORY DE SAINT-VINCENT, 1829:203*****Bryopsis* J. V. Lamouroux, 1809b:333***Bryopsis corticulans* Setchell, in Collins, Holden and Setchell, 1899: P.B.-A. Exsiccata no. 626

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía Kino, SON, to Bahía de Banderas, JAL.

SYNTYPE LOCALITIES. Carmel Bay and Pacific Grove, California.

LECTOTYPE LOCALITY. Pacific Grove, Monterey County, central California, USA (Smith, 1944).

*Bryopsis galapagensis* W. R. Taylor, 1945:60

GULF OF CALIFORNIA DISTRIBUTION. EC: Sa-yulita, NAY, to Bahía de Banderas, JAL. IS: Isla Larga, NAY.

TYPE LOCALITY. In intertidal pools; Wolf Island (Wenman Island), Galápagos Islands, Ecuador.

*Bryopsis hypnoides* J. V. Lamouroux, 1809b:333

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON, to Bahía de Banderas, JAL. WC: Punta

San Felipe, BC, to Cabo Pulmo, BCS. IS: Isla Partida and Isla Espíritu Santo, BCS; Isla de la Piedra, SIN; Isla Larga, NAY.

TYPE LOCALITY. “Cerca Cette” (Lamouroux, 1809b:333) [Sète, Hérault], Mediterranean coast of France.

*Bryopsis muscosa* J. V. Lamouroux, 1809b:333

GULF OF CALIFORNIA DISTRIBUTION. WC: Puerto Escondido to El Solitario, Bahía Agua Verde, BCS. IS: Isla Tortuga, Isla Cholla, and Isla San Ildefonso, BCS.

TYPE LOCALITY. Mediterranean coast of France.

*Bryopsis pennata* J. V. Lamouroux, 1809b:333

GULF OF CALIFORNIA DISTRIBUTION. EC: Puerto Peñasco, SON, to Bahía de Banderas, JAL. WC: Bahía de los Ángeles, BC, to Cabeza Ballena, BCS. IS: Isla Tiburón and Isla Turner, ISG.

TYPE LOCALITY. Antilles, West Indies [archipelago in Caribbean Sea composed of the islands of the Greater Antilles and the Lesser Antilles].

*Bryopsis pennata* var. *minor* J. Agardh, 1887:23

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta Chueca, SON, to Puerto Vallarta, JAL. WC: Bahía de La Paz to Cabo Pulmo, BCS. IS: Isla Espíritu Santo and Isla Partida, BCS.

TYPE LOCALITY. San Agustín, Oaxaca, Mexico.

*Bryopsis salvadoreana* E. Y. Dawson, 1961b:405

GULF OF CALIFORNIA DISTRIBUTION. IS: Isla Rasa, ISG.

TYPE LOCALITY. Arrecife de Sacate, off Punta Chiriquín, Golfo de Fonseca, El Salvador.

**DERBESIAEAE HAUCK, 1884:421*****Derbesia* Solier, 1846:452***Derbesia hollenbergii* W. R. Taylor, 1945:75

GULF OF CALIFORNIA DISTRIBUTION. WC: El Solitario, Bahía Agua Verde, BCS. IS: Isla San Pedro Nolasco (?), SON; Isla Cholla and Isla Carmen, BCS.

TYPE LOCALITY. Isla Floreana (Charles Island; Isla Santa María), Galápagos Islands, Ecuador.

*Derbesia marina* (Lyngbye) Solier, 1846:453GULF OF CALIFORNIA DISTRIBUTION. *Derbesia marina* (sporophyte)—EC: Puerto Peñasco, SON, to Bahía de Banderas, JAL. WC: Punta San Felipe, BC, to San José del Cabo, BCS. IS: Isla San Luis Gonzaga, BC; Isla Larga, NAY.*Halicystis*-phase (gametophyte of *Derbesia*)—EC: Bahía Concepción, BCS.TYPE LOCALITY. *Derbesia marina*: Kvívík (Kvívig), [Strømø], Stremoy [island], Faroe (Faeroe) Islands, Denmark.

**REMARKS.** Record of *Halicystis*-phase in the southern Gulf is presumed to be a vesicular gametangium of *Derbesia marina* (Mateo-Cid et al., 1993); its life history should be investigated.

*Derbesia* sp. A of Norris, 2010:840

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Punta Pelicano, Puerto Peñasco, SON.

*Derbesia* sp. of Rocha-Ramírez and Siqueiros-Beltrones, 1991:18

**GULF OF CALIFORNIA DISTRIBUTION.** WC: Bahía Balandra, BCS.

*Derbesia turbinata* M. Howe et Hoyt, 1916:106

**GULF OF CALIFORNIA DISTRIBUTION.** IS: Isla Las Ánimas, ISG.

**TYPE LOCALITY.** Beaufort, Carteret County, North Carolina, USA.

**REMARKS.** A western Atlantic species, its presence in the northern Gulf needs to be verified (Pedroche et al., 2005).

### ***Halicystis*-phase**

*Halicystis ovalis* of Norris and Bucher, 1976:3

**GULF OF CALIFORNIA DISTRIBUTION.** IS: Isla San Luis Gonzaga, BC.

**REMARKS.** Gulf of California specimens are epiphytic on *Amphiroa*; it is uncertain if these vesicles are gametophytes or sporophytes (Norris, 2010). Life history studies and molecular analyses of the Isla San Luis Gonzaga *Halicystis* will help clarify its taxonomic identity and whether it is distinct or perhaps a life history phase of *Derbesia* or of another genus.

## **CODIACEAE KÜTZING, 1843:302, 308**

### ***Codium* Stackhouse, 1797:xvi, xxiv**

*Codium amplivesiculatum* Setchell et N. L. Gardner, 1924a:709

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Punta Chueca, SON, to Bahía de Banderas, JAL. WC: Bahía de Los Ángeles, BC, to Punta Arena, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, Isla Estanque, Isla Rasa, and Isla San Esteban, ISG; Isla Monserrate, Isla Carmen, Isla Santa Catalina, and Isla Espíritu Santo, BCS.

**TYPE LOCALITY.** Floating; “near south end of [Isla] Ángel de la Guarda, Gulf of California” (Setchell and Gardner, 1924a:710); probably near Isla Estanque, Baja California, Islas Grandes (Islas de la Cintura), Gulf of California, Mexico.

**REMARKS.** Mora-Valdés and Riosmena-Rodríguez (2016) mistakenly state *C. decorticatum*, *C. dichotomum*, and *C. fernandezianum* were listed as synonyms of *C. amplivesiculatum* by Pedroche et al. (2005) and Norris (2010). Pedroche et al. (2002, 2005) did note that these were misapplied names

(misidentifications), and Norris (2010:87) cited only “*C. decorticatum* sensu Howe, 1911, *C. dichotomum* sensu Taylor, 1945, and *C. fernandezianum* sensu Taylor, 1945,” noting that the species *C. decorticatum* (Woodward) M. Howe (1911), *C. dichotomum* (Hudson) S. F. Gray (1821), and *C. fernandezianum* Setchell (1937) were distinct taxa.

*Codium brandegeei* Setchell et N. L. Gardner, 1924a:712

**GULF OF CALIFORNIA DISTRIBUTION.** Punta Pelicano, Puerto Peñasco, SON, to Bahía de Banderas, JAL. WC: San Felipe, BC, to Bahía de La Paz, BCS. IS: Isla San Jorge and Isla Alcatraz, SON; Puerto Refugio, Isla Ángel de la Guarda, Isla Patos, Isla Tiburón, and Isla Turner, ISG; Isla Carmen, Isla San Diego, Isla San José, and Isla Espíritu Santo, BCS.

**TYPE LOCALITY.** “Habitat unknown, probably at La Paz (?)” (locale questioned by Setchell and Gardner, 1924a:712), Baja California Sur, Gulf of California, Mexico.

**REMARKS.** Mora-Valdés and Riosmena-Rodríguez (2016) mistakenly stated that *Codium tomentosum* was treated as a synonym of *C. brandegeei* by Norris (2010). Only “*C. tomentosum* sensu Mendoza-González and Mateo-Cid, 1986” was referred to *C. brandegeei* and not the species *C. tomentosum* Stackhouse, 1797 (Norris, 2010:90). Pedroche et al. (2005:71) earlier noted “*C. tomentosum*” was a misapplied name (misidentified) in the Gulf of California and Pacific Mexico.

*Codium giraffa* P. C. Silva, 1979:264

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Mazatlán, SIN, to Bahía de Banderas, JAL. IS: Isla Larga, NAY.

**TYPE LOCALITY.** Papanoa, Guerrero, Mexico.

*Codium isabelae* W. R. Taylor, 1945:70

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Mazatlán, SIN, to Bahía de Banderas, JAL. IS: Isla de Venados, SIN; Isla Larga, NAY.

**TYPE LOCALITY.** On intertidal rock; near entrance to Tagus Cove, Isla Isabela (Isla Albemarle), Galápagos Islands, Ecuador.

**REMARKS.** Pedroche et al. (2005:74) did not list *C. isthomocladum* as a synonym of *C. isabelae* as stated by Mora-Valdés and Riosmena-Rodríguez (2016:216) but noted *C. isthomocladum* was one of several misapplied names and was not the species *C. isthomocladum* Vickers, 1905 (see Pedroche et al., 2002).

*Codium picturatum* Pedroche et P. C. Silva, 1996:2

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Bahía Chamela, JAL. WC: Puerto Escondido to Cabo Pulmo, BCS. IS: Isla Carmen, Isla San Idefonso, Isla Partida, and Isla Espíritu Santo, BCS.

**TYPE LOCALITY.** Playa La Audiencia (near Manzanillo), Colima, Mexico.

*Codium simulans* Setchell et N. L. Gardner, 1924a:706

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Bahía la Choya, Puerto Peñasco, SON, to Bahía de Banderas,

JAL. WC: Punta San Felipe, BC, to Cabeza Ballena, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, Isla Patos, Isla Estanque, Isla San Esteban, and Isla Rasa, ISG; Isla Coronado, BC; Isla San Pedro Nolasco, SON; Isla Tortuga, Isla Monserrate, Isla San Marcos, Isla San Ildefonso, Isla Danzante, Isla Santa Catalina, Isla San José, Isla Carmen, Isla San Francisco, Isla Partida, and Isla Espíritu Santo, BCS.

**TYPE LOCALITY.** Isla San Marcos, Baja California Sur, Gulf of California, Mexico.

**Codium sp. A**

**GULF OF CALIFORNIA DISTRIBUTION.** IS: Puerto Refugio, Isla Ángel de la Guarda, ISG.

**REMARKS.** Norris (2010:92, fig. 44) observed that the exceptionally large *Codium* sp. A, with broad flattened axes, was somewhat similar to the “*C. cuneatum*-form” of *C. simulans*. Its taxonomic status and phylogenetic relationship to other species of *Codium* require further study.

**Uncertain Record: *Codium fragile* (Suringar) Hariot, 1889:32**

**REMARKS.** Pedroche et al. (2005) noted Gulf records of Martínez-Lozano et al. (1991) and Casas-Valdéz et al. (1997) were not representative of *C. fragile* (now *C. fragile* subsp. *californicum* Maggs et J. Kelly, in Brodie et al., 2007), and its presence in the Gulf of California needs to be verified.

**Uncertain Record: *Codium setchellii* N. L. Gardner, 1919:489**

**REMARKS.** Southern Gulf records of “*C. setchellii*” are probably not this species, and most are referable to *C. picturatum* (Pedroche et al., 2005; Norris, 2010).

**Excluded Species: *Codium elongatum* (Turner) C. Agardh, 1823:454**

**REMARKS.** Mora-Valdés and Riosmena-Rodríguez (2016) noted *C. elongatum* was considered conspecific with *C. decorticutum* (Woodward) M. Howe (1911) by Silva et al. (1996). Pedroche et al. (2005:72) stated most of Gulf specimens of “*C. decorticutum*” were misidentified and probably were *C. giraffa* or *C. amplivesiculatum*.

**Excluded Species: *Codium fernandezianum* Setchell, 1937:592**

**REMARKS.** Although noting that *C. fernandezianum* was not recorded in the Gulf, Mora-Valdés and Riosmena-Rodríguez (2016) mistakenly stated it was treated as a synonym of *C. amplivesiculatum* by Norris (2010). However, only some specimens identified as “*C. fernandezianum* sensu Taylor, 1945” were referred to *C. amplivesiculatum* by Pedroche et al. (2002) and Norris (2010), and *C. fernandezianum* Setchell (1937) was not treated as being conspecific with *C. amplivesiculatum* Setchell et N. L. Gardner. *Codium fernandezianum* Setchell (1937) is a distinct species.

***Geppella* Børgesen, 1940:55**

**REMARKS.** The generitype, *Geppella mortensenii* Børgesen (1940), was transferred to *Rhipiliopsis* by Farghaly

and Denizot (1979, as *R. mortensenii* Farghaly et Denizot), thus leaving the generic placement of the remaining species, including the southern Gulf *G. decussata*, uncertain.

***Geppella? decussata* E. Y. Dawson, 1959a:14**

**GULF OF CALIFORNIA DISTRIBUTION.** IS: Isla San Francisco, BCS.

**TYPE LOCALITY.** Off southeast Isla San Francisco (off southern end of Isla San José), Baja California Sur, Gulf of California, Mexico.

**REMARKS.** A Gulf of California endemic that is known only from the type, the generic placement of *G.? decussata* is in need of elucidation (e.g., Norris, 2010; see also Remarks above under *Geppella*).

**CAULERPACEAE KÜTZING, 1843:302, 307**

***Caulerpa* J. V. Lamouroux, 1809b:332**

***Caulerpa antoensis* Yamada, 1940:100**

**GULF OF CALIFORNIA DISTRIBUTION.** WC: Bahía de La Paz to estero Balandra, BCS. IS: Isla San Juan Nepomuceno, BCS.

**TYPE LOCALITY.** Ant Atoll, off west coast of Pohnpei (Ponape), Senyavin Islands, Federated States of Micronesia, central Pacific Ocean.

**REMARKS.** Originally reported in the southern Gulf as *C. arenicola* W. R. Taylor (1950), a species that is now considered conspecific with *C. antoensis* (Abbott and Huisman, 2004).

***Caulerpa chemnitzia* (Esper) J. V. Lamouroux, 1809b:332**

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Mazatlán, SIN, to Bahía de Banderas, JAL. WC: Bahía Agua Verde to Cabeza Ballena, BCS. IS: Isla Monserrate, Isla San Francisco, Isla Partida, Isla Espíritu Santo, and Isla San Juan Nepomuceno, BCS; Isla Larga, NAY.

**TYPE LOCALITY.** “Aus den Malabarische Küsten” (Esper, 1800:167); Malabar Coast, Arabian Sea, southwest coast of India, northern Indian Ocean (Belton et al., 2014).

**REMARKS.** Three taxa reported in the Gulf were found to be conspecific with *C. chemnitzia* by Fernández-García et al. (2016): *C. peltata* J. V. Lamouroux (1809b; =*C. racemosa* var. *peltata* (J. V. Lamouroux) Eubank in T. A. Stephenson, 1944), *C. racemosa* var. *turbinata* (J. Agardh) Eubank (1946; Belton et al., 2014), and *C. vanbosseae* Setchell et N. L. Gardner (1924a). Fernández-García et al. (2016) also proposed use of the term “ecad” to recognize different morphologies within *C. chemnitzia*: “*C. chemnitzia* ecad *laetevirens*” with clavate fronds, “*C. chemnitzia* ecad *peltata*” with peltate or disklike fronds, and “*C. chemnitzia* ecad *intermedia*,” a transitional form between “ecad *peltata*” and “ecad *laetevirens*.” Ecad is not a valid taxon name (ICN, McNeill et al., 2012). However, the taxon variety (*varietas*) has been employed in botany in several senses; for example, a variety is morphologically distinct and may be geographical, ecological, cytological,

or combinations of these (e.g., Davis and Heywood, 1963; ICN, McNeill et al., 2012).

There are four varieties of *Caulerpa chemnitzia* now recorded in the Gulf of California, including three herein with proposed new combinations in acknowledgment of the studies of Dra. Cindy Fernández-García (Universidad de Costa Rica) and the late Dr. Rafael Riosmena-Rodríguez (Univeridad Autónoma de Baja California Sur), and their colleagues.

***Caulerpa chemnitzia* var. *laetevirens* (Montagne) Fernández-García et Riosmena-Rodríguez, *comb. nov.***

**BASIONYM.** *Caulerpa laetevirens* Montagne, 1842a:13.

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Bahía de Banderas, NAY/JAL.

**TYPE LOCALITY.** Toud Island (Warrior Inlet), Torres Strait, between Queensland, Australia, and Papua New Guinea.

***Caulerpa chemnitzia* var. *peltata* (J. V. Lamouroux) Zanardini, 1858:287**

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Mazatlán, SIN, to Bahía de Banderas, JAL. WC: Bahía de La Paz to Cabo Pulmo, BCS. IS: Isla San Francisco, Isla Partida, Isla Espíritu Santo, and Isla San Juan Nepomuceno, BCS; Isla Larga, NAY.

**TYPE LOCALITY.** Antilles, West Indies [archipelago in Caribbean Sea composed of the islands of the Greater Antilles and the Lesser Antilles].

***Caulerpa chemnitzia* var. *turbinata* (J. Agardh) Fernández-García et Riosmena-Rodríguez, *comb. nov.***

**BASIONYM.** *Caulerpa clavifera* var. *turbinata* J. Agardh, 1837:173.

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Mazatlán, SIN, to Bahía de Banderas, JAL. WC: Bahía Agua Verde to Cabeza Ballena, BCS. IS: Isla Monserrate, Isla San Francisco, Isla Partida, Isla Espíritu Santo, and Isla San Juan Nepomuceno, BCS; Isla Larga, NAY.

**TYPE LOCALITY.** Near Tor, Sinai Peninsula, Egypt.

***Caulerpa chemnitzia* var. *vanbosseae* (Setchell et N. L. Gardner) Fernández-García et Riosmena-Rodríguez, *comb. nov.***

**BASIONYM.** *Caulerpa vanbosseae* Setchell et N. L. Gardner, 1924a:704.

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Playa Tucson, Puerto Peñasco, to Ensenada de San Francisco, SON. WC: Bahía Concepción to Bahía de La Paz, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, ISG; Isla Tortuga, Isla San Ildefonso, Isla Cholla, Isla San José, Isla Partida, and Isla Espíritu Santo, BCS.

**TYPE LOCALITY.** “Habitat unknown; vicinity of La Paz” (Setchell and Gardner, 1924a), Baja California Sur, Gulf of California, Mexico.

**REMARKS.** Originally described from the southern Gulf, *Caulerpa vanbosseae* was treated as synonym of *C. chemnitzia* by Fernández-García et al. (2016). *Caulerpa chemnitzia* var. *vanbosseae* has also been reported along Pacific coast of Baja

California Sur (Pedroche et al., 2005; Norris, 2010, as *C. vanbosseae*). In the upper Gulf, its intertidal habitat in Puerto Peñasco is ecologically different from the tropical habitat of La Paz (type locality) in the southern Gulf. Molecular comparisons of type locality *C. vanbosseae* to those of the upper Gulf would test their phylogenetic relationship (see also Remarks under *C. chemnitzia*).

***Caulerpa cupressoides* (H. West ex Vahl) C. Agardh, 1817:xxiii**

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Playa Los Cerritos, SIN, to Playa de Guayabitos and Playa Las Peñas, NAY.

**TYPE LOCALITY.** St. Croix, U.S. Virgin Islands, Leeward Islands, Caribbean Sea.

**REMARKS.** “*Caulerpa mexicana*” as cited by Pedroche et al. (2005:64) on the basis of records from Mazatlán (Carballo et al., 2002) and tropical Pacific Mexico (González-González, 1993) were both found to be *C. cupressoides* (non *C. mexicana* Sonder ex Kützing, 1849) by Fernández-García et al. (2016).

***Caulerpa cupressoides* var. *lycopodium* Weber-van Bosse, 1898:335, 336**

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Sayulita, NAY, to Bahía de Banderas, JAL.

**TYPE LOCALITY.** Guadeloupe (Weber-van Bosse, 1898), Leeward Islands, Lesser Antilles, Caribbean Sea.

**REMARKS.** Silva et al. (1996) noted the intended basionym, *C. lycopodium* J. Agardh (1847), as a later homonym of *C. lycopodium* C. Agardh (1817) is a *nom. illeg.* and treated *C. cupressoides* var. *lycopodium* Weber-van Bosse (1898) as a *nom. nov.* (see also Pedroche et al., 2005).

***Caulerpa mexicana* f. *pectinata* (Kützing) W. R. Taylor, 1960:141**

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Bahía la Choya to Playa Estación, Puerto Peñasco, SON. WC: Bahía de Los Ángeles, BC. IS: Canal Mejía (channel between Isla Mejía and Isla División), NW side of Puerto Refugio, Isla Ángel de la Guarda, ISG.

**TYPE LOCALITY.** La Guaira, Vargas State, Venezuela.

***Caulerpa racemosa* (Forsskål) J. Agardh, 1873:35**

**GULF OF CALIFORNIA DISTRIBUTION.** EC: Guaymas, SON, to Bahía de Banderas, JAL. WC: Bahía de La Paz to Arrecife de Cabo Pulmo, BCS. IS: Isla Partida and Bahía San Gabriel, Isla Espíritu Santo, BCS.

**TYPE LOCALITY.** Suez, Gulf of Suez, Egypt.

**REMARKS.** Belton et al. (2014) found at least 11 distinct species were in the *C. racemosa-peltata* complex. Since none of their specimens from its type locality matched the type of *C. racemosa*, Belton et al. (2014) suggested that until topotype specimens can be located to resolve its taxonomic status, *C. racemosa* should be recognized on the basis of specimens closely resembling the type specimen from other locales. They also noted

Papenfuss and Egerod (1957) were likely correct in considering *C. racemosa* var. *uvifera* (C. Agardh) J. Agardh (1873) as a synonymy of *C. racemosa*; it has been treated as such in the Gulf of California (Pedroche et al., 2005).

*Caulerpa racemosa* var. *macrophysa* (Sonder ex Kützing) W. R. Taylor, 1928:101

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía de Banderas, NAY/JAL. WC: Bahía de La Paz, BCS.

TYPE LOCALITY. Central America, Eastern Pacific (Verlaque et al., 2003).

REMARKS. Fernández-García et al. (2016) treated *C. racemosa* var. *macrophysa* as a synonym of *C. racemosa*, noting its distribution is apparently restricted to the southern region of the eastern tropical Pacific. Although Belton et al. (2014) found no differences between specimens they identified as *C. racemosa* var. *macrophysa* and *C. racemosa* var. *racemosa*, they noted comparative testing of type locality *Chawinia macrophysa* Sonder ex Kützing (1857) was necessary before the synonymy could be accepted.

*Caulerpa sertularioides* (S. G. Gmelin) M. Howe, 1905:576

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía San Carlos, SON, to Playa de Guayabitos and Playa Las Peñas, NAY. WC: Bahía Concepción to Punta Los Frailes, BCS. IS: Isla Monserrate, Isla Partida, and Isla Espíritu Santo, BCS.

TYPE LOCALITY. "In coralliis americanis" (Gmelin, 1768); possibly "tropical Atlantic America" (Hodgson et al., 2004).

*Caulerpa sertularioides* f. *brevipes* (J. Agardh) Svedelius, 1906:114

GULF OF CALIFORNIA DISTRIBUTION. EC: Laguna de Agiabampo, SON/SIN.

SYNTYPE LOCALITIES. West Indies [Caribbean Sea], Pacific Ocean, Sri Lanka [Indian Ocean], and Red Sea.

REMARKS. Fernández-García et al. (2012, 2016) suggested two tropical eastern Pacific taxa, *C. sertularioides* f. *brevipes* and *C. sertularioides* f. *longiseta*, were possibly morphological adaptations to variable substrata and/or depths.

*Caulerpa sertularioides* f. *longiseta* (Bory de Saint-Vincent)

Svedelius, 1906:114

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz, BCS. IS: Isla Partida and Isla Espíritu Santo, BCS.

TYPE LOCALITY. Not specified (Silva et al., 1996).

REMARKS. See Remarks above under *C. sertularioides* f. *brevipes*.

Uncertain Record: *Caulerpa fastigiata* Montagne, 1837:353

REMARKS. Recorded in the southern Gulf from Bahía Concepción (Riosmena-Rodríguez et al., 1998), its presence in the Gulf needs to be verified.

Uncertain Record: *Caulerpa mexicana* Sonder ex Kützing, 1849:496

REMARKS. Belton et al. (2014) discovered several distinct genetic species that have been misidentified as "*C.*

*mexicana*." Gulf of California specimens identified as "*C. mexicana*" need to be reexamined to determine their identifications (see also *Remarks* under *C. cupressoides*).

## HALIMEDACEAE LINK, 1832:115

### *Halimeda* J. V. Lamouroux, 1812:186

*Halimeda cuneata* Hering, in Krauss, 1846:214

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía Chacala, NAY, to Bahía de Banderas, JAL.

TYPE LOCALITY. Natal Bay, South Africa (Silva et al., 1996).

*Halimeda discoidea* Decaisne, 1842a:102

GULF OF CALIFORNIA DISTRIBUTION. EC: Guaymas, SON, to Bahía de Banderas, JAL. WC: Santa Rosalía to San José del Cabo, BCS. IS: Puerto Refugio, Isla Ángel de la Guarda, ISG; Isla San Francisco, Isla Monserrate, Isla Cholla, Isla Partida, Isla Espíritu Santo, and Isla San Juan Nepomuceno, BCS; Isla María Magdalena and Isla Larga, NAY.

TYPE LOCALITY. "Not certain" (Silva et al., 1996). Herbarium label (PC) indicates "Kamtschatka" (Russia), collected during the voyage of the ship *Venus* (Decaisne, 1842b). Hillis (1959; Hillis-Colinvaux, 1980) noted "at least the locality [is] incorrect," as waters of the Kamchatka Peninsula are far too cold for this tropical to subtropical species.

*Halimeda opuntia* (Linnaeus) J. V. Lamouroux, 1816:308

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía Balandra, BCS.

TYPE LOCALITY. Jamaica (Hillis, 1959).

REMARKS. Mora-Valdés and Riosmena-Rodríguez (2016) mistakenly stated Pedroche et al. (2005) listed "*H. opuntia*" as a synonym of *H. hederacea*. Only two subspecific taxa, *H. opuntia* f. *hederacea* Barton (1901) and *H. opuntia* var. *hederacea* (Barton) Hillis-Colinvaux (Hillis, 1959), were listed as synonyms of *H. hederacea* (Barton) Hillis-Colinvaux (1968) by Pedroche et al. (2005:80) and not the species *H. opuntia* (Linnaeus) J. V. Lamouroux (1816).

*Halimeda tuna* (J. Ellis et Solander) J. V. Lamouroux, 1816:309

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía de Banderas, NAY/JAL.

TYPE LOCALITY. Mediterranean Sea.

## UDOTEACEAE J. AGARDH, 1887:12

### *Chlorodesmis* Harvey et Bailey, 1851:373

*Chlorodesmis caespitosa* J. Agardh, 1887:49

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta de Mita, NAY.

TYPE LOCALITY. Colombo, Sri Lanka, Indian Ocean.



***Chlorodesmis hildebrandtii* A. Gepp et E. S. Gepp, 1911:16**

GULF OF CALIFORNIA DISTRIBUTION. EC: Playa Los Muertos, NAY, to Bahía de Banderas, JAL. WC: Punta Arena, BCS. IS: Isla San Francisco, Isla Partida, and Isla Espíritu Santo, BCS; Isla Larga, NAY.

SYNTYPE LOCALITIES. Localities listed by Gepp and Gepp (1911:16): “Comoros Islands, Johanna, Pomona, [and] Selayar [sic] Island”; Selayar Island, Selayar Islands, South Sulawesi Province, Indonesia.

LECTOTYPE LOCALITY. “Johanna, Pomona” (Gepp and Gepp, 1911:16); Domoni, Anjouan Island (Johanna; Ndzuani; Ndzuwani), Comoros Islands, Indian Ocean (Ducker, 1967).

***Chlorodesmis mexicana* W. R. Taylor, 1945:64**

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de Banderas, NAY/JAL.

LECTOTYPE LOCALITY. In tide pools; Bahía Braithwaite, Isla Socorro, Islas Revillagigedo, Colima, Mexico.

REMARKS. Although listed as a synonym of *C. caespitosa* by Pedroche et al. (2005), others recognize it as a distinct taxon (e.g., Guiry and Guiry, 2014; Mora-Valdés and Riosmena-Rodríguez, 2016).

**DASYCLADOPHYCEAE C. HOEK, D. G. MANN  
ET JAHNS, 1995:436, NOM. INVALID.**

REMARKS. The class name is not validly published (see McNeill et al., 2012: Art. 44), and some include members of the class in the Ulvophyceae (see Guiry and Guiry, 2016).

**DASYCLADALES BESSEY, 1907:287****DASYCLADACEAE KÜTZING, 1843:302, 312*****Batophora* J. Agardh, 1854:107**

*Batophora oerstedii* J. Agardh, 1854:108

GULF OF CALIFORNIA DISTRIBUTION. EC: Laguna de Agiabampo, SON/SIN.

TYPE LOCALITY. Among the red mangroves, *Rhizophora mangle*; Krause lagoon, Saint Croix, U.S. Virgin Islands, Leeward Islands, Caribbean Sea.

***Neomeris* J. V. Lamouroux, 1816:241**

*Neomeris annulata* Dickie, 1874:198

GULF OF CALIFORNIA DISTRIBUTION. WC: Ensenada de Muertos to Arrecife de Cabo Pulmo, BCS. IS: Canal de San Lorenzo, Isla Espíritu Santo, Isla Partida, and Isla Cerralvo, BCS.

TYPE LOCALITY. Mauritania, on Atlantic coast of western North Africa.

**POLYPHYSACEAE KÜTZING, 1843:302, 311*****Acetabularia* J. V. Lamouroux, 1812:185**

*Acetabularia caliculus* J. V. Lamouroux, in Quoy et Gaimard, 1824:621

GULF OF CALIFORNIA DISTRIBUTION. EC: Bahía la Choya, Puerto Peñasco, SON. WC: Bahía de La Paz to Arrecife de Cabo Pulmo, BCS. IS: Isla Espíritu Santo, BCS.

TYPE LOCALITY. “Baie des Chiens-Marins” (Lamouroux in Quoy and Gaimard, 1824:261); Shark Bay, Gascoyne region, Western Australia, Australia.

***Acetabularia crenulata* J. V. Lamouroux, 1816:249**

GULF OF CALIFORNIA DISTRIBUTION. EC: Laguna de Agiabampo, SON/SIN. WC: Bahía de La Paz to Bahía Balandra, BCS.

TYPE LOCALITY. Caribbean Sea.

***Acetabularia farlowii* Solms-Laubach, 1895:27**

GULF OF CALIFORNIA DISTRIBUTION. EC: Laguna de Agiabampo, SON, to Laguna Altata-Ensenada del Pabellón, SIN.

TYPE LOCALITY. Key West, Florida Keys, Monroe County, Florida, USA.

***Acetabularia schenckii* K. Möbius, 1889:318**

GULF OF CALIFORNIA DISTRIBUTION. EC: Lagunas Santa María-Topolobampo-Ohuira to Laguna Altata-Ensenada del Pabellón, SIN. WC: Bahía de La Paz, BCS. IS: Isla Espíritu Santo, BCS.

TYPE LOCALITY. Rio de Janeiro, [state of] Rio de Janeiro, Brazil (Oliveira Filho, 1977).

***Parvocaulis* S. Berger, Fettweiss,  
Gleissberg, Liddle, U. Richter, Sawitzky  
et Zuccarello, 2003:559**

*Parvocaulis parvulus* (Solms-Laubach) S. Berger, Fettweiss, Gleissberg, Liddle, U. Richter, Sawitzky et Zuccarello, 2003:559

GULF OF CALIFORNIA DISTRIBUTION. EC: Punta de Mita, NAY, to Bahía de Banderas, JAL. WC: Punta Arena to Cabo Pulmo, BCS.

SYNTYPE LOCALITIES. Two locales were given for *Acetabularia parvula* by Solms-Laubach (1895:29): tropical India and Celebes, Indonesia.

LECTOTYPE LOCALITY. Makasar, Sulawesi (Celebes), Indonesia (Lipkin and Silva, 2002).

*Parvocaulis pusillus* (M. Howe) S. Berger, Fettweiss, Gleissberg, Liddle, U. Richter, Sawitzky et Zuccarello, 2003:560

GULF OF CALIFORNIA DISTRIBUTION. WC: Bahía de La Paz to Arrecife de Cabo Pulmo, BCS. IS: Isla San Juan Nepomuceno, BCS.

TYPE LOCALITY. Montego Bay, Jamaica, Greater Antilles, Caribbean Sea.

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# Appendix: Localities Cited in Distribution Sections

**TABLE A1.** Localities cited in Gulf of California Distribution sections, including state (estado) and geographic coordinates for each. Abbreviations: BC = Baja California; BCS = Baja California Sur; GUER = Guerrero; IS = Islas; ISG = Islas Grandes (Islas de la Cintura; Midriff Islands); JAL = Jalisco; MICH = Michoacán; NAY = Nayarit; SIN = Sinaloa; SON = Sonora; vic. = in the vicinity of.

| Locality   | State        | Latitude (N) | Longitude (W) |
|--|--------------|--------------|---------------|
| Arrecife de Cabo Pulmo                                       | BCS          | 23°26'       | 109°25'       |
| Bahía Agua Verde   | BCS          | 25°31'       | 110°56'       |
| Bahía Bacoichibampo (Bocoichibampo)                          | SON          | 27°55'       | 110°58'       |
| Bahía Balandra   | BCS          | 24°19'       | 110°18'       |
| Bahía Catalina (inlet, Canal de Guaymas, vic. Punta Narizón) | SON          | 27°52'       | 110°52'       |
| Bahía Chacala  | NAY          | 21°10'       | 105°14'       |
| Bahía Concepción   | BCS          | 26°39'       | 111°48'       |
| Bahía Coyote (Bahía El Coyote; inside Bahía Concepción)      | BCS          | 24°41'       | 110°43'       |
| Bahía de Agua Dulce (Bahía Tecomate), Isla Tiburón           | SON/ISG (IS) | 29°00'       | 112°23'       |
| Bahía de Banderas  | JAL          | 20°40'       | 105°25'       |
| Bahía de La Paz  | BCS          | 24°20'       | 110°25'       |
| Bahía de Las Ánimas  | BC           | 28°48'       | 113°21'       |
| Bahía de Loreto  | BCS          | 26°01'       | 111°21'       |
| Bahía de Los Ángeles   | BC           | 28°55'       | 113°32'       |
| Bahía de los Muertos (Bahía de los Suenos)                   | BCS          | 23°59'       | 109°49'       |
| Bahía del Rincón   | BCS          | 23°30'       | 109°30'       |
| Bahía de Navachiste  | SIN          | 25°27'       | 108°50'       |
| Bahía de San Lucas   | BCS          | 22°53'       | 109°52'       |
| Bahía Empalme  | SON          | 27°55'       | 110°48'       |
| Bahía Kino   | SON          | 28°46'       | 111°53'       |
| Bahía la Choya (Bahía Cholla)                                | SON          | 31°20'       | 113°37'       |
| Bahía La Ventana (SE of La Paz)                              | BCS          | 24°03'       | 109°59'       |
| Bahía Salinas (Isla Carmen)                                  | BCS          | 26°01'       | 111°07'       |
| Bahía San Carlos   | SON          | 27°56'       | 111°03'       |
| Bahía San Felipe   | BC           | 31°00'       | 114°51'       |
| Bahía San Francisco  | SON          | 27°57'       | 111°00'       |
| Bahía San Francisquito                                       | BC           | 28°26'       | 112°53'       |
| Bahía San Gabriel (Isla Espiritu Santo)                      | BCS (IS)     | 24°25'       | 110°20'       |
| Bahía San José del Cabo                                      | BCS          | 23°02'       | 109°40'       |
| Bahía San Luis Gonzaga                                       | BC           | 29°48'       | 114°22'       |
| Bahía San Pedro  | SON          | 28°03'       | 111°14'       |
| Bahía Tenacatita   | JAL          | 19°17'       | 104°48'       |
| Bahía Tepoca   | SON          | 29°22'       | 112°53'       |

TABLE A1. (Continued)

| Locality  | State        | Latitude (N)     | Longitude (W) |
|---|--------------|------------------|---------------|
| Bahía Topolobampo   | SIN          | 25°33'           | 109°05'       |
| Bahía Willard   | BC           | 29°49'           | 114°23'       |
| Barra de Navidad  | JAL          | 19° 12'          | 104° 41'      |
| Boca del Río Mayo   | SON          | 27°01'           | 109°59'       |
| Cabeza Ballena (E of Cabo San Lucas)  | BCS          | 22°54'           | 109°51'       |
| Cabo Arco (N of Guaymas)  | SON          | 27°52'           | 110°57'       |
| Cabo Corrientes   | JAL          | 20°24'           | 105°41'       |
| Cabo Los Machos (Bahía Concepción)  | BCS          | 26°52'           | 111°54'       |
| Cabo Pulmo  | BCS          | 23°26'           | 109°25'       |
| Cabo San Lucas  | BCS          | 22°52'           | 109°53'       |
| Cabo Tepoca (reef of Punta Tepoca)  | SON          | 30°16'           | 112°50'       |
| Calerita (vic. La Paz)  | BCS          | 24°21'           | 110°16'       |
| Caleta Partida (between Isla Partida and Isla Espíritu Santo)   | BCS (IS)     | 24°31'           | 110°23'       |
| Caleta Santa María (N of Santa Rosalía)   | BCS          | 27°25'           | 112°19'       |
| Caleta Santa María (NE of Cabo San Lucas)   | BCS          | 23°05'           | 109°37'       |
| Campo Hawaii (Playa Hawaii)   | BC           | 31°03'           | 114°49'       |
| Campo Oona (S of Campo Víboras)   | SON          | 28°58'           | 112°09'       |
| Campo Víboras (“ <i>Quipcō Coospoj</i> ” in Seri language; N of Punta Chueca)                         | SON          | 28°57'           | 112°09'       |
| Canal de Ballenas (between W coast of Isla Ángel de la Guarda and E coast of Baja California)         | BC           | 29°34' to 28°23' |               |
| Canal de Infiernillo (“ <i>Xepe Coosot</i> ” in Seri language; between Isla Tiburón and Sonora coast) | SON/ISG (IS) | 29°01'           | 112°10'       |
| Canal de San Lorenzo (off S end of Isla Espíritu Santo)   | BCS          | 24°24'           | 110°16'       |
| Canal Mejía (between Isla Mejía and Isla División)  | BC/ISG (IS)  | 29°32'           | 113°33'       |
| Cerro El Crestón (W of Bahía de Mazatlán)   | SIN          | 23°10'           | 106°25'       |
| El Colorado   | SON          | 28°17'           | 111°25'       |
| El Desemboque (Desemboque; El Desemboque Asunción)  | SON          | 30°34'           | 113°00'       |
| El Desemboque de los Seris (“ <i>Haxöl Iihom</i> ” in Seri language; El Desemboque de San Ignacio)    | SON          | 29°30'           | 112°23'       |
| El Faro   | MICH         | 18°19'           | 103°29'       |
| El Huerfanito   | BC           | 30°07'           | 114°38'       |
| El Machorro   | BC           | 31°11'           | 114°53'       |
| El Malecón (La Paz)   | BCS          | 24°10'           | 110°18'       |
| El Pardito-El Lobera (Isla San José)  | BCS (IS)     | 24°51'           | 110°35'       |
| El Requesón (Bahía Concepción)  | BCS          | 26°38'           | 111°50'       |
| El Tecolote   | BCS          | 24°21'           | 110°19'       |
| El Tornillal (Golfo de Santa Clara)   | SON          | 31°34'           | 114°18'       |
| Ensenada Ampe   | BCS          | 24°20'           | 110°25'       |
| Ensenada Bacochibampo   | SON          | 27°55'           | 110°58'       |
| Ensenada de La Paz  | BCS          | 24°08'           | 110°23'       |
| Ensenada de San Francisco (NE of Guaymas)   | SON          | 27°56'           | 111°04'       |
| Ensenada Lalo (vic. Bahía San Carlos)   | SON          | 27°56'           | 111°05'       |
| Estero Balandra   | BCS          | 24°19'           | 110°20'       |
| Estero de Bacorehuis (SE Lagnua de Agiabampo)   | SIN          | 26°17'           | 109°08'       |
| Estero del Urías  | SIN          | 23°11'           | 106°26'       |
| Estero Santa Rosa   | SON          | 28°58'           | 112°09'       |
| Estero Zacatecas (Bahía de La Paz)  | BCS          | 24°10'           | 110°26'       |
| Eureka (Rancho Eureka; near La Paz)   | BCS          | 23°36'           | 109°36'       |

TABLE A1. (Continued)

| Locality  | State        | Latitude (N) | Longitude (W) |
|---|--------------|--------------|---------------|
| Faro de San Felipe  | BC           | 31°03'       | 114°51'       |
| Guaymas   | SON          | 27°55'       | 110°55'       |
| Golfo de Santa Clara  | SON          | 31°30–34'    | 114°09–18'    |
| Isla Ardilla (vic. Guaymas)                                     | SON          | 27°55'       | 110°54'       |
| Isla Alcatr az  | SON (IS)     | 28°48'       | 111°58'       |
| Isla  ngel de la Guarda   | BC/ISG (IS)  | 29°15'       | 113°22'       |
| Isla Bargo (Bah a Concepci n)                                   | BCS          | 26°43'       | 111°53'       |
| Isla Carmen   | BCS (IS)     | 25°57'       | 111°12'       |
| Isla Cerralvo   | BCS          | 24°14'       | 109°53'       |
| Isla Cholla (vic. Isla Carmen)                                  | BCS (IS)     | 26°03'       | 111°13'       |
| Isla Coronado (Isla Smith)                                      | BC (IS)      | 29°04'       | 113°32'       |
| Isla Danzante   | BCS (IS)     | 25°47'       | 111°15'       |
| Isla de la Piedra (vic. Mazatl n)                               | SIN (IS)     | 23°11'       | 106°25'       |
| Isla de Venados (Isla Vernados)                                 | SIN          | 23°14'       | 106°29'       |
| Isla El Choyero   | SON (IS)     | 28°44'       | 112°18'       |
| Isla Esp ritu Santo   | BCS (IS)     | 24°30'       | 110°22'       |
| Isla Estanque (Isla Pond, Isla la Bibera)                       | BC/ISG (IS)  | 29°03'       | 113°06'       |
| Isla Gallina (La Gallina)                                       | BCS (IS)     | 24°27'       | 110°23'       |
| Isla Gallo (El Gallo; “Gallo-Gallina”)                          | BCS (IS)     | 24°27'       | 110°23'       |
| Isla Gaviota (Bah a de La Paz)                                  | BCS          | 24°17'       | 110°20'       |
| Isla Isabel   | NAY (IS)     | 21°51'       | 105°54'       |
| Isla Ixtapa (Isla Grande)                                       | GUER         | 17°41'       | 101°39'       |
| Isla [Islote] La Ballena  | BCS          | 24°29'       | 110°24'       |
| Isla Larga  | NAY (IS)     | 20°42'       | 105°35'       |
| Isla Las  nimas (Isla San Lorenzo del Norte), Islas San Lorenzo | BC/ISG (IS)  | 28°41'       | 112°55'       |
| Isla La Ventana   | BC (IS)      | 29°00'       | 114°31'       |
| Isla Los Lobos  | SIN          | 23°13'       | 106°27'       |
| Isla Mar a Cleofas, Islas Mar as (Islas Tres Mar as)            | NAY (IS)     | 21°18'       | 106°15'       |
| Isla Mar a Madre, Islas Mar as (Islas Tres Mar as)              | NAY (IS)     | 21°35'       | 106°36'       |
| Isla Mar a Magdalena, Islas Mar as (Islas Tres Mar as)          | NAY (IS)     | 21°27'       | 106°28'       |
| Isla Mej a (NW of Puerto Refugio, I.  ngel de la Guarda)        | BC/ISG (IS)  | 29°33'       | 113°34'       |
| Isla Monserrate   | BCS (IS)     | 25°41'       | 111°03'       |
| Isla Partida [norte] (Isla Cordonazo; NW of Isla Rasa)          | BC/ISG (IS)  | 28°53'       | 113°04'       |
| Isla Partida [sur] (N of Isla Esp ritu Santo)                   | BCS (IS)     | 24°32'       | 110°21'       |
| Isla Patos (off N end of Isla Tibur n)                          | SON/ISG (IS) | 29°16'       | 112°27'       |
| Isla Pel cano (WNW of Isla Alcatr az)                           | SON (IS)     | 28°48'       | 111°58'       |
| Isla Rasa (Isla Raza)   | BC/ISG (IS)  | 28°48'       | 112°56'       |
| Isla Salsipuedes (Islas de San Lorenzo)                         | BC/ISG (IS)  | 28°43'       | 112°57'       |
| Isla San Diego  | BCS (IS)     | 25°11'       | 110°42'       |
| Isla San Esteban  | SON/ISG (IS) | 28°42'       | 112°36'       |
| Isla San Francisco (off S end of Isla San Jos )                 | BCS (IS)     | 24°45'       | 110°34'       |
| Isla San Ildefonso (E of Bah a de San Nicolas)                  | BCS (IS)     | 26°37'       | 111°26'       |
| Isla San Jorge (SE of Puerto Pe asco)                           | SON (IS)     | 31°00'       | 113°15'       |
| Isla San Jos    | BCS (IS)     | 25°00'       | 110°36'       |
| Isla San Juan Nepomuceno  | BCS (IS)     | 24°16'       | 110°20'       |
| Isla San Lorenzo (Isla San Lorenzo del Sur), Islas San Lorenzo  | BC/ISG (IS)  | 28°34'       | 112°49'       |
| Isla San Luis Gonzaga (Isla Willard)                            | BC (IS)      | 29°58'       | 114°24'       |
| Isla San Marcos   | BCS (IS)     | 27°13'       | 112°06'       |

TABLE A1. (Continued)

| Locality   | State        | Latitude (N) | Longitude (W) |
|--|--------------|--------------|---------------|
| Isla San Pedro Mártir                                    | SON/ISG (IS) | 28°23'       | 112°19'       |
| Isla San Pedro Nolasco                                   | SON (IS)     | 27°58'       | 111°23'       |
| Isla Santa Catalina                                      | BCS (IS)     | 25°40'       | 110°47'       |
| Isla Santa Cruz  | BCS          | 25°17'       | 110°43'       |
| Islas de Los Gemelos (isla oeste and isla este)          | BC (IS)      | 28°57'       | 113°29'       |
| Islas Santa Inés (Islas Santa Inez)                      | BCS          | 27°02'       | 111°54'       |
| Isla Tiburón   | SON/ISG (IS) | 29°00'       | 112°22'       |
| Isla Tortuga   | BCS (IS)     | 27°26'       | 111°52'       |
| Isla Turner (Isla Turners; El Dátil; Isla Dátil)         | SON/ISG (IS) | 28°43'       | 112°19'       |
| La Concha Beach (vic. La Paz)                            | BCS          | 24°10'       | 110°19'       |
| La Cruz de Huanacaxtle (NW Bahía de Banderas)            | NAY          | 20°45'       | 105°23'       |
| Laguna Altata-Ensenada del Pabellón                      | SIN          | 24°24'       | 107°31'       |
| Laguna, Bahía San Gabriel (Isla Espíritu Santo)          | BCS (IS)     | 24°25'       | 110°20'       |
| Laguna de Agiabampo (estero de Agiabampo)                | SON/SIN      | 26°21'       | 109°12'       |
| Laguna de Agua Brava                                     | NAY          | 22°09'       | 105°30'       |
| Laguna Santa María y Laguna La Reforma                   | SIN          | 25°02'       | 108°03'       |
| Lagunas Santa María-Topolobampo-Ohuira                   | SIN          | 25°33'       | 109°05'       |
| La Paz   | BCS          | 24°10'       | 110°18'       |
| Las Cruces   | BCS          | 24°17'       | 110°12'       |
| Las Cuevas   | NAY          | 21°09'       | 105°14'       |
| Las Peñas  | NAY          | 21°01'       | 105°16'       |
| Las Piedras del Burro                                    | SON          | 31°37'       | 114°23'       |
| La Ventana   | BCS          | 24°02'       | 110°01'       |
| Lo de Marcos ("Los de Marco")                            | NAY          | 20°57'       | 105°20'       |
| Los Planes   | BCS          | 24°01'       | 109°48'       |
| Los Pocitos (SW Bahía Concepción)                        | BCS          | 26°40'       | 111°48'       |
| Los Tornados   | BCS          | 24°15'       | 110°10'       |
| Mazatlán   | SIN          | 23°13'       | 106°25'       |
| Miramar  | NAY          | 21°26'       | 105°11'       |
| Mulegé   | BCS          | 26°53'       | 111°56'       |
| Nopoló   | BCS          | 25°56'       | 111°22'       |
| Nueva Guaymas (Bahía San Carlos)                         | SON          | 27°56'       | 111°03'       |
| Pichilinke   | BCS          | 24°16'       | 110°19'       |
| Piedras de La Salina (Golfo de Santa Clara)              | SON          | 31°30'       | 114°09'       |
| Piedras del Burro (Golfo de Santa Clara)                 | SON          | 31°33'       | 114°17'       |
| Playa Arenosa (vic. Puerto Peñasco)                      | SON          | 31°19'       | 113°35'       |
| Playa Carelleros (Careyeros)                             | NAY          | 20°47'       | 105°31'       |
| Playa de Guayabitos (Rincón de Guayabitos)               | NAY          | 21°03'       | 105°17'       |
| Playa El Caimancito                                      | BCS          | 24°20'       | 110°30'       |
| Playa El Coloradito                                      | BC           | 30°34'       | 114°40'       |
| Playa El Sábalo (Punta Sábalo)                           | SIN          | 23°15'       | 106°27'       |
| Playa Estación and Cumpleaños Tide Pool (Puerto Peñasco) | SON          | 29°59'       | 111°11'       |
| Playa Hermosa (vic. Puerto Peñasco)                      | SON          | 31°19'       | 113°33'       |
| Playa Las Conchas (vic. Puerto Peñasco)                  | SON          | 31°17'       | 113°29'       |
| Playa Las Peñas (vic. Playa de Guayabitos)               | NAY          | 21°03'       | 105°17'       |
| Playa Los Algodones (NW of San Carlos)                   | SON          | 27°57'       | 111°06'       |
| Playa Los Cerritos (vic. Mazatlán)                       | SIN          | 23°19'       | 106°29'       |
| Playa Los Muertos  | NAY          | 20°51'       | 105°28'       |

TABLE A1. (Continued)

| Locality  | State       | Latitude (N) | Longitude (W) |
|---|-------------|--------------|---------------|
| Playa Mezcales                                      | JAL         | 19°36'       | 105°08'       |
| Playa Norte (vic. Mazatlán)                         | SIN         | 23°13'       | 106°25'       |
| Playa Olas Altas (vic. Mazatlán)                    | SIN         | 23°11'       | 106°25'       |
| Playa San Francisco                                 | NAY         | 20°54'       | 105°24'       |
| Playa Santa Teresa                                  | BC          | 30°20'       | 114°38'       |
| Playa Tucson (vic. Puerto Peñasco)                  | SON         | 31°19'       | 113°33'       |
| Puertecitos   | BC          | 30°21'       | 114°37'       |
| Puerto Ballandra (I. Carmen)                        | BCS (IS)    | 26°01'       | 110°10'       |
| Puerto Calamajué                                    | BC          | 29°40'       | 114°10'       |
| Puerto Escondido                                    | BCS         | 25°48'       | 111°19'       |
| Puerto Libertad                                     | SON         | 29°55'       | 112°41'       |
| Puerto Lobos  | SON         | 30°16'       | 112°51'       |
| Puerto Peñasco                                      | SON         | 31°20'       | 113°40'       |
| Puerto Refugio (Isla Ángel de la Guarda)            | BC/ISG (IS) | 29°32'       | 113°33'       |
| Puerto San Carlos                                   | SON         | 27°56'       | 111°01'       |
| Puerto Vallarta                                     | JAL         | 20°37'       | 105°14'       |
| Puerto Viejo (vic. Mazatlán)                        | SIN         | 23°12'       | 106°25'       |
| Punta Aguja   | BCS         | 26°53'       | 111°49'       |
| Punta Arena (Punta Arenas; N of Cabo Pulmo)         | BCS         | 23°03'       | 109°48'       |
| Punta Bufeo   | BC          | 29°55'       | 114°26'       |
| Punta Cabeza de Mechudo (Bahía de La Paz)           | BCS         | 24°48'       | 110°39'       |
| Punta Chile   | SIN         | 23°12'       | 106°25'       |
| Punta Chivato (Punta Santa Inés[z])                 | BCS         | 27°04'       | 111°56'       |
| Punta Chueca ("Socaaix" in Seri language)           | SON         | 29°01'       | 112°10'       |
| Punta Cirio   | SON         | 29°50'       | 112°39'       |
| Punta Colorado (near Candeleros, vic. Guaymas)      | SON         | 28°46'       | 112°22'       |
| Punta Coyote (E of La Paz)                          | BCS         | 24°20'       | 110°13'       |
| Punta Concepción                                    | BCS         | 23°34'       | 111°49'       |
| Punta Derecha                                       | SIN         | 23°12'       | 106°26'       |
| Punta El Pulpito (Pulpito, vic. Loreto)             | BCS         | 26°31'       | 111°26'       |
| Punta Gallito                                       | BCS         | 26°52'       | 111°56'       |
| Punta Gorda (NE end of Bahía San José del Cabo)     | BCS         | 23°05'       | 109°35'       |
| Punta Gorda (Golfo de Santa Clara)                  | SON         | 31°30'       | 114°12'       |
| Punta La Gringa (vic. Bahía de Los Ángeles)         | BC          | 29°03'       | 113°32'       |
| Punta Las Cuevas                                    | SON         | 27°56'       | 112°03'       |
| Punta Las Cuevitas                                  | SON         | 29°16'       | 112°30'       |
| Punta Los Frailes                                   | BCS         | 23°23'       | 109°25'       |
| Punta Palmilla (vic. San José del Cabo)             | BCS         | 23°00'       | 109°43'       |
| Punta Pelicano (vic. Puerto Peñasco)                | SON         | 31°20'       | 113°38'       |
| Punta Perico (ESE of Bahía Salinas, I. Carmen)      | BCS (IS)    | 25°58'       | 111°05'       |
| Punta Perico[s] (N end of Bahía de los Muertos)     | BCS         | 24°10'       | 109°80'       |
| Punta Piaxtla                                       | SIN         | 23°39'       | 106°48'       |
| Punta Prieta (in Bahía Topolobampo)                 | SIN         | 25°33'       | 109°05'       |
| Punta Robinson (between Punta Tepoca & Punta Cirio) | SON         | 29°54'       | 112°43'       |
| Punta San Evaristo                                  | BC          | 24°55'       | 110°42'       |
| Punta San Felipe                                    | BC          | 31°03'       | 114°51'       |
| Punta San Marcial                                   | BCS         | 25°31'       | 111°01'       |
| Punta San Pedro (N of entrance to Bahía San Pedro)  | SON         | 28°03'       | 111°14'       |

TABLE A1. (Continued)

| Locality   | State | Latitude (N) | Longitude (W) |
|--|-------|--------------|---------------|
| Río Mayo (near mouth of river)                     | SON   | 26°42'       | 109°31'       |
| Roca El Solitario (northern Bahía Agua Verde)      | BCS   | 25°32'       | 110°56'       |
| Roca Roja (Bahía Kino)                             | SON   | 28°50'       | 111°59'       |
| Roca San Marcial                                   | BCS   | 25°32'       | 111°00'       |
| San Blas   | NAY   | 21°31'       | 105°17'       |
| San Felipe   | BC    | 31°01'       | 114°52'       |
| San José del Cabo                                  | BCS   | 23°02'       | 109°40'       |
| San Juan de la Costa (Bahía de La Paz)             | BCS   | 24°20'       | 110°39'       |
| Santa Rosalía                                      | BCS   | 27°20'       | 112°17'       |
| Sayulita   | NAY   | 20°52'       | 105°28'       |
| Segundo Cerro Prieto (vic. Kino Nuevo, Bahía Kino) | SON   | 28°53'       | 112°02'       |
| Tarabillas   | BCS   | 24°27'       | 110°41'       |
| Teacapán   | SIN   | 22°32'       | 105°45'       |
| Topolobampo  | SIN   | 25°36'       | 109°03'       |
| Yelapa   | JAL   | 20°16'       | 105°26'       |



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# Index of Scientific Names

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All taxa recognized in the Gulf of California are shown in **bold type**. Names of all genera and species, subspecies, varietas, and forma of the benthic marine red, brown, and green algae are shown in **bold italics**, and higher taxa (phyla, classes, subclasses, orders, families, and subfamilies) are in **bold SMALL CAPITAL LETTERS**.

Names of genera and species that are uncertain records, excluded species, or synonyms; have uncertain taxonomic status; have a distribution outside of the Gulf; or are referred to in Remarks are in *nonbold italics*, and higher taxa are in nonbold **SMALL CAPITAL LETTERS**.

Page numbers in **bold type** refer to the start of the taxonomic accounts for currently accepted names of the Gulf taxa. Page numbers in nonbold type refer to taxa mentioned in the synopses lists, Remarks of other accounts, or elsewhere in the text (excluding tables of contents and references).

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REQUIRED ELEMENTS are title page, abstract, table of contents, main text, and references.

FIGURES must be numbered sequentially (1, 2, 3, etc.) in the order called out; have components lettered consistently (in size, font, and style) and described in captions; include a scale bar or scale description, if appropriate; include any legends in or on figures rather than in captions. Figures must be original and must be submitted as individual TIF or EPS files.

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