



# Diversity of marine benthic algae from Cantabria (Eastern Cantabrian, Spain): a historical overview of research and publications

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## Abstract

The macroalgal flora of Cantabria (north of Spain) has attracted the interest of many researchers on past occasions. Currently published information only reflects occasional collections from sporadic field visits to this region of the Spanish Atlantic coast. To overcome this, a historical overview of research and publications, encompassing collections and presence data recording, has been undertaken. This work lists the resultant taxonomic records and provides information about macroalgal flora of Cantabria. A total of 425 species (25 Cyanobacteria, 55 Chlorophyta, 81 Ochrophyta, and 264 Rhodophyta) were identified. The number of specific, infraspecific taxa, and stages is 437: 25 Cyanobacteria, 57 Chlorophyta, 89 Ochrophyta, and 266 Rhodophyta. The floristic character of flora from the Cantabrian coast is compared over time and with nearby regions applying Cheney's ratio  $[(\text{Rhodophyta} + \text{Chlorophyta}) / \text{Ochrophyta}]$ , or  $(R+C)/O$ . The present paper aims to provide an overview of the research that has been conducted in the Cantabrian coast, not only found in international publications but also in local publications as well as unpublished theses.

**Keywords** Cantabria · Chlorophyta · Cyanobacteria · Flora · Iberian Peninsula · NE Atlantic · Ochrophyta · Rhodophyta · Seaweeds · Spain

## Introduction

Marine benthic flora of the Atlantic coasts of the Iberian Peninsula has been studied for over 250 years (e.g., Clemente y Rubio 1807; Colmeiro 1867, 1889; Lázaro e Ibiza 1889); Sauvageau 1897; Chalon 1905; Miranda 1931; Dizerbo 1956, etc.) and, currently, many species are catalogued in various checklists or compilations (e.g. Miranda 1943a, b, c, 1944; Ardré 1970; Cremades et al. 2002; Gorostiaga et al. 2004; Araújo et al. 2003, 2009; Bárbara et al. 2003, 2005; Cires and Cuesta 2010, 2019). In recent years, new floristic contributions have increased our knowledge

of the algae in the north of the Iberian Peninsula, and new research at the molecular level has been developed, enriching the traditional systematics.

However, within the Iberian coast, Cantabrian marine benthic flora is scarcely known to the point that no detailed checklist of the region has been developed. Some lists focused on the Western and Eastern stretches of the coast were published (Fernández-Montero et al. 1998; Menoyo et al. 1998) and later expanded (Martínez-Gil et al. 2007), which verse around the benthic marine algae from Noja (Cantabria). Although these works add up a total of 252 species to the marine flora of the province, a much higher value is found in neighboring territories (Fig. 1).

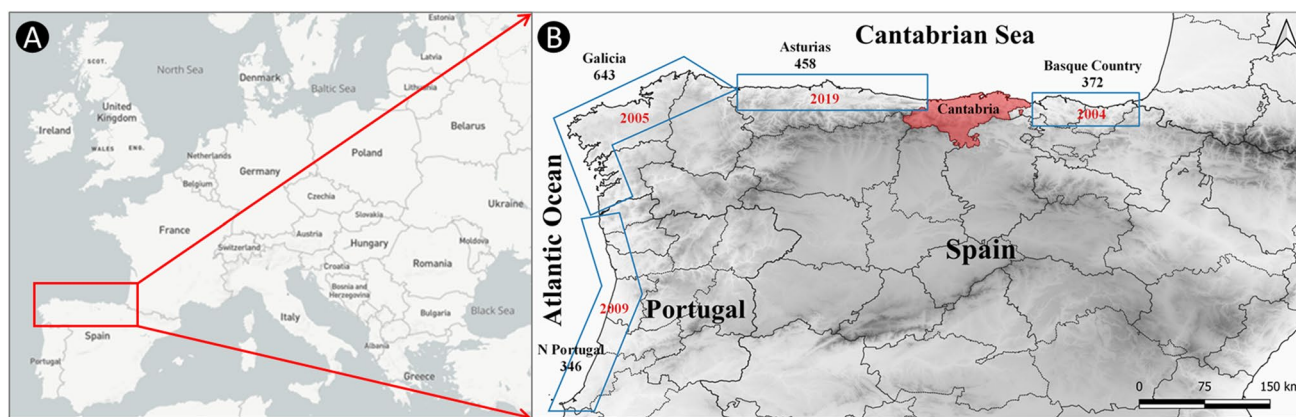
Thus, the present work aims to expand the knowledge on the marine algae flora of the coast of Cantabria for the first time. It is worth highlighting that a thorough knowledge of natural resources of a territory is always required, not only for a proper evaluation and conservation management, but also as it constitutes an exceptionally valuable source of scientific information. Therefore, this inventory does not attempt to be a definitive catalogue, as new records appear continuously, but to contribute to increase our understanding of the biogeographical characteristics of this area in the

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**Fig. 1** Map showing the location of Cantabria and the regions with which its flora is compared. **(A)** Study area of the present work. **(B)** Map showing the location of Atlantic provinces. Red: publication year of the checklist or compilation - North of Portugal (Araújo et al.

2009), Galicia (Bárbara et al. 2005), Asturias (Cires and Cuesta 2010, 2019); Basque Country (Gorostiaga et al. 2004). Black: number of algae listed

Atlantic coast and the knowledge of its marine biodiversity, which altogether may be useful for the sustainable management of the future marine protected area.

## Materials and methods

### Description of study area and applied methodology

The coast of the Cantabria region, between 43° 21' N, 3° 09' W and 43° 23' N, 4° 30' W covers about 220 km (Fig. 1). It borders Asturias to the west at Tina Mayor, a small estuary formed by the mouth of Deva river, while to the east it borders the Basque Country. It is characterized by extensive cliffs (approximately 136 km are occupied by cliffs). In short, it is a steep coast with many geographical features (e.g., wave-cut platformer beach, estuaries, bays, headlands and beaches). The climate is temperate, oceanic, with moderate winters and warm summers.

This catalogue compiles an intensive search of scientific information related to benthic marine algae from the Cantabrian coast. The checklist is based on a compilation of data from literature references and herbarium data. For the literature survey, international publications on macroalgae where Cantabria is cited were retrieved from four different search engines, i.e., the Web of Science (<https://clarivate.com/webofsciencelibrary/>), ScienceDirect (<https://www.sciencedirect.com/>), Scopus (<https://www.scopus.com/>) and Google Scholar (<https://scholar.google.com/>). Subsequently, inquiries were made regarding papers that were published locally in journals of different local universities and in final reports of national and international projects. The last step was to obtain unpublished works such as M. Phil. Thesis, Ph.D. Doctoral Thesis and Technical Reports from

universities and scientific institutions. The herbarium specimens checked belong to University of Oviedo (FCO-Algae), Royal Botanic Garden of Madrid (MA-Algae), University of Barcelona (BCN-Phycophyta), Complutense University of Madrid (MACB-Algae), University of Valencia (VAL-Algae), University of País Vasco (BIO-Algae), University of Santiago de Compostela (SANT-Algae) and The French National Museum of Natural History (Muséum National d'Histoire Naturelle, PC-cryptogamy) (see GBIF 2021; <https://www.gbif.org/>).

The current taxonomic status and nomenclatural changes of the taxa of interest have been considered following Algaebase (<https://www.algaebase.org/>; Guiry and Guiry 2021). Phyla, class, orders, families, genera and species are alphabetically arranged. To classify the Cantabrian algae flora, we have applied Feldmann's ratio [R/O] (number of species of Rhodophyta / number of species of Ochrophyta) and Cheney's ratio [(R+C)/O] in a similar manner to Feldmann's but including green algae (Feldmann 1937 and Cheney 1977 respectively). These ratios indicate the position of a flora in relation to cold and warm waters.

## Results

Table 1 presents the checklist of the seaweeds of Cantabria in taxonomic order. It includes most synonyms used in literature, bibliographic references and herbarium sheets. The list includes 425 species: 25 Cyanobacteria, 55 Chlorophyta, 81 Ochrophyta, and 264 Rhodophyta. The number of specific, infraspecific taxa, and stages is 437: 25 Cyanobacteria, 57 Chlorophyta, 89 Ochrophyta, and 266 Rhodophyta. We have also excluded 7 species from the coast of Cantabria due to misidentifications, and considered doubtful the presence of

**Table 1** Catalogue of the benthic marine algae of Cantabria (Eastern Cantabrian, Spain)

Taxon	Phylum	Class	Order	Family	Synonyms	References	Herbarium collections
<i>Arthrospira miniata</i> Gomont	Cyanobacteria	Cyanophyceae	Oscillatoriales	Microcoleaceae		Miranda (1931, 1943a)	
<i>Blennothrix glutinosa</i> (Gomont ex Gomont) Anagn. & Komárek	Cyanobacteria	Cyanophyceae	Oscillatoriales	Oscillatoriaceae	<i>Hydrocoleum glutinosum</i> Gomont ex Gomont	Miranda (1943a)	
<i>Calothrix confervicola</i> C.Agardh ex Bornet & Flahault	Cyanobacteria	Cyanophyceae	Nostocales	Calothriaceae	<i>Calothrix aeruginosa</i> Thur. ex Bornet & Flahault; <i>Leibleinia aeruginosa</i> Kütz., nom. inval.	Colmeiro (1889); Lázaro e Ibiza (1889); Chalón (1905); Miranda (1943a); Díaz-Tapia et al. (2008); Díaz-Tapia (2013)	SANT-Algae: 20155
<i>Calothrix parasitica</i> Thur. ex Bornet & Flahault	Cyanobacteria	Cyanophyceae	Nostocales	Calothriaceae		Miranda (1931, 1943a)	
<i>Chamaecalyx leibleiniae</i> (Reinsch) Komárek & Anagn.	Cyanobacteria	Cyanophyceae	Pleurocapsales	Hyellaceae	<i>Dermocarpa leibleiniae</i> (Reinsch) Bornet & Thur.	Sauvageau (1897); Chalón (1905); Miranda (1943a)	
<i>Dermocarpella prasina</i> (Reinsch) Komárek & Anagn.	Cyanobacteria	Cyanophyceae	Pleurocapsales	Dermocarpellaceae	<i>Dermocarpa prasina</i> (Reinsch) Bornet & Thur.	Miranda (1943a); Valenzuela Miranda (2005)	
<i>Entophysalis conferta</i> (Kütz.) Drouet & W.A.Daily	Cyanobacteria	Cyanophyceae	Chroococcales	Entophysalidaceae		Fernández-Montero et al. (1998)	
<i>Hyella caespitosa</i> Bornet & Flahault	Cyanobacteria	Cyanophyceae	Pleurocapsales	Hyellaceae		Sauvageau (1897); Miranda (1943a)	
<i>Isactis plana</i> Thur. ex Bornet & Flahault	Cyanobacteria	Cyanophyceae	Nostocales	Rivulariaceae		Sauvageau (1897); Chalón (1905); Miranda (1943a)	
<i>Lyngbya confervoides</i> C.Agardh ex Gomont	Cyanobacteria	Cyanophyceae	Oscillatoriales	Oscillatoriaceae		Sauvageau (1897); Chalón (1905); Miranda (1943a)	SANT-Algae: 7053
<i>Lyngbya majuscula</i> Harv. ex Gomont	Cyanobacteria	Cyanophyceae	Oscillatoriales	Oscillatoriaceae		Colmeiro (1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalón (1905); Miranda (1931, 1943a)	SANT-Algae: 14703
<i>Lyngbya meneghiniana</i> Gomont	Cyanobacteria	Cyanophyceae	Oscillatoriales	Oscillatoriaceae		Sauvageau (1897); Chalón (1905); Miranda (1943a)	
<i>Lyngbya semiplena</i> J.Agardh ex Gomont	Cyanobacteria	Cyanophyceae	Oscillatoriales	Oscillatoriaceae		Miranda (1943a)	
<i>Mastigocoleus testarum</i> Lagerh. ex Bornet & Flahault	Cyanobacteria	Cyanophyceae	Nostocales	Hapalosiphonaceae		Sauvageau (1897); Chalón (1905); Miranda (1943a)	
<i>Merismopedtia mediterranea</i> Nüßli	Cyanobacteria	Cyanophyceae	Synechococcales	Merismopediaceae		Miranda (1931, 1943a)	
<i>Microcoleus lyngbyaceus</i> Kütz. ex Forri	Cyanobacteria	Cyanophyceae	Oscillatoriales	Microcoleaceae		Fernández-Montero et al. (1998); Menoyo et al. (1998)	
<i>Phormidium baculum</i> (Gomont ex Gomont) Anagn.	Cyanobacteria	Cyanophyceae	Oscillatoriales	Oscillatoriaceae	<i>Leibleinia baculum</i> (Gomont) L.Hoflm.	Díaz-Tapia et al. (2008); Díaz-Tapia (2013)	SANT-Algae: 20154
<i>Pleurocapsa fuliginosa</i> Hauck	Cyanobacteria	Cyanophyceae	Pleurocapsales	Hyellaceae		Menoyo et al. (1998)	
<i>Rivularia ballata</i> Berk. ex Bornet & Flahault	Cyanobacteria	Cyanophyceae	Nostocales	Rivulariaceae		Sauvageau (1897); Chalón (1905); Miranda (1943a); Dizerbo (1956)	
<i>Rivularia nitida</i> C.Agardh ex Bornet & Flahault	Cyanobacteria	Cyanophyceae	Nostocales	Rivulariaceae	<i>Physactis pilifera</i> Kütz., nom. inval.	Colmeiro (1889); Lázaro e Ibiza (1889); Chalón (1905)	
<i>Schizothrix arenaria</i> Gomont	Cyanobacteria	Cyanophyceae	Synechococcales	Synechococcales familia incertae sedis		Fernández-Montero et al. (1998)	
<i>Scytonematopsis crustacea</i> (Thur. ex Bornet & Flahault) Koválik & Komárek	Cyanobacteria	Cyanophyceae	Nostocales	Scytonemataceae	<i>Calothrix crustacea</i> Thur. ex Bornet & Flahault	Sauvageau (1897); Chalón (1905); Miranda (1943a); Fernández-Montero et al. (1998); Valenzuela Miranda (2005)	
<i>Sirocoleum kurzii</i> Gomont	Cyanobacteria	Cyanophyceae	Oscillatoriales	Microcoleaceae		Díaz-Tapia (2013); Díaz-Tapia et al. (2008)	SANT-Algae: 20135
<i>Spirulina subsalsa</i> Oerst. ex Gomont	Cyanobacteria	Cyanophyceae	Spirulinales	Spirulinaceae		Colmeiro (1889); Lázaro e Ibiza (1889); Chalón (1905); Miranda (1943a)	
<i>Xenococcus schousboei</i> Thur.	Cyanobacteria	Cyanophyceae	Pleurocapsales	Xenococcaceae		Miranda (1931, 1943a)	
<i>Acrosiphonia arcta</i> (Dillwyn) Gain	Chlorophyta	Ulvothyceae	Ulotrichales	Ulotrichaceae	<i>Cladophora lanosa</i> (Roth) Kütz.; <i>Conferva lanosa</i> Roth; <i>Spongomorpha arcta</i> (Dillwyn) Kütz.	Colmeiro (1889); Lázaro e Ibiza (1889); Chalón (1905); Menoyo et al. (1998)	

Table 1 (continued)

Taxon	Phylum	Class	Order	Family	Synonyms	References	Herbarium collections
<i>Bitdingia marginata</i> (J.A.Gardth) P.J.L.Dang, ex Bliding	Chlorophyta	Ulvophyceae	Ulvales	Kormmanniaceae		Fernández-Montero et al. (1998)	
<i>Bitdingia minima</i> (Nägeli ex Kütz.) Kütz.	Chlorophyta	Ulvophyceae	Ulvales	Kormmanniaceae	<i>Enteromorpha nana</i> (Sommerf.) Sjöstedt	Lázaro e Ibiza (1889); Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil and Gallardo (2007); Martínez-Gil et al. (2007)	MACB-Algae: 94160
<i>Bryopsis plumosa</i> (Huds.) C.Agardh	Chlorophyta	Ulvophyceae	Bryopsidales	Bryopsidiaceae		Colmeiro (1889); Menoyo et al. (1998); Martínez-Gil et al. (2007); Juanes et al. (2008b); Puente and Juanes (2008); Pereira and Neto (2015)	SANT-Algae: 18999, 20369, 21240, 21241, 26833
<i>Chaetomorpha aerea</i> (Dillwyn) Kütz.	Chlorophyta	Ulvophyceae	Cladophorales	Cladophoraceae		Sauvageau (1897); Chalou (1905); Miranda (1943b)	SANT-Algae: 19986, 20145, 20404, 20432, 29070
<i>Chaetomorpha ligustica</i> (Kütz.) Kütz.	Chlorophyta	Ulvophyceae	Cladophorales	Cladophoraceae	<i>Chaetomorpha mediterranea</i> (Kütz.) Kütz.	Menoyo et al. (1998); Martínez-Gil et al. (2007)	MACB-Algae: 94327; SANT-Algae: 18986, 20028
<i>Chaetomorpha linum</i> (O.F.Müll.) Kütz.	Chlorophyta	Ulvophyceae	Cladophorales	Cladophoraceae		Fernández-Montero et al. (1998)	
<i>Chaetomorpha thorea</i> Harv.	Chlorophyta	Ulvophyceae	Cladophorales	Cladophoraceae		Martínez-Gil and Gallardo (2007)	
<i>Characium marinum</i> Kjellm.	Chlorophyta	Chlorophyceae	Sphaeropleales	Characiaceae		Fernández-Montero et al. (1998)	
<i>Cladophora albida</i> (Nees) Kütz.	Chlorophyta	Ulvophyceae	Cladophorales	Cladophoraceae		Colmeiro (1889); Lázaro e Ibiza (1889); Chalou (1905); Miranda (1943b); Martínez-Gil et al. (2007)	MACB-Algae: 94177; SANT-Algae: 19074, 19993
<i>Cladophora fracta</i> (O.F.Müll. ex Vahl) Kütz.	Chlorophyta	Ulvophyceae	Cladophorales	Cladophoraceae		Colmeiro (1889); Lázaro e Ibiza (1889); Chalou (1905)	
<i>Cladophora gracilis</i> Kütz.	Chlorophyta	Ulvophyceae	Cladophorales	Cladophoraceae		Colmeiro (1889); Lázaro e Ibiza (1889); Chalou (1905)	
<i>Cladophora hutchinsiae</i> (Dillwyn) Kütz.	Chlorophyta	Ulvophyceae	Cladophorales	Cladophoraceae		Fernández-Montero et al. (1998)	SANT-Algae: 29618, 26969
<i>Cladophora laetevirens</i> (Dillwyn) Kütz.	Chlorophyta	Ulvophyceae	Cladophorales	Cladophoraceae		Fernández-Montero et al. (1998); Martínez-Gil et al. (2007)	MACB-Algae: 94324
<i>Cladophora lehmanniana</i> (Lindenb.) Kütz.	Chlorophyta	Ulvophyceae	Cladophorales	Cladophoraceae	<i>Cladophora catenata</i> Hauck, nom. illeg.	Colmeiro (1867, 1889); Chalou (1905); Fernández-Montero et al. (1998); Menoyo et al. (1998)	
<i>Cladophora prolifera</i> (Roth) Kütz.	Chlorophyta	Ulvophyceae	Cladophorales	Cladophoraceae		Sauvageau (1897); Chalou (1905); Miranda (1943b); Menoyo et al. (1998); Martínez-Gil et al. (1943b); Puente and Juanes (2008)	SANT-Algae: 14699, 20039, 21148, 21202, 24627, 26975
<i>Cladophora refracta</i> Kütz.	Chlorophyta	Ulvophyceae	Cladophorales	Cladophoraceae		Sauvageau (1897); Chalou (1905); Miranda (1943b)	
<i>Cladophora rupestris</i> (L.) Kütz.	Chlorophyta	Ulvophyceae	Cladophorales	Cladophoraceae		Colmeiro (1889); Lázaro e Ibiza (1889); Chalou (1905); Fernández-Montero et al. (1998); Díaz-Tapia et al. (2008); Díaz-Tapia (2013); Ramos (2015)	SANT-Algae: 20031, 20041
<i>Cladophora sericea</i> (Huds.) Kütz.	Chlorophyta	Ulvophyceae	Cladophorales	Cladophoraceae		Colmeiro (1889); Lázaro e Ibiza (1889); Chalou (1905); Díaz-Tapia et al. (2008); Díaz-Tapia (2013)	SANT-Algae: 20157, 20221, 20344, 20405
<i>Codium adhaerens</i> C.Agardh	Chlorophyta	Ulvophyceae	Bryopsidales	Codiaceae		Fernández-Montero et al. (1998); Menoyo et al. (1998); Juanes et al. (2008b); García García et al. (2010); Pereira and Neto (2015); Ramos (2015)	MA-Algae: 4093; MACB-Algae: 94164; SANT-Algae: 7068, 14678
<i>Codium decorticatum</i> (Woodw.) M.Howe	Chlorophyta	Ulvophyceae	Bryopsidales	Codiaceae	<i>Codium elongatum</i> (Turner) C.Agardh	Colmeiro (1889); Martínez-Gil et al. (2007)	MACB-Algae: 94168, 94169
<i>Codium fragile</i> subsp. <i>atlanticum</i> (Cotton) P.C.Silva	Chlorophyta	Ulvophyceae	Bryopsidales	Codiaceae		Fernández-Montero et al. (1998); Menoyo et al. (1998)	

Table 1 (continued)

Taxon	Phylum	Class	Order	Family	Synonyms	References	Herbarium collections
* <i>Codium fragile</i> subsp. <i>fragile</i> (Suringar) Har.	Chlorophyta	Ulvophyceae	Bryopsidales	Codiaceae	<i>Codium fragile</i> subsp. <i>tomentosoides</i> (Goot) P.C.Silva	Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007); Juanes et al. (2008b); Rojo et al. (2014); Pereira and Neto (2015)	MACB-Algae: 94165, 94166; SANT-Algae: 7065, 26943
<i>Codium tomentosum</i> Stackh.	Chlorophyta	Ulvophyceae	Bryopsidales	Codiaceae		Colmeiro (1867, 1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1931, 1943b); Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil and Gallardo (2007); Martínez-Gil et al. (2007); Guinda (2008); Juanes et al. (2008a, b); Puente and Juanes (2008); García García et al. (2010); Guinda et al. (2012, 2014); Pereira and Neto (2015); Ramos (2015); Ramos et al. (2019)	MA-Algae: 4060, 4067; MACB-Algae: 94162; SANT-Algae: 14677, 26948, 26959, 26974
<i>Codium tomentosum</i> var. <i>micronotatum</i> (Hamel) Ardre	Chlorophyta	Ulvophyceae	Bryopsidales	Codiaceae	<i>Codium elongatum</i> var. <i>micronotatum</i> Hamel	Barbara et al. (2003); Martínez-Gil et al. (2007)	MA-Algae: 4061
<i>Codium vermilara</i> (Oliv.) Delle Chiaje	Chlorophyta	Ulvophyceae	Bryopsidales	Codiaceae		Lázaro e Ibiza (1889); Fernández-Montero et al. (1998); Martínez-Gil et al. (2007); Rojo et al. (2014)	BCN-Algae: 5794; MACB-Algae: 94167; SANT-Algae: 14679, 20061, 20358, 26938, 26949
<i>Derbesia marina</i> (Lyngb.) Solier	Chlorophyta	Ulvophyceae	Bryopsidales	Derbesiaceae		Díaz-Tapia et al. (2008); Bárbara et al. (2012); Díaz-Tapia (2013)	SANT-Algae: 20034, 20058, 26925
<i>Derbesia tenuissima</i> (Moris & De Not.) P.Crouan & H.Crouan	Chlorophyta	Ulvophyceae	Bryopsidales	Derbesiaceae	<i>Halicystis parvula</i> F.Schmitz ex Murray	Sauvageau (1897); Chalon (1905); Miranda (1943b); Fernández-Montero et al. (1998); Martínez-Gil et al. (2007)	MACB-Algae: 94161; SANT-Algae: 20023, 26982
<i>Gayralia oxysperma</i> (Kütz.) K.L.Vinogr. ex Scagel & al.	Chlorophyta	Ulvophyceae	Ulotrichales	Gayraliaceae	<i>Monostroma oxyspernum</i> (Kütz.) Doy	Fernández-Montero et al. (1998)	
<i>Gomontia polytricha</i> (Lagerh.) Bornet & Flahault	Chlorophyta	Ulvophyceae	Ulotrichales	Gomontiaceae		Sauvageau (1897); Chalon (1905); Miranda (1943b)	
<i>Lychaete pellucida</i> (Huds.) M.J. Wynne	Chlorophyta	Ulvophyceae	Cladophorales	Cladophoraceae	<i>Cladophora pellucida</i> (Huds.) Kütz.	Colmeiro (1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1943b)	SANT-Algae: 21211, 24441, 26857, 26859
<i>Ostreobium quekettii</i> Bornet & Flahault	Chlorophyta	Ulvophyceae	Bryopsidales	Ostreobiaceae		Sauvageau (1897); Chalon (1905); Miranda (1943b)	
<i>Pedobesia simplex</i> (Menegh. ex Kütz.) M.J. Wynne & F.Leliaert	Chlorophyta	Ulvophyceae	Bryopsidales	Derbesiaceae	<i>Derbesia lamourouxii</i> (J. Agardh) Solier	Sauvageau (1897); Chalon (1905); Miranda (1943b); Bárbara et al. (2006)	SANT-Algae: 20064, 26893
<i>Pedobesia solieri</i> Abélard & Knoepffler-Pégy	Chlorophyta	Ulvophyceae	Bryopsidales	Derbesiaceae		Bárbara et al. (2012)	SANT-Algae: 26837
<i>Percursaria percursa</i> (C. Agardh) Rosenv.	Chlorophyta	Ulvophyceae	Ulvales	Ulvaceae		Menoyo et al. (1998)	
<i>Pseudendoclonium submarinum</i> Wille	Chlorophyta	Ulvophyceae	Ulvales	Kommanniaceae		Fernández-Montero et al. (1998)	
<i>Rhizoclonium tortuosum</i> (Dillwyn) Kütz.	Chlorophyta	Ulvophyceae	Cladophorales	Cladophoraceae		Fernández-Montero et al. (1998); Menoyo et al. (1998)	
<i>Spongomorpha aeruginosa</i> (L.) C. Hoek	Chlorophyta	Ulvophyceae	Ulotrichales	Ulotrichaceae		Martínez-Gil and Gallardo (2007)	
<i>Ulothrix flacca</i> (Dillwyn) Thur.	Chlorophyta	Ulvophyceae	Ulotrichales	Ulotrichaceae		Fernández-Montero et al. (1998)	
<i>Ulva ardehana</i> Cormaci, G. Furnari & Alongi	Chlorophyta	Ulvophyceae	Ulvales	Ulvaceae		Fernández-Montero et al. (1998)	SANT-Algae: 6684
<i>Ulva australis</i> Aresch.	Chlorophyta	Ulvophyceae	Ulvales	Ulvaceae		Bárbara et al. (2014, 2015)	SANT-Algae: 29064, 29067, 29627
<i>Ulva clathrata</i> (Roth) C. Agardh	Chlorophyta	Ulvophyceae	Ulvales	Ulvaceae	<i>Enteromorpha clathrata</i> (Roth) Grev., <i>Enteromorpha muscoides</i> (Clemente) Cremades	Colmeiro (1889); Lázaro e Ibiza (1889); Chalon (1905); Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007)	MA-Algae: 4052; MACB-Algae: 94170, 94172

Table 1 (continued)

Taxon	Phylum	Class	Order	Family	Synonyms	References	Herbarium collections
<i>Ulva compressa</i> L.	Chlorophyta	Ulvophyceae	Ulvales	Ulvaceae	<i>Enteromorpha complanata</i> Kütz.; <i>Enteromorpha compressa</i> (L.) Nees	Colmeiro (1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007)	MACB-Algae: 94173
<i>Ulva curvata</i> (Kütz.) De Toni	Chlorophyta	Ulvophyceae	Ulvales	Ulvaceae	<i>Enteromorpha flexuosa</i> (Wulfen) J. Agardh	Fernández-Montero et al. (1998)	MACB-Algae: 94171
<i>Ulva flexuosa</i> Wulfen	Chlorophyta	Ulvophyceae	Ulvales	Ulvaceae	<i>Enteromorpha intextinialis</i> (L.) Nees; <i>Enteromorpha ramulosa</i> (Sm.) Carmich.	Colmeiro (1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1943a); Fernández-Montero et al. (1998); García García et al. (2010)	MA-Algae: 10551, 11018
<i>Ulva intextinialis</i> L.	Chlorophyta	Ulvophyceae	Ulvales	Ulvaceae	<i>Ulva fasciata</i> Gray, nom. illeg.; <i>Enteromorpha prolifera</i> (O.F.Müll.) J. Agardh	Colmeiro (1867, 1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1943a); GSHA (2005); García García et al. (2010)	MA-Algae: 4080
<i>Ulva lactuca</i> L.	Chlorophyta	Ulvophyceae	Ulvales	Ulvaceae	<i>Ulva rotundata</i> Bliding	Fernández-Montero et al. (1998)	MA-Algae: 4080
<i>Ulva pseudorotundata</i> Cormaci, G. Furnari & Alongi	Chlorophyta	Ulvophyceae	Ulvales	Ulvaceae	<i>Enteromorpha simplex</i> (K.L. Vinogr.) Koeman & C. Hoek	Fernández-Montero et al. (1998)	MA-Algae: 11016; MACB-Algae: 94174, 94175, 94176, 94463; SANT-Algae: 14695, 20046, 20408, 20862, 27054
<i>Ulva rhacodes</i> (Holmes) Papenf.	Chlorophyta	Ulvophyceae	Ulvales	Ulvaceae	<i>Monostroma obscurum</i> (Kütz.) J. Agardh	Fernández-Montero et al. (1998); B. Bárbara et al. (2003); Martínez-Gil et al. (2007)	MACB-Algae: 94159; SANT-Algae: 14711, 20420, 20434
<i>Ulva rigida</i> C. Agardh	Chlorophyta	Ulvophyceae	Ulvales	Ulvaceae	<i>Endoderma viride</i> (Reinke) De Toni	Fernández-Montero et al. (1998)	SANT-Algae: 20225
<i>Ulva simplex</i> (K.L. Vinogr.) H.S. Hayden, Blomster, Meggs, P.C. Silva, Stanhope & Waaland	Chlorophyta	Ulvophyceae	Ulvales	Ulvaceae	<i>Acinetospora pusilla</i> (A.W. Griffiths ex Harv.) De Toni; <i>Ectocarpus pusillus</i> Harv.	Miranda (1931, 1943b)	SANT-Algae: 20225
<i>Ulvaria obscura</i> (Kütz.) Gayral ex Bliding	Chlorophyta	Ulvophyceae	Ulotrichales	Monostromataceae	<i>Fucus nodosus</i> L.; <i>Ozothalia vulgaris</i> Deane. & Thur., nom. illeg.	Fernández-Montero et al. (1998); Díaz-Tapia et al. (2008)	SANT-Algae: 21239
<i>Ulvella lens</i> P. Crouan & H. Crouan	Chlorophyta	Ulvophyceae	Ulvales	Ulvellaceae	<i>Acinetospora pusilla</i> (A.W. Griffiths ex Harv.) De Toni; <i>Ectocarpus pusillus</i> Harv.	Fernández-Montero et al. (1998); Díaz-Tapia et al. (2007); Díaz-Tapia et al. (2008)	SANT-Algae: 18966, 18991, 19994, 20142, 20340, 20377, 20391, 20430
<i>Ulvella viridis</i> (Reinke) R. Nielsen, O'Kelly & B. Wyssor	Chlorophyta	Ulvophyceae	Ulvales	Ulvellaceae	<i>Fucus nodosus</i> L.; <i>Ozothalia vulgaris</i> Deane. & Thur., nom. illeg.	Colmeiro (1867, 1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1931, 1943b); Margalet and Navarro (1992); Fernández-Montero et al. (1998); Pérez-Ruzafa and Gallardo (1998); Gómez Garreta (2000); GSHA (2005); Martínez-Gil and Gallardo (2007); Martínez-Gil et al. (2007); García García et al. (2010)	BCN-Algae: 5764, 5775, 5776, 5791, 6219; MA-Algae: 3964, 4253, 4263, 5522; MACB-Algae: 94258; SANT-Algae: 42, 19081
<i>Umbraulva dangeardii</i> M.J. Wynne & G. Furnari	Chlorophyta	Ulvophyceae	Ulvales	Ulvaceae	<i>Pylaiella fihvescens</i> Bornet	Sauvageau (1897); Chalon (1905); Miranda (1931, 1943b)	
<i>Acinetospora crinita</i> (Carmich.) Sauv.	Ochrophyta	Phaeophyceae	Ectocarpales	Acinetosporaceae	<i>Pylaiella fihvescens</i> Bornet		
<i>Ascophyllum nodosum</i> (L.) Le Jol.	Ochrophyta	Phaeophyceae	Fucales	Fuaceae			
<i>Bachelotia antillarum</i> (Grunow) Gerloff	Ochrophyta	Phaeophyceae	Scyrodhammales	Bachelotiaceae			

Table 1 (continued)

Taxon	Phylum	Class	Order	Family	Synonyms	References	Herbarium collections
<i>Bifurcaria bifurcata</i> R.Ross	Ochrophyta	Phaeophyceae	Fucales	Sargassaceae	<i>Bifurcaria tuberculata</i> Stackh.; <i>Pycnophycus tuberculatus</i> (Stackh.) Kütz.	Colmeiro (1867, 1889); Sauvageau (1897); Chalou (1905); Miranda (1943b); Margalet and Navarro (1990); Fernández-Montero et al. (1998); Menoyo et al. (1998); Gómez Garreta (2000); Martínez-Gil and Gallardo (2007); Martínez-Gil et al. (2007); Guinda (2008); Juanes et al. (2008a, b); García García et al. (2010); Pereira and Neto (2015); Ramos (2015); Ramos et al. (2019)	BCN-Algae: 1908, 1924, 1925, 1926, 1927, 5788, 6195; MA-Algae: 4777, 5523; MACB-Algae: 94254, 94465; SANT-Algae: 14691, 20415; VAL-Algae: 32, 33, 34, 35, 43858, 43859, 43860, 43861
<i>Carpomitra costata</i> (Stackh.) Batters	Ochrophyta	Phaeophyceae	Sporochneales	Sporochneaceae		Guinda (2008); Guinda et al. (2012)	
<i>Cladostephus spongiosus</i> (Huds.) C. Agardh	Ochrophyta	Phaeophyceae	Sphaecelariales	Cladostephaceae	<i>Cladostephus spongiosus</i> f. <i>verricillatus</i> (Lightf.) Prud'homme	Colmeiro (1889); Sauvageau (1897); Chalou (1905); Miranda (1943b); Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007); Díaz-Tapia et al. (2008); Guinda (2008); Guinda et al. (2012); Juanes et al. (2008a, b); Pereira and Neto (2015); Ramos (2015)	BCN-Algae: 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965; MA-Algae: 338, 3591; MACB-Algae: 94259; VAL-Algae: 138, 139, 140, 141, 142, 143
<i>Cladostephus verrucillatus</i> C. Agardh	Ochrophyta	Phaeophyceae	Sphaecelariales	Cladostephaceae		Lázaro e Ibiza (1889); Sauvageau (1897); Chalou (1905); Miranda (1943b); Juanes et al. (2008b); Pereira and Neto (2015)	
<i>Colpomenia peregrina</i> Sauv.	Ochrophyta	Phaeophyceae	Ectocarpales	Scytosiphonaceae		Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007); Ramos (2015); Ramos et al. (2019)	MACB-Algae: 94251; SANT-Algae: 20357
<i>Colpomenia sinuosa</i> (Mert. ex Roth) Derbes & Solier	Ochrophyta	Phaeophyceae	Ectocarpales	Scytosiphonaceae	<i>Hydroclathrus sinuatus</i> (Mert. ex Roth) Zanardini	Colmeiro (1889); Lázaro e Ibiza (1889); Chalou (1905); Miranda (1931, 1943b)	
<i>Cutleria adspersa</i> (Mert. ex Roth) De Not.	Ochrophyta	Phaeophyceae	Tilopteridales	Cutleriaceae	<i>Aglaezonia melanoidea</i> Sauv.	Sauvageau (1899b); Fernández-Montero et al. (1998)	BCN-Algae: 2819; SANT-Algae: 8820, 19424, 21238, 26914
<i>Cutleria multifida</i> (Turner) Grev.	Ochrophyta	Phaeophyceae	Tilopteridales	Cutleriaceae	<i>Aglaezonia parvula</i> (Grev.) Zanardini	Lázaro e Ibiza (1889); Chalou (1905); Miranda (1943b); Fernández-Montero et al. (1998); Guinda (2008); Guinda et al. (2012)	SANT-Algae: 8821, 20259
<i>Cystoseira foeniculacea</i> (L.) Grev.	Ochrophyta	Phaeophyceae	Fucales	Sargassaceae	<i>Cystoseira abrotanifolia</i> (L.) C. Agardh; <i>Cystoseira discors</i> (L.) C. Agardh	Colmeiro (1867, 1889); Lázaro e Ibiza (1889); Sauvageau (1897, 1912); Chalou (1905); Miranda (1943b)	
<i>Cystoseira humilis</i> Schousb. ex Kütz.	Ochrophyta	Phaeophyceae	Fucales	Sargassaceae			BCN-Algae: 1293, 1295, 1296, 1297, 1298; SANT-Algae: 21231
<i>Cystoseira humilis</i> var. <i>myriophylloides</i> (Sauv.) J.H.Price & D.M.John	Ochrophyta	Phaeophyceae	Fucales	Sargassaceae	<i>Cystoseira myriophylloides</i> Sauv.	Sauvageau (1912); Miranda (1943b); Barceló et al. (1994); Fernández-Montero et al. (1998); Gómez Garreta (2000)	PC: 555233, 555234
<i>Desmarestia aculeata</i> (L.) J.V.Lamour.	Ochrophyta	Phaeophyceae	Desmarestiales	Desmarestiaceae		Colmeiro (1867, 1889); Fernández-Montero et al. (1998)	
<i>Desmarestia ligulata</i> (Stackh.) J.V.Lamour.	Ochrophyta	Phaeophyceae	Desmarestiales	Desmarestiaceae		Colmeiro (1889); Lázaro e Ibiza (1889); Chalou (1905); Miranda (1943b); Fernández-Montero et al. (1998); Menoyo et al. (1998); Guinda (2008); Juanes et al. (2008a); Guinda et al. (2012)	MA-Algae: 3936, 3938
<i>Dictyopteris lucida</i> M.A.Ribera Sigüán, A. Gómez Garreta, Pérez Kuzafá, Barceló Martí & Rull Lluch	Ochrophyta	Phaeophyceae	Dictyotales	Dictyotaceae		Barbára et al. (2012)	SANT-Algae: 26876, 26941

Table 1 (continued)

Taxon	Phylum	Class	Order	Family	Synonyms	References	Herbarium collections
<i>Dictyopteris polypodioides</i> (DC.) J.V.Lamour.	Ochrophyta	Phaeophyceae	Dictyotales	Dictyotaceae	<i>Haliseris polypodioides</i> (DC.) C.Agardh	Colmeiro (1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1943b); Fernández-Montero et al. (1998); Menoyo et al. (1998); Gómez Garreta (2000); Gómez Garreta et al. (2002); Martínez-Gil et al. (2007); Guinda (2008); Juanes et al. (2008a); Puente and Juanes (2008); Guinda et al. (2012, 2014); Ramos (2015)	BCN-Algae: 2547, 2563, 2568, 2576, 2584, 2585, 2593, 2594, 2595, 2596, 2600, 2603, 2606, 2607, 2608, 2615, 2632, 2654, 2655; MA-Algae: 4025; MACB-Algae: 94335; SANT-Algae: 20020, 26921
<i>Dictyota dichotoma</i> (Huds.) J.V.Lamour.	Ochrophyta	Phaeophyceae	Dictyotales	Dictyotaceae		Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1943b); Fernández-Montero et al. (1998); Menoyo et al. (1998); Rull Lluch et al. (2005); Martínez-Gil et al. (2007); Díaz-Tapia et al. (2008); Guinda (2008); Juanes et al. (2008a, b); Guinda et al. (2012, 2014); Pereira and Neto (2015); Ramos (2015); Ramos et al. (2019)	BCN-Algae: 217, 3038, 3144, 3152, 3334, 3350, 3351; MACB-Algae: 94256; SANT-Algae: 7107, 20361, 26915, 26940, 26947
<i>Dictyota dichotoma</i> var. <i>intricata</i> (C.Agardh) Grev.	Ochrophyta	Phaeophyceae	Dictyotales	Dictyotaceae		Rull Lluch et al. (2005)	
<i>Dictyota implexa</i> (Desf.) J.V.Lamour.	Ochrophyta	Phaeophyceae	Dictyotales	Dictyotaceae	<i>Dictyota linearis</i> (C.Agardh) Grev.	Colmeiro (1889); Lázaro e Ibiza (1889); Chalon (1905)	MA-Algae: 4165
<i>Dictyota spiralis</i> Mont.	Ochrophyta	Phaeophyceae	Dictyotales	Dictyotaceae	<i>Dictyota ligulata</i> Kütz., nom. illeg.	Sauvageau (1897); Chalon (1905); Miranda (1943b)	BCN-Algae: 215, 216, 3303; SANT-Algae: 27055
<i>Ectocarpus fasciculatus</i> Harv.	Ochrophyta	Phaeophyceae	Ectocarpales	Ectocarpaceae		Sauvageau (1897); Chalon (1905); Miranda (1943b); Menoyo et al. (1998)	SANT-Algae: 26926
<i>Ectocarpus siliiculosus</i> (Dillwyn) Lyngb.	Ochrophyta	Phaeophyceae	Ectocarpales	Ectocarpaceae	<i>Ectocarpus simpliciusculus</i> C.Agardh	Chalon (1905); Martínez-Gil et al. (2007)	MACB-Algae: 94253
<i>Elachista flaccida</i> (Dillwyn) Fr.	Ochrophyta	Phaeophyceae	Ectocarpales	Chordariaceae		Sauvageau (1897); Chalon (1905); Miranda (1943b); Fernández-Montero et al. (1998); Martínez-Gil et al. (2007)	SANT-Algae: 14673
<i>Elachista fuscicola</i> (Velley) Aresch.	Ochrophyta	Phaeophyceae	Ectocarpales	Chordariaceae		Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1943b)	
<i>Ercaria selaginoides</i> (L.) Molinari & Güiry	Ochrophyta	Phaeophyceae	Fucales	Sargassaceae	<i>Carpodesmia tamariscifolia</i> (Huds.) S.Orellana & M.Sansón; <i>Cystoseira ericoides</i> (L.) C.Agardh; <i>Cystoseira tamariscifolia</i> (Huds) Papenf.	Colmeiro (1867, 1889); Sauvageau (1897); Chalon (1905); Miranda (1931); Gómez Garreta et al. (1994); Ribera et al. (1995); Fernández-Montero et al. (1998); Menoyo et al. (1998); Gómez Garreta (2000); Martínez-Gil and Gallardo (2007); Martínez-Gil et al. (2007); Guinda (2008); Juanes et al. (2008a, b); García García et al. (2010); Pereira and Neto (2015); Ramos (2015)	BCN-Algae: 1553, 1555, 1556, 1560, 1562, 1563, 1670, 1671, 1672, 6194; MACB-Algae: 94261; PC: 518984, 518987, 535211, 535212; SANT-Algae: 14666; VAL-Algae: 186, 187, 188, 189, 190, 191, 192, 193, 3273
<i>Ercaria zosterooides</i> (C.Agardh) Molinari & Güiry	Ochrophyta	Phaeophyceae	Fucales	Sargassaceae	<i>Carpodesmia zosterooides</i> (Turner) Grev.; <i>Cystoseira zosterooides</i> (Turner) C.Agardh		VAL-Algae: 175, 176, 177, 178
<i>Feldmannia irregularis</i> (Kütz.) Hamel	Ochrophyta	Phaeophyceae	Ectocarpales	Acinetosporaceae	<i>Ectocarpus irregularis</i> Kütz.	Sauvageau (1897); Miranda (1943b)	
<i>Feldmannia lebelii</i> (Aresch. ex P.Crouan & H.Crouan) Hamel	Ochrophyta	Phaeophyceae	Ectocarpales	Acinetosporaceae	<i>Ectocarpus lebelii</i> Aresch. ex P.Crouan & H.Crouan; <i>Feldmannia caespitula</i> var. <i>lebelii</i> (Aresch. ex P.Crouan & H.Crouan) Knoepfler-Péguy; <i>Giffordia lebelii</i> (Aresch. ex P.Crouan & H.Crouan) Batters	Sauvageau (1897); Chalon (1905); Miranda (1931, 1943b); Fernández-Montero et al. (1998)	



**Table 1** (continued)

Taxon	Phylum	Class	Order	Family	Synonyms	References	Herbarium collections
<i>Feldmannia mitchelliae</i> (Harv.) Hy.S.Kim	Ochrophyta	Phaeophyceae	Ectocarpales	Acinetosporaceae	<i>Ectocarpus virescens</i> Thur. ex Sauv., <i>Hincksia mitchelliae</i> (Harv.) P.C.Silva	Sauvageau (1897); Chalon (1905); Miranda (1931, 1943b); Díaz-Tapia et al. (2008); Bárbara et al. (2012); Diaz-Tapia (2013)	SANT-Algae: 20227, 26930
<i>Fucus ceranoides</i> L.	Ochrophyta	Phaeophyceae	Fucales	Fucaceae		Colmeiro (1867, 1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1943b); Margalet et al. (1993); Fernández-Montero et al. (1998); Menoyo et al. (1998); Pérez-Ruzafa and Gallardo (1998); Gómez Garreta (2000); GESHA (2005)	MA-Algae: 3555, 3557, 5520, 11007; SANT-Algae: 19084
<i>Fucus giryi</i> Zardi, Nicastro, E.S.Serrão & G.A.Pearson	Ochrophyta	Phaeophyceae	Fucales	Fucaceae	<i>Fucus platycarpus</i> Thur. nom. illeg., <i>Fucus spiralis</i> var. <i>limitaneus</i> (Mont.) J.M.Pérez-Ruzafa; <i>Fucus spiralis</i> var. <i>platycarpus</i> Batters	Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1943b); Pérez-Ruzafa and Gallardo (1997, 1998); Menoyo et al. (1998); Gómez Garreta (2000)	
<i>Fucus serratus</i> L.	Ochrophyta	Phaeophyceae	Fucales	Fucaceae		Colmeiro (1867, 1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1943b); GESHA (2005); Duarte et al. (2013)	MA-Algae: 3516
<i>Fucus spiralis</i> L.	Ochrophyta	Phaeophyceae	Fucales	Fucaceae		Colmeiro (1867, 1889); Sauvageau (1897); Miranda (1943b); Margalet et al. (1993); Pérez-Ruzafa and Gallardo (1997, 1998); Fernández-Montero et al. (1998); Menoyo et al. (1998); Gómez Garreta (2000); Martínez-Gil and Gallardo (2007); Martínez-Gil et al. (2007); Juanes et al. (2008a); Pereira and Neto (2015)	BCN-Algae: 5746, 5778; MA-Algae: 5536; MACB-Algae: 94264, 94265, 94266; VAL-Algae: 328, 329, 330
<i>Fucus spiralis</i> var. <i>lutaricus</i> (Kütz.) Sauv.	Ochrophyta	Phaeophyceae	Fucales	Fucaceae	<i>Fucus lutaricus</i> (Chauv. ex J.Kickx f.) Kütz.	Sauvageau (1897, 1908); Dizerbo (1956)	
<i>Fucus vesiculosus</i> L.	Ochrophyta	Phaeophyceae	Fucales	Fucaceae		Colmeiro (1867, 1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1943b); Dizerbo (1956); Margalet et al. (1993); Pérez-Ruzafa and Gallardo (1997); Fernández-Montero et al. (1998); Gómez Garreta (2000); GESHA (2005); Martínez-Gil et al. (2007); Juanes et al. (2008b); García García et al. (2010); Pereira and Neto (2015)	MA-Algae: 3526, 3527, 3528, 3548, 4728, 5521; MACB-Algae: 94267; PC: 737288, 737289, 737296; SANT-Algae: 7100, 19085
<i>Fucus vesiculosus</i> var. <i>compressus</i> Kjellm.	Ochrophyta	Phaeophyceae	Fucales	Fucaceae		Pérez-Ruzafa and Gallardo (1997); Gómez Garreta (2000)	
<i>Fucus vesiculosus</i> var. <i>linearis</i> (Huds.) Kütz.	Ochrophyta	Phaeophyceae	Fucales	Fucaceae	<i>Fucus vesiculosus</i> var. <i>evescitulosus</i> Cotton	Colmeiro (1867, 1889); Sauvageau (1897); Miranda (1943b)	
<i>Fucus vesiculosus</i> var. <i>vadorum</i> Aresch.	Ochrophyta	Phaeophyceae	Fucales	Fucaceae		Pérez-Ruzafa and Gallardo (1997, 1998); Fernández-Montero et al. (1998); Gómez Garreta (2000)	
<i>Fucus vesiculosus</i> var. <i>volubilis</i> Gooden. & Woodw.	Ochrophyta	Phaeophyceae	Fucales	Fucaceae	<i>Fucus axillaris</i> J.Agardh, nom. illeg.	Chalon (1905); Miranda (1931, 1943b)	

Table 1 (continued)

Taxon	Phylum	Class	Order	Family	Synonyms	References	Herbarium collections
<i>Gongolaria baccata</i> (S.G.Gmel.) Molinari & Guiry	Ochrophyta	Phaeophyceae	Fucales	Sargassaceae	<i>Cystoseira baccata</i> (S.G.Gmel.) P.C.Silva; <i>Cystoseira fibrosa</i> (Huds.) C.Agarth; <i>Phylolacantha fibrosa</i> (S.G.Gmel.) Kütz.; <i>Treptacantha baccata</i> (S.G.Gmel.) S.Orellana & M.Sansón	Colmeiro (1867, 1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalton (1905); Miranda (1943b); Dizerbo (1956); Rull Lluch et al. (1994); Ribera et al. (1995); Fernández-Montero et al. (1998); Menoyo et al. (1998); García-Castrillo Riesgo et al. (2000); Gómez Garreta (2000); Martínez-Gil et al. (2007); Guinda (2008); Juanes et al. (2008a, b); Puente and Juanes (2008); García García et al. (2010); Guinda et al. (2012, 2014); Pereira and Neto (2015); Ramos (2015); García Fernández (2020)	BCN-Algae: 609, 610, 611, 612, 613, 614, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 629, 630, 631, 632, 634, 642, 645, 653, 654, 660, 689, 690; MA-Algae: 367, 370, 373, 3573; 11005; MACB-Algae: 94262, 94263; PC: 519201; SANT-Algae: 7114, 14664, 20019
<i>Halidrys siliquosa</i> (L.) Lyngb.	Ochrophyta	Phaeophyceae	Fucales	Sargassaceae		Colmeiro (1889); Lázaro e Ibiza (1889); Chalton (1905); Margalef and Navarro (1990, 1992); Fernández-Montero et al. (1998); Menoyo et al. (1998); Pérez-Ruzafa and Gallardo (1998); Gómez Garreta (2000); Guinda (2008); Juanes et al. (2008a); Guinda et al. (2012, 2014)	
<i>Halopteris filicina</i> (Gratel.) Kütz.	Ochrophyta	Phaeophyceae	Sphaelariales	Stypocaulaceae		Miranda (1944); Fernández-Montero et al. (1998); Menoyo et al. (1998); Echavarrri-Erasam et al. (2007); Guinda (2008); Juanes et al. (2008a); Guinda et al. (2014)	SANT-Algae: 21224, 21227
<i>Halopteris scoparia</i> (L.) Sauv.	Ochrophyta	Phaeophyceae	Sphaelariales	Stypocaulaceae	<i>Sphaelaria scoparia</i> (L.) Lyngb.	Lázaro e Ibiza (1889); Miranda (1943b); Fernández-Montero et al. (1998); Puente and Juanes (2008); Ramos et al. (2019)	MA-Algae: 3878, 5529; VAL-Algae: 440
<i>Herponema solitarium</i> (Sauv.) Hamel	Ochrophyta	Phaeophyceae	Ectocarpales	Acinetosporaceae	<i>Ectocarpus solitarium</i> Sauv.	Sauvageau (1897); Miranda (1943b)	
<i>Herponema valiantei</i> (Bornet) Hamel	Ochrophyta	Phaeophyceae	Ectocarpales	Acinetosporaceae	<i>Ectocarpus valiantei</i> Bornet	Sauvageau (1897); Chalton (1905); Miranda (1943b)	
<i>Herponema velutinum</i> (Grev.) J.Agarth	Ochrophyta	Phaeophyceae	Ectocarpales	Acinetosporaceae	<i>Ectocarpus velutinum</i> (Grev.) Kütz.	Sauvageau (1897); Chalton (1905); Miranda (1943b)	
<i>Himanthalia elongata</i> (L.) Gray	Ochrophyta	Phaeophyceae	Fucales	Himanthaliaceae	<i>Himanthalia lorea</i> (L.) Lyngb.	Colmeiro (1867, 1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalton (1905); Miranda (1943b); Fischer-Piette & Ginsburg-André (1963); Margalef and Navarro (1992); Gómez Garreta (2000); Duarte et al. (2013)	BCN-Algae: 2240
<i>Hincksia granulosa</i> (Sm.) P.C.Silva	Ochrophyta	Phaeophyceae	Ectocarpales	Acinetosporaceae	<i>Ectocarpus granulosa</i> (Sm.) C.Agarth	Colmeiro (1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalton (1905); Miranda (1943b); Martínez-Gil et al. (2007); Díaz-Tapia (2013)	SANT-Algae: 18989, 20009, 20392, 27053
<i>Hincksia hincksiae</i> (Harv.) P.C.Silva	Ochrophyta	Phaeophyceae	Ectocarpales	Acinetosporaceae	<i>Ectocarpus hincksiae</i> Harv.	Sauvageau (1897); Chalton (1905); Miranda (1943b); Fernández-Montero et al. (1998); Menoyo et al. (1998)	
<i>Hincksia secunda</i> (Kütz.) P.C.Silva	Ochrophyta	Phaeophyceae	Ectocarpales	Acinetosporaceae	<i>Ectocarpus secundus</i> Kütz.; <i>Giffordia secunda</i> (Kütz.) Batters	Sauvageau (1897); Chalton (1905); Miranda (1943b); Fernández-Montero et al. (1998); Martínez-Gil et al. (2007)	MACB-Algae: 94269
<i>Laminaria digitata</i> (Huds.) J.V.Lamour.	Ochrophyta	Phaeophyceae	Laminariales	Laminariaceae	<i>Hafgygia digitata</i> (Huds.) Kütz.; <i>Laminaria flexicaulis</i> Le Jol.; <i>Laminaria saccharina</i> (L.) J.V.Lamour.	Colmeiro (1867, 1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalton (1905); Miranda (1943b)	PC: 513071, 513072, 513073, 513095, 513096, 513097, 513098, 513099, 513104, 513111, 513112, 513113, 513114, 513115, 513116, 513117, 513118, 513119, 513120, 513121, 513122, 513123, 539027, 539028, 539029

Table 1 (continued)

Taxon	Phylum	Class	Order	Family	Synonyms	References	Herbarium collections
<i>Laminaria hyperborea</i> (Gunnerus) Fossil	Ochrophyta	Phaeophyceae	Laminariales	Laminariaceae	<i>Laminaria cloustonii</i> Edmondston	Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1943b); Izquierdo et al. (1993); Pérez-Ruzafa et al. (2003); Martínez-Gil et al. (2007)	MACB-Algae: 94111
<i>Laminaria ochroleuca</i> Bach.Pyl.	Ochrophyta	Phaeophyceae	Laminariales	Laminariaceae		Miranda (1943b); Izquierdo et al. (1993); Fernández-Montero et al. (1998); Menoyo et al. (2000); Arroyo García-Castrillo Riesgo et al. (2002); Pérez-Ruzafa et al. (2003); Arroyo et al. (2004); Martínez-Gil et al. (2007); Guinda (2008); Juanes et al. (2008a); Puente and Juanes (2008); Guinda et al. (2012, 2014)	BCN-Algae: 368; MACB-Algae: 94268; VAL-Algae: 464
<i>Leathesia marina</i> (Lyngb.) Decne.	Ochrophyta	Phaeophyceae	Ectocarpales	Chordariaceae	<i>Leathesia difformis</i> Aresch.	Sauvageau (1897); Chalon (1905); Miranda (1943b); Fernández-Montero et al. (1998); Menoyo et al. (1998); Bárbara et al. (2005); Martínez-Gil et al. (2007); Guinda (2008); Juanes et al. (2008a); García García et al. (2010); Ramos (2015); Ramos et al. (2019)	MACB-Algae: 94255; SANT-Algae: 14701
<i>Litosiphon laminariae</i> (Lyngb.) Harv.	Ochrophyta	Phaeophyceae	Ectocarpales	Chordariaceae	<i>Asperococcus pusillus</i> Carmich.; <i>Litosiphon pusillus</i> (Carmich.) Harv.	Colmeiro (1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1943b)	
<i>Myriactula chordatae</i> (Aresch.) Levring	Ochrophyta	Phaeophyceae	Ectocarpales	Chordariaceae		Fernández-Montero et al. (1998)	
<i>Myriactula rivulariae</i> (Suhr ex Areschoug) Feldmann	Ochrophyta	Phaeophyceae	Ectocarpales	Chordariaceae	<i>Elachista pulvinata</i> (Kütz.) Harv.	Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1943b); Fernández-Montero et al. (1998)	
<i>Myrionema strangulans</i> Grev.	Ochrophyta	Phaeophyceae	Ectocarpales	Chordariaceae	<i>Myrionema vulgare</i> Thur.	Sauvageau (1897); Chalon (1905); Miranda (1943b)	
<i>Myrionichia claviformis</i> Harv.	Ochrophyta	Phaeophyceae	Ectocarpales	Chordariaceae	<i>Myrionichia filiformis</i> Harv.	Colmeiro (1889); Lázaro e Ibiza (1889); Chalon (1905); Miranda (1931, 1943b)	
<i>Padina pavonica</i> (L.) Thivy	Ochrophyta	Phaeophyceae	Dictyotales	Dictyotaceae		Sauvageau (1897); Chalon (1905); Miranda (1943b); Barceló et al. (1998); Fernández-Montero et al. (1998); Martínez-Gil et al. (2007); Ramos (2015)	BCN-Algae: 3397, 3407, 3408; MA-Algae: 4153; MACB-Algae: 94249; SANT-Algae: 20022
<i>Pebehia canaliculata</i> (L.) Decne. & Thur.	Ochrophyta	Phaeophyceae	Fucales	Fucaceae	<i>Fucus canaliculatus</i> L.	Colmeiro (1867, 1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1943b); Margalef and Navarro (1992); Fernández-Montero et al. (1998); Menoyo et al. (1998); Pérez-Ruzafa and Gallardo (1998); Gómez Garreta (2000); Pereira and Neto (2015); Martínez-Gil and Gallardo (2007); Martínez-Gil et al. (2007); Guinda (2008); Juanes et al. (2008a, b)	BCN-Algae: 2269, 5770, 5771, 5772, 5773, 5774, 5780, 5790, 5806; MA-Algae: 5537, 11013; MACB-Algae: 94247; SANT-Algae: 19082; VAL-Algae: 535, 536, 537, 538, 539
<i>Petalonia fascia</i> (O.F.Müll.) Kuntze	Ochrophyta	Phaeophyceae	Ectocarpales	Scytosiphonaceae		Miranda (1931, 1943b)	SANT-Algae: 21206, 21216
<i>Petrosiphonium berkeleyi</i> (Grev.) Nägeli ex Kütz.	Ochrophyta	Phaeophyceae	Ectocarpales	Petrosiphoniaceae	<i>Cylindrocarpus berkeleyi</i> (Grev.) P.Crouan & H.Crouan	Martínez-Gil and Gallardo (2007)	SANT-Algae: 14710, 21215, 26832, 26872, 26928
<i>Phyllariopsis brevipes</i> (C.Agardh) E.C.Henry & South	Ochrophyta	Phaeophyceae	Tilopteridales	Phyllariaceae		Martínez-Gil et al. (2007); Díaz-Tapia et al. (2008)	MACB-Algae: 94245
<i>Phyllariopsis brevipes</i> subsp. <i>pseudopurpurascens</i> Pérez-Cirena, Cremades, I.Bárbara & M.C.López	Ochrophyta	Phaeophyceae	Tilopteridales	Phyllariaceae			
<i>Pleurocladia lacustris</i> A.Braun	Ochrophyta	Phaeophyceae	Ectocarpales	Ectocarpaceae	<i>Pilinia maritima</i> (Kjellm.) Rosenv.	Sauvageau (1897); Chalon (1905); Miranda (1943b)	

Table 1 (continued)

Taxon	Phylum	Class	Order	Family	Synonyms	References	Herbarium collections
<i>Punctaria latifolia</i> Grev.	Ochrophyta	Phaeophyceae	Ecocarinales	Chordariaceae		Puente and Juares (2008)	SANT-Algae: 26979
<i>Pylaeella littoralis</i> (L.) Kjellm.	Ochrophyta	Phaeophyceae	Ecocarinales	Acinetosporaceae	<i>Ecocarpus firmus</i> (C.Agardh) J.Agardh	Colmeiro (1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalón (1905); Miranda (1943b)	
<i>Ralfsia verrucosa</i> (Aresch.) Aresch.	Ochrophyta	Phaeophyceae	Ralfsiales	Ralfsiaceae	<i>Ulva latissima</i> L.	Fernández-Montero et al. (1998); Juares et al. (2008b); Pereira and Neto (2015); Ramos (2015)	
<i>Saccharina latissima</i> (L.) C.E.Lane, C.Mayes, Druel & G.W.Saunders	Ochrophyta	Phaeophyceae	Laminariales	Laminariaceae		Colmeiro (1889); Lázaro e Ibiza (1889); APRO-MAR (2014); Peleiro et al. (2014, 2016)	
<i>Saccorhiza polyschides</i> (Lightf.) Batters	Ochrophyta	Phaeophyceae	Tilopteridales	Phyllariaceae	<i>Halgenea bulbosa</i> Decne., nom. illeg.; <i>Saccorhiza bulbosa</i> J.Agardh, nom. illeg.	Colmeiro (1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalón (1905); Miranda (1943b); Izquierdo et al. (1995); Fernández-Montero et al. (1998); Menoyo et al. (1998); García-Castrillo Riesgo et al. (2000); Martínez-Gil et al. (2007); Guinda (2008); Juares et al. (2008a); Puente and Juares (2008); Guinda et al. (2012)	BCN-Algae: 2294, 2295, 2296; MACB-Algae: 94252; SANT-Algae: 14667, 14709; VAL-Algae: 633, 634, 635, 636, 637
* <i>Sargassum muticum</i> (Yendo) Fensholt	Ochrophyta	Phaeophyceae	Fucales	Sargassaceae		Ribera et al. (1995); Fernández-Montero et al. (1998); Menoyo et al. (1998); Gómez Garreta (2000); Martínez-Gil et al. (2007); Guinda (2008); Juares et al. (2008a, b); Pereira and Neto (2015); Ramos (2015)	BCN-Algae: 2337, 2338, 3745, 5747; MA-Algae: 5535; MACB-Algae: 94257; MGC-Algae: 3759; SANT-Algae: 14665; VAL-Algae: 1016
<i>Sargassum vulgare</i> C.Agardh	Ochrophyta	Phaeophyceae	Fucales	Sargassaceae		Martínez-Gil and Gallardo (2007); Martínez-Gil et al. (2007)	MACB-Algae: 94244
<i>Sauvageoia thurstonii</i> (Clemente) Cremades	Ochrophyta	Phaeophyceae	Ecocarinales	Chordariaceae	<i>Castagnea chordariiformis</i> (P.Crouan & H.Crouan) Thur.; <i>Cladosiphon chordariiformis</i> (P.Crouan & H.Crouan) J.Agardh	Sauvageau (1897); Chalón (1905); Miranda (1943b)	
<i>Scytosiphon lomentaria</i> (Lynch.) Link	Ochrophyta	Phaeophyceae	Ecocarinales	Scytosiphonaceae		Sauvageau (1897); Chalón (1905); Miranda (1931, 1943b); Fernández-Montero et al. (1998); Martínez-Gil et al. (2007); Ramos (2015)	MACB-Algae: 94334; SANT-Algae: 8822, 20365
<i>Spatoglossum solieri</i> (Chauv. ex Mont.) Kütz.	Ochrophyta	Phaeophyceae	Dictyotales	Dictyotaceae		Barbarn et al. (2003); Martínez-Gil et al. (2007); Guinda (2008); Juares et al. (2008a); Guinda et al. (2012, 2014)	SANT-Algae: 14708, 20685, 26875, 26878, 26899
<i>Sphaecelaria cirrosa</i> (Roth) C.Agardh	Ochrophyta	Phaeophyceae	Sphaecelariales	Sphaecelariaceae	<i>Sphaecelaria hystrix</i> Suhr ex Reinke	Sauvageau (1897, 1900-1914); Chalón (1905); Miranda (1943b); Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007); Puente and Juares (2008)	SANT-Algae: 14672, 18988, 20027, 20223, 20353, 20413, 20439
<i>Sphaecelaria fusca</i> (Huds.) Gray	Ochrophyta	Phaeophyceae	Sphaecelariales	Sphaecelariaceae		Fernández-Montero et al. (1998); Menoyo et al. (2007)	MACB-Algae: 94246
<i>Sphaecelaria plumula</i> Zanardini	Ochrophyta	Phaeophyceae	Sphaecelariales	Sphaecelariaceae		Fernández-Montero et al. (1998); Menoyo et al. (2007)	SANT-Algae: 18987, 20000, 20138, 20342, 20428
<i>Sphaecelaria rigida</i> Kütz.	Ochrophyta	Phaeophyceae	Sphaecelariales	Sphaecelariaceae		Sauvageau (1897, 1900-1914); Chalón (1905); Miranda (1943b); Fernández-Montero et al. (1998)	
<i>Sphaecelaria tribuloides</i> Menegh.	Ochrophyta	Phaeophyceae	Sphaecelariales	Sphaecelariaceae			
<i>Spongema tomentosum</i> (Huds.) Kütz.	Ochrophyta	Phaeophyceae	Ecocarinales	Ecocarpaceae	<i>Ecocarpus tomentosus</i> (Huds.) Lynch.	Colmeiro (1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalón (1905); Miranda (1943b)	
<i>Sporichmus pedunculatus</i> (Huds.) C.Agardh	Ochrophyta	Phaeophyceae	Sporochneales	Sporochneaceae		Colmeiro (1889); Lázaro e Ibiza (1889); Chalón (1905)	

Table 1 (continued)

Taxon	Phylum	Class	Order	Family	Synonyms	References	Herbarium collections
<i>Stypocaulon scoparium</i> (L.) Kütz.	Ochrophyta	Phaeophyceae	Sphaelariales	Stypocaulaceae		Colmeiro (1867, 1889); Sauvageau (1897); Chalon (1905); Menoyo et al. (1998); Martínez-Gil and Gallardo (2007); Martínez-Gil et al. (2007); Díaz-Tapia et al. (2008); Juanes et al. (2008a, b); García García et al. (2010); Guinda et al. (2012); Pereira and Neto (2015); Ramos (2015)	BCN-Algae: 2449, 2450; MACB-Algae: 94248; SANT-Algae: 34, 119, 7080, 14696, 19001, 20055, 20354, 20416, 24633
<i>Taonia atomaria</i> (Woodw.) J. Agardh	Ochrophyta	Phaeophyceae	Dictyotales	Dictyotaceae		Sauvageau (1897); Miranda (1943b); Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007); Díaz-Tapia et al. (2008); Guinda (2008); Juanes et al. (2008a); Guinda et al. (2012)	MACB-Algae: 94250; SANT-Algae: 20012, 20013; VAL-Algae: 695, 698, 700
* <i>Undaria pinnatifida</i> (Harv.) Suringar	Ochrophyta	Phaeophyceae	Laminariales	Alariaceae		APROMAR (2014); Peteiro et al. (2016)	
<i>Zanardhinia typus</i> (Nardo) P.C. Silva	Ochrophyta	Phaeophyceae	Tilopteridales	Cutleriaceae		Martínez-Gil and Gallardo (2007); Martínez-Gil et al. (2007)	MACB-Algae: 94240
<i>Acrochaetium secundatum</i> (Lyngb.) Nägeli	Rhodophyta	Florideophyceae	Acrochaetiales	Acrochaetiaceae	<i>Chantransia secundata</i> (Lyngb.) Thur.	Colmeiro (1889); Lázaro e Ibiza (1889); Chalon (1905); Miranda (1943b)	
<i>Acrosorium ciliolatum</i> (Harv.) Kylin	Rhodophyta	Florideophyceae	Ceramiales	Delesseriaceae		Martínez-Gil et al. (2007); Escudero et al. (2009); Ramos (2015)	MACB-Algae: 94241; SANT-Algae: 27060
<i>Acrosorium venulosum</i> (Zanardini) Kylin	Rhodophyta	Florideophyceae	Ceramiales	Delesseriaceae		Puente and Juanes (2008); Fernández-Montero et al. (1998); Menoyo et al. (1998)	
<i>Aglaohammon bipinnatum</i> (P.Crouan & H.Crouan) Feldmann & Feldm.-Maz.	Rhodophyta	Florideophyceae	Ceramiales	Callithamniaceae		Fernández-Montero et al. (1998)	
<i>Aglaohammon feldmanniae</i> L'Hardy-Halos	Rhodophyta	Florideophyceae	Ceramiales	Callithamniaceae		Martínez-Gil and Gallardo (2007); Martínez-Gil et al. (2007)	SANT-Algae: 20153
<i>Aglaohammon pseudobyssoides</i> (P.Crouan & H.Crouan) L'Hardy-Halos	Rhodophyta	Florideophyceae	Ceramiales	Callithamniaceae		Fernández-Montero et al. (1998); Díaz-Tapia et al. (2008); Díaz-Tapia (2013)	
<i>Aglaohammon sepositum</i> (Gunnerus) Maggs & Hommers.	Rhodophyta	Florideophyceae	Ceramiales	Callithamniaceae	<i>Dasya arbuscula</i> (R.Br. ex Dillwyn) C. Agardh	Sauvageau (1897); Chalon (1905); Miranda (1944)	
<i>Aglaohammon tenuissimum</i> (Bonnem.) Feldm.-Maz.	Rhodophyta	Florideophyceae	Ceramiales	Callithamniaceae	<i>Aglaohammon byssoides</i> (Arm. ex Harv.) Boudour. & M.Perrit	Fernández-Montero et al. (1998); Martínez-Gil and Gallardo (2007); Martínez-Gil et al. (2007)	SANT-Algae: 18983, 20035, 20052
<i>Aglaohammon tripinnatum</i> (C. Agardh) Feldm.-Maz.	Rhodophyta	Florideophyceae	Ceramiales	Callithamniaceae		Fernández-Montero et al. (1998)	
<i>Ahnfeltia plicata</i> (Huds.) Fr.	Rhodophyta	Florideophyceae	Ahnfeltiales	Ahnfeltiaceae		Sauvageau (1897); Chalon (1905); Miranda (1944); Fernández-Montero et al. (1998); Ramos (2015)	BCN-Algae: 5781; SANT-Algae: 20014, 21201, 21207, 28942, 28944, 28946
<i>Ahnfeltiopsis devoniensis</i> (Grev.) P.C. Silva & DeCew	Rhodophyta	Florideophyceae	Gigartinales	Phylloporaceae		Díaz-Tapia et al. (2008); Díaz-Tapia (2013)	SANT-Algae: 19997, 20156, 20229, 20234, 20352, 20403
<i>Aizocolax pulchellus</i> Pocock	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae		Fernández-Montero et al. (1998)	
<i>Amphiroa rigida</i> J.V.Lamour.	Rhodophyta	Florideophyceae	Corallinales	Lithophylaceae		Barbára et al. (2012, 2014); Lugiilde et al. (2016)	SANT-Algae: 26901, 29061
<i>Amphiroa vanboscuae</i> McLemoine	Rhodophyta	Florideophyceae	Corallinales	Lithophylaceae		Barbára et al. (2003); Martínez-Gil et al. (2007); Díaz-Tapia et al. (2008)	BCN-Algae: 5785; SANT-Algae: 14705, 21230, 26858, 26927, 26932
<i>Anotrichium furcellatum</i> (J. Agardh) Baldoek	Rhodophyta	Florideophyceae	Ceramiales	Wrangeliaceae		Fernández-Montero et al. (1998)	
<i>Anitiammon cricium</i> (C. Agardh) Nägeli	Rhodophyta	Florideophyceae	Ceramiales	Ceramiceae			

Table 1 (continued)

Taxon	Phylum	Class	Order	Family	Synonyms	References	Herbarium collections
<i>Anthamniomella boergerseii</i> (Cormaci & G.Furnari) Athanas.	Rhodophyta	Floriideophyceae	Ceramiales	Ceramiaceae		Díaz-Tapia et al. (2008)	
<i>Anthamniomella multiplandulosa</i> A. Scilla, A. Santolaria, I. Díez & J.M. Corostaga	Rhodophyta	Floriideophyceae	Ceramiales	Ceramiaceae		Díaz-Tapia et al. (2012); Díaz-Tapia (2013)	SANT-Algae: 24446, 24623, 24655
<i>Anthamniomella terrifolia</i> (Hook.f. & Harv.) Lyle	Rhodophyta	Floriideophyceae	Ceramiales	Ceramiaceae		Fernández-Montero et al. (1998); Menoyo et al. (1998)	SANT-Algae: 20146
<i>Aphanocladia stichidiosa</i> (Funk) Ardré	Rhodophyta	Floriideophyceae	Ceramiales	Rhodomelaceae		Barbára et al. (2015)	SANT-Algae: 29617, 29622
<i>Apoglossum ruscifolium</i> (Turner) J. Agardh	Rhodophyta	Floriideophyceae	Ceramiales	Delesseriaceae	<i>Delesseria ruscifolia</i> (Turner) J.V. Lamour; <i>Hypoglossum ruscifolium</i> (Turner) Kütz.	Colmeiro (1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalón (1905); Miranda (1931, 1943c); Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007); Puente and Juanes (2008); Ramos (2015)	SANT-Algae: 14681, 20059, 20362
* <i>Asparagopsis armata</i> Harv.	Rhodophyta	Floriideophyceae	Bonnemaisoniales	Bonnemaisoniaceae	<i>Falkenbergia rufolanosa</i> (Harv.) F. Schmitz	Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007); Díaz-Tapia et al. (2008); Guinda (2008); Juanes et al. (2008b); García García et al. (2010); Guinda et al. (2012); Pereira and Neto (2015); Ramos (2015); Ramos et al. (2019)	BCN-Algae: 3223; MACB-Algae: 94239, 94327; SANT-Algae: 14682, 18982, 20151, 20360; VAL-Algae: 43849
<i>Bangia atropurpurea</i> (Mert. ex Roth) C. Agardh	Rhodophyta	Bangiophyceae	Bangiales	Bangiaceae		Fernández-Montero et al. (1998)	SANT-Algae: 26955
<i>Bonnemaisonia asparugoides</i> (Woodw.) C. Agardh	Rhodophyta	Floriideophyceae	Bonnemaisoniales	Bonnemaisoniaceae		Fernández-Montero et al. (1998); Díaz-Tapia et al. (2008)	SANT-Algae: 21200, 21242, 26831, 26860
<i>Bonnemaisonia clavata</i> Hamel	Rhodophyta	Floriideophyceae	Bonnemaisoniales	Bonnemaisoniaceae		Miranda (1943c, 1944); Valenzuela Miranda (1979); Valenzuela & Pérez-Cirera (1982); Martínez-Gil et al. (2007)	
<i>Bonnemaisonia hamifera</i> Har.	Rhodophyta	Floriideophyceae	Bonnemaisoniales	Bonnemaisoniaceae	<i>Traiillia intricata</i> Batters	Martínez-Gil et al. (2007); Barbára et al. (2012, 2014); Díaz-Tapia (2013)	BCN-Algae: 2776; SANT-Algae: 18997, 26929, 29065, 29068
<i>Bornetia secundiflora</i> (J. Agardh) Thur.	Rhodophyta	Floriideophyceae	Ceramiales	Wrangeliaceae		Sauvageau (1897); Chalón (1905); Miranda (1943c); Fernández-Montero et al. (1998); Menoyo et al. (1998)	BCN-Algae: 3972, 3973, 3974, 5784; SANT-Algae: 20050, 21219, 26898
<i>Bostrychia scorpioides</i> (Huds.) Mont.	Rhodophyta	Floriideophyceae	Ceramiales	Rhodomelaceae		Sauvageau (1897); Chalón (1905); Miranda (1931, 1944); Valenzuela Miranda (1979); Valenzuela & Pérez-Cirera (1982); Fernández-Montero et al. (1998); Menoyo et al. (1998); GESHA (2005); Martínez-Gil and Gallardo (2007); Martínez-Gil et al. (2007)	MACB-Algae: 94287; VAL-Algae: 50, 51, 52, 53
<i>Calliblepharis ciliata</i> (Huds.) Kütz.	Rhodophyta	Floriideophyceae	Gigartinales	Cystocloniaceae		Colmeiro (1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalón (1905); Miranda (1944); Dízerbo (1956); Valenzuela Miranda (1979); Valenzuela & Pérez-Cirera (1982); Fernández-Montero et al. (1998); Menoyo et al. (1998); Conde & Gallardo (2002); Martínez-Gil et al. (2007); Ramos (2015); Guinda (2008); Juanes et al. (2008b); Puente and Juanes (2008); Guinda et al. (2012, 2014)	BCN-Algae: 3990, 3991, 3992, 3993, 3995, 3996; MA-Algae: 3656, 3663, 10996; MACB-Algae: 94300; SANT-Algae: 12230; VAL-Algae: 58, 59, 60, 61, 63, 64, 65, 66, 70
<i>Calliblepharis hypneoides</i> Díaz-Tapia, I. Barbára & Hommers.	Rhodophyta	Floriideophyceae	Gigartinales	Cystocloniaceae		Díaz-Tapia (2013); Díaz-Tapia et al. (2013b)	
<i>Calliblepharis jubata</i> (Gooden. & Woodw.) Kütz.	Rhodophyta	Floriideophyceae	Gigartinales	Cystocloniaceae		Sauvageau (1897); Chalón (1905); Miranda (1944); Conde & Gallardo (2002); Martínez-Gil et al. (2007)	BCN-Algae: 3997; MACB-Algae: 94299; MGC-Algae: 3755; SANT-Algae: 137

**Table 1** (continued)

Taxon	Phylum	Class	Order	Family	Synonyms	References	Herbarium collections
<i>Callithamnion corymbosum</i> (Sm.) Lyngb.	Rhodophyta	Florideophyceae	Ceramiales	Callithamniaceae		Martínez-Gil et al. (2007)	MACB-Algae: 94322
<i>Callithamnion granulatum</i> (Ducluz.) C. Agardh	Rhodophyta	Florideophyceae	Ceramiales	Callithamniaceae	<i>Ceramium granulatum</i> Ducluz. (Dillwyn) Kütz.	Colmeiro (1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalón (1905); Miranda (1931, 1943c); Fernández-Montero et al. (1998); Martínez-Gil et al. (2007)	MACB-Algae: 94298
<i>Callithamnion tetragonum</i> (With.) Gray	Rhodophyta	Florideophyceae	Ceramiales	Callithamniaceae	<i>Phlebothamnion tetricum</i> (Dillwyn) Kütz.	Fernández-Montero et al. (1998)	
<i>Callithamnion tetricum</i> (Dillwyn) Gray	Rhodophyta	Florideophyceae	Ceramiales	Callithamniaceae		Colmeiro (1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalón (1905); Miranda (1943c); Fernández-Montero et al. (1998); Martínez-Gil et al. (2007)	MACB-Algae: 94297; SANT-Algae: 7269, 14700, 20958, 21218
<i>Callophyllis flabellata</i> P.Crouan & H.Crouan	Rhodophyta	Florideophyceae	Gigartinales	Kallymeniaceae		Lázaro e Ibiza (1889); Chalón (1905)	
<i>Carradoriella denudata</i> (Dillwyn) Savoie & G.W.Saunders	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae	<i>Polysiphonia denudata</i> (Dillwyn) Grev. ex Harv.	Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007)	MACB-Algae: 94301, 94329
<i>Carradoriella elongata</i> (Huds.) Savoie & G.W.Saunders	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae	<i>Polysiphonia elongata</i> (Huds.) Spreng.	Colmeiro (1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalón (1905); Miranda (1943c)	
<i>Catenella caespitosa</i> (With.) L.M.Irvine	Rhodophyta	Florideophyceae	Gigartinales	Caulacanthaceae	<i>Catenella opuntia</i> (Gooden. & Woodw.) Grev.	Sauvageau (1897); Chalón (1905); Miranda (1944); Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil and Gallardo (2007); Martínez-Gil et al. (2007); Juanes et al. (2008b); Silva et al. (2010); Pereira and Neto (2015)	MACB-Algae: 94313, 94333; SANT-Algae: 7266
<i>Caulacanthus okamurae</i> Yamada	Rhodophyta	Florideophyceae	Gigartinales	Caulacanthaceae		Barbara et al. (2019)	
<i>Caulacanthus ustulatus</i> (Mert. ex Turner) Kütz.	Rhodophyta	Florideophyceae	Gigartinales	Caulacanthaceae		Sauvageau (1897); Chalón (1905); Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil and Gallardo (2007); Martínez-Gil et al. (2007); Guinda (2008); Juanes et al. (2008a, b); Puente and Juanes (2008); García García et al. (2010); Silva et al. (2010); Pereira and Neto (2015); Ramos (2015); Ramos et al. (2019)	MACB-Algae: 94311; SANT-Algae: 26933
<i>Centroceras clavulatum</i> (C.Agardh) Mont.	Rhodophyta	Florideophyceae	Ceramiales	Ceramiaaceae		Martínez-Gil et al. (2007); Díaz-Tapia et al. (2008); Díaz-Tapia (2013)	SANT-Algae: 18973, 20002, 20143, 20435, 26856, 26881
<i>Centroceras gasparinii</i> (Menegh.) Kütz.	Rhodophyta	Florideophyceae	Ceramiales	Ceramiaaceae			SANT-Algae: 29075
<i>Ceramium botryocarpum</i> A.W.Griffiths ex Harv.	Rhodophyta	Florideophyceae	Ceramiales	Ceramiaaceae		Fernández-Montero et al. (1998); Menoyo et al. (1998)	SANT-Algae: 20384
<i>Ceramium ciliatum</i> (J.Ellis) Ducluz.	Rhodophyta	Florideophyceae	Ceramiales	Ceramiaaceae		Miranda (1943c); Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007); Puente and Juanes (2008); Díaz-Tapia (2013)	MACB-Algae: 94295, 94466; SANT-Algae: 14698, 18974, 20140, 20224, 20343, 24638
<i>Ceramium cimbriacum</i> H.E.Petersen	Rhodophyta	Florideophyceae	Ceramiales	Ceramiaaceae		Fernández-Montero et al. (1998)	
<i>Ceramium diaphanum</i> (Lightf.) Roth	Rhodophyta	Florideophyceae	Ceramiales	Ceramiaaceae		Fernández-Montero et al. (1998)	
<i>Ceramium echinotum</i> J.Agardh	Rhodophyta	Florideophyceae	Ceramiales	Ceramiaaceae	<i>Acanthoceras echinotum</i> (J.Agardh) Kütz.	Colmeiro (1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalón (1905); Miranda (1943c); Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007)	MACB-Algae: 94294, 94323, 94328; SANT-Algae: 18979, 20008
<i>Ceramium gaditanum</i> (Clemente) Cremades	Rhodophyta	Florideophyceae	Ceramiales	Ceramiaaceae		Fernández-Montero et al. (1998); Menoyo et al. (1998)	

Table 1 (continued)

Taxon	Phylum	Class	Order	Family	Synonyms	References	Herbarium collections
<i>Ceramium pallidum</i> (Kütz.) Maggs & Hommers.	Rhodophyta	Florideophyceae	Ceramiales	Ceramiales		Fernández-Montero et al. (1998); Martínez-Gil et al. (2007); Díaz-Tapia (2013)	SANT-Algae: 18972, 20383
<i>Ceramium secundatum</i> Lyngb.	Rhodophyta	Florideophyceae	Ceramiales	Ceramiales		Fernández-Montero et al. (1998); Martínez-Gil et al. (2007)	MACB-Algae: 94336; SANT-Algae: 18980, 20359, 20412
<i>Ceramium shuttleworthianum</i> (Kütz.) Rabenh.	Rhodophyta	Florideophyceae	Ceramiales	Ceramiales		Fernández-Montero et al. (1998); Menoyo et al. (1998)	
<i>Ceramium siliquosum</i> (Kütz.) Maggs & Hommers.	Rhodophyta	Florideophyceae	Ceramiales	Ceramiales		Fernández-Montero et al. (1998)	
<i>Ceramium virgatum</i> Roth	Rhodophyta	Florideophyceae	Ceramiales	Ceramiales	<i>Ceramium nodulosum</i> (Lightf.) Ducluz.; <i>Ceramium rubrum</i> C. Agardh	Colmeiro (1889); Lázaro e Ibiza (1889); Chalon (1905); Miranda (1931, 1943c); Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil and Gallardo (2007); Martínez-Gil et al. (2007)	MACB-Algae: 94338
<i>Ceratodicyon pannosum</i> (Grunow) R. E. Norris	Rhodophyta	Florideophyceae	Rhodymeniales	Lomentariaceae	<i>Gelidiopsis pannosa</i> (Grunow) F. Schmitz	Sauvageau (1897); Chalon (1905)	
<i>Champia parvula</i> (C. Agardh) Harv.	Rhodophyta	Florideophyceae	Rhodymeniales	Champiaceae		Sauvageau (1897); Chalon (1905); Miranda (1944); Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007); Ramos (2015)	MACB-Algae: 94291, 94292; SANT-Algae: 20048, 20212
<i>Chondracanthus acicularis</i> (Roth) Fredericq	Rhodophyta	Florideophyceae	Gigartinales	Gigartinaceae	<i>Gigartina acicularis</i> (Roth) J. V. Lamour.	Sauvageau (1897); Chalon (1905); Miranda (1944); Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007); Juanes et al. (2008b); García García et al. (2010); Pereira and Neto (2015); Ramos (2015)	MACB-Algae: 94319; SANT-Algae: 7209, 12231, 14694; VAL-Algae: 363, 364, 365
<i>Chondracanthus teadei</i> (Mert. ex Roth) Kütz.	Rhodophyta	Florideophyceae	Gigartinales	Gigartinaceae	<i>Chondroclonium teadei</i> (Mert. ex Roth) Kütz.; <i>Gigartina teadei</i> (Mert. ex Roth) J. V. Lamour.	Colmeiro (1867, 1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1944); Fernández-Montero et al. (1998); Bárbara et al. (2003); Martínez-Gil et al. (2007); Ramos (2015)	BCN-Algae: 4119; VAL-Algae: 366, 367, 368, 369
<i>Chondria capillaris</i> (Huds.) M. J. Wynne	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae	<i>Chondria tenuissima</i> (With.) C. Agardh, nom. illeg.	Miranda (1931, 1943c)	VAL-Algae: 114
<i>Chondria coerulea</i> (J. Agardh) Sauv.	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae		Sauvageau (1897); Chalon (1905); Miranda (1943c); Fernández-Montero et al. (1998); Menoyo et al. (1998); Pereira and Neto (2015); Juanes et al. (2008b); Ramos (2015)	SANT-Algae: 19988, 20129, 20350
<i>Chondria dasycphylla</i> (Woodw.) C. Agardh	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae		Fernández-Montero et al. (1998); Martínez-Gil et al. (2007)	MACB-Algae: 94290
<i>Chondrus crispus</i> Stackh.	Rhodophyta	Florideophyceae	Gigartinales	Gigartinaceae	<i>Chondrus norvegicus</i> (Gunnerus) Lyngb.; <i>Gymnogongrus norvegicus</i> (Gunnerus) J. Agardh	Colmeiro (1867, 1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1944); Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007); Juanes et al. (2008b); Pereira and Neto (2015); Ramos (2015)	BCN-Algae: 4155, 4156, 5779; MA-Algae: 3793, 4181, 5524; MACB-Algae: 94320; SANT-Algae: 197, 12226, 14688, 20062, 20956; VAL-Algae: 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129
<i>Choromena thuretii</i> (Bornet) F. Schmitz	Rhodophyta	Florideophyceae	Hapalidiales	Hapalidiales		Fernández-Montero et al. (1998); Díaz-Tapia (2013); Martínez-Gil et al. (2007); Lugalde et al. (2016)	SANT-Algae: 18978, 20033, 20442
<i>Chylocladia verticillata</i> (Lightf.) Bolid	Rhodophyta	Florideophyceae	Rhodymeniales	Champiaceae	<i>Gastroclonium kalifornicum</i> (Gooden. & Woodw.) Ardis.; <i>Lomentaria kalifornis</i> (Gooden. & Woodw.) Gallon	Colmeiro (1889); Lázaro e Ibiza (1889); Chalon (1905); Miranda (1931, 1944); Fernández-Montero et al. (1998); Menoyo et al. (1998); Ramos (2015)	SANT-Algae: 14670, 20356, 20386



**Table 1** (continued)

Taxon	Phylum	Class	Order	Family	Synonyms	References	Herbarium collections
<i>Coccolytus brodiaei</i> (Turner) Kütz.	Rhodophyta	Florideophyceae	Gigartinales	Phyllophoraceae	<i>Phyllophora brodiaei</i> (Turner) Endl.	Colmeiro (1889); Lázaro e Ibiza (1889); Chalon (1905)	SANT-Algae: 20067
<i>Colaconema bonnemaisoniae</i> Batters	Rhodophyta	Florideophyceae	Colaconematales	Colaconemataceae	<i>Audouinella caespitosa</i> (J. Agardh) P.S. Dixon; <i>Callithamnion caespitosum</i> J. Agardh	Bárbara et al. (2006)	
<i>Colaconema caespitosum</i> (J. Agardh) Jackelman, Stegenga & J.J. Bolton	Rhodophyta	Florideophyceae	Colaconematales	Colaconemataceae	<i>Audouinella caespitosa</i> (J. Agardh) P.S. Dixon; <i>Callithamnion caespitosum</i> J. Agardh	Fernández-Montero et al. (1998); Menoyo et al. (1998)	
<i>Colaconema codicola</i> (Børgesen) Stegenga, J.J. Bolton & R.J. Anderson	Rhodophyta	Florideophyceae	Colaconematales	Colaconemataceae	<i>Acrochaetium codicola</i> Børgesen	Miranda (1931, 1943c); Fernández-Montero et al. (1998)	
<i>Colaconema daviesii</i> (Dillwyn) Stegenga	Rhodophyta	Florideophyceae	Colaconematales	Colaconemataceae	<i>Audouinella daviesii</i> (Dillwyn) Woelk.	Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007)	SANT-Algae: 14674, 19000, 20431
<i>Compsorhamnion thuioides</i> (Sm.) Nägeli	Rhodophyta	Florideophyceae	Ceramiales	Wrangelaceae	<i>Callithamnion thuioides</i> (Sm.) C. Agardh	Colmeiro (1889); Lázaro e Ibiza (1889); Chalon et al. (2007); Díaz-Tapia (2013); Bárbara et al. (2015)	SANT-Algae: 18993, 29624
<i>Corallina ferreyrae</i> E.Y. Dawson, Acléto & Foldvik	Rhodophyta	Florideophyceae	Corallinales	Corallinaceae	<i>Corallina caespitosa</i> R.H. Walker, J. Brodie & L.M. Irvine	Pardo et al. (2015); Lugiilde et al. (2016); Williamson et al. (2018)	
<i>Corallina officinalis</i> L.	Rhodophyta	Florideophyceae	Corallinales	Corallinaceae	<i>Jania corniculata</i> (L.) J.V. Lamour.	Colmeiro 1867; Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1943c); Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007); Juanes et al. (2008b); Puente and Juanes (2008); García García et al. (2010); Pereira and Neto (2015); Ramos (2015); Lugiilde et al. (2016); Williamson et al. (2018); Yesson et al. (2018)	BCN-Algae: 4215; MACB-Algae: 94183, 94184; SANT-Algae: 14706
<i>Croissetta requienii</i> (J. Agardh) M.J. Wynne	Rhodophyta	Florideophyceae	Gigartinales	Kallymeniaceae	<i>Kallymenia requienii</i> (J. Agardh) J. Agardh		BCN-Algae: 4739
<i>Crouania attenuata</i> (C. Agardh) J. Agardh	Rhodophyta	Florideophyceae	Ceramiales	Callithamniaceae		Miranda (1931, 1943c); Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007)	SANT-Algae: 14669, 14684, 14702, 18992, 20047, 20347, 20409
<i>Cryptonemia palmata</i> (S.G. Gmel.) Woelk., G. Furnari, Cormaci & McNeill	Rhodophyta	Florideophyceae	Halymeniales	Halymeniaceae	<i>Cryptonemia lactuca</i> J. Agardh, nom. illeg.; <i>Cryptonemia lomation</i> (Bertol.) J. Agardh	Sauvageau (1897); Miranda (1943c); Díaz-Tapia et al. (2008); Díaz-Tapia (2013)	SANT-Algae: 20013, 20066, 21226, 26863
<i>Cryptonemia semintervis</i> (C. Agardh) J. Agardh	Rhodophyta	Florideophyceae	Halymeniales	Halymeniaceae	<i>Cryptonemia lactuca</i> f. <i>semintervis</i> (C. Agardh) Sauv.	Sauvageau (1897); Chalon (1905); Puente and Juanes (2008)	
<i>Cryptopleura ramosa</i> (Huds.) L. Newton	Rhodophyta	Florideophyceae	Ceramiales	Delesseriaceae	<i>Cryptopleura lacerata</i> (S.G. Gmel.) Kütz.; <i>Nitophyllum laceratum</i> (S.G. Gmel.) Grev.; <i>Nitophyllum uncinatum</i> (Turner) J. Agardh	Colmeiro (1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1943c); Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007); Puente and Juanes (2008); Ramos (2015)	MA-Algae: 3843; MACB-Algae: 94279, 94280; SANT-Algae: 21195, 26936, 27051; VAL-Algae: 165, 21511, 4752
<i>Cystoclonium purpureum</i> (Huds.) Batters	Rhodophyta	Florideophyceae	Gigartinales	Cystocloniaceae	<i>Cystoclonium purpurascens</i> (Huds.) Kütz.		MA-Algae: 3834
<i>Dasya hutchinsiae</i> Harv.	Rhodophyta	Florideophyceae	Ceramiales	Delesseriaceae		Fernández-Montero et al. (1998); Pena Martín et al. (2011)	SANT-Algae: 20054, 20148, 20390, 26913, 26931
<i>Dasya ocellata</i> (Gratel.) Harv.	Rhodophyta	Florideophyceae	Ceramiales	Delesseriaceae		Fernández-Montero et al. (1998); Pena Martín et al. (2011)	SANT-Algae: 18995, 20021
<i>Dasya rigida</i> (Kütz.) Ardiss.	Rhodophyta	Florideophyceae	Ceramiales	Delesseriaceae		Pena Martín et al. (2011)	
<i>Delesseria sanguinea</i> (Huds.) J.V. Lamour.	Rhodophyta	Florideophyceae	Ceramiales	Delesseriaceae	<i>Hydroclathra sanguineum</i> (Huds.) Stackh.	Colmeiro (1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1943c)	MA-Algae: 4125

Table 1 (continued)

Taxon	Phylum	Class	Order	Family	Synonyms	References	Herbarium collections
<i>Dermocorynus dichotomus</i> (J. Agardh) Gargiulo, Morabito & Manghisi	Rhodophyta	Florideophyceae	Halymeniales	Halymeniaceae	<i>Grateloupia dichotoma</i> J. Agardh	Sauvageau (1897); Chalon (1905); Miranda (1943c)	SANT-Algae: 26935
<i>Dilsea carnosae</i> (Schmidle) Kuntze	Rhodophyta	Florideophyceae	Gigartinales	Dumontiaceae	<i>Iridaea edulis</i> (Stackh.) Grev.; <i>Sarcophyllis edulis</i> (Stackh.) J. Agardh	Colmeiro (1867, 1889); Chalon (1905); Lázaro e Ibiza (1889); Fernández-Montero et al. (1998)	
<i>Drachiella heterocarpa</i> (Chauv. ex Duby) Maggs & Hommers.	Rhodophyta	Florideophyceae	Ceramiales	Delesseriaceae	<i>Nitophyllum versicolor</i> Harv.	Colmeiro (1889); Lázaro e Ibiza (1889); Chalon (1905)	SANT-Algae: 21196, 26984, 26986
<i>Drachiella spectabilis</i> J. Ernst & Feldmann	Rhodophyta	Florideophyceae	Ceramiales	Delesseriaceae		Fernández-Montero et al. (1998); Díaz-Tapia et al. (2008)	SANT-Algae: 26957
<i>Dudresnaya verticillata</i> (With.) Le Jol.	Rhodophyta	Florideophyceae	Gigartinales	Dumontiaceae	<i>Corallina elongata</i> J. Ellis & Sol.; <i>Corallina mediterranea</i> Aresch.	Sauvageau (1897); Miranda (1943c); Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007); Díaz-Tapia et al. (2016)	MA-Algae: 10998; MACB-Algae: 94185; SANT-Algae: 14707, 27667, 27668, 29066
<i>Ellislandia elongata</i> (J. Ellis & Sol.) K. R. Hind & G. W. Saunders	Rhodophyta	Florideophyceae	Corallinales	Corallinaceae		(2008); Juanes et al. (2008b); Puente and Juanes (2008); García García et al. (2010); Pereira and Neto (2015); Ramos (2015); Lugilde et al. (2016)	
<i>Erythrogloussum laciniatum</i> (Lightf.) Maggs & Hommers.	Rhodophyta	Florideophyceae	Ceramiales	Delesseriaceae	<i>Porphyra laciniata</i> (Lightf.) C. Agardh	Sauvageau (1897); Díaz-Tapia et al. (2008); Puente and Juanes (2008); Bárbara et al. (2012)	PC: 111179, 111180, 111181, 111182, 111183; SANT-Algae: 21204, 26849
<i>Erythrotrichia bertholdii</i> Batters	Rhodophyta	Composopogonophyceae	Erythropeltales	Erythrotrichiaceae		Díaz-Tapia et al. (2008); Díaz-Tapia (2013)	SANT-Algae: 20010, 20159
<i>Erythrotrichia carnea</i> (Dillwyn) J. Agardh	Rhodophyta	Composopogonophyceae	Erythropeltales	Erythrotrichiaceae	<i>Erythrotrichia ceramica</i> (Lyngb.) Aresch.	Sauvageau (1897); Chalon (1905); Hamel (1928); Miranda (1943b); Fernández-Montero et al. (1998); Martínez-Gil et al. (2007)	MACB-Algae: 94310, 94322; PC: 111282, 111283, 111284, 111285
<i>Erythrotrichia investiens</i> (Zamardini) Bornet	Rhodophyta	Composopogonophyceae	Erythropeltales	Erythrotrichiaceae		Sauvageau (1897); Chalon (1905); Hamel (1928); Miranda (1943b)	PC: 111090, 111262, 111263, 111264
<i>Erythrotrichia reflexa</i> (P. Crouan & H. Crouan) Thur. ex De Toni	Rhodophyta	Composopogonophyceae	Erythropeltales	Erythrotrichiaceae		Sauvageau (1897); Chalon (1905); Hamel (1928); Miranda (1943b)	PC: 111096, 111266, 111267, 111268, 111269
<i>Furcellaria lambricatis</i> (Huds.) J. V. Lamour.	Rhodophyta	Florideophyceae	Gigartinales	Furcellariaceae	<i>Fasigilaria furcellata</i> (L.) Stackh.; <i>Furcellaria fastigiata</i> (Turner) J. V. Lamour.	Colmeiro (1867, 1889); Lázaro e Ibiza (1889); Chalon (1905); Miranda (1943c)	SANT-Algae: 19073
<i>Gaillona gallica</i> (Nägeli) Athanas.	Rhodophyta	Florideophyceae	Ceramiales	Callithamniaceae	<i>Aglaothamnion gallicum</i> (Nägeli) L'Hardy-Halos ex Ardicé	Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007)	SANT-Algae: 18981, 20218, 20389, 20443
<i>Gaillona hookeri</i> (Dillwyn) Athanas.	Rhodophyta	Florideophyceae	Ceramiales	Callithamniaceae	<i>Aglaothamnion hookeri</i> (Dillwyn) Maggs & Hommers.; <i>Callithamnion hookeri</i> (Dillwyn) Gray	Sauvageau (1897); Chalon (1905); Miranda (1943c); Fernández-Montero et al. (1998)	SANT-Algae: 20410, 20441
<i>Gaillona rosea</i> (Roth) Athanas.	Rhodophyta	Florideophyceae	Ceramiales	Callithamniaceae	<i>Aglaothamnion roseum</i> (Roth) Maggs & L'Hardy-Halos; <i>Callithamnion roseum</i> (Roth) Lyngb.	Sauvageau (1897); Chalon (1905); Miranda (1943c); Menoyo et al. (1998)	
<i>Gaillona seposita</i> (Gunnerus) Athanas.	Rhodophyta	Florideophyceae	Ceramiales	Callithamniaceae	<i>Aglaothamnion sepositum</i> (Gunnerus) Maggs & Hommers.	Fernández-Montero et al. (1998)	
<i>Gastroclonium ovatum</i> (Huds.) Papenf.	Rhodophyta	Florideophyceae	Rhodymeniales	Champiaceae		Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007); Ramos (2015)	MACB-Algae: 94321; SANT-Algae: 20044, 21220
<i>Gastroclonium reflexum</i> (Chauv.) Kürz.	Rhodophyta	Florideophyceae	Rhodymeniales	Champiaceae		Martínez-Gil et al. (2007)	SANT-Algae: 14712, 18970, 20024, 20222, 20382, 24634

**Table 1** (continued)

Taxon	Phylum	Class	Order	Family	Synonyms	References	Herbarium collections
<i>Gavililla flaccida</i> (Harv. ex Kütz.) T.O.Cho & L.M.Melvor	Rhodophyta	Florideophyceae	Ceramiales	Ceramiales	<i>Ceramium flaccidum</i> (Harv. ex Kütz.) Ardiss.; <i>Ceramium gracillimum</i> Griffiths & Harv. ex Harv.	Sauvageau (1897); Chalon (1905); Miranda (1943c); Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007)	MACB-Algae: 94293; SANT-Algae: 14671, 18985, 20007, 20388
<i>Gelidium attenuatum</i> (Turner) Thur. ex Bornet	Rhodophyta	Florideophyceae	Gelidiales	Gelidiellaceae		Sauvageau (1897); Chalon (1905); Miranda (1943c); Fernández-Montero et al. (1998); Menoyo et al. (1998); Díaz-Tapia et al. (2008)	BCN-Algae: 4418; SANT-Algae: 14686
<i>Gelidium cantabricum</i> Seoane-Camba	Rhodophyta	Florideophyceae	Gelidiales	Gelidiellaceae		Seoane-Camba (1979); Gallardo et al. (2016)	BCN-Algae: 2465
<i>Gelidium corneum</i> (Huds.) J.V.Lamour.	Rhodophyta	Florideophyceae	Gelidiales	Gelidiellaceae	<i>Gelidium sesquipedale</i> (Clemente) Thur.	Colmeiro (1867, 1889); Sauvageau (1897); Chalon (1905); Miranda (1932, 1943c); Juanes & Gutiérrez (1991); Fernández-Montero et al. (1998); Menoyo et al. (1998); García-Castrillo Riesgo et al. (2000); Martínez-Gil and Gallardo (2007); Martínez-Gil et al. (2007); Díaz-Tapia et al. (2008); Guinda (2008); Juanes et al. (2008a, b); Puente and Juanes (2008); García García et al. (2010); Pena Martín et al. (2011); Guinda et al. (2012, 2014); APROMAR (2014); Pereira and Neto (2015); Ramos (2015); López Mecandéz (2017); Ramos et al. (2019)	BCN-Algae: 4445, 4446, 4447, 4448, 4451, 4452, 4453, 4455, 4457, 4460, 4461, 4462, 4463, 4464, 4465, 4467; MA-Algae: 3998, 5526, 11000; MACB-Algae: 94274; VAL-Algae: 359, 360, 361, 362
<i>Gelidium crinale</i> (Hare ex Turner) Gaillon	Rhodophyta	Florideophyceae	Gelidiales	Gelidiellaceae		Sauvageau (1897); Chalon (1905); Miranda (1943c); Díaz-Tapia et al. (2008); Díaz-Tapia (2013); Díaz-Tapia and Bárbara (2014)	SANT-Algae: 19998, 24631
<i>Gelidium pulchellum</i> (Turner) Kütz.	Rhodophyta	Florideophyceae	Gelidiales	Gelidiellaceae		Sauvageau (1897); Chalon (1905); Miranda (1943c)	
<i>Gelidium pusillum</i> (Stackh.) Le Jol.	Rhodophyta	Florideophyceae	Gelidiales	Gelidiellaceae		Chalon (1905); Miranda (1943c); Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007); Juanes et al. (2008b); García García et al. (2010); Pereira and Neto (2015); Ramos (2015)	MA-Algae: 10999; MACB-Algae: 94275; SANT-Algae: 7216, 14713, 19999
<i>Gelidium pusillum</i> var. <i>pulvinatum</i> (C.Agardh) Feldmann	Rhodophyta	Florideophyceae	Gelidiales	Gelidiellaceae	<i>Gelidium pulvinatum</i> (C.Agardh) Grunow; <i>Gelidium pulvinatum</i> Thur. ex Bornet, nom. illeg.	Sauvageau (1897); Díaz-Tapia et al. (2008); Díaz-Tapia (2013)	
<i>Gelidium spathulatum</i> (Kütz.) Bornet	Rhodophyta	Florideophyceae	Gelidiales	Gelidiellaceae		Díaz-Tapia et al. (2008); Díaz-Tapia (2013)	SANT-Algae: 20378
<i>Gelidium spinosum</i> (S.G.Gmel.) P.C.Silva	Rhodophyta	Florideophyceae	Gelidiales	Gelidiellaceae	<i>Gelidium latifolium</i> (Grev.) Bornet	Sauvageau (1897); Chalon (1905); Miranda (1943c); Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007); Guinda (2008); Juanes et al. (2008a, b); Puente and Juanes (2008); García García et al. (2010); Pereira and Neto (2015); Ramos (2015); Ramos et al. (2019)	MACB-Algae: 94271; SANT-Algae: 7222, 14680, 20065, 20955
<i>Gigartina pistillata</i> (S.G.Gmel.) Stackh.	Rhodophyta	Florideophyceae	Gigartinales	Gigartinales		Colmeiro (1867, 1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1944); Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007); Ramos (2015)	BCN-Algae: 4549, 4550, 4551, 4552, 4553, 4554, 4555, 4556, 5793; MA-Algae: 3289, 3839, 5527; MACB-Algae: 94286; SANT-Algae: 12227, 12234, 20016, 20957
<i>Gloiocladia repens</i> (C.Agardh) N.Sánchez & Rodr.-Prieto	Rhodophyta	Florideophyceae	Rhodymniales	Fauchetaceae	<i>Fauchea repens</i> (C.Agardh) Mont. & Bory	Colmeiro (1889); Lázaro e Ibiza (1889); Chalon (1905); Miranda (1931, 1944); Valenzuela Miranda (1979); Valenzuela & Pérez-Cirera (1982)	

Table 1 (continued)

Taxon	Phylum	Class	Order	Family	Synonyms	References	Herbarium collections
<i>Gracilaria bursa-pastoris</i> (S.G.Gmel.) P.C.Silva	Rhodophyta	Florideophyceae	Gracilariales	Gracilariaceae	<i>Gracilaria compressa</i> (C.Agardh) Grev.; <i>Sphaerococcus compressus</i> C.Agardh	Colmeiro (1889); Lázaro e Ibiza (1889); Chalon (1905); Menoyo et al. (1998)	MA-Algae: 3313
<i>Gracilaria foliifera</i> (Forsk.) Borgesen	Rhodophyta	Florideophyceae	Gracilariales	Gracilariaceae		Valenzuela & Pérez-Chirra (1982)	
<i>Gracilaria gracilis</i> (Stackh.) Steentoft, L.M.Irvine & Farnham	Rhodophyta	Florideophyceae	Gracilariales	Gracilariaceae		Polifrone et al. (2005); Martínez-Gil et al. (2007); Diaz-Tapia et al. (2008); Diaz-Tapia (2013)	BCN-Algae: 508, 509, 510; MACB-Algae: 94270; SANT-Algae: 156, 20136, 20210
<i>Gracilaria multipartita</i> (Clemente) Harv.	Rhodophyta	Florideophyceae	Gracilariales	Gracilariaceae	<i>Sphaerococcus multipartitus</i> (Clemente) C.Agardh	Colmeiro (1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1931, 1944); Valenzuela Miranda (1979); Fernández-Montero et al. (1998); Martínez-Gil et al. (2007)	SANT-Algae: 14687, 29069
<i>Gracilaria longissima</i> (S.G.Gmel.) Steentoft, L.M.Irvine & Farnham	Rhodophyta	Florideophyceae	Gracilariales	Gracilariaceae	<i>Gracilaria confervoides</i> (L.) Grev., nom. illeg.; <i>Sphaerococcus confervoides</i> (F.H.Wigg.) Stackh.	Colmeiro (1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1944); Fernández-Montero et al. (1998)	
<i>Grateloupia filicina</i> (J.V.Lamour.) C.Agardh	Rhodophyta	Florideophyceae	Halymeniales	Halymeniaceae		Sauvageau (1897); Chalon (1905); Miranda (1943c); Fernández-Montero et al. (1998); Menoyo et al. (1998)	SANT-Algae: 21221, 26855
<i>Grateloupia subpinnata</i> Holmes	Rhodophyta	Florideophyceae	Halymeniales	Halymeniaceae		Diaz-Tapia et al. (2008)	SANT-Algae: 21232
<i>Gymnogongrus crenulatus</i> (Turner) J.Agardh	Rhodophyta	Florideophyceae	Gigartinales	Phylloporaceae	<i>Actinococcus peltiformis</i> F.Schmitz	Sauvageau (1897); Chalon (1905); Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007); Ramos et al. (2019)	MA-Algae: 1100; MACB-Algae: 94308; SANT-Algae: 14697, 20063
<i>Gymnogongrus griffithiae</i> (Turner) C.Mart.	Rhodophyta	Florideophyceae	Gigartinales	Phylloporaceae		Sauvageau (1897); Miranda (1944); Fernández-Montero et al. (1998)	
<i>Gymnohamion elegans</i> (Schousb. ex C.Agardh) J.Agardh	Rhodophyta	Florideophyceae	Ceramiales	Callithamniaceae	<i>Plamaria schousboei</i> (Bornet) F.Schmitz	Sauvageau (1897); Chalon (1905); Miranda (1931, 1943b, 1943c)	MA-Algae: 5075; SANT-Algae: 13045
<i>Halarachnion ligulatum</i> (Woodw.) Kütz.	Rhodophyta	Florideophyceae	Gigartinales	Furcellariaceae	<i>Halymenia ligulata</i> (Woodw.) C.Agardh	Colmeiro (1889); Lázaro e Ibiza (1889); Chalon (1905); Bárbara et al. (2012)	SANT-Algae: 26942
<i>Halophilys incurva</i> (Huds.) Batters	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae	<i>Halophilys pinastroides</i> (Stackh.) Kütz.	Miranda (1931, 1944); Valenzuela Miranda (1979); Valenzuela & Pérez-Chirra (1982); Menoyo et al. (1998); Martínez-Gil et al. (2007); Díaz-Tapia et al. (2008); Guinda (2008); Juanes et al. (2008a); Guinda et al. (2012); Ramos (2015); Escudero et al. (2009)	MACB-Algae: 94307; SANT-Algae: 7203, 14715, 18984, 20381, 24632, 26013
<i>Halarus equisetifolius</i> (Lightf.) Kütz.	Rhodophyta	Florideophyceae	Ceramiales	Wrangellicaeae		Sauvageau (1897); Chalon (1905); Miranda (1943c); Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007); Guinda (2008); Juanes et al. (2008a, b); Puente and Juanes (2008); Guinda et al. (2012); Pereira and Neto (2015); Ramos (2015)	BCN-Algae: 4654, 4655, 4656; MA-Algae: 5530; MACB-Algae: 94309; SANT-Algae: 20018, 20053, 20366
<i>Halarus flosculosus</i> (J.Ellis) Maggs & Hommers.	Rhodophyta	Florideophyceae	Ceramiales	Wrangellicaeae		Martínez-Gil et al. (2007)	MACB-Algae: 94326
<i>Haraldophyllum bonnemaisonii</i> (Kyllin) Zinova	Rhodophyta	Florideophyceae	Ceramiales	Delesseriaceae		Fernández-Montero et al. (1998); Puente and Juanes (2008)	
<i>Helminthocladia calvadosii</i> (J.V.Lamour. ex Duby) Setch.	Rhodophyta	Florideophyceae	Nemaliales	Liagoraceae	<i>Helminthocladia purpurea</i> (Harv.) J.Agardh	Sauvageau (1897); Chalon (1905); Miranda (1931, 1943c); Fernández-Montero et al. (1998); O'Dwyer & Alfonso-Carrillo (2001); Martínez-Gil et al. (2007)	MACB-Algae: 94316; SANT-Algae: 26970, 26972, 26977, 26980, 27059

**Table 1** (continued)

Taxon	Phylum	Class	Order	Family	Synonyms	References	Herbarium collections
<i>Herposiphonia secunda</i> f. <i>tenella</i> (C.Agardh) M.J.Wyime	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae		Bárbara et al. (2003); Martínez-Gil et al. (2007); Díaz-Tapia (2013); Díaz-Tapia and Bárbara (2013); Díaz-Tapia et al. (2018)	SANT-Algae: 14704, 20049, 20139, 20417, 24646
<i>Heterosiphonia plumosa</i> (J.Ellis) Batters	Rhodophyta	Florideophyceae	Ceramiales	Delesseriaceae	<i>Dasya coccinea</i> (Huds.) Aresch.; <i>Heterosiphonia coccinea</i> (Huds.) Falkenb.; <i>Trichothamnon coccineum</i> (Huds.) Kütz.	Colmeiro (1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1943c); Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007); Guinda (2008); Juanes et al. (2008a); Puente and Juanes (2008); Guinda et al. (2012); Ramos (2015)	MACB-Algae: 94315; VAL-Algae: 442, 443, 444, 445, 446, 447, 3260, 3261
<i>Hildenbrandia rubra</i> (Sommerf.) Menegh.	Rhodophyta	Florideophyceae	Hildenbrandiales	Hildenbrandiaceae	<i>Hildenbrandia prototypus</i> Nardo	Sauvageau (1897); Chalon (1905); Miranda (1943c); Fernández-Montero et al. (1998); Ramos (2015)	SANT-Algae: 20469
<i>Holmsella pachyderma</i> (Reinsch) Sturch	Rhodophyta	Rhodophyta classis incertae sedis	Rhodophyta ordo incertae sedis	Perocladiophylacae		Díaz-Tapia et al. (2008); Díaz-Tapia (2013)	SANT-Algae: 20137
<i>Hydrolython farinosum</i> (J.V.Lamour.) Penrose & Y.M.Chamb.	Rhodophyta	Florideophyceae	Corallinales	Hydrolythaceae	<i>Melobesia farinosa</i> J.V.Lamour.	Sauvageau (1897); Chalon (1905); Miranda (1943c); Lugilde et al. (2016)	SANT-Algae: 26838, 26880, 29071
<i>Hypnea musciformis</i> (Wulfen) J.V.Lamour.	Rhodophyta	Florideophyceae	Gigartinales	Cystocloniaceae		Colmeiro (1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1944)	SANT-Algae: 20346, 20438, 24639
<i>Hypoglossum hypoglossoides</i> (Stackh.) Collins & Herv.	Rhodophyta	Florideophyceae	Ceramiales	Delesseriaceae	<i>Delesseria hypoglossum</i> (Woodw.) J.V.Lamour.; <i>Hypoglossum woodwardii</i> Kütz.	Sauvageau (1897); Chalon (1905); Miranda (1943c); Fernández-Montero et al. (1998); Menoyo et al. (1998); Díaz-Tapia (2013); Ramos (2015)	SANT-Algae: 20057, 20130, 20346, 20438, 24639
<i>Isonoa marginifera</i> (J.Agardh) Masuda & Guiry	Rhodophyta	Florideophyceae	Nemastomatales	Nemastomataceae	<i>Nemastoma marginiferum</i> J.Agardh; <i>Platoma marginiferum</i> (J.Agardh) Batters	Sauvageau (1897); Chalon (1905); Miranda (1943c); Fernández-Montero et al. (1998); Bárbara et al. (2002)	SANT-Algae: 12228, 21213, 26841, 26973, 27056, 27057
<i>Jania longifurca</i> Zanardini	Rhodophyta	Florideophyceae	Corallinales	Corallinaceae	<i>Corallina longifurca</i> (Zanardini) Kütz.	Sauvageau (1897); Chalon (1905); Miranda (1943c); Díaz-Tapia (2013); Lugilde et al. (2016)	SANT-Algae: 18977, 19987, 20032, 20385, 20437
<i>Jania rubens</i> (L.) J.V.Lamour.	Rhodophyta	Florideophyceae	Corallinales	Corallinaceae	<i>Corallina rubens</i> L.	Colmeiro (1889); Lázaro e Ibiza (1889); Chalon (1905); Miranda (1943c); Fernández-Montero et al. (1998); Menoyo et al. (1998); Bárbara et al. (2003); Martínez-Gil et al. (2007); García et al. (2010); Ramos (2015); Lugilde et al. (2016); Ramos et al. (2019)	MA-Algae: 3942, 3946, 5531; MACB-Algae: 94186; SANT-Algae: 14720, 20372
<i>Jania rubens</i> var. <i>corniculata</i> (L.) Yendo H.G.Choi	Rhodophyta	Florideophyceae	Corallinales	Corallinaceae	<i>Corallina squamata</i> L.; <i>Halimtilon squamatum</i> (L.) H.W.Johans., L.M.Irvine & A.M.Webster	Lugilde et al. (2016)	BCN-Algae: 5744, 5765, 6193; MA-Algae: 3910, 3911, 3912, 11011; SANT-Algae: 27666
<i>Kallymenia reniformis</i> (Turner) J.Agardh	Rhodophyta	Florideophyceae	Gigartinales	Kallymeniaceae		Sauvageau (1897); Chalon (1905); Miranda (1944); Guinda (2008); Puente and Juanes (2008); Guinda et al. (2012)	SANT-Algae: 26987
<i>Laurencia obtusa</i> (Huds.) J.V.Lamour.	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae		Sauvageau (1897); Chalon (1905); Miranda (1943c); Fernández-Montero et al. (1998); Martínez-Gil et al. (2007); Ramos (2015)	MACB-Algae: 94296; PC: 495536, 552976, 552977, 552978, 552979, 552980, 552981, 552987, 573376, 573379
<i>Laurencia pyramidalis</i> Bory ex Kütz.	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae		Menoyo et al. (1998); Martínez-Gil et al. (2007)	SANT-Algae: 14685, 20414, 29072

Table 1 (continued)

Taxon	Phylum	Class	Order	Family	Synonyms	References	Herbarium collections
<i>Leptosiphonia brodiaei</i> (Dillwyn) Savoie & G.W.Saunders	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae		Fernández-Montero et al. (1998); Menoyo et al. (1998)	SANT-Algae: 20980, 20981
<i>Leptosiphonia fibrata</i> (C. Agardh) Savoie & G.W.Saunders	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae	<i>Polysiphonia fibrata</i> (Dillwyn) Harv.	Díaz-Tapia et al. (2008); Díaz-Tapia (2013)	SANT-Algae: 20982
<i>Leptosiphonia fibrillosa</i> (Agardh) Savoie & G.W.Saunders	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae	<i>Polysiphonia carmichaeliana</i> Harv.; <i>Polysiphonia fibrillosa</i> (C. Agardh) Spreng.; <i>Polysiphonia griffithsiana</i> Harv.	Colmeiro (1889); Lázaro e Ibiza (1889); Chalón (1905); Miranda (1943c); Díaz-Tapia et al. (2008); Díaz-Tapia (2013)	SANT-Algae: 20445, 27052
<i>Leptosiphonia schousboei</i> (Thur.) Kylin	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae		Díaz-Tapia et al. (2008); Bárbara et al. (2012); Díaz-Tapia (2013)	SANT-Algae: 26835, 26843, 26882, 26934, 29073, 29074
<i>Liagora viscida</i> (Forsk.) C. Agardh	Rhodophyta	Florideophyceae	Nemaliales	Liagoraceae		Fernández-Montero et al. (1998)	SANT-Algae: 26900
<i>Lithophyllum artabriticum</i> V. Peña	Rhodophyta	Florideophyceae	Corallinales	Lithophylaceae		Peña & Torres (2021)	MACB-Algae: 94178
<i>Lithophyllum byssoides</i> (Lam.) Foslie	Rhodophyta	Florideophyceae	Corallinales	Lithophylaceae		Martínez-Gil et al. (2007); Juanes et al. (2008b); Pereira and Neto (2015); Lugiilde et al. (2016)	
<i>Lithophyllum crassum</i> Rosanoff	Rhodophyta	Florideophyceae	Corallinales	Lithophylaceae		Sauvageau (1897)	
<i>Lithophyllum fasciculatum</i> (Lam.) Foslie	Rhodophyta	Florideophyceae	Corallinales	Lithophylaceae	<i>Lithothamnion fasciculatum</i> (Lam.) Aresch.	Colmeiro (1889); Lázaro e Ibiza (1889)	
<i>Lithophyllum hibernicum</i> Foslie	Rhodophyta	Florideophyceae	Corallinales	Lithophylaceae		Hernández-Kantún et al. (2015); Lugiilde et al. (2016); Vázquez-Ferreira & Peña (2016)	SANT-Algae: 29194, 29195, 29196, 29197, 29199, 29200, 29201
<i>Lithophyllum incrustans</i> Phil.	Rhodophyta	Florideophyceae	Corallinales	Lithophylaceae	<i>Lithothamnion incrustans</i> (Phil.) Foslie	Sauvageau (1897); Chalón (1905); Miranda (1943c); Menoyo et al. (1998); Martínez-Gil et al. (2007); Díaz-Tapia et al. (2008); Bárbara et al. (2012, 2014); Guinda et al. (2014); Ramos (2015); Ramos et al. (2019)	MACB-Algae: 94180, 94181; SANT-Algae: 14721, 15674, 18870, 20260
<i>Lithophyllum racemosum</i> (Lam.) Foslie	Rhodophyta	Florideophyceae	Corallinales	Lithophylaceae	<i>Lithophyllum duckerae</i> Woelk.; <i>Lithothamnion crassum</i> Phil.	Lázaro e Ibiza (1889); Lugiilde et al. (2016)	SANT-Algae: 26900
<i>Lithophyllum stictiforme</i> (Aresch.) Hauck	Rhodophyta	Florideophyceae	Corallinales	Lithophylaceae		Bárbara et al. (2012); Lugiilde et al. (2016)	
<i>Lomentaria articulata</i> (Huds.) Lyngb.	Rhodophyta	Florideophyceae	Rhodymeniales	Lomentariaceae		Colmeiro (1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalón (1905); Miranda (1943c, 1944); Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007); García García et al. (2010); Ramos (2015)	BCN-Algae: 4806; MA-Algae: 3203, 5532; MACB-Algae: 94288
<i>Lomentaria clavellosa</i> (Lightf. ex Turner) Gaillon	Rhodophyta	Florideophyceae	Rhodymeniales	Lomentariaceae		Díaz-Tapia et al. (2008); Díaz-Tapia (2013)	SANT-Algae: 20043, 21203
<i>Lophosiphonia obscura</i> (C. Agardh) Falkenb.	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae		Sauvageau (1897); Chalón (1905); Miranda (1931, 1944)	
<i>Mastocarpus stellatus</i> (Stackh.) Guiry	Rhodophyta	Florideophyceae	Gigartinales	Phylloporaceae	<i>Gigartina mammillosa</i> (Gooden. & Woodw.) J. Agardh; <i>Mastocarpus mammillosus</i> (Gooden. & Woodw.) Kütz.; <i>Petrocelis cruenta</i> J. Agardh	Colmeiro (1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalón (1905); Miranda (1943c, 1944); Fernández-Montero et al. (1998); Menoyo et al. (1998); Gallardo & Casado (2000); Lázaro & Gallardo (2004); Martínez-Gil and Gallardo (2007); Martínez-Gil et al. (2007); Juanes et al. (2008b); Pereira and Neto (2015); Ramos (2015)	BCN-Algae: 4308, 4310; MACB-Algae: 94282; SANT-Algae: 12229; VAL-Algae: 507, 508, 509, 510, 511, 512, 513, 514, 515
<i>Metidiscus spatbergensis</i> (Kjellm.) G. W. Saunders & McLachlan	Rhodophyta	Florideophyceae	Palmariales	Meiodiscaceae	<i>Rhodochorton penicilliforme</i> (Kjellm.) Rosenv.	Valenzuela & Pérez-Cierra (1982)	

**Table 1** (continued)

Taxon	Phylum	Class	Order	Family	Synonyms	References	Herbarium collections
<i>Melanthammy collabens</i> (C. Agardh) Díaz-Tapia & Maggs	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae	<i>Neosiphonia collabens</i> (C. Agardh) Díaz-Tapia & I. Bárbara; <i>Sirebocladia collabens</i> (C. Agardh) Falkenb.	Martínez-Gil et al. (2007); Díaz-Tapia et al. (2008); Díaz-Tapia (2013)	SANT-Algae: 18996, 19995, 20132, 20217, 20373, 20407, 20440
<i>Melanthammyus ferulaceus</i> (Sühr ex J. Agardh) Díaz-Tapia & Maggs	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae	<i>Polysiphonia ferulacea</i> Sühr ex J. Agardh	Sauvageau (1897); Chalon (1905); Miranda (1944)	SANT-Algae: 20226
<i>Melanthammyus harveyi</i> (Bailey) Díaz-Tapia & Maggs	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae	<i>Neosiphonia harveyi</i> (Bailey) M.S. Kim, H.G. Choi, Guiry & G. W. Saunders	Sauvageau (1897); Chalon (1905); Miranda (1931, 1943c)	SANT-Algae: 20226
<i>Melobesia membranacea</i> (Esper) J. V. Lamour.	Rhodophyta	Florideophyceae	Hapalidiales	Hapalidiaceae	<i>Epitithon membranaceum</i> (Esper) Heydt.	Sauvageau (1897); Chalon (1905); Miranda (1931, 1943c)	SANT-Algae: 26845
<i>Meredithia microphylla</i> (J. Agardh) J. Agardh	Rhodophyta	Florideophyceae	Gigartinales	Kallymeniaceae	<i>Kallymenia microphylla</i> J. Agardh	Lázaro e Ibiza (1889); Chalon (1905); Miranda (1944); Puente and Juanes (2008); Bárbara et al. (2012)	SANT-Algae: 26845
<i>Mesophyllum expansum</i> (Phil.) Cabioch & M.L. Mend.	Rhodophyta	Florideophyceae	Hapalidiales	Mesophyllumaceae		Lugilde et al. (2016)	SANT-Algae: 27893
<i>Mesophyllum lichenoides</i> (J. Ellis) Mc-Lemoine	Rhodophyta	Florideophyceae	Hapalidiales	Mesophyllumaceae	<i>Lithophyllum lichenoides</i> (J. Ellis) Rosanoff ex Hauck, nom. illeg.	Sauvageau (1897); Chalon (1905); Miranda (1943c); Fernández-Montero et al. (1998); Menoyo et al. (1998); García-Castrillo Riesgo et al. (2000); Puente (2000); Arroyo (2002); Arroyo et al. (2004); Martínez-Gil et al. (2007); Díaz-Tapia et al. (2008); Guinda et al. (2014); Ramos (2015); Lugilde et al. (2016); Echavarrri-Erasun et al. (2007)	MACB-Algae: 94187, 94188; SANT-Algae: 7418, 14719, 27894
<i>Metacallophyllis laciniata</i> (Huds.) Vergés & L. Le Gall	Rhodophyta	Florideophyceae	Gigartinales	Kallymeniaceae	<i>Callophyllis laciniata</i> (Huds.) Kütz.	Colmeiro (1867, 1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1944); Fernández-Montero et al. (1998); Puente and Juanes (2008)	BCN-Algae: 4022, 4023, 4024; MA-Algae: 3654; SANT-Algae: 12232, 26945; VAL-Algae: 77, 80, 81, 82, 83, 84
<i>Microcladia glandulosa</i> (Sol. ex Turner) Grev.	Rhodophyta	Florideophyceae	Ceramiales	Ceramiaceae		Menoyo et al. (1998); Díaz-Tapia et al. (2008)	SANT-Algae: 26937, 26944
<i>Milnerella pamosa</i> (Feldmann) G.H. Boo & L. Le Gall	Rhodophyta	Florideophyceae	Gelidiales	Gelidiellaceae	<i>Gelidiella pamosa</i> (Feldmann) Feldmann & Hamel; <i>Gelidella tenuissima</i> Feldmann & Hamel, nom. illeg.; <i>Parviphycus tenuissimus</i> Santel.	Sauvageau (1897); Miranda (1943c); Seoane-Camba (1979); Fernández-Montero et al. (1998)	BCN-Algae: 4232, 4233, 4234
<i>Monosporus pedicellatus</i> (Sm.) Solier	Rhodophyta	Florideophyceae	Ceramiales	Wrangelaceae	<i>Conferva pedicellata</i> Sm.	Colmeiro (1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1943c); Martínez-Gil et al. (2007); Díaz-Tapia (2013)	SANT-Algae: 18990, 19989, 20371
<i>Myriogramme minuta</i> Kylin	Rhodophyta	Florideophyceae	Ceramiales	Delesseriaceae	<i>Drachiella minuta</i> (Kylin) Maggs & Hommers.	Martínez-Gil and Gallardo (2007); Martínez-Gil et al. (2007)	MACB-Algae: 94330
<i>Naccaria wiggsii</i> (Turner) Endl. ex J. Agardh	Rhodophyta	Florideophyceae	Bonnemaisoniales	Naccariaceae		Miranda (1931)	
<i>Nematolium elminthoides</i> (Velley) Batters	Rhodophyta	Florideophyceae	Nemaliales	Nemaliaceae		Miranda (1931, 1943c); Fernández-Montero et al. (1998); Guinda (2008); Juanes et al. (2008a, b); Pereira and Neto (2015); Ramos (2015)	VAL-Algae: 522, 523, 524
<i>Nematolium lubricum</i> Duby	Rhodophyta	Florideophyceae	Nemaliales	Nemaliaceae		Sauvageau (1897); Chalon (1905); Miranda (1931, 1943c)	
<i>Nematolium multifidum</i> (Lyngb.) Chauv.	Rhodophyta	Florideophyceae	Nemaliales	Nemaliaceae		Sauvageau (1897); Chalon (1905); Miranda (1943c)	
<i>Neogoniolithon racemosum</i> (Kütz.) Basso & Rodondi	Rhodophyta	Florideophyceae	Corallinales	Spongiteaceae	<i>Spongites racemosus</i> Kütz.	Colmeiro (1889)	

Table 1 (continued)

Taxon	Phylum	Class	Order	Family	Synonyms	References	Herbarium collections
<i>Neopyropia leucosticta</i> (Thur.) L.-E. Yang & J. Brodie	Rhodophyta	Bangiophyceae	Bangiales	Bangiaceae	<i>Porphyra leucosticta</i> Thur.	Menoyo et al. (1998); Martínez-Gil et al. (2007)	MACB-Algae: 94242; SANT-Algae: 20387
<i>Nesostia latifolia</i> (P.Crouan & H.Crouan ex Kütz.) H.W.Lee & M.S.Kim	Rhodophyta	Florideophyceae	Halymeniales	Halymeniaceae	<i>Halymenia latifolia</i> P.Crouan & H.Crouan ex Kütz.	Díaz-Tapia et al. (2008)	SANT-Algae: 27062
<i>Neurocotton foliosum</i> (Menegh.) Zanardini ex Kütz.	Rhodophyta	Florideophyceae	Gigartinales	Furcellariaceae			SANT-Algae: 21197, 26896
<i>Nitophyllum punctatum</i> (Stackh.) Grev.	Rhodophyta	Florideophyceae	Ceramiales	Delesseriaceae		Sauvageau (1897); Chalon (1905); Miranda (1931, 1943c); Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007); Ramos (2015); Ramos et al. (2019)	MACB-Algae: 94318; SANT-Algae: 20051, 26892
<i>Nothokallymenia crouaniorum</i> (Vergés & Le Gall) Vergés & Le Gall	Rhodophyta	Florideophyceae	Gigartinales	Kallymeniaceae	<i>Kallymenia crouaniorum</i> Vergés & Le Gall	Robuchon et al. (2014)	
<i>Ophidocladus simpliciusculus</i> (P.Crouan & H.Crouan) Falkenb.	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae		Sauvageau (1897); Chalon (1905); Miranda (1944); Díaz-Tapia et al. (2008); Díaz-Tapia (2013); Díaz-Tapia and Bárbara (2013)	SANT-Algae: 6706, 20001, 20128, 20219, 20421, 24445, 24619, 24642, 24651, 27326
<i>Osmundea hybrida</i> (DC.) K.W.Nam	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae		Fernández-Montero et al. (1998); Martínez-Gil et al. (2007)	MACB-Algae: 94332; SANT-Algae: 20026
<i>Osmundea osmundae</i> (S.G.Gmel.) K.W.Nam & Maggs	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae		Fernández-Montero et al. (1998); Martínez-Gil et al. (2007)	MACB-Algae: 94237
<i>Osmundea pinnatifida</i> (Huds.) Stackh.	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae	<i>Laurencia pinnatifida</i> (Huds.) J.V.Lamour.	Sauvageau (1897); Chalon (1905); Miranda (1943c); Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007); García García et al. (2010); Ramos (2015); Ramos et al. (2019)	MACB-Algae: 94243; PC: 59643, 552917, 552918, 552920, 573671; SANT-Algae: 20367
<i>Palmaria palmata</i> (L.) F. Weber & D. Mohr	Rhodophyta	Florideophyceae	Palmariales	Palmariaaceae	<i>Fucus palmatus</i> L.; <i>Rhodomyenia palmata</i> (L.) Grev.; <i>Rhodomyenia sobolifera</i> (M.Vahl) Grev.; <i>Sphaerococcus soboliferus</i> (M.Vahl) Kütz.	Colmeiro (1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1944); Puente and Juanes (2008)	MA-Algae: 3716, 3980, 4172
<i>Peyssonmelia atropurpurea</i> P.Crouan & H.Crouan	Rhodophyta	Florideophyceae	Peyssonneliales	Peyssonneliaceae		Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007); Guinda et al. (2012); Ramos (2015)	MA-Algae: 5533; MACB-Algae: 94312; SANT-Algae: 20261; VAL-Algae: 1952, 1988
<i>Peyssonmelia coriacea</i> Feldmann	Rhodophyta	Florideophyceae	Peyssonneliales	Peyssonneliaceae		Fernández-Montero et al. (1998); Martínez-Gil et al. (2007)	BCN-Algae: 4884; MA-Algae: 5077; SANT-Algae: 12233, 13047, 14683, 19003, 21228, 26861, 26871, 26897; VAL-Algae: 1953
<i>Peyssonmelia squamaria</i> (S.G.Gmel.) Decne. ex J. Agardh	Rhodophyta	Florideophyceae	Peyssonneliales	Peyssonneliaceae		Colmeiro (1867, 1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1943c); Fernández-Montero et al. (1998); Guinda et al. (2014)	VAL-Algae: 1968
<i>Phycoclitella suborbiculata</i> (Kjellm.) Santiañez & M.J. Wynne	Rhodophyta	Bangiophyceae	Bangiales	Bangiaceae	<i>Porphyra suborbiculata</i> Kjellm.; <i>Pyropia suborbiculata</i> (Kjellm.) J.E. Sutherland, H.G. Choi, M.S. Hwang & W.A. Nelson	Vergés et al. (2011, 2013)	SANT-Algae: 27948, 29063
<i>Phycodrys rubens</i> (L.) Batters	Rhodophyta	Florideophyceae	Ceramiales	Delesseriaceae	<i>Delesseria sinuosa</i> J.V. Lamour.; <i>Phyllophora rubens</i> (L.) Grev.	Colmeiro (1867, 1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1944)	BCN-Algae: 3250



**Table 1** (continued)

Taxon	Phylum	Class	Order	Family	Synonyms	References	Herbarium collections
<i>Phyllophora crispata</i> (Huds.) P.S.Dixon	Rhodophyta	Florideophyceae	Gigartinales	Phyllophoraceae		Fernández-Montero et al. (1998); Martínez-Gil et al. (2007); Guinda (2008); Ramos (2015)	MACB-Algae: 94283; SANT-Algae: 20040, 21225
<i>Phyllophora pseudocarranoides</i> (S.G.Gmel.) Newirth & A.R.A. Taylor ex P.S.Dixon & L.M.Irvine	Rhodophyta	Florideophyceae	Gigartinales	Phyllophoraceae	<i>Phyllophora membranifolia</i> (Gooden. & Woodw.) J.Agarth	Colmeiro (1889); Lázaro e Ibiza (1889); Chalón (1905); Fernández-Montero et al. (1998)	
<i>Phyllophora sicula</i> (Kütz.) Guiry & L.M.Irvine	Rhodophyta	Florideophyceae	Gigartinales	Phyllophoraceae		Martínez-Gil and Gallardo (2007); Martínez-Gil et al. (2007); Díaz-Tapia et al. (2008); Puente and Juanes (2008)	BCN-Algae: 5787; MACB-Algae: 94284; SANT-Algae: 21212, 26920
<i>Phymatolithon brunneum</i> Y.M.Chamb.	Rhodophyta	Florideophyceae	Corallinales	Lithophyllaceae		Peña et al. (2015); Pardo Carabias (2016)	SANT-Algae: 29488
<i>Phymatolithon calcareum</i> (Pall.) W.H.Adey & D.L.McKibbin ex Woelk. & L.M.Irvine	Rhodophyta	Florideophyceae	Corallinales	Lithophyllaceae	<i>Eleutherospora polymorpha</i> Heydr., nom. illeg.; <i>Lithothamnion polymorphum</i> Aresch., nom. illeg.; <i>Spongitis polymorpha</i> Kütz., nom. illeg.	Colmeiro (1889); Lázaro e Ibiza (1889); Chalón (1905)	
<i>Phymatolithon lamii</i> (Me.Lemoine) Y.M.Chamb.	Rhodophyta	Florideophyceae	Corallinales	Lithophyllaceae		Peña et al. (2015); Lugilde et al. (2016); Pardo Carabias (2016)	
<i>Phymatolithon lenormandii</i> (Aresch.) W.H.Adey	Rhodophyta	Florideophyceae	Corallinales	Lithophyllaceae	<i>Lithophyllum lenormandii</i> (Aresch.) Rosanoff; <i>Melobesia lenormandii</i> Aresch.	Colmeiro (1889); Lázaro e Ibiza (1889); Chalón (1905); Miranda (1943c); Lugilde et al. (2016)	
<i>Pleonosporium borrevi</i> (Sm.) Nägeli	Rhodophyta	Florideophyceae	Ceramiales	Wrangeliaceae		Miranda (1943c); Fernández-Montero et al. (1998); Martínez-Gil et al. (2007); Puente and Juanes (2008); Bárbara et al. (2015)	SANT-Algae: 7162, 18998, 21194
<i>Pleonosporium flexuosum</i> (C.Agarth) Bornet	Rhodophyta	Florideophyceae	Ceramiales	Wrangeliaceae		Sauvageau (1897); Chalón (1905)	SANT-Algae: 20056, 20363
<i>Pleonosporium cartilagineum</i> (L.) P.S.Dixon	Rhodophyta	Florideophyceae	Plocamiales	Plocamiaceae	<i>Gelidium cartilagineum</i> (L.) Gaillon; <i>Plocamium concineum</i> Lyngb., nom. illeg.	Colmeiro (1867, 1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalón (1905); Miranda (1944); Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007); Díaz-Tapia et al. (2008); Guinda (2008); Puente and Juanes (2008); Ramos (2015); Ramos et al. (2019)	BCN-Algae: 4924, 4926, 4927, 4928, 4929, 4930; MA-Algae: 3693, 5534; MACB-Algae: 94276, 94277, 94278; SANT-Algae: 12952, 12964, 18967, 20017, 20038, 20399, 20427, 24614, 24654; VAL-Algae: 575
<i>Plocamium cornutum</i> (Turner) Harv.	Rhodophyta	Florideophyceae	Plocamiales	Plocamiaceae	<i>Fucus cornutus</i> Turner	Díaz-Tapia (2013)	MA-Algae: 4256
<i>Plocamium maggsiae</i> G.W.Saunders & K.V.Lehmkuhl	Rhodophyta	Florideophyceae	Plocamiales	Plocamiaceae		Díaz-Tapia et al. (2008); Bárbara et al. (2012)	SANT-Algae: 21198, 26851, 26874, 26877, 26894
<i>Plocamium raphelisiaenum</i> P.J.L.Dang.	Rhodophyta	Florideophyceae	Plocamiales	Plocamiaceae		Díaz-Tapia et al. (2008); Bárbara et al. (2012)	SANT-Algae: 21198, 26851, 26874, 26877, 26894
<i>Polydides rotunda</i> (Huds.) Gaillon	Rhodophyta	Florideophyceae	Gigartinales	Polydaceae	<i>Polydides lumbricalis</i> C.Agarth, nom. illeg.	Lázaro e Ibiza (1889); Chalón (1905)	MA-Algae: 3841; VAL-Algae: 576, 577, 580, 581, 582, 583, 584, 585, 586, 588, 589
<i>Polysiphonia atlantica</i> Kapraun & J.N.Norris	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae	<i>Polysiphonia macrocarpa</i> Harv., nom. illeg.	Sauvageau (1897); Chalón (1905); Miranda (1943c); Fernández-Montero et al. (1998); Martínez-Gil et al. (2007)	SANT-Algae: 20444
<i>Polysiphonia caespitosa</i> (Pocock) Hollenb.	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae		Díaz-Tapia (2013)	
<i>Polysiphonia devoniensis</i> Maggs & Hommers.	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae		Díaz-Tapia et al. (2008); Bárbara et al. (2012); Díaz-Tapia (2013); Díaz-Tapia and Bárbara (2013)	SANT-Algae: 19992, 20228, 20374, 20397, 20422, 24621, 24630, 24647
<i>Polysiphonia morrowii</i> Harv.	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae			SANT-Algae: 26971

Table 1 (continued)

Taxon	Phylum	Class	Order	Family	Synonyms	References	Herbarium collections
<i>Polysiphonia polyspora</i> (C. Agardh) Mont.	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae		Sauvageau (1897); Chalon (1905); Miranda (1943c); Díaz-Tapia et al. (2008)	SANT-Algae: 21193, 26976, 26981, 26983, 26985
<i>Polysiphonia scopularum</i> Harv.	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae		Martínez-Gil et al. (2007); Díaz-Tapia et al. (2008); Díaz-Tapia (2013)	SANT-Algae: 6716, 18968, 19996, 20158, 20233, 20351, 20375, 20379, 20401, 20426
<i>Polysiphonia stricta</i> (Mert. ex Dillwyn) Grev.	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae	<i>Ceramium strictum</i> (Mert. ex Dillwyn) Poir.	Fernández-Montero et al. (1998); Martínez-Gil and Gallardo (2007); Martínez-Gil et al. (2007); Díaz-Tapia et al. (2008); Díaz-Tapia (2013)	MACB-Algae: 94302; SANT-Algae: 19991, 20368
<i>Polysiphonia subulata</i> (Ducluz.) Kütz.	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae		Miranda (1944)	SANT-Algae: 29062
<i>Porphyra dioica</i> J. Brodie & L. M. Irvine	Rhodophyta	Bangiophyceae	Bangiales	Bangiaceae		Bárbara et al. (2014)	MA-Algae: 11002; SANT-Algae: 21208, 21223, 21233
<i>Porphyra linearis</i> Grev.	Rhodophyta	Bangiophyceae	Bangiales	Bangiaceae			
<i>Porphyra umbilicatis</i> Kütz.	Rhodophyta	Bangiophyceae	Bangiales	Bangiaceae	<i>Willemania laciniata</i> (Lightf.) De Toni	Chalon (1905); Hamel (1928); Miranda (1943b)	
<i>Porphyrostromium boryanum</i> (Mont.) P. C. Silva	Rhodophyta	Compsopogonophyceae	Erythropeltales	Erythrotrichiaceae		Díaz-Tapia et al. (2008); Díaz-Tapia (2013)	SANT-Algae: 20395
<i>Porphyrostromium ciliare</i> (Carmich.) M. J. Wynne	Rhodophyta	Compsopogonophyceae	Erythropeltales	Erythrotrichiaceae		Díaz-Tapia et al. (2008); Díaz-Tapia (2013)	SANT-Algae: 20394
<i>Pterocladella capillacea</i> (S. G. Gmel.) Santel. & Hommers.	Rhodophyta	Florideophyceae	Gelidiales	Pterocladaceae	<i>Gelidium capillaceum</i> (S. G. Gmel.) Menegh.	Colmeiro 1867; Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1943c); Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007); García García et al. (2010)	MA-Algae: 3685, 3688, 3995; MACB-Algae: 94273; SANT-Algae: 14675; VAL-Algae: 611
<i>Pterocladella melanoidea</i> (Schousb. ex Bornet) Santel. & Hommers.	Rhodophyta	Florideophyceae	Gelidiales	Pterocladaceae		Díaz-Tapia et al. (2008); Díaz-Tapia (2013); Martínez-Gil et al. (2007)	SANT-Algae: 19002, 20131
<i>Pterisiphonia complanata</i> (Clemente) Falkenb.	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae	<i>Ryphiacea complanata</i> (Clemente) C. Agardh	Colmeiro (1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1944); Fernández-Montero et al. (1998); Menoyo et al. (1998); García-Castrillo Riesgo et al. (2000); Martínez-Gil et al. (2007); Guinda (2008); Juanes et al. (2008b); Puente and Juanes (2008); Guinda et al. (2012); Pereira and Neto (2015)	BCN-Algae: 5055, 5056, 5059; MA-Algae: 4005; MACB-Algae: 94306; SANT-Algae: 20004, 20370; VAL-Algae: 615, 616, 617, 618, 619
<i>Pterothamnion crispum</i> (Ducluz.) Nägeli	Rhodophyta	Florideophyceae	Ceramiales	Ceramiceae		Fernández-Montero et al. (1998); Menoyo et al. (1998); Díaz-Tapia et al. (2008); Díaz-Tapia (2013)	SANT-Algae: 20060, 20433, 21209
<i>Pterothamnion plumula</i> (J. Ellis) Nägeli	Rhodophyta	Florideophyceae	Ceramiales	Ceramiceae		Miranda (1931); Fernández-Montero et al. (1998); Menoyo et al. (1998)	
<i>Ptilothamnion pluma</i> (Dillwyn) Thur.	Rhodophyta	Florideophyceae	Ceramiales	Wrangeliaceae		Sauvageau (1897); Chalon (1905); Miranda (1943c)	
<i>Ptilothamnion sphaericum</i> (P. Crouan & H. Crouan ex J. Agardh) Maggs & Hommers.	Rhodophyta	Florideophyceae	Ceramiales	Wrangeliaceae		Díaz-Tapia et al. (2008); Díaz-Tapia & Bárbara (2011); Díaz-Tapia (2013); Martínez-Gil et al. (2007)	SANT-Algae: 18969, 20152, 20215, 20345, 20398, 20436, 21775, 24440, 24442
<i>Radiclingua thysanorhizans</i> (Holmes) Papenf.	Rhodophyta	Florideophyceae	Ceramiales	Delesseriaceae		Fernández-Montero et al. (1998)	
<i>Rhodochorton purpureum</i> (Lightf.) Rosenb.	Rhodophyta	Florideophyceae	Acrochaetales	Rhodochortonaceae	<i>Rhodochorton rothii</i> (Turton) Nägeli	Sauvageau (1897); Chalon (1905); Miranda (1943c)	
<i>Rhodophyllis bifida</i> (J. V. Lamour.) Kütz.	Rhodophyta	Florideophyceae	Gigartinales	Cystocloniaceae		Colmeiro (1889); Lázaro e Ibiza (1889); Chalon (1905); Miranda (1944)	
<i>Rhodophyllis divaricata</i> (Stackh.) Papenf.	Rhodophyta	Florideophyceae	Gigartinales	Cystocloniaceae		Puente and Juanes (2008)	

**Table 1** (continued)

Taxon	Phylum	Class	Order	Family	Synonyms	References	Herbarium collections
<i>Rhodohammiella floridula</i> (Dillwyn) Feldmann	Rhodophyta	Florideophyceae	Palmariales	Rhodohamniellaceae		Fernández-Montero et al. (1998); Pérez-Ruzafa et al. (2005); Martínez-Gil et al. (2007); Díaz-Tapia et al. (2008); Díaz-Tapia (2013); Ramos (2015)	SANT-Algae: 14693, 18975, 20003, 20149, 20220, 20339, 20396, 20425, 20978, 24624, 24641
<i>Rhodymenia holmesii</i> Ardiss.	Rhodophyta	Florideophyceae	Rhodymeniales	Rhodymeniaceae		Fernández-Montero et al. (1998); Bárbara et al. (2012)	SANT-Algae: 26840, 26958
<i>Rhodymenia ligulata</i> Zanardini	Rhodophyta	Florideophyceae	Rhodymeniales	Rhodymeniaceae		Colmeiro (1889); Lázaro e Ibiza (1889); Chalon (1905)	
<i>Rhodymenia pseudopalmeta</i> (J.V.Lamour) P.C.Silva	Rhodophyta	Florideophyceae	Rhodymeniales	Rhodymeniaceae	<i>Rhodymenia palmeta</i> (Stackh.) Grev., <i>Sphaerococcus palmatus</i> (L.) Wahlenb., nom. illeg.	Colmeiro (1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1944); Fernández-Montero et al. (1998); Menoyo et al. (1998); Puente and Juanes (2008); Echavarrri-Erasun et al. (2007)	BCN-Algae: 5786; SANT-Algae: 20011, 20364, 26939, 26946
<i>Sahlbingia subintegra</i> (Rosenv.) Kornmann	Rhodophyta	Compsopogonophyceae	Erythropeltales	Erythrotrichiaceae		Fernández-Montero et al. (1998)	
<i>Scagella pylaisaei</i> (Mont.) M.J.Wynne	Rhodophyta	Florideophyceae	Ceramiales	Ceramiaceae		Menoyo et al. (1998)	
<i>Scagellopsis patens</i> E.M. Woll.	Rhodophyta	Florideophyceae	Ceramiales	Callithamniaceae		Secilla et al. (2008); Díaz-Tapia (2013); Bárbara et al. (2015)	SANT-Algae: 18908, 18909, 29623
<i>Scagellohammion turneri</i> (Mert. ex Roth) Athanas.	Rhodophyta	Florideophyceae	Ceramiales	Ceramiaceae	<i>Spermohammion turneri</i> (Mert. ex Roth) Aresch.	Sauvageau (1897); Chalon (1905)	
<i>Schimmelmannia schousboei</i> (J.Agardh) J.Agardh	Rhodophyta	Florideophyceae	Acrosymphytales	Schimmelmanniaceae		Díaz-Tapia et al. (2008); Bárbara et al. (2012)	SANT-Algae: 21222, 26839, 26842, 26873
<i>Schizymenia dubyi</i> (Chauv. ex Duby) J.Agardh	Rhodophyta	Florideophyceae	Nemastomatales	Schizymeniaceae		Sauvageau (1897); Chalon (1905); Miranda (1943c); Fernández-Montero et al. (1998)	MA-Algae: 3137; SANT-Algae: 21217, 21234; VAL-Algae: 650
<i>Schmitziella endophloea</i> Bornet & Batters	Rhodophyta	Florideophyceae	Gigartinales	Schmitziellaceae		SANT-Algae: 24443	
<i>Schottera nicaeensis</i> (J.V.Lamour. ex Duby) Guiry & Hollenb.	Rhodophyta	Florideophyceae	Gigartinales	Phylloporaceae		Sauvageau (1897); Chalon (1905); Miranda (1943c); Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007); Ramos (2015)	MA-Algae: 5076; SANT-Algae: 13046, 21205, 21229, 26836, 26848, 26850
<i>Scinaia furcellata</i> (Turner) J.A.gardh	Rhodophyta	Florideophyceae	Nematales	Scinaiaceae		Sauvageau (1897); Chalon (1905); Miranda (1943c); Fernández-Montero et al. (1998); Ramos (2015)	MACB-Alcuar: 94317
<i>Spermohammion repens</i> (Dillwyn) Magnus	Rhodophyta	Florideophyceae	Ceramiales	Wrangeliaceae		Miranda (1943c); Fernández-Montero et al. (1998); Díaz-Tapia (2013)	SANT-Algae: 20042, 20411, 24625, 24636
<i>Spermohammion strictum</i> (C.Agardh) Ardiss.	Rhodophyta	Florideophyceae	Ceramiales	Wrangeliaceae		Fernández-Montero et al. (1998); Martínez-Gil et al. (2007)	MACB-Algae: 94325
<i>Sphaerococcus coronopifolius</i> Stackh.	Rhodophyta	Florideophyceae	Gigartinales	Sphaerococcaceae	<i>Rhynchococcus coronopifolius</i> (Stackh.) Kütz.	Colmeiro (1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1944); Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007); Juanes et al. (2008a); Guinda et al. (2012)	BCN-Algae: 5169; MACB-Algae: 94314; SANT-Algae: 12235, 14668; VAL-Algae: 679
<i>Sphombolohammion multifidum</i> (Huds.) Nägeli	Rhodophyta	Florideophyceae	Ceramiales	Wrangeliaceae		Sauvageau (1897); Chalon (1905); Miranda (1943c); Fernández-Montero et al. (1998)	SANT-Algae: 21214, 26956
<i>Spyridia filamentosa</i> (Wulfen) Harv.	Rhodophyta	Florideophyceae	Ceramiales	Callithamniaceae		Miranda (1931, 1943c)	
<i>Stenoglossum interruptum</i> (C.Agardh) Mont.	Rhodophyta	Florideophyceae	Gigartinales	Phylloporaceae		Fernández-Montero et al. (1998); Díaz-Tapia et al. (2008)	SANT-Algae: 21210; 26834, 26864, 27058

Table 1 (continued)

Taxon	Phylum	Class	Order	Family	Synonyms	References	Herbarium collections
<i>Stylonema alsidii</i> (Zanardini) K.M.Drew	Rhodophyta	Stylonematophyceae	Stylonematales	Stylonemataceae	<i>Bangia elegans</i> Chauv.	Chalon (1905); Miranda (1943b); Díaz-Tapia et al. (2008); Díaz-Tapia (2013)	SANT-Algae: 20380
<i>Stylonema cornu-cervi</i> Reinsch	Rhodophyta	Stylonematophyceae	Stylonematales	Stylonemataceae	<i>Goniatrichum cornu-cervi</i> (Reinsch) Hauck	Miranda (1931, 1943b)	
<i>Symphocladella parasitica</i> (Huds.) D.E.Bustam., B.Y.Won, S.C.Lindstrom & T.O.Cho	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae	<i>Pterosphonia parasitica</i> (Huds.) Falkenb.	Miranda (1944); Martínez-Gil et al. (2007); Puente and Juanes (2008)	MA-Algae: 3993; SANT-Algae: 7142, 14689, 18994, 20006, 20147, 20230, 26847
<i>Tenarea tortuosa</i> (Esper) Mc.Lemoine	Rhodophyta	Florideophyceae	Corallinales	Lithophyllaceae	<i>Lithophyllum tortuosum</i> (Esper) Foslie	Chalon (1905); Miranda (1943c); Fernández-Montero et al. (1998); Martínez-Gil and Gallardo (2007); Guinda (2008); Juanes et al. (2008a, b); García García et al. (2010); Ramos (2015); Ramos et al. (2019)	
<i>Titanoderma laminariae</i> (P.Crouan & H.Crouan) Y.M.Chamb.	Rhodophyta	Florideophyceae	Corallinales	Lithophyllaceae	<i>Melobesia laminariae</i> P.Crouan & H.Crouan	Sauvageau (1897); Miranda (1943c); Lugilde et al. (2016)	
<i>Titanoderma pustulatum</i> (J.V.Lamour.) Nägeli	Rhodophyta	Florideophyceae	Corallinales	Lithophyllaceae	<i>Dermatolithon macrocarpum</i> (Rosanoff) Foslie; <i>Melobesia pustulata</i> J.V.Lamour.	Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1943c); Menoyo et al. (1998); Lugilde et al. (2016)	
<i>Vertebrata foetidissima</i> (Cocks ex Bornet) Díaz-Tapia & Maggs	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae	<i>Polysiphonia foetidissima</i> Cocks ex Bornet	Díaz-Tapia et al. (2013a)	SANT-Algae: 24620, 24628, 24648
<i>Vertebrata fruticulosa</i> (Wulfen) Kuntze	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae	<i>Boereseiella fruticulosa</i> (Wulfen) Kylin; <i>Polysiphonia fruticulosa</i> (Wulfen) Spreng.	Sauvageau (1897); Chalon (1905); Miranda (1944); Fernández-Montero et al. (1998); Menoyo et al. (1998); Ramos (2015)	SANT-Algae: 26879
<i>Vertebrata fucoides</i> (Huds.) Kuntze	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae	<i>Polysiphonia fucoides</i> (Huds.) Grév.; <i>Polysiphonia nigrescens</i> (Huds.) Grév. ex Harv.; <i>Polysiphonia violacea</i> (Roth) Spreng.	Sauvageau (1897); Chalon (1905); Miranda (1944); Fernández-Montero et al. (1998); Martínez-Gil et al. (2007)	MACB-Algae: 94304
<i>Vertebrata lanosa</i> (L.) T.A.Chr.	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae	<i>Polysiphonia fastigiata</i> (Roth) Grév.; <i>Polysiphonia lanosa</i> (L.) Tandy	Colmeiro (1889); Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1951, 1943c); Fernández-Montero et al. (1998); Martínez-Gil et al. (2007)	MACB-Algae: 94303
<i>Vertebrata nigra</i> (Huds.) Díaz-Tapia & Maggs	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae	<i>Polysiphonia nigra</i> (Huds.) Batters	Martínez-Gil et al. (2007); Díaz-Tapia et al. (2008); Díaz-Tapia (2013)	SANT-Algae: 18965, 20133, 20424, 20466
<i>Vertebrata reptabunda</i> (Sühr) Díaz-Tapia & Maggs	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae	<i>Lophosiphonia reptabunda</i> (Sühr) Kylin	Fernández-Montero et al. (1998); Menoyo et al. (1998); Martínez-Gil et al. (2007); Díaz-Tapia (2013); Díaz-Tapia et al. (2008)	SANT-Algae: 18964, 20036, 20141, 20211, 20341, 20376, 20429, 24635
<i>Vertebrata thuyoides</i> (Harv.) Kuntze	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae	<i>Boereseiella thuyoides</i> (Harv.) Kylin; <i>Polysiphonia thuyoides</i> (Harv.); <i>Ryphileaea thuyoides</i> (Harv.) Harv.	Colmeiro (1889, suppl.); Lázaro e Ibiza (1889); Sauvageau (1897); Chalon (1905); Miranda (1944); Fernández-Montero et al. (1998); Menoyo et al. (1998); Puente and Juanes (2008); Ramos (2015)	SANT-Algae: 20393
<i>Xiphosiphonia andreaea</i> (Maggs & Hommers.) Savoié & G.W.Saunders	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae	<i>Pterosphonia andreaea</i> Maggs & Hommers.	Fernández-Montero et al. (1998); Menoyo et al. (1998); Puente and Juanes (2008); Díaz-Tapia and Bárbara (2011, 2013); Díaz-Tapia (2013)	SANT-Algae: 6699, 14714, 20005, 20029, 20231, 20349, 20419, 24617, 26844
<i>Xiphosiphonia pennata</i> (C.Agarth) Savoié & G.W.Saunders	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae	<i>Pterosphonia pennata</i> (C.Agarth) Sauv.	Sauvageau (1897); Chalon (1905); Miranda (1944); Fernández-Montero et al. (1998); Menoyo et al. (1998); Díaz-Tapia (2013); Díaz-Tapia and Bárbara (2013); Martínez-Gil et al. (2007); Díaz-Tapia et al. (2008); Puente and Juanes (2008)	BCN-Algae: 5069; MACB-Algae: 94305; SANT-Algae: 14690, 18971, 19990, 20015, 20025, 20030, 20150, 20214, 20348, 20400, 20418, 24444, 24615, 24616, 24618, 24640, 24643, 24650

**Table 1** (continued)

Taxon	Phylum	Class	Order	Family	Synonyms	References	Herbarium collections
<i>Xiphosiphonia pinnulata</i> (Kütz.) Savoié & G.W.Saunders	Rhodophyta	Florideophyceae	Ceramiales	Rhodomelaceae	<i>Pterosiphonia pinnulata</i> (Kütz.) Maggs & Hommers.	Fernández-Montero et al. (1998); Díaz-Tapia and Bárbara (2004)	

Note \* = This taxon is included in the Spanish Catalogue of Invasive Alien Species (Annex, R.D. 630/2013)  
**Fossil algae** (Lemoine and Mengaud 1934; Miranda 1935; Aguirre et al. 2011):

- *Arthrocardia mengaudii* (Lemoine) Jul.Aguirre, Braga & Bassi (= *Jania mengaudii* Lemoine) – Rhodophyta
- *Hydrolithon lemoinei* (Miranda) Jul.Aguirre, Braga & Bassi (= *Melobesia lemoinei* Miranda) – Rhodophyta
- *Lithophyllum quadrangulum* Lemoine – Rhodophyta
- *Lithophyllum royoii* Miranda – Rhodophyta
- *Lithophyllum simplex* Lemoine – Rhodophyta
- *Lithoporella melobesioides* (Foslie) Foslie (= *Melobesia melobesioides* (Foslie) Lemoine) – Rhodophyta
- *Lithohamion camarasae* Pfender – Rhodophyta
- *Mexophyllum vaughani* (Howe) Lemoine (= *Lithothamnium vaughani* Howe) – Rhodophyta
- *Sporolithon lugeonii* (Pfender) A.K.Ghosh & Maithy (= *Archaeolithothamnium lugeoni* Pfender) – Rhodophyta

**Dubious records and taxa inquirenda:**

- *Codium effusum* (Raf.) Delle Chiaje (= *Codium difforme* Kütz.) – Chlorophyta. This species has a meridional distribution and no further information has been given for it, therefore its occurrence in the coast of Cantabria should be confirmed. Ref.: Sauvageau (1897), Chalón (1905), Miranda (1943b, 1944)
- *Gongolaria barbata* (Stackh.) Kuntze (= *Cystoseira barbata* (Stackh.) C.Agardh; *Treptacantha barbata* (Stackh.) S.Orellana & M.Sansón) – Ochrophyta. No further information was given for this Mediterranean taxon after Colmeiro (1889) and Lázaro e Ibiza 1889). Thus, the occurrence of this species in the coast of Cantabria should be confirmed
- *Griffithsia corallina* C.Agardh (= *Griffithsia corallinoides* (L.) Trevis.) – Rhodophyta. This taxon has been reported by Colmeiro (1889), Chalón (1905) and Miranda (1943c). Its occurrence in the coast of Cantabria should be confirmed since it has a predominantly northern distribution and there are no voucher specimens to confirm its presence
- *Gymnogongrus patens* (Gooden. & Woodw.) J.Agardh – Rhodophyta. This cold-water taxon has been reported by Miranda (1944), but no voucher specimens could be found until now. Researchers from the Basque Country (border region) concluded that the specimens identified as *G. patens* are instead *Almfjeltiopsis devoniensis*) after studying material on its coasts (see Gorostiaga et al., 2004). Thus, the occurrence of this species in the coast of Cantabria should be confirmed
- *Sargassum natans* (L.) Gaillon (= *Sargassum bacciferum* (Turner) C.Agardh) – Rhodophyta. No further information was given for this taxon after Colmeiro (1867, 1889) and Chalón (1905). The current distribution of this taxon is not the Cantabrian Sea. Thus, the occurrence of this species in the coast of Cantabria should be confirmed
- *Streblomena solitariarum* (Sauv.) De Toni – Ochrophyta. No further information was given for this taxon after Chalón (1905). Therefore, the occurrence of this species in Cantabria should be confirmed

**Taxa excludenda:**

- *Callophyllis variegata* (Bory) Kütz. – Rhodophyta. Ref.: Colmeiro (1889) reported this taxon. No further information was given
- *Chaetopteris plumosa* (Lyngb.) Kütz. (= *Sphacelaria plumosa* Lyngb.) – Rhodophyta. Ref.: Colmeiro (1889), Lázaro e Ibiza 1889), Chalón (1905), Miranda (1944) → see *Halopteris filicina* (Gratel.) Kütz
- *Euthora cristata* (C.Agardh) J.Agardh (= *Callophyllis cristata* (C.Agardh) Kütz.; *Fucus cristatus* L. ex Turner, nom. illeg.; *Sphaerococcus cristatus* C.Agardh). Ref.: Colmeiro (1889), Lázaro e Ibiza 1889), Chalón (1905), Miranda (1944) → see *Palmaria palmata* (L.) F.Weber & D.Mohr → see taxa inquirenda, *Griffithsia corallina* C.Agardh
- *Griffithsia schousboei* Mont. – Rhodophyta. Ref.: Miranda (1943c) reported this meridional taxon as *Griffithsia corallina* C.Agardh. However, no further information was given and, considering its current distribution, we think that it is due to a misidentification
- *Gymnogongrus torreyi* (C.Agardh) J.Agardh – Rhodophyta. Ref.: Colmeiro (1867, 1889), Chalón (1905), Miranda (1944) → see taxa inquirenda, *Gymnogongrus patens* (Gooden. & Woodw.) J.Agardh
- *Naccaria wiggii* (Turner) Endl. Ex J.A.Gardh – Rhodophyta. Ref.: Miranda (1931, 1944) → see *Bonnemaisonia clavata* Hamel
- *Polysiphonia spinosa* (C.Agardh) J.Agardh – Rhodophyta. Ref.: Chalón (1905) reported this mediterranean taxon. However, no further information was given and, considering its current distribution, we think that it is due to a misidentification

**Table 2** Main taxonomic figures of the macroalgal flora of Cantabria (Spain)

Phylum	Class	Order	Family	Total taxa	Total species
Chlorophyta	2	5	13	57	55
Ochrophyta	1	10	20	89	81
Rhodophyta	4	22	51	266	264
Total	7	37	84	412	400

6 further taxa. The confirmed species (Table 2) comprise 7 classes, 37 orders and 84 families of macroalgae (excluding cyanophytes). Additionally, 9 fossil algae were registered.

## Discussion

Previous studies conducted in Cantabria (see Fernández-Montero et al. 1998; Menoyo et al. 1998; Martínez-Gil et al. 2007) reported the presence of 252 seaweeds. The 437 taxa reported here increase the total of marine benthic algae recorded in this region by 58%, revealing that seaweed diversity from the Atlantic coast of Southern Europe remains partially unknown. This study reveals the presence of alien species such as *Anotrichium furcellatum*, *Antithamionella ternifolia*, *Bonnemaisonia hamifera*, *Caulacanthus okamurae*, *Centroceras clavulatum*, *Ceramium secundatum*, *Codium fragile*, *Colpomenia peregrina*, *Falkenbergia rufolanosa* (tetrasporophytic phase of *Asparagopsis armata*), *Grateloupia filicina*, *Grateloupia subpectinata*, *Hypnea musciformis*, *Melanothamnus collabens* (= *Neosiphonia collabens*), *Melanothamnus harveyi* (= *Neosiphonia harveyi*), *Polysiphonia morrowii*, *Phycocalidia suborbiculata* (= *Porphyra suborbiculata*), *Sargassum muticum*, *Ulva australis*, *Umbraulva dangeardii* and *Undaria pinnatifida*, all of which are also present in other nearby Cantabrian regions.

**Table 3** Number of species and percentages of each algae group in the Cantabrian coast, including Cheney's ratio

	Chlorophyta	Ochrophyta	Rhodophyta	Cheney's ratio
Fernández-Montero et al. (1998)	31 (16%)	39 (20%)	127 (64%)	4.05
Menoyo et al. (1998)	18 (16%)	26 (22%)	72 (62%)	3.46
Martínez-Gil et al. (2007)	18 (12%)	26 (23%)	63 (65%)	3.03
Present study	55 (14%)	81 (20%)	264 (66%)	3.93

Information provided covers main algal flora and the present work

It is worth mentioning that considering Cheney's ratio ( $[\text{Rhodophyta} + \text{Chlorophyta}] / \text{Ochrophyta}$ ), all values fell within the range of 3.42 to 4.15 (Table 3). A closer look to this ratio showed that nearby regions such as Basque Country, Asturias and Galicia present ratios of 4.09 (Gorostiaga et al. 2004), 2.91 (Cires and Cuesta 2010) and 2.94 (Bárbara et al. 2005), respectively. Based on this, the flora of Cantabria (3.93) appears to be closer to the one of Basque Country, possibly indicating its warm-water character.

Our data indicates that the coast of Cantabria sustains a relatively rich marine macroalgal flora and confirms that the Atlantic coast is a suitable geographic location for the settlement of macroalgae with different biogeographical affinities. Despite this richness, specific habitats and locations remain fully or partially overlooked (e.g., subtidal environments or certain groups that required detailed studies such as Cyanobacteria). The present study aims to contribute to fill those gaps, ultimately deepening the knowledge of the macroalgal flora of Cantabria, as well as its connections with other bordering territories.

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## Declarations

**Conflict of interest** On behalf of all authors, the corresponding author states that there is no conflict of interest.

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