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Marine benthic flora of the Gargano promontory (Adriatic Sea, southern Italy)

Abstract

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A study of the Marine benthic flora of the Gargano promontory has been performed, in order to know the benthic algal communities of this zone. A list of 213 taxa at specific and infraspecific level has been obtained (153 *Rhodophyceae*, 30 *Phaeophyceae* and 30 *Chlorophyceae*), among which 115 of them are new for the Gargano coast and 12 are new for the Adriatic Sea. The discovery of propagules-bearing thalli of *Alsidium corallinum*, of thalli of *Antithamnion cruciatum* with intercalary spores and of female gametophytic thalli (with gonimoblasts) of *Corallophila cinnabarina* can be numbered among the most interesting result of this study.

Introduction

To date, the available information on the benthic algal flora of the Gargano coast was scarce and incomplete. In the literature, there are very few papers dealing with this area, dating back to either the sixties or the seventies. In most of them only few species from rather circumscribed areas (Huvé & al. 1963, Rizzi Longo & al. 1967, Giaccone 1970, Giaccone & Bruni 1971, Cinelli 1979) are reported. A more complete list of seaweeds occurring along the Gargano coast is reported in the revised algal flora of the Adriatic Sea compiled by Giaccone (1978), on the basis of literature data and examination of Herbarium specimens as well as of personal collections.

This research, which is a part of PRISMA 2, a multidisciplinary project finalised to the evaluation of the environmental conditions of the Adriatic Sea, has allowed to widen and to update the knowledge of the seaweeds of the Gargano coast.

Materials and methods

Two sampling campaigns were carried out in May and in October 1997, respectively.

Five localities, comprised in a 35 km stretch of the Gargano coast, were selected (Fig.

1), on the basis of the presence of rocky substrata. In line with each locality a transect perpendicular to the coast was sampled by SCUBA diving from the intertidal zone through to the maximum depth where algal vegetation was present (-12 m).

The collected material was fixed in a 4% Formaldehyde-seawater solution for later laboratory examination. Voucher specimens have been deposited at the Istituto Sperimentale Talassografico of Taranto, Italy.

Description of the area

The Gargano promontory, representing the "spur" of Italy, stands in the Middle/Southern part of the Adriatic Sea. It can therefore be considered as a boundary between the two basins (Fig. 1).

Its coastline is generally rocky, high and jagged, with rifts and many caves; characteristic high sharp rocks ("faraglioni") standing from the sea are numerous in this region. Coves are very scarce. No collections were made in the area southward of Vieste, since the coastline is low and sandy for about 3 km (Fig. 1).

We give hereafter a brief description of the sampling sites (Fig. 1):

Torre Spinale (TS): in this station the coast is irregular and jagged. The sea currents are oriented towards the land. The bottom between 0 m and -3 m is generally characterised by an assemblage with the mussel *Mytilus galloprovincialis* Lamarck in which the algal vegetation is patchy. Between -2 m and -3 m depth, an organogenic concretion made by coralline red algae, the Barnacles *Balanus perforatus* Bruguière and the coral *Cladocora caespitosa* (L.) covers the rocky bottom. Between -3 m and -4 m, a concretion formed by *B. perforatus* and coralline red algae dominates. Below -4 m, the bottom is sandy. Samples were collected at 0 m, -0.5 m, -1 m, -1.5 m, - 2 m, -2.5 m, -3 m and -4 m.

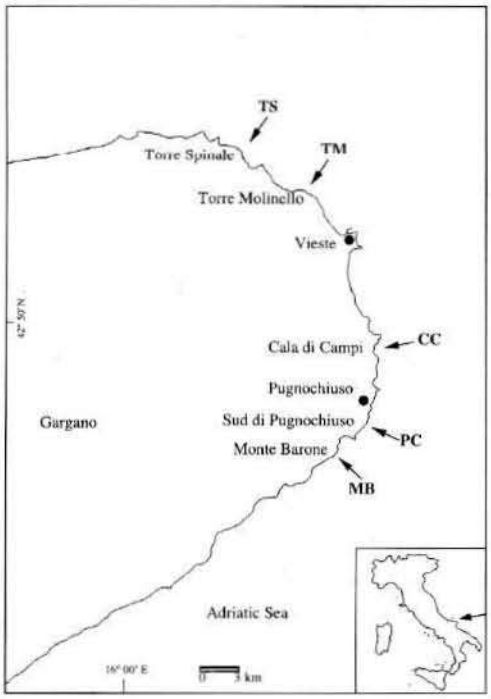


Fig. 1 — Map of the studied area and location of the transects. The smaller picture shows the geographical position of the Gargano promontory.

Torre Molinello (TM): the general aspect of the coastline is similar to that of Torre Spinale, from which it is a few kilometres away.

The bottom between 0 m and -1 m houses the assemblage with *M. galloprovincialis*, between -1 m and -2.5 m the assemblage of photophilous seaweeds, down to -4 m the concretion of *B. perforatus* and coralline red algae; below –4 m the bottom becomes sandy and bare. Samples were collected at -0.5 m, -1.5 m, -2 m, -3 m, -3.5 m and -4 m.

Cala di Campi (CC): this area is characterised by the presence of some islets and many caves. The coastline, even around the islets, is very irregular with rifts and cracks. The bottom is quite deep and reaches -10 m near the islets. In the first -0.5 m, *M. galloprovincialis* dominates, then replaced by *B. perforatus*, turf-forming seaweeds and coralline red algae down to -8 m. At -8 m, from the sandy and muddy bottom, flat rocks scarcely covered with colonial animals [e.g. the sponge *Chondrilla nucula* (Schmidt) and the cnidarian *Maasella edwardsii* (de Lacaze-Duthiers, 1888)] arise. Samples were collected at 0 m, -0.5 m, -1.5 m, -2 m, -4 m, -4.5 m, -6 m and -7.5 m.

Southwards Pugnochiuso (PC): in this station the coastline is high and jagged with many rifts and small caves. From 0 m to -4 m the bottom is characterised by the concretion of *B. perforatus* and coralline red algae, from -4 m to -10 m the assemblage of sciaphilous algae dominates (i.e. *Aglaothamnion tenuissimum* var. *tenuissimum*, *Peyssonnelia harveyana*, *P. rubra*), while below -10 m the soft bottom slopes gently and it is covered with rocks 2-3 m high. Samples were collected at -1 m, -1.5 m, -2 m, -3 m, -3.5 m, -4 m, -8 m, -10 m and -12 m.

Monte Barone (MB): in this locality the coastline is high and characterised by the presence of a "faraglione". From 0 to -2 m coralline red algae mostly dominate, then together with *B. perforatus* from -2 m to -4 m. From -4 m to -8 m the assemblage of sciophilous algae dominates (i.e. *Lithophyllum stictaeforme*, *Peyssonnelia harveyana*, *P. rubra*, *P. squamaria*), down to -8 m the bottom becomes sandy and covered with scattered rocks presenting a patchy algal vegetation. Samples were collected at 0 m, -0.5 m, -1 m, -2 m, -3 m, -3.5 m, -4.5 m, -7 m, -8 m and -8.5 m.

Results and Discussion

153 *Rhodophyceae*, 30 *Phaeophyceae* and 30 *Chlorophyceae* have been identified for a total of 213 taxa at specific and infraspecific level.

Among them, 128 species are new records from the Gargano coast while 12 species are new for the Adriatic Sea.

75 species (35 *Rhodophyceae*, 20 *Phaeophyceae*, and 20 *Chlorophyceae*), previously recorded from the Gargano coast, were not collected during the present study (Tab. 1). Among the *Phaeophyceae*, the disappearance of *Sargassaceae* as well as the strong reduction in *Cystoseira* species, which are very important canopy-forming species, are remarkable. This phenomenon could be ascribed to the reduced light penetration due to the occurrence of inert suspended material (Cecere & al. 2000).

From a phytogeographical point of view, the present flora has a R/P (*Rhodophyceae*/*Phaeophyceae*) Index value (Feldmann 1937) of 5.1. Such a high value, according to Feldmann (1937) should indicate tropical characteristics of the flora. But following Cecere & al. (2000) we think that this high value should be rather connected with both the reduction in light penetration and the increase in sedimentation which caused the heavy decrease in canopy-forming species, mostly *Phaeophyceae*, and the increase in turf-forming species, mostly *Rhodophyceae*.

Tab. 2 shows the chorological spectrum of the Gargano Marine Bentic flora. The Atlantic element is the best represented (45.93%), followed by the Cosmopolitan (29.19%) and the Mediterranean (15.31%) elements. The above spectrum is quite similar to that of

the Tremiti Islands (Cormaci & Furnari 1999) (Tab. 2) except for the Mediterranean (15.31% in the Gargano vs 20.83% in the Tremiti Islands) and the Cosmopolitan (29.19% in the Gargano vs 22.43% in the Tremiti Islands) elements. Such differences are probably due to the different maximum depths where algal assemblages on rocky substrata are present in the two areas: -12 m in Gargano vs –33 m at the Tremiti Islands. In fact, the lower per cent value of the Mediterranean element and the higher per cent value of the Cosmopolitan element recorded in the Gargano flora, can be related to the lack of deep water species [most of which belong to the Mediterranean element (Boudouresque 1973)] and to the prevalence of species with wide ecological valence (mainly belonging to the Cosmopolitan element) in shallow water.

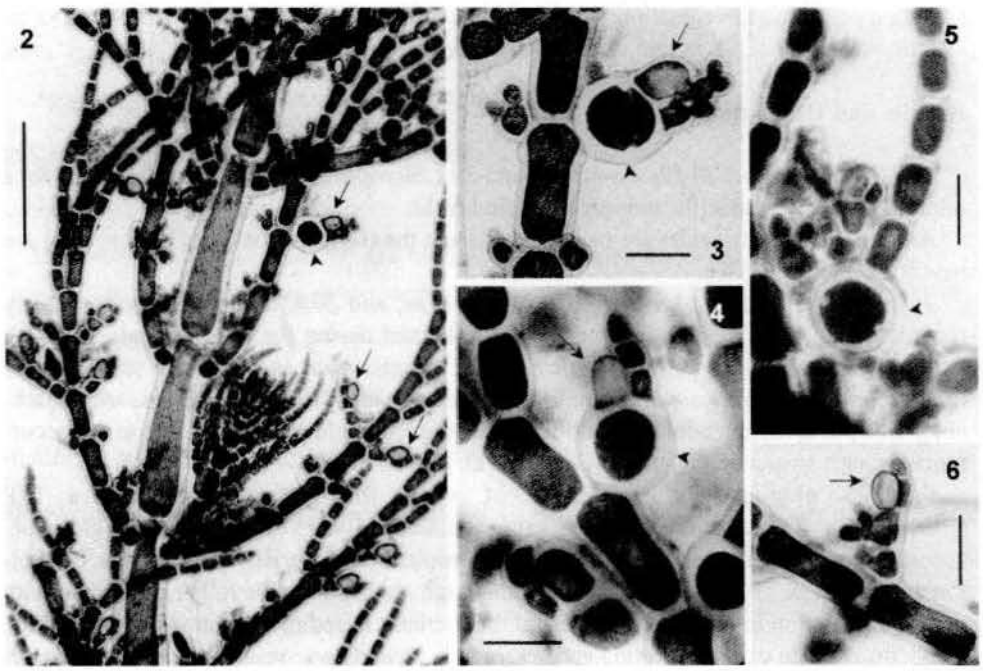
From a floristic point of view the following taxa are noteworthy:

Alsidium corallinum C. Agardh

Some plants collected in autumn bore propagules. This is the first record of propagule-bearing plants of this species after its description from the Gulf of Taranto (Cecere & al. 1996).

Antithamnion cruciatum (C. Agardh) Nägeli

Several thalli showing intercalary tetrasporangia and unusually branched pinnules were collected in spring near Pugnochiuso at a depth of –2 m (Figs. 2-6). Unfortunately, no living thalli were available to be cultivated. So, we cannot state about the spores viability and



Figs. 2-6. *Antithamnion cruciatum*. **2**, Habit of a specimen showing intercalary spores and unusually branched pinnules; **3-4**, pinnules with intercalary spores; **5**, branchlet with an intercalary spore; **6**, unusually branched pinnule. Arrows indicate gland cells. Arrowheads indicate intercalary spores. Bar = 200 µm in Fig. 2; bar = 50 µm in Figs. 3-6.

eventually, if they were meiotic or apomeiotic. As well, we do not know if they have been released or if they conversely germinated *in situ*. Nevertheless, this latter hypothesis seems the less probable, since no specimens bearing a "bouquet" of young thalli in correspondence of intercalary thetrasporangia were observed. It is possible that the unusual branching of pinnules bearing gland cells (Fig. 6) could be related to the intercalary tetrasporangia formation: the supplementary cells of those pinnules might be the future tetrasporangia. Among Ceramiaceae, tetrasporangia in chains, deriving from the transformation of cells of branchlets, were observed by L'Hardy-Halos (1970) in *Pterothamnion plumula* (J. Ellis) Nägeli [as *Antithamnion plumul*a (Ellis) Thuret].

Corallophila cinnabarina (Grateloup ex Bory) R. E. Norris

Female gametophytic plants with gonimoblasts were collected in springat -1 to -2 m depth on the southern side of the promontory. The gonimoblast consists of more or less equal gonimolobes lacking involucral filaments, developing on each side of the axis and pushing aside the cortex. It is the first record of female plants with gonimoblasts for this species. To date, gonimoblasts (showing the same structure as in *C. cinnabarina*) were known only in *Corallophila huysmansii* (Weber van Bosse) R. E. Norris (Norris 1993).

Table 1. Species previously reported from the Gargano coasts and not found in the present study (1 = Huvé & al. 1963; 2 = Rizzi Longo & al. 1967; 3 = Giaccone 1969; 4 = Giaccone & Bruni 1971; 5 = Giaccone 1978; 6 = Cinelli 1979).

Rhodophyta

Acanthophora najadiformis (Delile) Papenfuss: (1), (5) as *Acanthophora delilei* Lamouroux

Amphiroa rigida J. V. Lamouroux: (2)

Audouinella daviesii (Dillwyn) Woelkerling: (3), (5) as *Acrochaetium daviesii* (Dillwyn) Nägeli

Audouinella thuretii (Bornet) Woelkerling: (3), (5) as *Acrochaetium thuretii* (Bornet) Collins & Hervey

Bangia atropurpurea (Roth) C. Agardh: (5)

Catenella caespitosa (Withering) L. M. Irvine: (1), (3), (5) as *Catenella repens* (Lightfoot) Batters

Ceramium bertholdii Funk: (2), (5)

Chondracanthus teedei ("*teedii*") (Roth) Kützing: (5) as *Gigartina teedei* ("*teedii*") (Roth) J. V. Lamouroux

Chondria coerulescens (J. Agardh) Falkenberg: (1), (5) as *Chondria coerulescens* (P et H. Crouan) Falkenberg; (3) as *Chondria coerulescens* Falkenberg

Chondria dasyphylla (Woodward) C. Agardh: (2), (5)

Chroodactylon ornatum (C. Agardh) Basson: (3), (5) as *Asterocytis ornata* (C. Agardh) Hamel

Erythrotrichia reflexa (P. et H. Crouan) Thuret ex De Toni: (5)

Gelidium pulchellum (Turner) Kützing: (2), (5)

Gracilaria corallicola Zanardini: (5)

Grateloupia proteus Kützing: (5)

Herposiphonia secunda (C. Agardh) Ambronn f. *tenella* (C. Agardh) M. J. Wynne: (5) as *Herposiphonia tenella* (C. Agardh) Nägeli

Hildenbrandia rubra (Sommerfelt) Meneghini: (5); (1) as *Hildenbrandia* ("*Hildenbrandtia*") *prototypus* Nardo,

Jania rubens (Linnaeus) J. V. Lamouroux v. *corniculata* (Linnaeus) Yendo: (2), (5) as *Jania corniculata* (Linnaeus) J. V. Lamouroux

Laurencia obtusa (Hudson) J. V. Lamouroux: (2), (5)

Lithophyllum papillosum (Zanardini & Hauck) Foslie: (5) as *Goniolithon papillosum* (Zanardini & Hauck) Foslie; (1) as *Lithophyllum papillosum* (Zanardini) H. Huvè [according to Woelkerling & al (1998: 139) the placement of this taxon in *Lithophyllum* requires confirmation]

Lithophyllum racemus (Lamarck) Foslie [T.i.]: (2), (5)

Melobesia membranacea (Esper) J. V. Lamouroux: (5)

Nitophyllum punctatum (Stackhouse) Greville: (5) as *Nitophyllum punctatum* v. *ocellatum* (J. V. Lamouroux) J. Agardh; (3) as *Nitophyllum punctatum* v. *ocellatum* J. V. Lamouroux

Peyssonnelia polymorpha (Zanardini) F. Schmitz: (5)

Plocamium cartilagineum (Linnaeus) P. S. Dixon: (5)

Polysiphonia atra Zanardini: (3), (5)

Polysiphonia breviarticulata (C. Agardh) Zanardini: (3), (5)

Polysiphonia castagnei Kützing [*Taxon inquirendum*]: (3), (5)

Polysiphonia fucoides (Hudson) Greville: (2), (5) as *Polysiphonia violacea* (Roth) Greville

Polysiphonia opaca (C. Agardh) Moris & De Notaris: (1); (2), (5) as *Polysiphonia opaca* (C. Agardh) Zanardini

Polysiphonia subulifera (C. Agardh) Harvey: (2), (5)

Pterocladiella capillacea (S. G. Gmelin) Santelices & Hommersand: (5) as *Pterocladia pinnata* (Hudson) Papenfuss

Pterosiphonia parasitica (Hudson) Falkenberg: (5)

Sphaerococcus coronopifolius Stackhouse: (2), (5) as *Sphaerococcus coronopifolius* (Goodenough & Woodward) C. Agardh

Spongites fruticulosus Kützing: (2), (5) as *Lithothamnion fruticulosum* (Kützing) Foslie

Spyridia filamentosa (Wulfen) Harvey: (2), (5)

Phaeophyta

Arthrocladia villosa (Hudson) Duby: (5)

Colpomenia sinuosa (Mertens ex Roth) Derbès & Solier: (3), (5) as *Colpomenia sinuosa* (Mertens) Derbès & Solier

Cutleria adspersa (Roth) De Notaris: (3) as *Cutleria adspersa* De Notaris

Cystoseira barbata (Stackhouse) C. Agardh v. *barbata*: (2) as *Cystoseira barbata* (Goodenough & Woodward) C. Agardh

Cystoseira corniculata (Turner) Zanardini: (3), (5) as *Cystoseira corniculata* Hauck; (3) as *Cystoseira corniculata* v. *laxior* Ercegovic

Cystoseira schiffneri Hamel f. *tenuiramosa*: (5) as *Cystoseira ercegovicii* Giaccone

Cystoseira spinosa Sauvageau v. *spinosa*: (3) as *Cystoseira adriatica* (Linnaeus) C. Agardh; (5) as *Cystoseira adriatica* Sauvageau

Dictyota fasciola (Roth) Lamouroux v. *fasciola*: (2), (5) as *Dilophus fasciola* (Roth) M. Howe

Ectocarpus siliculosus (Dillwyn) Lyngbye v. *arctus* (Kützing) Gallardo: (5) as *Ectocarpus siliculosus* (Dillwyn) Lyngbye v. *arctus* (Kützing) Kuckuck

Giraudia sphacelarioides Derbès & Solier: (5)

Liebmannia leveillei J. Agardh: (3), (5)

Nemacystus flexuosus (C. Agardh) Kylin v. *giraudyi* ("*giraudii*") (J. Agardh) De Jong: (5) as *Nemacystus ramulosus* Derbes & Solier

Ralfsia verrucosa (Areschoug) Areschoug: (1), (3), (5)

Sargassum acinarium (Linnaeus) Setchell: (5) as *Sargassum acinarium* (Linnaeus) C. Agardh

Sargassum hornschuchii C. Agardh: (3), (5)

Sauvageaugloia griffithsiana (Greville ex Hooker) Hamel ex Kylin: (5) as *Sauvageaugloia griffithsiana* (Greville) Hamel

Scytosiphon lomentaria ("*lomentarius*") (Lyngbye) Link: (5) as *Scytosiphon lomentaria* (Lyngbye) Endlicher

Sphacelaria rigidula Kützing: (3), (5) as *Sphacelaria furcigera* Kützing

Stilophora tenella (Esper) P. C. Silva: (5) as *Stilophora rhizodes* (Erhart?) J. Agardh

Zanardinia typus (Nardo) G. Furnari: (3), (5) as *Zanardinia prototypus* Nardo

Chlorophyta

Acetabularia acetabulum (Linnaeus) P. C. Silva: (3), (5); (2) as *Acetabularia mediterranea* Lamouroux

Anadyomene stellata (Wulfen) C. Agardh: (3), (5)

Blidingia marginata (J. Agardh) P. J. L. Dangeard ex Bliding: (5); (3) as *Blidingia marginata* (J. Agardh) P. J. L. Dangeard

Caulerpa prolifera (Forsskål) J. V. Lamouroux: (3), (5)

Cladophora liniformis Kützing: (2), (3), (5)

Cladophora nigrescens Zanardini ex Frauenfeld: (2), (3), (5) as *Cladophora nigrescens* Zanardini

Codium bursa (Linnaeus) C. Agardh: (5)

Codium effusum (Rafinesque) Delle Chiaje: (3) as *Codium adhaerens* (Cabrera) C. Agardh (misapplied name); (5) as *Codium effusum* Delle Chiaje

Dasycladus vermicularis (Scopoli) Krasser: (3), (5), (6); (1) as *Dasycladus clavaeformis* C. Agardh

Enteromorpha clathrata (Roth) Greville: (5)

Enteromorpha compressa (Linnaeus) Nees v. compressa: (2), (3), (5) as *Enteromorpha compressa* (Linnaeus) Greville

Enteromorpha intestinalis (Linnaeus) Nees v. *intestinalis*: (2), (5) as *Enteromorpha intestinalis* (Linnaeus) Link

Enteromorpha linza (Linnaeus) J. Agardh: (2), (5)

Enteromorpha muscoides (Clemente) Cremades: (3) as *Enteromorpha ramulosa* (J. E. Smith) Hooker

Enteromorpha prolifera (Müller) J. Agardh ssp. *prolifera*: (5)

Enteromorpha ralfsii Harvey: (3), (5); (2) as *Enteromorpha* cf. *ralfsii* Harvey

Entocladia endolithica (Ercegovic) R. Nielsen: (2) as *Endoderma endolithicum* (Lagerheim) Ercegovic; (3) as *Endoderma endolithicum* Ercegovic

Flabellia petiolata (Turra) Nizamuddin: (1), (3), (5) as *Udotea petiolata* (Turra) Börgesen

Pedobesia lamourouxii (J. Agardh) Feldmann, Loreau, Codomier & Coutè: (5) as *Derbesia lamourouxii* (J. Agardh) Solier

Pilinia rimosa Kützing (*Incertae sedis*): (2), (5)

Table 2. Chorological spectra of the marine benthic flora of both the Gargano promontory and the Tremiti Islands. Atlantic includes: Atlantic; Boreo-Atlantic; Boreo-tropical Atlantic; Atlanto-Pacific; Atlanto-Pacific cold temperate; Atlantic tropical; Indo-Atlantic; Indo-Atlantic tropical; Indo-Atlantic cold temperate. Cosmopolitan includes: Cosmopolite; Subcosmopolitan (Cormaci & al. 1983).

	Gargano	Tremiti Islands
Atlantic	45.93%	47.12%
Cosmopolitan	29.19%	22.43%
Mediterranean	15.31%	20.83%
Indo Pacific	3.35%	4.50%
Pantropical	5.26%	4.16%
Circumboreal	0.96%	0.96%

Floristic list

In square brackets, season of collection (S = spring, A = autumn), sampling station (TS = Torre Spinale; TM = Torre Molinello; CC = Cala di Campi; PC = Southwards Pugnochiuso; MB = Monte Barone), depth in meters and reproductive phenology (f = female gametophyte including carposporophyte; m = male gametophyte; t = tetrasporophyte; s = sporophyte; p = plurilocular cysts) are reported.

The phytogeographic elements are in bold type outside the square brackets: **A** = Atlantic; **Ab** = Boreo-Atlantic; **Abt** = Boreo-tropical Atlantic; **AP** = Atlanto-Pacific; **APct** = Atlanto-Pacific cold temperate; **At** = Atlantic tropical; **C** = Cosmopolite; **CB** = Circumboreal; **IA** = Indo-Atlantic; **IAt** = Indo-Atlantic tropical; **IAct** = Indo-Atlantic cold temperate; **IP** = Indo-Pacific; **M** = Mediterranean; **P** = Pantropical; **SC** = Subcosmopolitan (Cormaci & al. 1983).

° = taxon newly reported from the Adriatic Sea; * = taxon newly reported from the Gargano coast.

Rhodophyta

****Acrodiscus vidovichii*** (Meneghini) Zanardini [A: PC -12] **M**

****Acrosorium venulosum*** (Zanardini) Kylin [A: MB -2] **A**

****Aglaothamnion caudatum*** (J. Agardh) Feldmann-Mazoyer [S: TS -1 (t), -2.5 (t); TM -1.5 (t), -2 (t); PC -2 (t); A: TS -3; MB -8.5] **M**

****Aglaothamnion cordatum*** (Børgesen) Feldmann-Mazoyer [S: TS -2.5 (f, m, t); PC -2 (f, m), -3.5 (f); A: TS 0, -1 (m), -2 (m), -3, -4 (m); TM -0.5 (m)] **IAt**

Aglaothamnion tenuissimum (Bonnemaison) Feldmann-Mazoyer v. ***tenuissimum*** [S: TS -0.5 (m), -2.5 (m); PC -2 (f, t); -3.5 (t); A: TS -3; TM -3.5; CC -2 (m) , -4; PC -1, -8; MB -4.5] **Abt**

****Aglaothamnion tenuissimum*** (Bonnemaison) Feldmann-Mazoyer var ***mazoyerae*** G. Furnari, L'Hardy-Halos, Rueness & Serio [S: TS -0.5 (f, m); A: TS -2, -4; TM -2, -3 (t)] **M**

****Aglaothamnion tripinnatum*** (C. Agardh) Feldmann-Mazoyer [S: TS -0.5, -1 (m, t), -2.5 (f, t); TM -0.5, -1.5, -2 (f, t); CC -1.5 (t); PC -2 (f, t), -3.5 (t); MB -1 (m, t), -2 (m, t), -3.5 (t); A: TS -2, -3, -4 (t); TM -0.5 (t); PC -3; MB -4.5, -8.5] **IA**

****Alsidium corallinum*** C. Agardh [A: TS -3; TM -3.5] **At**

Alsidium helminthochorton (Schwendimann) Kützing [S: TM -0.5] **M**

****Amphiroa beauvoisii*** J. V. Lamouroux [S: MB -1, -3.5] **IAt**

Amphiroa rubra* (Philippi) Woelkerling [S: TS -1; TM -2 (t); CC -1.5 (f, t); PC -2; MB -2 (t), -3.5; A: TM -0.5, -3 (f), -3.5; CC -1.5] **P

Antithamnion cruciatum* (C. Agardh) Nägeli [S: TM -2; CC -1.5; PC -2 (t); MB -2; A: PC -3] **IA

Antithamnion heterocladum* Funk [S: CC -1.5 (t); PC -2 (t); A: PC -3] **M

Antithamnion tenuissimum* (Hauck) Schiffner [S: PC -2 (t); -3 (t)] **M

Apoglossum ruscifolium* (Turner) J. Agardh [A: PC -1] **IA

°**Audouinella codii* (Hamel) G. Furnari **comb. nov.** [S: TS -2.5; TM -0.5, -2; CC 0, -0.5, -1.5, -6; PC -2, -3, -4; MB -1, -2, -3.5, -8; A: TS 0, -1 (t); TM -0.5; CC -1.5; PC -2, -10] **AP**
Note: *Audouinella codii* (Hamel) G. Furnari comb. nov. [Bas. *Acrochaetium codii* Hamel 1927: 30, 92, fig. 27].
The combination *Audouinella codii* Garbary (1979: 490) must be considered not valid because the basionym indicated, *Callithamnion codii* P. et H. Crouan (1860: 368), is a *nomen nudum*. *Acrochaetium codii* was first described by Hamel (1927: 30, 92, fig. 27) who, however, attributed it to (P. et H. Crouan) Bornet. But, since Bornet never pubblished that combination and, as above mentioned, the intended basionym is a *nomen nudum*, the species has to be attributed to only Hamel.

°**Audouinella nemalionis* (De Notaris ex Dufour) P. S. Dixon [S: TS -0.5, -2.5] **Ab**

Audouinella thuretii (Bornet) Woelkerling [S: TS -1, -2.5] **SC**

Boergeseniella fruticulosa (Wulfen) Kylin [S: TS -0.5 (f, t), -1, -2.5; TM -0.5 (t), -1.5 (t), -2; CC -1.5; MB -1, -2; A: TS -3; TM -0.5, -2, -3, -3.5] **Ab**

Botryocladia boergesenii* Feldmann [S: TS -0.5, -2.5; TM -2; PC -3, -3.5; A: PC -8, -10; MB -4.5, -7, -8.5] **Ab

Botryocladia botryoides (Wulfen) Feldmann [S: CC -6; MB -8; A: TM -3] **Abt**

Botryocladia chiajeana* (Meneghini) Kylin [S: TS -2.5; CC -1.5; PC -2] **Abt

Botryocladia madagascariensis* Feldmann-Mazoyer [A: TS -2, -4 (f); MB -2, -4.5, -7] **IP

Callithamnion corymbosum (J. E. Smith) Lyngbye [S: TS -2.5; A: TS -0, -1 (f)] **Abt**

Callithamnion granulatum (Ducluzeau) C. Agardh [S: CC 0, -0.5 (m, f)] **IA**

Ceramium ciliatum (J. Ellis) Ducluzeau var ***ciliatum*** [S: TS -0.5 (t), -1; TM -1.5; A: TS -3] **AP**

Ceramium ciliatum (J. Ellis) Ducluzeau var ***robustum*** (J. Agardh) Feldmann-Mazoyer [S: TM -0.5; A: TM -0.5] **M**

****Ceramium cimbricum*** H. E. Petersen [S: TS -1, -2.5; CC -1.5; PC -2 (t), -3, -3.5 (t), -4; MB -2, -3.5 (t); A: TS -2, -4; CC -4.5] **SC**

****Ceramium circinatum*** (Kützing) J. Agardh [S: TM -2; CC -1.5 (t); MB -2; A: TS -3; CC -1.5, -2] **IA**

****Ceramium codii*** (H. Richards) Feldmann-Mazoyer [S: TM -1.5; CC -1.5, -6, -7.5; PC -3; MB -3.5, -8] **SC**

****Ceramium comptum*** Børgesen [S: TS -2.5; A: TM -0.5 (f, t); PC -10, -12; MB -8.5] **IA**

Ceramium deslongchampii Chauvin ex Duby [S: CC -1.5] **IA**

Ceramium diaphanum (Lightfoot) Roth [S: TM -0.5 (f, m, t), -1.5, -2; CC 0, -0.5; MB -1 (f, t), -2, -8; A: TS -2, -4; CC -1.5] **SC**

****Ceramium flaccidum*** (Kützing) Ardissone [S: TM -0.5, -1.5; CC -1.5, -7.5; PC -4; MB -1, -2; A: TS -3; TM -0.5; PC -1; MB 0, -1, -2] **C**
°****Ceramium graecum*** Lazaridou & Boudouresque [S: PC -3, -3.5; A: TM -2; PC -3, -8; MB -4.5] **M**

****Ceramium incospicuum*** Zanardini [S: TS -2.5; CC -6; MB -2, -3.5; A: TS -3; CC -4.5; PC -3, -8, -12; MB -4.5, -7] **M**

****Ceramium rubrum*** auctorum var ***rubrum*** [S: TS -0.5 (f, t), -2.5; PC -3.5; A: TS 0, -1; TM -3.5; MB -2] **SC**

****Ceramium rubrum*** auctorum var ***tenue*** C. Agardh [S: TM -0.5; MB -3.5; A: TM -0.5 (f)] **M**

Ceramium secundatum Lyngbye [S: TM -0.5 (f, t), -1.5, -2; CC 0, -0.5 (t), -7.5; MB -1, -2 (t)] **Ab**

Ceramium siliquosum (Kützing) Maggs & Hommersand var ***siliquosum*** [S: TS -0.5 (m, t), -2.5; TM -0.5, -1.5 (f, m); CC -1.5, -7.5 (f); PC -2 (m), -3.5; MB -3.5; A: CC -1.5; MB 0, -1 (m), -2 (t)] **SC**

****Ceramium siliquosum*** (Kützing) Maggs & Hommersand var ***zostericola*** (Feldmann-Mazoyer) G. Furnari [S: CC -1.5 (t); PC -2 (t) **Ab**

****Ceramium tenerrimum*** (G. Martens) Okamura [S: CC -1.5; PC -3 (t); A: MB 0, -1 (m)] **SC**

°****Ceramium tenerrimum*** (G. Martens) Okamura var ***brevizonatum*** (H.E. Petersen) Feldmann-Mazoyer [S: CC -1.5 (t); PC -2 (f, m)] **SC**

****Champia parvula*** (C. Agardh) Harvey [S: TS -2.5 (m, t); TM -2 (t); PC -2; MB -2; A: TS -2, -4 (f); TM -0.5, -2; CC -4.5; PC -1; MB -4.5, -8.5] **C**

Chondracanthus acicularis (Roth) Fredericq [S: TS -0.5; TM -0.5; A: TS -2, -4; TM -0.5, -2; MB -2] **C**

Chondrophycus papillosus (C. Agardh) Garbary & J. Harper [A: TM -0.5] **C**

Chrysymenia ventricosa (J. V. Lamouroux) J. Agardh [S: TS -2.5, -3] **At**

****Chylocladia verticillata*** (Lightfoot) Bliding [A: TS -2, -4 (f); TM -3; PC -3, -8] **At**

****Compsothamnion thuyoides*** (J. E. Smith) Nägeli [S: TS -1; PC -2 (t), -3.5] **Abt**

****Contarinia peyssonneliaeformis*** Zanardini [S: TM -1.5; CC -6, -7.5] **M**

****Contarinia squamariae*** (Meneghini) Denizot [S: TM -2; CC -6; MB -1, -3.5, -8; A: MB -4.5, -7, -8.5] **M**

Corallina elongata J. Ellis & Solander [S: TS -0.5 (t), -1; TM -0.5, -2; CC 0, -0.5, -1.5, -7.5 (t); MB -1, -2; A: TS 0, -1; TM -0.5; CC -1.5; PC -1; MB 0, -1, -2, -4.5] **Ab**

Corallina officinalis Linnaeus [S: CC -1.5 (f); PC -2; A: TM -2] **SC**

Corallophila cinnabarina (Grateloup ex Bory) R.E. Norris [S: TS -1 (t), -2.5 (t); TM -1.5 (t), -2; CC -1.5 (f, t); PC -2 (f, t); MB -1 (f, t) -2, -8; A: CC -1.5, -4; PC -1; MB 0, -1, -2] **M**

****Crouania attenuata*** (C. Agardh) J. Agardh [S: TM -0.5; MB -1; A: TS -3; TM -0.5, -2] **SC**

°****Crouania francescoi*** (*"franciscī"*) Cormaci, G. Furnari & Scammacca [A: MB -8.5] **IP**

Cruoria sp. [S: CC -1.5]

****Cryptonemia lomation*** (A. Bertoloni) J. Agardh [S: PC -2; A: PC -8] **IA**

****Dasya baillouviana*** (S. G. Gmelin) Montagne [S: CC -1.5; PC -2 (t); MB -2] **IA**

****Dasya corymbifera*** J. Agardh [S: TS -2.5; TM -1.5, -2; A: TS -3; TM -3] **Abt**

****Dasya hutchinsiae*** Harvey [S: CC -1.5 (m); PC -2; A: TM -2 (f), -3.5; PC -1, -3, -8; MB 0, -1, -2, -3 (t)] **Ab**

****Dasya ocellata*** (Grateloup) Harvey [S: MB -1; A: TS -2, -3 (f, t), -4 (m)] **IA**

****Dasya rigidula*** (Kützing) Ardissone [A: TS -3; TM -3; PC -1; MB -8.5] **Abt**

****Erythrocladia irregularis*** Rosenvinge [S: TS -0.5, -2.5; A: MB 0, -1] **SC**

Erytrhotrichia carnea (Dillwyn) J. Agardh [S: TS -0.5, -2.5; TM -0.5; MB -2] **C**

****Feldmannophycus rayssiae*** (Feldmann & Feldmann-Mazoyer) H. Augier & Boudouresque [A: TM -0.5] **M**

Gastroclonium clavatum (Roth) Ardissone [S: TM -0.5 (t)] **Ab**

****Gastroclonium reflexum*** (Chauvin) Kützing [S: TM -2] **IA**

****Gelidiella antipae*** Celan [A: PC -10 (t)] **IP**

****Gelidiella lubrica*** (Kützing) Feldmann & Hamel [S: TM -2; PC -2] **IP**

****Gelidiella pannosa*** (Feldmann) Feldmann & Hamel [A: TS -2, -4 (t); PC -3 (t)] **SC**

****Gelidium pusillum*** (Stackhouse) Le Jolis [S: TS -1, -1.5; TM -0.5, -1.5 (t), -2; CC 0, -0.5 (t), -1.5 (t); PC -2 (f), -3.5; MB -1, -2, -3.5; A: TS -2, -3, -4; TM -0.5, -3, -3.5] **C**

Gelidium spathulatum (Kützing) Bornet [S: TS -0.5 (t), -1; PC -2] **Ab**

****Gelidium spinosum*** (S. G. Gmelin) P. C. Silva [S: TS -1; TM -1.5, -2; CC -1.5; PC -2; MB -1, -2, -8; A: TS 0, -1 (t); TM -0.5 (t), -2, -3; CC -1.5, -4; PC -1 (f, t), -3; MB 0, -1 (t), -2 (t), -4.5] **SC**

Gracilaria bursa-pastoris (S. G. Gmelin) P. C. Silva [S: TS -0.5, -1; TM -1.5, -2] **SC**

****Grateloupia filicina*** (J. V. Lamouroux) C. Agardh [A: TS -3 (f, t)] **SC**

****Griffithsia schousboei*** Montagne [S: TS -1; TM -2; CC -1.5; PC -2 (f), -3.5 (t), -4 (t); A: TM -2; PC -1, -8; MB -4.5] **IA**

****Gymnothamnion elegans*** (Schousboe ex C. Agardh) J. Agardh [A: TS -3 (t)] **SC**

Haliptilon virgatum (Zanardini) Garbary & H. W. Johansen [S: TS -1; TM -0.5, -1.5, -2] **IAct**

Halopithys incurva (Hudson) Batters [S: TM -0.5; A: TM -2] **IA**

****Halymenia elongata*** C. Agardh [A: TS -2, -4 (t)] **IA**

****Halymenia floresia*** (Clemente) C. Agardh [A: TS -2, -4 (t); TM -3.5; PC -10 (f); MB -8.5 (f)] **SC**

°****Halymenia latifolia*** Kützing [A: TS -2, -4 (t)] **SC**

Herposiphonia secunda (C. Agardh) Ambronn [S: TM -0.5; A: TS -2, -3, -4; TM -0.5] **P**

Hydrolithon sp.$_1$ [S: TS -2.5; CC 0, -0.5 (t)]

****Hydrolithon boreale*** (Foslie) Y. M. Chamberlain [S: PC -2, -3] **C**

Hydrolithon farinosum (J. V. Lamouroux) Penrose & Y. M. Chamberlain [S: TS -0.5, -1, -2.5; TM -0.5, -1.5, -4; CC -1.5 (t), -6; PC -2, -3, -3.5, -4; MB -1, -2, -3.5, -8; A: TS 0, -1, -2, -3, -4; TM -0.5, -2 (t), -3, -3.5; CC -1.5, -2, -4.5; PC -1; MB 0, -1, -2, -4.5, -8.5] **C**

Hypnea musciformis (Wulfen) J. V. Lamouroux [A: TS -3; TM -0.5] **P**

****Hypoglossum hypoglossoides*** (Stackhouse) Collins & Hervey [S: TS -0.5; PC -2; MB -1, -3.5; A: TM -2; MB 0, -1] **Ab**

Jania rubens (Linnaeus) J. V. Lamouroux [A: TS -3; TM -0.5, -2, -3; PC -1, -3] **C**

Laurencia paniculata (C. Agardh) J. Agardh [S: TM -0.5; A: TM -0.5; MB -2] [*nom. illeg.*] (According to Cormaci & Furnari, unpublished data, this species belongs to the genus *Chondrophycus*) **SC**

****Lejolisia mediterranea*** Bornet [A: TS -3] **P**

Lithophyllum byssoides (Lamarck) Foslie [S: CC 0, -0.5 (t)] **IP**

****Lithophyllum corallinae*** (P. & H. Crouan) Heydrich [A: CC -1.5; MB 0, -1] **IA**

Lithophyllum stictaeforme (Areschoug) Hauck [= *Lithophyllum frondosum* (L. Dufour) G. Furnari, Cormaci & Alongi] [S: TM -2 (t); CC -1.5 (t); PC -4; A: CC -4 (t); PC -3, -10 (t), -12; MB -4.5 (t), -8.5] **IA**

Lithophyllum incrustans Philippi [S: CC -7.5 (t); A: MB 0, -1] **Ab**

Lithophyllum pustulatum (J. V. Lamouroux) Foslie [S: TS -1 (t), -2.5 (t); TM -0.5 (t), -1.5 (t); CC 0, -0.5 (t), -1.5 (t); PC -2 (t), -3.5; MB -1 (t), -2 (t), -3.5 (t), -8 (t); A: TS 0, -1 (t); CC -2; PC -1, -8; MB -7] **IA**

Lomentaria clavellosa (Turner) Gaillon [S: MB -2 (t), -8] **IAct**

****Lomentaria ercegovicii*** Verlaque & al. [S: TS -1; CC -1.5; PC -2 (f), -3.5 (f); MB -2 (f, t), -3.5 (t); A: PC -1, -3] **M**

Lophosiphonia obscura (C. Agardh) Falkenberg [S: PC -2; A: PC -3] **SC**

Meredithia microphylla (J. Agardh) J. Agardh [S: TM -2; MB -8; A: TS -2, -4; TM -3] **Abt**

Nemalion helminthoides (Velley) Batters [S: CC 0, -0.5] **SC**

Neogoniolithon brassica-florida (Harvey) Setchell & L. R. Mason [S: TM -0.5 (t), -1.5 (t), -2 (t); CC -1.5, -6 (t), -7.5 (t); PC -3, -3.5; A: TS 0, -1, -3; TM -0.5, -2, -3, -3.5; CC -1.5, -2, -4 (t), -4.5; PC -3, -8, -12; MB -2, -7, -8.5 (t)] **IA**

Neogoniolithon mamillosum (Hauck) Setchell & L. R. Mason [S: CC -1.5 (t)] **At**

****Neurocaulon foliosum*** (Meneghini) Zanardini [A: TM -3] **M**

Osmundea ramosissima (Oeder) Athanasiadis [S: TS -0.5 (m, t); TM -1.5 (f, m); MB -2] **Ab**

****Osmundea verlaquei*** G. Furnari [S: TM -0.5 (f, t); A: TM -0.5] **M**

****Peyssonnelia armorica*** (P. & H. Crouan) Weber Bosse [S: TS -2.5 (t); TM -0.5 (f), -2 (t); CC 0, -0.5; MB -1, -2 (t); A: TS 0, -1; CC -1.5 (t), -4; PC -10, -12; MB 0, -1, -2, -4.5, -7] **Ab**

Peyssonnelia bornetii Boudouresque & Denizot [S: TS -2.5 (t); CC -6; PC -2(t), -3.5 (t); A: TS -2, -4; MB -8.5] **M**

****Peyssonnelia crispata*** Boudouresque & Denizot [S: TS -0.5, -1, -2.5; TM -0.5, -1.5; A: TS -3; TM -0.5; PC -10, -12; MB -2, -7] **M**

****Peyssonnelia dubyi*** P. & H. Crouan [S: TS -0.5 (t), -1, -2.5, -3; CC -1.5; PC -2; A: PC -3; MB 0, -1 (t), -4.5] **Ab**

Peyssonnelia harveyana P. & H. Crouan ex J. Agardh [S: TS -1, -2.5 (t); CC -1.5, -7.5; PC -2; A: TS 0, -1, -3 (t); TM -2; CC -2 (t); PC -1, -3, -8 (t), -10, -12; MB -2, -4.5 (f, t), -7; -8.5 (f)] **Ab**

Peyssonnelia inamoena* Pilger [A: TS -2, -4; TM -0.5; PC -10, -12; MB -2] **At

Peyssonnelia rosa-marina Boudouresque & Denizot [S: PC -2, -3.5; A: TS -3; PC -1; MB -4.5, -7] **M**

Peyssonnelia rubra (Greville) J. Agardh [S: TS -2.5; TM -2; CC -6; PC -2, -3 (t), -4; MB -2, -8; A: TM -2, -3; PC -8, -10, -12; MB -4.5, -7 (f), -8.5] **IA**

Peyssonnelia squamaria (S. G. Gmelin) Decaisne [S: TS -1, -2.5; TM -1.5, -2; PC -3.5; MB -2, -3.5; A: CC -2, -4.5; PC -1; MB -4.5, -7, -8.5 (t)] **M**

Phyllophora sp. [A: TS -2, -3, -4; TM -0.5, -2, -3; CC -1.5; MB 0, -1, -2, -4.5]

Phyllophora crispa* (Hudson) P. S. Dixon [S: PC -2] **Ab

Phymatolithon* sp. [S: TS –2.5 (t), -3 (f**, t)]

Phymatolithon lenormandii (Areschoug) W. H. Adey [S: TS -0.5 (t); TM -4 (t); CC -7.5 (t)] **IA**

Pleonosporium borreri* (J. E. Smith) Nägeli [S: PC -2, -3, -4; MB -2, -8] **IA

Pneophyllum confervicola* (Kützing) Y. M. Chamberlain [S: TS -2.5; MB -3.5; A: TS -3; TM -3.5] **IA

Pneophyllum coronatum* (Rosanoff) Penrose [S: TM -0.5, -1.5, -2; MB -2 (t)] **SC

Pneophyllum fragile Kützing [S: TM -1.5; MB -1, -3.5] **C**

Polysiphonia elongata* (Hudson) Sprengel [S: TS -0.5; TM -0.5 (f, t), -1.5] **IA

Polysiphonia furcellata* (C. Agardh) Harvey [S: MB -2] **APct

Polysiphonia scopulorum* Harvey [S: **TS -1, -2.5; TM -1.5; CC -1.5; A: TS -2, -3 (t), -4; TM -0.5, -3; CC -4.5; PC -10, -12; MB -7, -8.5] **IP**

Polysiphonia sertularioides (Grateloup) J. Agardh [S: TM -2; CC -1.5; PC -4; A: TS -3 (f, t)] **IA**

Polysiphonia subulata (Ducluzeau) P. et H. Crouan [S: TS -1, -2.5] **Ab**

Polysiphonia tripinnata* J. Agardh [S: TS -0.5 (t); TM -0.5 (t), -1.5, -2] **M

Porphyra leucosticta Thuret [S: TS -0.5; TM -0.5] **A**

****Pterocladiella melanoidea*** (Schousboe ex Bornet) Santelices & Hommersand [S: CC -1.5; PC -4; A: TM -0.5 (t); MB -2, -4.5, -8.5] **Abt**

****Pterosiphonia pennata*** (C. Agardh) Sauvageau [S: TM -0.5, -2] **SC**

°****Pterosiphonia pinnulata*** (Kützing) Maggs & Hommersand [S: TS -0.5, -2.5; PC -3; A: TS 0, -1, -2, -3, -4] **SC**

****Pterothamnion crispum*** (Ducluzeau) Nägeli [S: PC -2 (f, t); MB -1 (f); A: PC -8] **SC**

****Pterothamnion plumula*** (J. Ellis) Nägeli [S: PC -2 (t), -3] **SC**

****Ptilothamnion pluma*** (Dillwyn) Thuret [S: PC -2 (t), -3.5; A: CC -2; PC -3] **IA**

****Radicilingua reptans*** (Kylin) Papenfuss [S: TS -2.5; TM -2 (t); PC -3.5 (t); MB -3.5 (f), -8 (t); A: PC -3, -8; MB -4.5, -7] **Ab**

****Radicilingua thysanorhizans*** (Holmes) Papenfuss [S: PC -3] **Ab**

Rhodophyllis divaricata (Stackhouse) Papenfuss [S: CC -1.5; PC -2 (t); MB -1, -2; A: TS -3; PC -1, -3 (f)] **Ab**

Rhodymenia ardissonei Feldmann [A: CC -1.5 (t)] **Ab**

****Rhodymenia delicatula*** P. J. L. Dangeard [S: PC -2] **Ab**

****Rhodymenia ligulata*** Zanardini [S: TM -1.5] **M**

****Rhodymenia*** cfr ***pseudopalmata*** (J. V. Lamouroux) P. C. Silva [S: TS -1; PC -2] **Abt**

Rytiphloea tinctoria (Clemente) C. Agardh [S: TM -0.5] **IAt**

****Schizymenia dubyi*** (Chauvin ex Duby) J. Agardh [S: TM -2 (t); MB -3.5 (t)] **SC**

Schottera nicaeensis (J. V. Lamouroux ex Duby) Guiry & Hollenberg [S: PC -2] **IA**

****Spermothamnion flabellatum*** Bornet [S: TS -2.5] **M**

****Spermothamnion repens*** (Dillwyn) Rosenvinge [S: MB -2] **Ab**

****Sporolithon ptychoides*** Heydrich [S: TM -2 (t)] **IP**

Stylonema alsidii (Zanardini) K. M. Drew [S: TS -1, -2.5; TM -0.5, -1.5, -2; CC -1.5, -7.5; PC -2, -3, -3.5; MB -1, -2,-3.5, -8; A: TS -2, -3, -4; TM -0.5, -2, -3, -3.5; MB -2] **C**

****Stylonema cornu-cervi*** Reinsch [S: TS -0.5; TM -2; CC -7.5; PC -2, -3.5; A: TM – 0.5; MB 0, -1] **AP**

Wrangelia penicillata (C. Agardh) C. Agardh [A: TS -3 (f, t)] **P**

Phaeophyta

Cladostephus spongiosum (Hudson) C. Agardh f. ***verticillatum*** (Lightfoot) Prud'Homme van Reine [S: TM -1.5; A: TS -3] **IA**

****Corynophlaea flaccida*** (C. Agardh) Kützing [S: TS -2.5] **M**

Cutleria multifida (J. E. Smith) Greville [S: CC -1.5 (s)] **SC**

Cystoseira amentacea (C. Agardh) Bory [S: TS -0.5; TM -0.5; CC -1.5; MB -1 (g); A: CC -1.5; MB 0, -1] **M**

Cystoseira compressa (Esper) Gerloff & Nizamuddin [S: TS -0.5, -1; TM -0.5, -1.5; CC -1.5; MB -2, -3.5; A: TS -2, -4; TM -0.5, -3.5; CC -1.5; PC -1] **Ab**

Dictyopteris polypodioides (A. P. De Candolle) J. V. Lamouroux [A: TS -3 (f)] **C**

Dictyota dichotoma (Hudson) J. V. Lamouroux var ***dichotoma*** [S: TS -2.5; TM -2; CC -1.5; PC -2 (s); MB -2, -3.5; A: TS -2, -4 (s); TM -3, -3.5; CC -1.5, -4.5; PC -1 (s), -3 (s); MB 0, -1, -4.5 (s)] **C**

Dictyota dichotoma (Hudson) J. V. Lamouroux var ***intricata*** (C. Agardh) Greville [A: TM -3.5] **SC**

Dictyota linearis (C. Agardh) Greville [A: TS -3 (f)] **SC**

Ectocarpus siliculosus (Dillwyn) Lyngbye var ***siliculosus*** [S: TS -0.5 (p); TM -4 (p); CC -1.5 (p); PC -2 (p); MB -1 (p)] **C**

°****Ectocarpus siliculosus*** (Dillwyn) Lyngbye var ***crouaniorum*** ("*crouanii*") (Thuret) Gallardo [S: TS -0.5 (p); CC -1.5 (p)] **Ab**

****Ectocarpus siliculosus*** (Dillwyn) Lyngbye var ***dasycarpus*** (Kuckuck) Gallardo [S: PC -2 (p)] **Abt**

****Ectocarpus siliculosus*** (Dillwyn) Lyngbye v. ***pygmaeus*** (Areschoug) Gallardo [S: MB -1 (p)] **CB**

****Elachista stellaris*** Areschoug [S: MB -8] **Ab**

Feldmannia caespitula* (J. Agardh) Knoepffler-Péguy [S: TS -0.5 (p); CC -1.5 (p); A: TM -0.5] **IAct

Feldmannia irregularis* (Kützing) Hamel [S: TS -0.5 (p); TM -0.5 (p); CC -1.5 (p)] **C

Halopteris filicina (Grateloup) Kützing [S: TS -0.5, -1, -2.5; TM -0.5; A: TM -0.5, -2, -3] **SC**

°**Halothrix lumbricalis* (Kützing) Reinke cfr [S: PC -3] **APct**

Hincksia dalmatica* (Ercegovic) Cormaci & G. Furnari [A: TS -3] **M

Hincksia mitchelliae* (Harvey) P. C. Silva [S: TM -1.5 (p), -2 (p); CC -1.5 (p); A: TS -3 (p)] **C

Hincksia ovata* (Kjellman) P. C. Silva [S: CC -1.5 (p); TS -0.5 (p)] **IA

Myriactula rivulariae* (Suhr) Feldmann [S: MB -8 (p)] **IA

Myrionema orbiculare J. Agardh [S: TS -2.5; CC -1.5] **SC**

Myrionema strangulans* Greville [S: TS -1] **SC

Nereia filiformis (J. Agardh) Zanardini [S: CC -6; A: TM -3] **At**

Padina pavonica (Linnaeus) J. V. Lamouroux [A: TS -2, -3, -4 (s)] **P**

Sphacelaria cirrosa (Roth) C. Agardh [S: TS -0.5, -1, -2.5; TM -0.5, -1.5, -2; CC -1.5; PC -2; MB -1, -2; A: TS -3; TM -0.5, -2, -3.5; MB 0, -1; PC -1] **SC**

Stypocaulon scoparium (Linnaeus) Kützing [S: TM -0.5, -1.5, -2; CC -1.5; A: TS -3; TM -0.5] **SC**

Taonia atomaria (Woodward) J. Agardh f. *atomaria* [S: CC -1.5; A: TS -3; TM -3.5] **IA**

Taonia atomaria* (Woodward) J. Agardh f. *ciliata* (C. Agardh) Nizamuddin [S: MB -3.5] **M

Chlorophyta

Bryopsis corymbosa* J. Agardh [S: TM -1.5; CC 0, -0.5; MB -1, -2, -3.5] **AP

Bryopsis cupressina J. V. Lamouroux [S: TM -0.5; CC -1.5; PC -4] **M**

Bryopsis duplex De Notaris [A: PC -3] **A**

Bryopsis feldmannii Gallardo & G. Furnari [S: TS -0.5, -1, -2.5; CC -1.5; PC -2; -3.5] **M**

****Bryopsis hypnoides*** J. V. Lamouroux [S: TS -0.5; CC -1.5] **C**

****Bryopsis pennata*** J. V. Lamouroux [S: CC -1.5; PC -2, -3.5] **IAt**

°****Bryopsis secunda*** J. Agardh [S: CC -1.5] **M**

Chaetomorpha linum (O.F. Müller) Kützing [S: TM -0.5; MB -1; A: TS -3] **C**

****Cladophora albida*** (Nees) Kützing [S: TM -1.5] **SC**

****Cladophora coelothrix*** Kützing [S: TM -0.5; A: TM -0.5; MB -4.5] **IA**

Cladophora dalmatica Kützing [S: CC -7.5] **IA**

Cladophora echinus (Biasoletto) Kützing [S: CC -1.5, -6; MB -1, -2, -3.5] **IA**

****Cladophora glomerata*** (Linnaeus) Kützing [S: TS -0.5; PC -1.5] **SC**

****Cladophora hutchinsiae*** (Dillwyn) Kützing [S: TS -2.5; CC -1.5] **SC**

****Cladophora laetevirens*** (Dillwyn) Kützing [S: TS -0.5, -1, -2.5; TM -0.5, -1.5, -2; CC 0, -0.5, -1.5, -6; PC -2; MB -1; A: TS -2, -3, -4; TM -0.5, -2, -3] **SC**

Cladophora lehmanniana (Lindenberg) Kützing [S: TS -2.5] **IA**

****Cladophora prolifera*** (Roth) Kützing [S: TM -0.5, -1.5; A: TS -3] **IA**

Cladophora rupestris (Linnaeus) Kützing [S: TS -3; TM -2; A: TS -0.5, -1, -1.5, -3; TM -2] **AP**

****Cladophora sericea*** (Hudson) Kützing [S: TS -0.5, -1, -2.5; CC -1.5; PC -2, -4; A: TS -2, -4; TM -3] **SC**

****Derbesia tenuissima*** (Moris & De Notaris) P. & H. Crouan [S: TS -0.5 (s), -2.5 (s); CC -1.5 (s); PC -3.5 (s), -4 (s); A: TS -3 (s); PC -3 (s); MB -4.5 (s)] **SC**

Entocladia viridis Reinke [S: CC -1.5; PC -2] **C**

Halimeda tuna (J. Ellis & Solander) J. V. Lamouroux [S: TS -1, -2.5; TM -0.5, -1.5; A: TM -0.5, -2; CC -2, -4.5; MB -4.5, -8.5] **P**

****Pseudochlorodesmis furcellata*** (Zanardini) Børgesen [S: TM -1.5; CC -1.5, -6; PC -2, -3.5; MB -2, -3.5; A: TS -2, -4; TM -2, -3; CC -2, -4.5; PC -1, -8, -10,-12; MB -4.5, -7] **SC**

Ulva laetevirens Areschoug [S: TM -1.5; A: TS -2, -4; TM -2] **C**

Ulva olivascens P. J. L. Dangeard [S: TS -0.5] **Ab**

°****Ulva*** cfr ***scandinavica*** Bliding [S: CC -1.5] **Ab**

****Ulvella lens*** P. & H. Crouan [S: TS -2.5; TM -1.5; A: TS -3; TM -0.5, -2] **IA**

****Valonia macrophysa*** Kützing [S: TS -1, -2.5; A: MB 0, -1] **P**

Valonia utricularis (Roth) C. Agardh [S: TS -0.5, -1, -2.5; TM -0.5, -1.5; CC -6; MB -2, -3.5; A: TS -2, -4; TM -0.5, -2, -3; CC -2, -4.5; PC -1, -3; MB -2, -4.5, -8.5] **P**

°****Ventricaria ventricosa*** (J. Agardh) Olsen & J. A. West [S: TS -0.5; PC -2, -3.5] **P**

Nomenclatural innovation proposed in this paper: *Audouinella codii* (Hamel) G. Furnari comb. nov.

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