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# A checklist of the benthic marine macroalgae from the eastern Adriatic coast: II. Heterokontophyta: Phaeophyceae

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*A checklist of brown algae (Heterokontophyta: Phaeophyceae) from the eastern Adriatic coast, based on records published from 1948 to 1997, is presented. For geographic analysis the coast is divided into three parts: northern, middle, and southern. A total of 180 macroalgal taxa at specific and infraspecific levels are recognized, in which 12 new combinations are proposed.*

**Key words**: marine benthic macroalgae, Heterokontophyta, Phaeophyceae, checklist, eastern Adriatic coast

## INTRODUCTION

The present checklist of brown algae from the eastern Adriatic coast is intended to be a part of the catalogue of benthic algal taxa of the eastern Adriatic coast which includes systematic divisions Rhodophyta, Heterokontophyta and Chlorophyta. The Chlorophyta were treated in the first part (ANTOLIĆ *et al*., 2001). A first checklist of Adriatic macroalgae was compiled by GIACCONE (1978). That list, however, has no data for the southern Adriatic. A more recent check list (RIBERA *et al*., 1992), which covers brown algae of the entire Mediterranean Sea, treats the Adriatic as a single region and some taxa are omitted. Most recently, FURNARI *et al*. (1999) published a catalogue of the benthic marine macroalgae of the western Adriatic coast, providing more detailed information for that region than may be obtained from existing checklists.

Our present checklist has been compiled following the scheme used in the first part of this series (ANTOLIĆ *et al*., 2001). For geographic analysis, the eastern Adriatic coast has been divided into three parts (Fig. 1). The northern part (NEAd) extends from the Gulf of Trieste in Italy, along the coast of Slovenia to Jablanac in Croatia, the middle part (MEAd) from Jablanac to Gradac in Croatia, and the southern part (SEAd) from Gradac, along the coast of Montenegro to Vlorë in Albania.

The following references were used in preparing this checklist: 1 - ANTOLIĆ *et al*. (1995); 2 - AVČIN *et al*. (1974); 3 - ERCEGOVIĆ (1948); 4 - ERCEGOVIĆ (1952); 5 - ERCEGOVIĆ (1955a); 6 - ERCEGOVIĆ (1955b); 7 - ERCEGOVIĆ (1957); 8 - ERCEGOVIĆ (1966); 9 - ERCEGOVIĆ (1968); 10 - FLETCHER *et al*. (1988); 11 - GIACCONE (1978); 12 - MATJAŠIĆ *et al*. (1975); 13 - MUNDA (1954); 14 - MUNDA (1960); 15 - MUNDA (1979); 16 - PIGNATTI & GIACCONE (1967); 17 - SOLAZZI (1971); 18 - SILVA *et al*. (1996); 19 - ŠERMAN *et al*. (1981); 20 - ŠPAN (1972); 21 - ŠPAN (1980); 22 - ŠPAN & ANTOLIĆ (1981); 23 - ŠPAN & ANTOLIĆ (1983); 24

- ŠPAN & ANTOLIĆ (1988); 25 - ŠPAN & ANTOLIĆ (1994); 26 - ŠPAN & ANTOLIĆ (1997); 27 - ŠPAN *et al*. (1996); 28 - VATOVA (1948); 29 - VUKOVIČ (1980); 30 - ZAVODNIK *et al*. (1981).

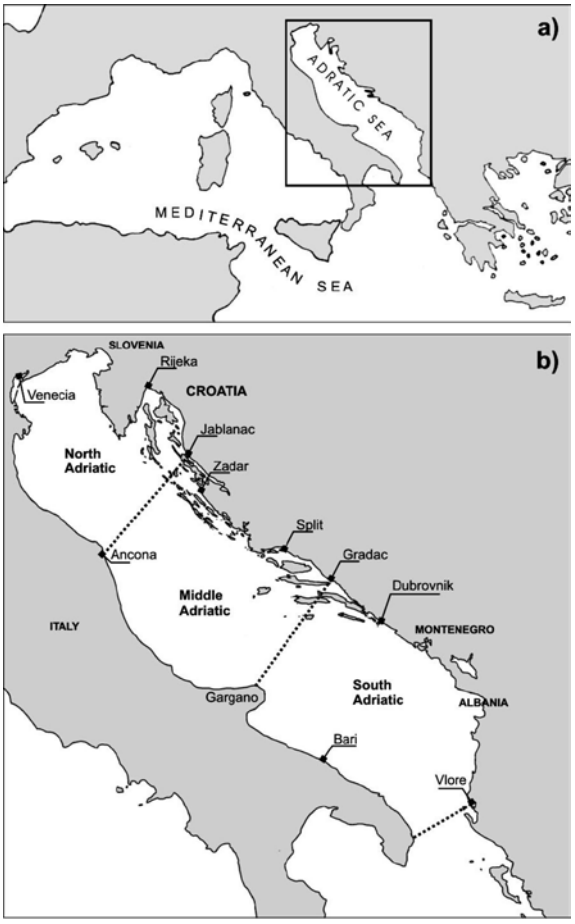


*Fig.1. Map of the investigated area*

For each part of the eastern Adriatic coast, records are shown by numbers that correspond to bibliographic references published from 1948 to 1997 (Table 1).

Italics are used for accepted algal taxa, with roman type for synonyms, misapplied names and doubtful or unaccepted taxa. Superscript numbers in the brackets refer to the Notes. Authors of names are given in full. Authors of synonyms are reported as quoted in original papers.

The taxonomy is arranged according to the website www.algaebase.org (GUIRY & GUIRY, 2009).

It is important to emphasize that we have included in this checklist 12 taxa from genera *Cystoseira*, *Ectocarpus* and *Elachista*, designated by ERCEGOVIĆ (1948, 1952, 1955a, 1955b, 1957) as new for science, in the renamed form. These taxa were considered by some scientists as taxonomic synonyms of existing taxa or did not register in their inventories (CORMACI *et al*., 1992; RIBERA *et al*., 1992; GUIRY & GUIRY, 2009). We are doing so because we believe that renaming should be based on both genetic and very detailed comparative studies of new algal material.

Moreover, in this list we include the taxa of genera *Padinopsis*, *Adriogloia* and *Dalmatogloia* which are in some checklists included as *taxa inquirenda* (RIBERA *et al*., 1992).

An alphabetical list of taxa (Annex) and *taxa inquirenda* are given.

A total of 180 benthic macroalgal taxa at specific and infraspecific levels are included in the list (Table 2).

In comparison to the 160 taxa recorded in the entire Adriatic Sea by RIBERA *et al*. (1992), and 140 taxa recorded for the western Adriatic coast by FURNARI *et al.* (1999), we recorded about 11% and 22% more taxa, respectively, although we introduced some taxa that these authors listed as taxonomic synonyms, or they did not mention, or that they listed in the category of *taxa inquirenda*.

In our study, a higher number of algal taxa were recorded in the middle (153) and in the northern (129) parts of the Adriatic, while only 75 taxa were recorded in the southern part.

*Table 1. Numbers of references used for the three parts of the eastern Adriatic coast: northern (NEAd), middle (MEAd), and southern (SEAd)*

| Parts of Adriatic | Reference numbers | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NEAd | 2 | 4 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 18 | 20 | 27 | 28 | 29 | 30 |
| MEAd | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 11 | 18 | 20 | 21 | 25 | 26 | | |
| SEAd | 1 | 3 | 4 | 6 | 17 | 19 | 20 | 22 | 23 | 24 | | | | | |

*Table 2. Taxonomic list of benthic marine macroalgal taxa from the three parts of the eastern Adriatic coast (northern - NEAd, middle - MEAd, southern - SEAd). For the meaning of numbers see the text*

| Taxa | NEAd | MEAd | SEAd |
|---|---|---|---|
| HETEROKONTOPHYTA | | | |
| PHAEOPHYCEAE Kjellman (FUCOPHYCEAE Warming) | | | |
| C u t l e r i a l e s Bessey | | | |
| Cutleriaceae Griffiths *et* Henfrey | | | |
| *Cutleria* Greville | | | |
| *C. adspersa* (Mertens *ex* Roth) De Notaris [(1)] ……..... | *11* | *8* | - |
| *C. chillosa* (Falkenberg) P.C.Silva [(2)] ..... | 11 | 6 | 5 |
| = Cutleria monoica Ollivier | | | |
| *C. multifida* (Turner) Greville [(3)] ..... | *28* | *8* | *23* |
| *Zanardinia* Zanardini | | | |
| *Zanardinia typus* (Nardo) P.C.Silva ……..... | 28 | *7* | *17* |
| = Zanardinia prototypus (Nardo) Nardo | | | |
| = Zanardinia collaris (C.Agardh) P.L. Crouan et H.M. Crouan | | | |
| D e s m a r e s t i a l e s Setchell *et* N.L.Gardner | | | |
| Arthrocladiaceae Chauvin | | | |
| *Arthrocladia* Duby | | | |
| *A. villosa* (Hudson) Duby ..... | *11* | *7* | *22* |
| Desmarestiaceae (Thuret) Kjellmann | | | |
| *Desmarestia* J.V.Lamouroux | | | |
| *D. ligulata* (Stackhouse) J.V. Lamouroux ..... | - | 3 | - |
| = Desmarestia adriatica Ercegović | | | |
| D i c t y o t a l e s Bory de Saint-Vincent | | | |
| Dictyotaceae J.V.Lamouroux *ex* Dumortier | | | |
| *Dictyopteris* J.V.Lamouroux | | | |
| *D. polypodioides* (A.P.De Candolle) J.V.Lamouroux ……..... | 28 | 7 | 19 |
| = Haliseris polypodioides (A.P. de Candolle) C.Agardh | | | |
| = Dictyopteris membranacea (Stackhouse) Batters | | | |
| *Dictyota* J.V.Lamouroux | | | |
| *D. dichotoma* (Hudson) J.V.Lamouroux | | | |
| var. *dichotoma* ……..... | 28 | *7* | *17* |
| var. *intricata* (C.Agardh) Greville ……..... | 13 | 8 | 19 |
| = Dictyota implexa (Desfontaines) J.V.Lamouroux | | | |
| = Dictyota dichotoma var. implexa (Desfontaines) S.F.Gray | | | |
| = Dictyota dichotoma f. implexa (Desfontaines) Hauck | | | |

*Table 2. cont'd*

| Taxa | NEAd | MEAd | SEAd |
|---|---|---|---|
| *D. fasciola* (Roth) J.V.Lamouroux | | | |
| var. *fasciola* ……..... | 28 | 7 | 22 |
| = Dilophus fasciola (Roth) M.Howe | | | |
| var. *repens* (J.Agardh) Ardissone ……..... | - | 11 | - |
| = Dilophus repens (J.Agardh) J.Agardh | | | |
| = Dilophus fasciola var. repens (J.Agardh) J.Feldmann | | | |
| *D. linearis* (C.Agardh) Greville ……..... | *14* | *7* | *22* |
| *D. mediterranea* (Schiffner) G.Furnari ..... | - | 11 | - |
| **=** Dilophus mediterraneus Schiffner | | | |
| *D. spiralis* Montagne ……..... | 16 | 8 | 17 |
| = Dilophus ligulatus (Kützing) J.Feldmann | | | |
| = Dilophus spiralis (Montagne) G.Hamel | | | |
| *Padina* Adanson | | | |
| *P. pavonica* (Linnaeus) Thivy ……..... | 28 | 7 | 17 |
| = Padina pavonia J.V.Lamouroux | | | |
| *Padinopsis* Ercegović | | | |
| *P. adriatica* Ercegović [(4)] ……..... | - | *6* | - |
| *Spatoglossum* Kützing | | | |
| *S. solieri* (Chauvin *ex* Montagne) Kützing ……..... | - | *26* | - |
| *Taonia* J.Agardh | | | |
| *T. atomaria* (Woodward) J.Agardh ……..... | 28 | *7* | *23* |
| D i s c o s p o r a n g i a l e s Schmidt | | | |
| Choristocarpaceae Kjellmann | | | |
| *Choristocarpus* Zanardini | | | |
| *C. tenellus* Zanardini ……..... | 28 | *6* | - |
| *Discosporangium* Falkenberg | | | |
| *D. mesarthrocarpum* (Meneghini) Hauck ……..... | - | *7* | - |
| E c t o c a r p a l e s Setchell *et* N.L.Gardner | | | |
| Acinetosporaceae G.Hamel *ex* J. Feldmann | | | |
| *Acinetospora* Bornet | | | |
| *A.crinita* (Carmichael) Kornmann ..... | 14 | 7 | 23 |
| = Ectocarpus crinitus Carmichael | | | |
| = Acinetospora vidovichii (Meneghini) Sauvageau | | | |
| = Acinetospora pusilla (Griffiths *ex* Harvey) De Toni | | | |
| *Feldmannia* G.Hamel | | | |
| *F. battersiides* (Ercegović) Cormaci *et* G.Furnari | | | |
| *f. battersiides* ……..... | - | 5 | - |
| = Ectocarpus battersiides Ercegović | | | |
| *f. maior (*Ercegović) Antolić *et* Špan, *comb. nov.* ……..... | - | 5 | - |
| = Ectocarpus battersiides Ercegović f. maior Ercegović | | | |

*Table 2. cont'd*

| Taxa | NEAd | MEAd | SEAd |
|---|---|---|---|
| *f. spongiosessilis* (Ercegović) Antolić *et* Špan, *comb. nov.* ..... | 27 | 5 | - |
| = Ectocarpus battersiides Ercegović f. spongiosessilis Ercegović | | | |
| *f. taoniae* (Ercegović) Antolić *et* Špan, *comb. nov.* .....……..... | - | 5 | - |
| = Ectocarpus battersiides Ercegović f. taoniae Ercegović | | | |
| *F. irregularis* (Kützing) G.Hamel | | | |
| var. *irregularis* ……..... | 28 | 5 | *22* |
| = Ectocarpus irregularis Kützing | | | |
| = Giffordia irregularis (Kützing) Joly | | | |
| var. *lebeliides* (Ercegović) Antolić *et* Špan, *comb. nov*..... | 27 | 5 | - |
| = Ectocarpus irregularis subsp. lebeliides Ercegović | | | |
| *F. lebelii* (J.E. Areschoug *ex* P.L. Crouan *et* H.M. Crouan) G. Hamel..... | 16 | 5 | 23 |
| = Feldmannia caespitula (J.Agardh) Knoepffler-Péguy | | | |
| = Ectocarpus lebelii J.E.Areschoug ex P.L.Crouan et H.M.Crouan | | | |
| = Feldmannia caespitula var. lebelii (J.E.Areschoug ex P.L.Crouan et H.M.Crouan) Knoepffler-Péguy | | | |
| = Ectocarpus paradoxus subsp. lebeliides Ercegović | | | |
| *F. padinae* (Buffham) G.Hamel ……..... | *16* | - | - |
| *F. paradoxa* (Montagne) G.Hamel | | | |
| var. *paradoxa* ……..... | 28 | 5 | *22* |
| = Ectocarpus paradoxus Montagne | | | |
| *f. profonda* (Ercegović) Antolić *et* Špan, *comb. nov.* …..... | - | 7 | - |
| = Ectocarpus paradoxus f. profonda Ercegović | | | |
| var. *donatiae* (Ercegović) Antolić *et* Špan, *comb. nov.* …..... | - | 7 | - |
| = Ectocarpus paradoxus var. donatiae Ercegović | | | |
| *F. paradoxoides* (Ercegović) Cormaci *et* G. Furnari ……..... | - | 5 | - |
| = Ectocarpus paradoxoides Ercegović | | | |
| *Hincksia* J.E.Gray | | | |
| *H. dalmatica* (Ercegović) Cormaci *et* G.Furnari | | | |
| *f. dalmatica* ……..... | 2 | 5 | 22 |
| = Ectocarpus dalmaticus Ercegović | | | |
| = Giffordia dalmatica (Ercegović) Cormaci et G.Furnari | | | |
| *f. acinetiformis* (Ercegović) Antolić *et* Špan, *comb.nov.* ..... | - | 5 | - |
| = Ectocarpus dalmaticus Ercegović f. acinetiformis Ercegović | | | |
| *H. geniculata* (Ercegović) Cormaci *et* G.Furnari ……..... | - | 5 | - |
| = Ectocarpus geniculatus Ercegović | | | |
| = Giffordia geniculata (Ercegović) Cormaci et G.Furnari | | | |
| *H. granulosa* (J.E.Smith) P.C.Silva ...……..... | 11 | 5 | - |
| = Ectocarpus granulosus (J.E.Smith) C.Agardh | | | |
| = Giffordia granulosa (J.E.Smith) G.Hamel | | | |
| *H. hauckii* (Ercegović) Cormaci *et* G.Furnari ……..... | 11 | 5 | - |
| = Ectocarpus hauckii Ercegović | | | |
| = Giffordia hauckii (Ercegović) Cormaci et G.Furnari | | | |
| *H. hincksiae* (Harvey) P.C.Silva ……..... | 15 | - | - |
| = Ectocarpus hincksiae Harvey | | | |
| = Giffordia hincksiae (Harvey) G.Hamel | | | |
| *H. mitchelliae* (Harvey) P.C.Silva ……..... | 16 | 11 | - |
| = Ectocarpus mitchelliae Harvey | | | |
| = Giffordia mitchelliae (Harvey) G.Hamel | | | |

*Table 2. cont'd*

| Taxa | NEAd | MEAd | SEAd |
|---|---|---|---|
| *H. sandriana* (Zanardini) P.C.Silva ……..... | 28 | 5 | - |
| = Ectocarpus sandrianus Zanardini | | | |
| = Giffordia sandriana (Zanardini) G.Hamel | | | |
| *Pylaiella* Bory | | | |
| *P. littoralis* (Linnaeus) Kjellmann ……..... | *16* | *11* | - |
| Chordariaceae Greville | | | |
| *Acrospongium* Schiffner | | | |
| *A. ralfsioides* Schiffner ……..... | *28* | *11* | - |
| *Adriogloia* Ercegović | | | |
| *A. adriatica* Ercegović [5] ……..... | - | *6* | - |
| *Ascocyclus* Magnus | | | |
| *A.orbicularis* (J. Agardh) Kjellman ……..... | *28* | 7 | *22* |
| = Myrionema orbiculare J. Agardh | | | |
| = Myrionema magnusii (Sauvageau) Loiseaux | | | |
| = Ascocyclus magnusii Sauvageau | | | |
| *Asperococcus* J.V.Lamouroux | | | |
| *A. bullosus* J.V.Lamouroux ……..... | *28* | *7* | *17* |
| = Asperococcus turneri (Dillwyn ex J.E.Smith) W.J.Hooker | | | |
| *A. ensiformis* (Chiaje) M.J. Wynne ……..... | 28 | 8 | 23 |
| = Asperococcus compressus A.W.Griffiths ex W.J.Hooker | | | |
| = Haloglossum compressum (A.W.Griffiths ex W.J.Hooker) G.Hamel | | | |
| *A. fistulosus* (Hudson) W.J.Hooker ……..... | - | 7 | - |
| = Asperococcus echinatus (Mertens ex Roth) Greville | | | |
| *A. scaber* Kuckuck ……..... | *28* | *8* | - |
| *Cladosiphon* Kützing | | | |
| *C. contortus* (Thuret) Kylin ……..... | 28 | - | - |
| *C. cylindricus* (Sauvageau) Kylin ……..... | 11 | - | - |
| = Castagnea cylindrica Sauvageau | | | |
| *C. mediterraneus* Kützing ……..... | 11 | 8 | 22 |
| = Castagnea mediterranea (Kützing) Hauck | | | |
| *C. zosterae* (J.Agardh) Kylin ……..... | 16 | - | - |
| = Castagnea zosterae (J.Agardh) Thuret | | | |
| *Corynophlaea* Kützing | | | |
| *C. flaccida* (C.Agardh) Kützing ……..... | 11 | - | - |
| = Myriactis adriatica (J.Agardh) De Toni | | | |
| = Leathesia flaccida (C.Agardh) Endlicher | | | |
| *C.umbellata* (C.Agardh) Kützing ……..... | 28 | 8 | - |
| = Corynephora umbellata C.Agardh | | | |
| = Leathesia umbellata (C.Agardh) Meneghini | | | |
| *Cylindrocarpus* P.L. Crouan *et* H.M. Crouan | | | |
| *C. microscopicus* P.L. Crouan *et* H.M. Crouan ……..... | *11* | - | - |
| *Dalmatogloia* Ercegović | | | |
| *D. bryozoi* Ercegović [6] ……..... | - | *6* | - |

*Table 2. cont'd*

| Taxa | NEAd | MEAd | SEAd |
|---|---|---|---|
| *Elachista* Duby | | | |
| *E. fucicola* (Velley) J.E.Areschoug | | | |
| *f. fucicola* ……..... | *27* | *11* | *19* |
| *f. profunda* Ercegović ……..... | - | *7* | - |
| *E. intermedia* P.L. Crouan *et* H.M. Crouan | | | |
| var. *intermedia* ……..... | 28 | *11* | *19* |
| = Elachista kuckuckiana Schiffner | | | |
| *f. profunda* Ercegović ……..... | - | *3* | - |
| var. *clavaeformis* Ercegović ……..... | - | *3* | - |
| *E. neglecta* Kuckuck *nom. illeg.* | | | |
| var. *neglecta* ……..... | *28* | *7* | *23* |
| var. *jabukae* (Ercegović) Antolić *et* Špan, *comb. nov.* ..... | - | 3 | - |
| = Elachista jabukae Ercegović | | | |
| = Elachista neglecta subsp. jabukae Ercegović | | | |
| *E. stellaris* J.E.Areschoug ……..... | *28* | - | *23* |
| *Giraudia* Derbès *et* Solier | | | |
| *G. sphacelarioides* Derbès *et* Solier .....……..... | *28* | *7* | *22* |
| *Hecatonema* Sauvageau | | | |
| *H. terminale* (Kützing) Kylin ..... | - | *26* | - |
| = Hecatonema maculans (F.S.Collins) Sauvageau | | | |
| *Herponema* J.Agardh | | | |
| *H. valiantei* (Bornet *ex* Sauvageu) G.Hamel ……..... | - | 9 | - |
| = Ectocarpus valiantei Bornet ex Sauvageau | | | |
| *Kuetzingiella* Kornmann | | | |
| *K. battersii* (Bornet *ex* Sauvageau) Kornmann | | | |
| var. *battersii* ……..... | 11 | 5 | - |
| = Ectocarpus battersii Bornet ex Sauvageau | | | |
| = Feldmannia battersii (Bornet ex Sauvageau) G.Hamel | | | |
| var. *mediterranea* (Bornet *ex* Sauvageau) Gómez *et* Ribera …..... | 16 | - | - |
| = Ectocarpus battersii var. mediterraneus Bornet ex Sauvageau | | | |
| *Leathesia* S.F.Gray | | | |
| *L. mucosa* J.Feldmann | | | |
| var. *mucosa* ……..... | *11* | *3* | - |
| *f. exuberans* Ercegović ……..... | - | *5* | - |
| *Leptonematella* P.C.Silva | | | |
| *L. fasciculata* (Reinke) P.C.Silva ……..... | 28 | - | - |
| = Leptonema fasciculatum Reinke | | | |
| *Liebmannia* J.Agardh | | | |
| *L. leveillei* J.Agardh ……..... | 28 | 9 | - |
| = Mesogloia leveillei Meneghini nom.illeg. | | | |
| = Mesogloea leveillei (J.Agardh) Meneghini | | | |
| *Litosiphon* Harvey | | | |
| *L. laminariae* (Lyngbye) Harvey ……..... | - | 5 | - |
| = Streblonema oligosporum Strömfelt | | | |
| = Entonema oligosporum (Strömfelt) Kylin | | | |

*Table 2. cont'd*

| Taxa | NEAd | MEAd | SEAd |
|---|---|---|---|
| *Mesogloia* C.Agardh | | | |
| *M. vermiculata* (J.E.Smith) S.F.Gray ..……..... | 28 | - | 22 |
| = Mesogloea vermiculata (J.E.Smith) Le Jolis nom.illeg. | | | |
| *Microspongium* Reinke | | | |
| *M. kuckuckianum* Schiffner …….... | *28* | *11* | - |
| *Myriactula* Kuntze | | | |
| *M.elongata* (Sauvageau) G.Hamel …….... | *27* | 3 | *23* |
| = Myriactis elongata Sauvageau | | | |
| *M.microscopica* (Ercegović) Ercegović …….... | - | 3 | *23* |
| = Myriactis microscopica Ercegović | | | |
| *M. rigida* (Sauvageau) G.Hamel …….... | - | 3 | *23* |
| = Myriactis rigida Sauvegau | | | |
| *M. rivulariae* (Suhr) J.Feldmann …….... | 28 | 3 | 3 |
| = Myriactis pulvinata Kützing | | | |
| = Myriactula pulvinata (Kützing) Kuntze | | | |
| *M. stellulata* (Harvey) Levring …….... | 27 | *7* | *23* |
| = Myriactis stelullata (Harvey) Batters | | | |
| *Myrionema* Greville | | | |
| *M. liechtensternii* Hauck …….... | 11 | - | - |
| = Phaeosphaerium liechtensternii (Hauck) De Toni | | | |
| *M. strangulans* Greville …….... | *28* | *8* | *23* |
| = Myrionema vulgare Thuret | | | |
| *Myriotrichia* Harvey | | | |
| *M. adriatica* Hauck …….... | *11* | *25* | - |
| *M. clavaeformis* Harvey | | | |
| *f. clavaeformis* ..... | 28 | 7 | *23* |
| = Myriotrichia repens Hauck | | | |
| = Streblonema sphaericum (Derbès et Solier) Thuret | | | |
| = Dichosporangium repens (Hauck) Hauck | | | |
| *f. acycla* (Ercegović) Antolić *et* Špan, *comb. nov.* …….... | - | 6 | - |
| = Myriotrichia repens Hauck f. acycla Ercegović | | | |
| *Nemacystus* Derbès *et* Solier | | | |
| *N. flexuosus* (C.Agardh) Kylin | | | |
| var. *giraudyi* (J.Agardh) Y.S.D.M.De Jong ...…….... | 28 | 7 | - |
| = Nemacystus ramulosus Derbès et Solier | | | |
| *Petrospongium* Nägeli | | | |
| *P. berkeleyi* (Greville) Nägeli *ex* Kützing …….... | *11* | - | - |
| = Cylindrocarpus berkeleyi (Greville) P.L.Crouan et H.M.Crouan | | | |
| *Protasperococcus* Sauvageau | | | |
| *P. myriotrichiiformis* Sauvageau …….... | 28 | *7* | - |
| = Myriotrichia protasperococcus Kuckuck | | | |

*Table 2. cont'd*

| Taxa | NEAd | MEAd | SEAd |
|---|---|---|---|
| *Punctaria* Greville | | | |
| *P. latifolia* Greville ……..... | *28* | *8* | - |
| *P. tenuissima* (C. Agardh) Greville ……..... | - | 7 | - |
| = Streblonema effusum Kylin | | | |
| = Entonema effusum (Kylin) Kylin | | | |
| *Sauvageaugloia* G.Hamel *ex* Kylin | | | |
| *S. divaricata* (Clemente) Cremades ……..... | 11 | 21 | - |
| = Sauvageaugloia griffithsiana (Greville ex W.J.Hooker) G.Hamel ex Kylin | | | |
| = Mesogloia griffithsiana Greville ex W.J.Hooker | | | |
| *Spermatochnus* Kütz ing | | | |
| *S. paradoxus* (Roth) Kütz ing | | | |
| var. *paradoxus* ……..... | *29* | *7* | *19* |
| var. *adriaticus* Ercegović ……..... | *11* | *3* | *3* |
| *Stictyosiphon* Kütz ing | | | |
| *S. adriaticus* Kütz ing ……..... | *28* | *7* | *24* |
| *S. tortilis* (Gobi) Reinke .....…….... | *14* | - | - |
| *Stilophora* J.Agardh | | | |
| *S. tenella* (Esper) P.C.Silva ..... | 28 | *7* | 22 |
| = Stilophora rhizodes (C.Agardh) J.Agardh nom. illeg. | | | |
| *Streblonema* Derbès *et* Solier *in* Castagne | | | |
| *S. infestans* (H.Gran) Batters ……..... | - | 7 | - |
| = Endodictyon infestans H.Gran | | | |
| *Streblonemopsis* R. Valiante | | | |
| *S. irritans* R. Valiante ..... | - | *9* | - |
| *Striaria* Greville | | | |
| *S. attenuata* (Greville) Greville ..... | *28* | *9* | - |
| *Zosterocarpus* Bornet | | | |
| *Z. oedogonium* (Meneghini) Bornet ..... | *11* | *7* | - |
| Ectocarpaceae C.Agardh | | | |
| *Ectocarpus* Lyngbye | | | |
| *E. bombycinus* Kütz ing ……..... | - | *18* | - |
| *E. fasciculatus* Harvey | | | |
| var. *fasciculatus* ……..... | *16* | - | - |
| var. *abbreviatus* (Kütz ing) Sauvageau ……..... | 28 | - | - |
| = Ectocarpus abbreviatus Kütz ing | | | |
| *E. flagelliformis* Kütz ing ……..... | *18* | 18 | - |
| = Ectocarpus fasciculatus Kütz ing nom. illeg. | | | |
| = Ectocarpus approximatus Kütz ing - | | | |
| *E. parvulus* Kütz ing ……..... | *18* | - | - |
| *E. pectinis* Ercegović ……..... | - | *5* | - |
| *E. rufulus* Kütz ing ……..... | *18* | - | - |

*Table 2. cont'd*

| Taxa | NEAd | MEAd | SEAd |
|---|---|---|---|
| *E. siliculosus* (Dillwyn) Lyngbye | | | |
| var. *siliculosus* ……..... | 28 | 5 | 22 |
| = Ectocarpus confervoides (Roth) Le Jolis nom. illeg. | | | |
| = Ectocarpus siliculosus var. confervoides (Roth) Kjellman | | | |
| var. *adriaticus* (Ercegović) Cormaci *et* G.Furnari [7] ……..... | 11 | 5 | *22* |
| = Ectocarpus adriaticus Ercegović | | | |
| *f. maior (*Ercegović) Antolić *et* Špan, *comb..nov.* ..…..... | - | 6 | - |
| = Ectocarpus adriaticus Ercegović f. maior Ercegović | | | |
| var. *arctus* (Kützing) T.Gallardo [8] ……..... | 14 | 7 | - |
| = Ectocarpus arctus Kützing | | | |
| var. *dasycarpus* (Kuckuck) T.Gallardo ……..... | 11 | - | - |
| = Ectocarpus dasycarpus Kuckuck | | | |
| = Ectocarpus siliculosus var. crassus (Kjellman) T.Gallardo | | | |
| var. *pygmaeus* (J.E.Areschoug) T.Gallardo [9] ……..... | 11 | - | - |
| = Ectocarpus pygmaeus J.E.Areschoug | | | |
| var. *subulatus* (Kützing) T.Gallardo [10] ……..... | 11 | - | - |
| = Ectocarpus subulatus Kützing | | | |
| var. *venetus* (Kützing) T.Gallardo [11] ……..... | 11 | 11 | - |
| = Ectocarpus venetus Kützing | | | |
| *E. simpliciusculus* C.Agardh | | | |
| *f. simpliciusculus* ……. | *18* | *5* | - |
| *f. reductus* (*"reducta"*) Ercegović ……... | - | 7 | - |
| *E. virescens* Thuret *ex* Sauvageau ……..... | - | *5* | - |
| *Kuckuckia* G.Hamel | | | |
| *K. spinosa* (Kützing) Kornman ……..... | 28 | *25* | - |
| = Ectocarpus spinosus Kützing | | | |
| F u c a l e s Kylin | | | |
| Cystoseiraceae Kützing | | | |
| *Cystoseira* C.Agardh | | | |
| *C.amentacea* (C.Agardh) Bory | | | |
| var. *spicata* (Ercegović) Giaccone ……..... | 4 | 4 | 4 |
| = Cystoseira spicata Ercegović | | | |
| = Cystoseira stricta Sauvageau var. spicata (Ercegović) Giaccone | | | |
| *C. barbata* (Stackhouse) C.Agardh | | | |
| var. *barbata* ……..... | 28 | 4 | 4 |
| = Cytoseira barbata J.Agardh | | | |
| = Cystoseira barbata (Goodenough et Woodward) C.Agardh | | | |
| *f. insularum* Ercegović ……..... | - | *4* | - |
| var. *tophuloidea* (Ercegović) Giaccone ..... | 11 | 4 | - |
| = Cystoseira barbata subsp. tophuloidea Ercegović | | | |
| = Cystoseira barbata var. tophuloidea (Ercegović) Giaccone | | | |
| *C. compressa* (Esper) Gerlof *et* Nizamudin | | | |
| *f. compressa* ……..... | 28 | 4 | 4 |
| = Cystoseira fimbriata (Desfontaines) Bory | | | |
| = Cystoseira abrotanifolia C.Agardh | | | |
| *f. plana* (Ercegović) Cormaci *et al.* ..... | 15 | 4 | 4 |
| = Cystoseira abrotanifolia subsp. plana Ercegović | | | |

*Table 2. cont'd*

| Taxa | NEAd | MEAd | SEAd |
|---|---|---|---|
| *f. rosetta* (Ercegović) Cormaci *et al.* ..... | 4 | 4 | 4 |
| = Cystoseira abrotanifolia subsp. rosetta Ercegović | | | |
| = Cystoseira fimbriata (Desfontaines) Bory f. rosetta | | | |
| *f. insularum* (Ercegović) Antolić *et* Špan, *comb. nov.* …..... | - | 4 | - |
| = Cystoseira abrotanifolia C.Agardh f. insularum Ercegović | | | |
| *C. corniculata* (Turner) Zanardini | | | |
| var. *corniculata* ……..... | *28* | 4 | 4 |
| = Cystoseira corniculata Hauck | | | |
| *f. imperfecta* Ercegović [(12)] ……..... | - | *4* | - |
| var. *divergens* (Ercegović) Antolić *et* Špan, *comb. nov.* ..... | - | 3 | - |
| = Cystoseira corniculata subsp. divergens Ercegović | | | |
| var. *laxior* (Ercegović) Antolić *et* Špan, *comb. nov.* ..... | 30 | 4 | 4 |
| = Cystoseira corniculata subsp. laxior Ercegović | | | |
| *C. crinita* Duby | | | |
| *f. crinita* ……..... | 28 | *4* | *4* |
| = Cystoseira crinita Bory | | | |
| *f. semispinosa* Ercegović ……..... | - | *4* | *4* |
| *C. crinitophylla* Ercegović ……..... | *12* | *4* | *22* |
| *C. dubia* R.Valiante ……..... | *11* | 4 | - |
| = Cystoseira fucoides Ercegović | | | |
| *C. foeniculacea* (Linnaeus) Greville | | | |
| *f. foeniculacea* ……..... | 28 | 4 | 4 |
| = Fucus discors Linnaeus | | | |
| = Cystoseira discors (Linnaeus) C.Agardh | | | |
| = Cystoseira ercegovicii Giaccone | | | |
| *f. latiramosa* (Ercegović) Gómez, Garreta, Barceló, Ribera *et* Rull Lluch ..... | 4 | 4 | 4 |
| = Cystoseira discors subsp. latiramosa Ercegović | | | |
| = Cystoseira discors f. latiramosa (Ercegović) Giaccone | | | |
| = Cystoseira ecegovicii Giaccone f. latiramosa (Ercegović) Giaccone | | | |
| *f. tenuiramosa* (Ercegović) Gómez, Garreta, Barceló, Ribera *et* Rull Lluch …..... | 16 | 4 | - |
| = Cystoseira discors f. tenuiramosa Ercegović | | | |
| = Cystoseira ercegovicii Giaccone f. tenuiramosa | | | |
| *C. humilis* Kützing | | | |
| var. *humilis* ……..... | 4 | 4 | 4 |
| = Cystoseira abrotanifolia subsp. pustulata Ercegović | | | |
| = Cystoseira compressa var. pustulata Ercegović | | | |
| var. *myriophylloides* (Sauvageau) J.H.Price *et* D.M. John …..... | 11 | - | - |
| = Cystoseira myriophylloides Sauvageau | | | |
| *C. jabukae* Ercegović | | | |
| *f. jabukae* …..... | - | *4* | - |
| *f. tenuissima* (Ercegović) Cormaci, G.Furnari, Giaccone, Scammacca *et* Serio ..... | - | 4 | - |
| = Cystoseira jabukae subsp. *tenuissima* Ercegović | | | |
| *C. pelagosae* Ercegović ..... | - | *4* | - |
| *C. sauvageauana* G.Hamel ..... | - | - | 17 |
| = Cystoseira selagenoides R.Valiante | | | |
| *C.spinosa* Sauvageau | | | |
| var. *spinosa* ....……..…..... | 28 | *9* | *4* |
| = Cystoseira erica-marina R.Valiante | | | |
| = Cystoseira adriatica Sauvageau | | | |

*Table 2. cont'd*

| Taxa | NEAd | MEAd | SEAd |
|---|---|---|---|
| var. *compressa* (Ercegović) Cormaci *et al.* ..... | 11 | 4 | 4 |
| = Cystoseira adratica subsp. compressa Ercegović | | | |
| = Cystoseira adriatica var. compressa (Ercegović) Giaccone in Amico et al. | | | |
| = Cystoseira adriatica subsp. intermedia Ercegović | | | |
| = Cystoseira adriatica var. intermedia (Ercegović) Giaccone in Amico et al. | | | |
| = Cystoseira platyramosa Ercegović | | | |
| var. *tenuior* (Ercegović) Cormaci *et al.* ..... | 11 | 4 | 4 |
| = Cystoseira adriatica subsp. tenuior Ercegović | | | |
| = Cystoseira adriatica f. tenuior (Ercegović) Giaccone in Amico et al. | | | |
| = Cystoseira adriatica subsp. reducta Ercegović | | | |
| = Cystoseira adriatica f. reducta (Ercegović) Giaccone in Amico et al. | | | |
| *C. squarrosa* De Notaris ……..... | 11 | *8* | *4* |
| = Cystoseira spinosa var. squarrosa (De Notaris) Giaccone | | | |
| *C. zosteroides* C.Agardh ……..... | - | 4 | - |
| = Cystoseira opuntioides Bory ex Montagne | | | |
| Fucaceae Adanson | | | |
| *Fucus* Linnaeus | | | |
| *F. virsoides* J.Agardh ……..... | *28* | *8* | *17* |
| Sargassaceae Kützing | | | |
| *Sargassum* C.Agardh | | | |
| *S. acinarium* (Linnaeus) Setchell [13] ……..……..... | 28 | 8 | - |
| = Sargassum vulgare var. linifolium C.Agardh | | | |
| = Sargassum linifolium C.Agardh | | | |
| *S. hornschuchii* C.Agardh .....……..... | *28* | *7* | *20* |
| *S. vulgare* C.Agardh | | | |
| var. . *vulgare* ……..... | *20* | *7* | *17* |
| = Sargassum salicifolium Naccari, | | | |
| = Sargassum vulgare var. salicifolium C.Agardh | | | |
| = Sargassum vulgare subsp. megalophyllum (Montagne) Grunow | | | |
| L a m i n a r i a l e s Kylin | | | |
| Laminariaceae Bory | | | |
| *Laminaria* J.V.Lamouroux | | | |
| *L. rodriguezii* Bornet ……..... | - | *7* | - |
| R a l f s i a l e s Nakamura | | | |
| Ralfsiaceae Farlow | | | |
| *Pseudolithoderma* Svedelius | | | |
| *P. adriaticum* (Hauck) Verlaque ……..... | 16 | 7 | *1* |
| = Lithoderma adriaticum Hauck | | | |

*Table 2. cont'd*

| Taxa | NEAd | MEAd | SEAd |
|---|---|---|---|
| *Ralfsia* Berkeley *in* J.E.Smith *et* Sowerby | | | |
| *R. verrucosa* (J.E.Areschoug) J.E.Areschoug……..... | *16* | *7* | *19* |
| S c y t o s i p h o n a l e s J.Feldmann | | | |
| Scytosiphoniaceae Farlow | | | |
| *Colpomenia* (Endlicher) Derbès *et* Solier | | | |
| *C. sinuosa* (Mertens *ex* Roth) Derbès *et* Solier ..... | *28* | *8* | *19* |
| *Compsonema* Kuckuck | | | |
| *C. gracile* Kuckuck ..... | *28* | *11* | - |
| *C. saxicolum* (Kuckuck) Kuckuck ..... | *10* | - | - |
| = Myrionema saxicola Kuckuck | | | |
| *Hydroclathrus* Bory de Saint-Vincent | | | |
| *H. clathratus* (C.Agardh) M.A.Howe ……..... | - | *11* | - |
| *Petalonia* Derbès *et* Solier | | | |
| *P. fascia* (O.F.Müller) Kuntze ..... | 28 | *8* | - |
| = Phyllitis fascia (O.F.Müller) Kützing | | | |
| *P. zosterifolia* (Reinke) Kuntze ……..... | *28* | - | - |
| = Phyllitis zosterifolia Reinke | | | |
| *Scytosiphon* C.Agardh | | | |
| *S. dotyi* M.J.Wynne ……..... | *11* | - | - |
| *S. lomentaria* (Lyngbye) Link [(14)] ……..……..... | 28 | *8* | *21* |
| = Scytosiphon lomentarius (Lyngbye) J.Agardh | | | |
| = Scytosiphon simplicissimus (Clemente) Cremades | | | |
| S p h a c e l a r i a l e s Oltmanns | | | |
| Sphacelariaceae Decaisne | | | |
| *Cladostephus* C.Agardh | | | |
| *C. spongiosum* (Hudson) C.Agardh | | | |
| *f. verticillatum* (Lightfoot) Prud'homme van Reine ..... | 28 | 7 | 22 |
| = Cladostephus verticillatus (Lightfoot) Lyngbye | | | |
| = Cladostephus hirsutus (Linnaeus) C.F.Boudouresque et M.Perret-Boudouresque | | | |
| *Sphacella* Reinke | | | |
| *S. subtilissima* Reinke ……..... | - | *9* | - |
| *Sphacelaria* Lyngbye *in* Hornemann | | | |
| *S. cirrosa* (Roth) C.Agardh ……..... | *28* | *7* | *22* |
| = Sphacellaria hystrix Suhr ex Reinke | | | |
| = Sphacelaria irregularis Kützing | | | |
| = Sphacelaria pennata Lyngbe | | | |
| = Sphacelaria cirrosa var. pennata (Lyngbe) Hauck | | | |
| *S. fusca* (Hudson) S.F.Gray ……..... | *11* | *7* | *22* |

*Table 2. cont'd*

| Taxa | NEAd | MEAd | SEAd |
|---|---|---|---|
| *S. nana* Nägeli *ex* Kützing ……..... | 16 | - | - |
| = Sphacelaria britannica Sauvageau | | | |
| *S. plumula* Zanardini ..... | *28* | *7* | *19* |
| *S. rigidula* Kützing ……..... | 16 | *25* | 22 |
| = Sphacelaria furcigera Kützing | | | |
| *S. tribuloides* Meneghini ……..... | *28* | *7* | *19* |
| Stypocaulaceae Oltmans | | | |
| *Halopteris* Kützing | | | |
| *H. filicina* (Grateloup) Kützing ……..... | *28* | *7* | *22* |
| = Sphacelaria filicina (Grateloup) C.Agardh | | | |
| *Stypocaulon* Kützing | | | |
| *Stypocaulon scoparium* (Linnaeus) Kützing ……..... | 13 | 7 | 17 |
| = Halopteris scoparia (Linnaeus) Sauvageau | | | |
| = Sphacelaria scoparia (Linnaeus) Lyngbye | | | |
| S p o r o c h n a l e s Sauvageau | | | |
| Sporochnaceae Greville | | | |
| *Carpomitra* Kützing | | | |
| *C. costata* (Stackhouse) Batters | | | |
| var. *costata* ……..... | - | 9 | - |
| = Fucus costatus Stackhouse | | | |
| = Carpomitra cabrerae (Clemente) Kützing | | | |
| var. *dichotoma* (Zanardini) J.Feldmann ..... | - | *7* | - |
| = Sporochnus dichotomus Zanardini | | | |
| *Nereia* Zanardini | | | |
| *N. filiformis* (J.Agardh) Zanardini ……..... | *28* | *7* | *22* |
| *Sporochnus* C.Agardh | | | |
| *S. pedunculatus* (Hudson) C.Agardh …… | *28* | *7* | *19* |

## NOTES

1. This species includes the sporophytic stage *Aglaozonia melanoidea* Sauvageau *nom.inval*.
2. This species includes the sporophytic stage *Aglaozonia chilosa* Falkenberg.
3. This species includes the sporophytic stage *Aglaozonia parvula* (Greville) Zanardini.
4. RIBERA *et al.* (1992) and GUIRY & GUIRY (2009) considered this species as *taxon inquirendum*, but we will accept it and include it in this checklist.
5. We followed GUIRY & GUIRY (2009) including this species in the checklist as a currently accepted taxon; RIBERA *et al.* (1992) treated this species as *taxon inquirendum*.
6. We followed GUIRY & GUIRY (2009) including this species in the checklist as a currently accepted taxon; RIBERA *et al.* (1992) treated this species as *taxon inquirendum*.
7. GIACCONE (1978) transferred the species *Ectocarpus adriaticus* Ercegović into the variety *Ectocarpus siliculosus* (Dillwyn) Lyngbye var. *adriaticus* (Ercegović) Giaccone without specifying a bibliographic reference of the basionym. This is incorrect according to Art. 33.2 of the International Code of Botanical Nomenclature (McNEILL *et al*., 2006). The new combination was correctly proposed by CORMACI & FURNARI (1987) and we included it in this checklist
8. GIACCONE (1978) transferred the species *Ectocarpus arctus* Kützing into the variety *Ectocarpus siliculosus* (Dillwyn) Lyngbye var. *arctus* (Kützing) Giaccone without specifying a bibliographic reference of the basionym. This is incorrect according to Art. 33.2 of the International Code of Botanical Nomenclature (McNEILL *et al*., 2006). The new combination was correctly proposed by GALLARDO (1992). We included this variety in the checklist. GUIRY & GUIRY (2009) included it as one of the taxonomic synonyms of *Ectocarpus siliculosus* (Dillwyn) Lyngbye.
9. GIACCONE (1978) transferred the species *Ectocarpus pygmaeus* J.E. Areschoug *in* Kjellman into the variety *Ectocarpus siliculosus* (Dillwyn) Lyngbye var. *pygmaeus* (J.E. Areschoug) Giaccone without specifying a bibliographic reference of the basionym. This is incorrect according to Art. 33.2 of the International Code of Botanical Nomenclature (McNEILL *et al*., 2006). The new combination was correctly proposed by GALLARDO (1992) and we included this variety in the checklist.
10. GIACCONE (1978) transferred the species *Ectocarpus subulatus* Kützing into the variety *Ectocarpus siliculosus* (Dillwyn) Lyngbye var. *subulatus* (Kützing) Giaccone without specifying a bibliographic reference of the basionym. The new combination was correctly proposed by GALLARDO (1992).
11. GIACCONE (1978) transferred the species *Ectocarpus venetus* Kützing into the variety *Ectocarpus siliculosus* (Dillwyn) Lyngbye var. *venetus* (Kützing) Giaccone without specifying a bibliographic reference of the basionym. The new combination was correctly proposed by GALLARDO (1992).
12. CORMACI *et al.* (1992) and RIBERA *et al*. (1992) indicated the form *Cystoseira corniculata* (Turner) Zanardini *f. imperfecta* Ercegović as one of the taxonomic synonyms of the species *Cystoseira corniculata* (Turner) Zanardini. GUIRY & GUIRY (2009) included this form by the name of *Cystoseira corniculata f. imperfecta* Ercegović in the category "P" (indicates a preliminary AlgaeBase entry that has not been subjected to any kind of verification). Until genetic and detailed comparative research will be done on fresh algal material, we consider this taxon as distinct.
13. This species includes the subspecies *Sargassum salicifolium* subsp. *linifolium* Špan, to which the latter was transferred as a variety (ŠPAN, 2005).
14. Acording to PARENTE *et al.* (2003) this species includes the sporophytic stage *Microspongium gelatinosum* Reinke.

## NOMENCLUTARAL CHANGES

CORMACI & FURNARI (1987) transferred the species *Ectocarpus battersiides* Ercegović into the species *Feldmannia battersiides* (Ercegović) Cormaci *et* G. Furnari. However, ERCEGOVIĆ (1955a) described three different forms within this species and we suggest new combinations as follows:

*Feldmannia battersiides* (Ercegović) Cormaci *et* G. Furnari *f. maior* (Ercegović) Antolić *et* Špan, *comb. nov.*
Basionym: *Ectocarpus battersiides* Ercegović *f. maior* Ercegović *in* Acta Adriat., 7 (5): 36-38, 40, Fig. 16. 1955a.
*Feldmannia battersiides* (Ercegović) Cormaci *et* G. Furnari *f. sporangiosessilis* (Ercegović) Antolić *et* Špan, *comb. nov.*
Basionym: *Ectocarpus battersiides* Ercegović *f. sporangiosessilis* Ercegović *in* Acta Adriat., 7 (5): 38, 40, Fig. 17 c. 1955a.
*Feldmannia battersiides* (Ercegović) Cormaci *et* G. Furnari *f. taoniae* (Ercegović) Antolić *et* Špan, *comb. nov.*
Basionym: *Ectocarpus battersiides* Ercegović *f. taoniae* Ercegović *in* Acta Adriat., 7 (5): 38, 40, Fig. 17 a, b. 1955a.

HAMEL (1939) transferred the species *Ectocarpus irregularis* Kützing into the species *Feldmannia irregularis* (Kützing) Hamel. However, within this species ERCEGOVIĆ (1955a) described the subspecies *Ectocarpus irregularis* Kützing subsp. *lebeliides* Ercegović, and we suggest a new combination as follows:

*Feldmannia irregularis* (Kützing) G. Hamel var. *lebeliides* (Ercegović) Antolić *et* Špan, *comb. et stat. nov.*
Basionym: *Ectocarpus irregularis* Kützing subsp. *lebeliides* Ercegović *in* Acta Adriat., 7 (5): 54-57, Fig. 25. 1955a.

HAMEL (1939) transferred the species *Ectocarpus paradoxus* Montagne *in* Moris *et* De Notaris into the species *Feldmannia paradoxa* (Montagne) G. Hamel. However, ERCEGOVIĆ (1957) within the species *Ectocarpus paradoxus* Montagne distinguished the form *Ectocarpus paradoxus* Montagne *f. profunda* Ercegović and the variety *Ectocarpus paradoxus* Montagne var. *donatiae* Ercegović and we suggest new combinations as follows:

*Feldmannia paradoxa* (Montagne) G. Hamel *f. profonda* (Ercegović) Antolić *et* Špan, *comb. nov.*
Basionym: *Ectocarpus paradoxus* Montagne *f. profonda* Ercegović *in* Acta Adriat., 8 (8): 37-38, Fig. 12 b. 1957.
*Feldmannia paradoxa* (Montagne) G. Hamel var. *donatiae* (Ercegović) Antolić *et* Špan, *comb. nov.*
Basionym: *Ectocarpus paradoxus* Montagne var. *donatiae* Ercegović *in* Acta Adriat., 8 (8): 38-39, Fig. 12 a. 1957.

CORMACI & FURNARI (1987) transferred the species *Ectocarpus dalmaticus* Ercegović firstly into the species *Giffordia dalmatica* (Ercegović) Cormaci *et* G. Furnari and later into the species *Hincksia dalmatica* (Ercegović) Cormaci *et* G. Furnari (*in* GALLARDO, 1992) which is valid today. GUIRY & GUIRY (2009) included the species *Ectocarpus dalmaticus* Ercegović in the category "U" (indicates a name of uncertain taxonomic status, but which has been subjected to some verification nomenclaturally). In accepting correct renaming of the species by CORMACI & FURNARI (1987), we suggest the new combination of the form *Ectocarpus dalmaticus* Ercegović *f. acinetiformis* Ercegović as follows:

*Hincksia dalmatica* (Ercegović) Cormaci *et* G. Furnari *f. acinetiformis* (Ercegović) Antolić *et* Špan, *comb. nov.*
Basionym: *Ectocarpus dalmaticus* Ercegović *f. acinetiformis* Ercegović *in* Acta Adriat., 7 (5): 60-62, Fig. 27. 1955a.

ERCEGOVIĆ (1948) described the new species *Elachista Jabukae* Ercegović. Later, he transfered this species into the subspecies *Elachista neglecta* Kuckuck subsp. *Jabukae* Ercegović (ERCEGOVIĆ, 1957). We suggest the new combination of *Elachista Jabukae* Ercegović as follows:
*Elachista neglecta* Kuckuck var. *jabukae* (Ercegović) Antolić *et* Špan, *comb. et stat. nov.*

Basionym: *Elachista Jabukae* Ercegović *in* Acta Adriat., 3 (5): 10-13, Figs. 4, 5. 1948.

Acording to PEDERSEN (1978), RIBERA *et al.* (1992) treated the species *Myriotrichia repens* Hauck as one of the taxonomic synonyms of *Myriotrichia clavaeformis* Harvey. However, ERCEGOVIĆ (1955b) within the species *Myriotrichia repens* Hauck described six different forms. For one form, we suggest a new combination as follows:

*Myriotrichia clavaeformis* Harvey *f. acycla* (Ercegović) Antolić *et* Špan, *comb. nov.*
Basionym: *Myriotrichia repens* Hauck *f. acycla* Ercegović *in* Acta Adriat., 7 (6): 23-24, Fig. 5d. 1955b.

GIACCONE (1978) transferred the species *Ectocarpus adriaticus* Ercegović into the variety *Ectocarpus siliculosus* (Dillwyn) Lyngbye var. *adriaticus* (Ercegović) Giaccone without specifying a bibliographic reference of the basionym. This is incorrect according to Art. 33.2 of the International Code of Botanical Nomenclature (McNEILL *et al*., 2006). The new combination was correctly proposed by CORMACI & FURNARI (1987). In accepting correct renaming of the species by CORMACI & FURNARI (1987), we suggest the new combination the *Ectocarpus adriaticus* Ercegovic *f. maior* Ercegovic as follows:

*Ectocarpus siliculosus* (Dillwyn) Lyngbye var. *adriaticus* (Ercegović) Cormaci *et* G.Furnari *f. maior* (Ercegović) Antolić *et* Špan, *comb. et stat. nov*.
Basionym: *Ectocarpus adriaticus* Ercegović *f. maior* Ercegović *in* Acta Adriat., 7 (5): 16-17. 1955a.

GERLOF & NIZAMUDDIN (1975) transferred the species *Cystoseira abrotanifolia* C.Agardh into the species *Cystoseira compressa* (Esper) Gerlof *et* Nizamudin. Until genetic and detailed comparative research will be done on new material, we suggest the new combination of *Cystoseira abrotanifolia f. insularum* Ercegović, which inhabits depths between 1 and 30 m along the outer islands of the central Adriatic, as follows:

*Cystoseira compressa* (Esper) Gerlof *et* Nizamudin *f. insularum* (Ercegović) Antolić *et* Špan, *comb. nov*.
Basionym: *Cystoseira abrotanifolia* C.Agardh *f. insularum* Ercegović *in* Fauna et Flora Adriat., 2: 102. 1952.

CORMACI *et al.* (1992) and RIBERA *et al*. (1992) cited both subspecies *Cystoseira corniculata* Hauck subsp. *divergens* Ercegović and *Cystoseira corniculata* Hauck subsp. *laxior* Ercegović Hauck as the taxonomic synonyms of *Cystoseira corniculata* (Wulfen) Zanardini. Until genetic and detailed comparative research will be done on new material, we suggest the new combination as follows:

*Cystoseira corniculata* (Turner) Zanardini var. *divergens* (Ercegović) Antolić *et* Špan, *comb. et stat. nov.*
Basionym: *Cystoseira corniculata* Hauck subsp. *divergens* Ercegović *in* Fauna et Flora Adriat., 2: 18, 106, Icon: Tab. III. 1952.
*Cystoseira corniculata* (Turner) Zanardini var. *laxior* (Ercegović) Antolić *et* Špan, *comb. et stat. nov.*
Basionym: *Cystoseira corniculata* Hauck subsp. *laxior* Ercegović *in* Fauna et Flora Adriat., 2: 17, 18, 106, Icon: Tab. II. 1952.

Taxa inquirenda
*Acinetospora species* Ercegović: (MEAd: ERCEGOVIĆ, 1957).
*Ectocarpus siliculosus* (Dillwyn) Lyngbye var. *divergens* Schiffner: (NEAd: GIACCONE, 1978).
*Ectocarpus siliculosus* (Dillwyn) Lyngbye var. *elongatus* Schifner: (NEAd: GIACCONE, 1978).
*Ectocarpus siliculosus* (Dillwyn) Lyngbye var. *megacarpus* Schiffner: (NEAd: GIACCONE, 1978).
*Dictyota dichotoma* (Hudson) Lamouroux *f. proliferans* Ercegović: (NEAd: ŠPAN *et al.*, 1996; MEAd: ERCEGOVIĆ, 1957; SEAd: ŠPAN & ANTOLIĆ, 1983).
*Dilophus mediterraneus* Schiffner var. *crassus* Schiffner: (MEAd: GIACCONE, 1978).
*Cystoseira barabata* (Stackhouse) C. Agardh *f. punctata* Ercegović: (NEAd: ERCEGOVIĆ, 1952; MEAd: ERCEGOVIĆ, 1952).

*Cystoseira discors* (Linnaeus) C. Agardh *f. dubia* Ercegović: (MEAd: ERCEGOVIĆ, 1952).
*Cystoseira spicata* Ercegović subsp. *crassa* Ercegović: (NEAd: ERCEGOVIĆ, 1952; MEAd: ERCEGOVIĆ, 1952; SEAd: ERCEGOVIĆ, 1952).
*Cystoseira spicata* Ercegović subsp. *elegans* Ercegović: (MEAd: ERCEGOVIĆ, 1952; SEAd: ERCEGOVIĆ, 1952).
*Myriogloea sciurus* (Harvey) P.Kuckuck *ex* F.Oltmanns: (NEAd: PIGNATTI & GIACCONE, 1967).
*Myriotrichia repens* Hauck *f. brevicellularis-plurilocularis* Ercegović: (MEAd: ERCEGOVIĆ, 1955b).
*Myriotrichia repens* Hauck *f. brevicellularis-unilocularis* Ercegović: (MEAd: ERCEGOVIĆ, 1955b).
*Myriotrichia repens* Hauck *f. internodilais-mixtolocularis* Ercegović: (MEAd: ERCEGOVIĆ, 1955b).
*Myriotrichia repens* Hauck *f. longicellularis-unilocularis* Ercegović: (MEAd: ERCEGOVIĆ, 1955b).
*Myriotrichia repens* Hauck *f. longicellularis-scoparia* Ercegović: (MEAd: ERCEGOVIĆ, 1955b).
*Sargassum vulgare* C.Agardh *f. ercegovicii* Špan (MEAd: ŠPAN, 1972).
*Sargassum vulgare* C.Agardh subsp. *jabukae* Špan (CEAd: ŠPAN, 1972).

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# Popis morskih bentoskih makroalgi na istočnoj obali Jadrana: II. Heterokontophyta: Phaeophyceae

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## SAŽETAK

U ovom radu iznosimo popis svojti morskih bentoskih makroalgi iz odjeljka smeđih alga (Heterokontophytata: Phaeophyceae) koji se temelji na podacima objavljenim između 1948. i 1997. godine. Zemljopisno smo istočnu obalu Jadranskog mora podijelili na tri dijela: sjeverni, srednji i južni. Navedeno je ukupno 180 vrsta i nižih taksonomskih kategorija smeđih algi među kojima je predloženo 12 novih sistematskih kombinacija. Najviše ih je zabilježeno u srednjem (153), manju u srednjem (129), a najmanje u južnom (75) Jadranu.

**Ključne riječi:** morske bentoske makroalge, Heterokontophyta, Paheophyceae, popis, istočna obala Jadrana

## ANNEX

Alphabetical list of algal taxa
(**c** = *Nomenclutaral change*; ***i*** = *taxon inquirendum*; **n** = *Note*)

*Acinetospora crinita*
Acinetospora pusilla
*Acinetospora species* ***i***
Acinetospora vidovichii
*Acrosporangium ralfsioides*
Ascocyclus magnusii
*Ascocyclus orbicularis*
*Adriogloia adriatica* **n5**
*Agalozonia chilosa* **n2**
*Agalozonia melanoidea* **n1**
*Agalozonia parvula* **n3**
*Arthrocladia villosa*
*Asperococcus bullosus*
Asperococcus compressus
Asperococcus echinatus
*Asperococcus ensiformis*
*Asperococcus fistulosus*
*Asperococcus scaber*
Asperococcus turneri
Castagnea cylindrical
Castagnea mediterranea
Castagnea zosterae
Carpomitra cabrerae
*Carpomitra costata*
var. *costata*
*Carpomitra costata*
var. *dichotoma*
*Choristocarpus tenellus*
*Cladosiphon contortus*
*Cladosiphon cylindricus*
*Cladosiphon mediterraneus*
*Cladosiphon zosterae*
Cladostephus hirsutus
*Cladostephus spongiosum*
*f. verticillatum*
Cladostephus verticillatus
*Colpomenia sinuosa*
*Compsonema gracile*
*Compsonema saxicolum*
*Corynophlaea flaccida*
*Corynophlaea. umbellata*
Corynephora umbellata
*Cutleria adspersa*
*Cutleria chillosa*
Cutleria monoica
*Cutleria multifida*
Cylindrocarpus berkeleyi
*Cylindrocarpus microscopicus*
Cystoseira abrotanifolia
Cystoseira abrotanifolia
f. insularum **c**
Cystoseira abrotanifolia
subsp. plana
Cystoseira abrotanifolia
subsp. pustulata
var. compressa
Cystoseira adratica
subsp. compressa
Cystoseira adratica
var. intermedia
Cystoseira adriatica
subsp. intermedia
Cystoseira adriatica
subsp. reducta
Cystoseira adriatica
f. reducta
Cystoseira adriatica
subsp. tenuior
Cystoseira adriatica
f. tenuior
*Cystoseira amentacea*
var. *spicata*
Cytoseira barbata
*Cystoseira barbata*
var. *barbata*
*Cystoseira barbata*
*f. insularum*
*Cystoseira barbata*
*f. punctata* ***i***
*Cystoseira barbata*
var. *tophuloidea*
Cystoseira barbata
subsp. tophuloidea
Cystoseira barbata
var. tophuloidea
*Cystoseira compressa*
*f. compressa*
*Cystoseira compressa*
*f. plana*
*Cystoseira compressa*
*f. rosseta*
*Cystoseira compressa*
*f. insularum* **c**
Cystoseira compressa
var. pustulata
*Cystoseira corniculata*
var. *corniculata*
*Cystoseira corniculata*
*f. imperfecta* **n12**
Cystoseira corniculata
subsp. divergens **c**
*Cystoseira corniculata*
var. *divergens* **c**
Cystoseira corniculata
subsp. laxior **c**
*Cystoseira corniculata*
var. *laxior* **c**
*Cystoseira crinita*
*f. crinita*
Cystoseira crinita
*Cystoseira crinita*
*f. semispinosa*
*Cystoseira crinitophylla*
Cystoseira discors
*Cystoseira discors*
*f. dubia* ***i***
Cystoseira discors
f. latiramosa
Cystoseira discors
subsp. latiramosa
Cystoseira discors
f. tenuiramosa
*Cystoseira dubia*
Cystoseira ercegovicii
Cystoseira ercegovicii
f. latiramosa
Cystoseira ercegovicii
f. tenuiramosa
Cystoseira erica-marina
Cystoseira fimbriata
Cystoseira fimbriata
f. rosetta
*Cystoseira foeniculacea*
*f. foeniculacea*

*Cystoseira foeniculacea* *f. latiramosa*
*Cystoseira foeniculacea* *f. tenuiramosa*
Cystoseira fucoides
*Cystoseira humilis* var. *humilis*
*Cystoseira humilis* var. *myriophylloides*
*Cystoseira. jabukae* *f. jabukae*
*Cystoseira. jabukae* *f. tenuissima*
Cystoseira. jabukae subsp. tenuissima
Cystoseira myriophylloides
Cystoseira opuntioides
*Cystoseira pelagosae*
Cystoseira platyramosa
*Cystoseira sauvageauana*
Cystoseira selagenoides
*Cystoseira spinosa* var. *compressa*
*Cystoseira spinosa* var. *spinosa*
*Cystoseira spinosa* var. *tenuior*
Cystoseira spinosa var. squarrosa
Cystoseira spicata
*Cystoseira spicata* subsp. *crassa* ***i***
*Cystoseira spicata* subsp. *elegans* ***i***
Cystoseira stricta var. spicata
*Cystoseira squarrosa*
*Cystoseira zosteroides*
*Dalmatogloia bryozoi* **n6**
Desmarestia adriatica
*Desmarestia ligulata*
Dichosporangium repens
*Dictyopteris polypodioides*
Dictyopteris membranacea
*Dictyota dichotoma* var. *dichotoma*
Dictyota dichotoma f. implexa
Dictyota dichotoma var. implexa
*Dictyota dichotoma* var. *intricata*
*Dictyota dichotoma* *f. proliferans* ***i***
*Dictyota fasciola* var. *fasciola*
*Dictyota fasciola* var. *repens*
Dictyota implexa
*Dictyota linearis*
*Dictyota mediterranea*
*Dictyota spiralis*
Dilophus fasciola
Dilophus fasciola var. repens
Dilophus ligulatus
Dilophus mediterraneus
*Dilophus mediterraneus* var. *crassus* ***i***
Dilophus repens
Dilophus spiralis
*Discosporangium mesarthrocarpum*
Ectocarpus abbreviatus
Ectocarpus adriaticus **n7**
Ectocarpus adriaticus f. maior **c**
Ectocarpus approximatus
Ectocarpus arctus **n8**
Ectocarpus battersii
Ectocarpus battersii var. mediterraneus
Ectocarpus battersiides
Ectocarpus battersiides f. maior **c**
Ectocarpus battersiides f. spongiosessilis **c**
Ectocarpus battersiides f. taoniae **c**
*Ectocarpus bombycinus*
Ectocarpus crinitus
Ectocarpus confervoides
Ectocarpus dalmaticus
Ectocarpus dalmaticus f. acinetiformis **c**
Ectocarpus dasycarpus
Ectocarpus fasciculatus
*Ectocarpus fasciculatus* var. *fasciculatus*
*Ectocarpus fasciculatus* var. *abbreviatus*
*Ectocarpus flagelliformis*
Ectocarpus geniculatus
Ectocarpus granulosus
Ectocarpus hauckii
Ectocarpus hinksiae
Ectocarpus mitchelliae
Ectocarpus irregularis
Ectocarpus irregularis subsp. lebeliides **c**
Ectocarpus lebelii
Ectocarpus paradoxoides
Ectocarpus paradoxus
Ectocarpus paradoxus var. donatiae **c**
Ectocarpus paradoxus subsp. Lebeliides
Ectocarpus paradoxus f. profonda **c**
*Ectocarpus parvulus*
*Ectocarpus pectinis*
Ectocarpus pygmaeus **n9**
*Ectocarpus rufulus*
Ectocarpus sandrianus
*Ectocarpus siliculosus* var. *adriaticus* **n7**
*Ectocarpus siliculosus* var. *adriaticus* *f. maior* **c**
*Ectocarpus siliculosus* var. *arctus* **n8**
Ectocarpus siliculosus var. confervoides
Ectocarpus siliculosus var. crassus
*Ectocarpus siliculosus* var. *dasycarpus*
*Ectocarpus siliculosus* var. *divergens* ***i***
*Ectocarpus siliculosus* var. *elongatus* ***i***
*Ectocarpus siliculosus* var. *megacarpus* ***i***
*Ectocarpus siliculosus* var. *pygmaeus* **n9**
*Ectocarpus siliculosus* var. *siliculosus*
*Ectocarpus siliculosus* var. *subulatus* **n10**

*Ectocarpus siliculosus* var. *venetus* **n11**
*Ectocarpus simpliciusculus f. simpliciusculus*
*Ectocarpus simpliciusculus f.reductus ("reducta")*
Ectocarpus spinosus
Ectocarpus subulatus **n10**
Ectocarpus valiantei
Ectocarpus velutinus **n11**
Ectocarpus venetus
*Ectocarpus virescens*
*Elachista fucicola f. fucicola*
*Elachista fucicola f. profunda*
*Elachista intermedia* var. *intermedia*
*Elachista intermedia* var. *clavaeformis*
*Elachista intermedia f. profunda*
Elachista jabukae **c**
Elachista kuckuckiana
*Elachista neglecta* var. *neglecta*
*Elachista neglecta* var. *jabukae* **c**
Elachista neglecta subsp. Jabukae
*Elachista stellaris*
Entonema effusum
Entonema oligosporum
Endodictyon infestans
Feldmannia battersii
*Feldmannia battersiides f. battersiides*
*Feldmannia battersiides f. maior* **c**
*Feldmannia battersiides f. spongiosessilis* **c**
*Feldmannia battersiides f. taoniae* **c**
Feldmannia caespitula
Feldmannia caespitula var. lebelii
*Feldmannia irregularis* var . *irregularis*
*Feldmannia irregularis* var. *lebeliides* **c**
*Feldmannia lebelii*
*Feldmannia padinae*
*Feldmannia paradoxa* var. *paradoxa*
*Feldmannia paradoxa* var. *donatiae* **c**
*Feldmannia paradoxa f. profonda* **c**
*Feldmannia paradoxoides*
Fucus costatus
Fucus discors
*Fucus visoides*
Giffordia dalmatica
Giffordia geniculata
Giffordia granulosa
Giffordia haucki
Giffordia hinksiae
Giffordia irregularis
Giffordia mitchelliae
Giffordia sandriana
*Giraudia sphacelarioides*
Gonodia stellulata
Haloglossum compressum
*Halopteris filicina*
Halopteris scoparia
Halyseris polypodioides
Hecatonema maculans
*Hecatonema terminale*
*Herponema valiantei*
*Hincksia dalmatica f. dalmatica*
*Hincksia dalmatica f. acinetiformis* **c**
*Hinksia geniculata*
*Hinksia granulosa*
*Hinksia hauckii*
*Hinksia hincksiae*
*Hinksia mitchelliae*
*Hinksia sandriana*
*Hydroclathrus clathratus*
*Kuckuckia spinosa*
*Kuetzingiella battersii* var. *battersii*
*Kuetzingiella battersii* var. *mediterranea*
*Laminaria rodriguezii*
*Leptonematella fasciculata*
Leptonema fasciculatum
Lithoderma adriaticum
*Litosiphon laminariae*
Leathesia flaccida
*Leathesia mucosa* var. *mucosa*
*Leathesia mucosa f. exuberans* **c**
Leathesia umbellata **c**
*Liebmannia leveillei*
Mesogloia griffithsiana
Mesogloia leveillei
Mesogloea leveillei
Mesogloea vermiculata
*Mesogloia vermiculata*
*Microspongium gelatinosum* **n14**
*Microsporangium kuckuckianum*
Myriactis adriatica
Myriactis elongata
Myriactis microscopica
Myriactis pulvinata
Myriactis rigida
Myriactis stelullata
*Myriactula elongata*
*Myriactula microscopica*
Myriactula pulvinata
*Myriactula rigida*
*Myriactula rivulariae*
*Myriactula stellulata*
*Myriogloea sciurus* ***i***
*Myrionema liechtensternii*
Myrionema magnusii **c**
Myrionema orbiculare
Myrionema saxicola
*Myrionema strangulans*
Myrionema vulgare
*Myriotrichia adriatica*
*Myriotrichia clavaeformis f. clavaeformis*
*Myriotrichia clavaeformis f. acycla* **c**
Myriotrichia protasperococcus
Myriotrichia repens
*Myriotrichia repens f. brevicellularis-plurilocularis* ***i***

*Myriotrichia repens* *f. brevicellularis-unilocularis* **i**
*Myriotrichia repens* *f. internodilais-mixtolocularis* **i**
*Myriotrichia repens* *f. longicellularis-unilocularis* **i**
*Myriotrichia repens* *f. longicellularis-scoparia* **i**
Myriotrichia repens f. acycla **c**
*Nemacystus flexuosus* var. *giraudyi*
Nemacystus ramulosus
*Nereia filiformis*
*Padina pavonica*
Padina pavonia
*Padinopsis adriatica* **n4**
*Petalonia fascia*
*Petalonia zosterifolia*
*Petrosporangium berkeley*
Phaeosphaerium liechtensternii
Phyllitis fascia
Phyllitis zosterifolia
*Pilayella litoralis*
*Protasperococcus myriotrichiiformis*
*Pseudolithoderma adriaticum*
*Punctaria latofolia*
*Punctaria tenuissima*
*Ralfsia verrucosa*
*Sargassum acinarium*
*Sargassum hornschuchii*
Sargassum linifolium
Sargassum salicifolium
*Sargassum salicifolium* subsp. *linifolium* **n13**
*Sargassum vulgare*
*Sargassum vulgare* *f. ercegovicii* **i**
*Sargassum vulgare* subsp. *jabukae* **i**
Sargassum vulgare var. linifolium
Sargassum vulgare subsp. megalophyllum
Sargassum vulgare var. salicifolium
*Sauvageaugloia divaricata*
Sauvageaugloia griffithsiana
*Scytosiphon dotyi*
*Scytosiphon lomentaria*
Scytosiphon lomentarius
Scytosiphon simplicissimus
*Spatoglossum solieri*
*Spermatochnus paradoxus* var. *paradoxus*
*Spermatochnus paradoxus* var. *adriaticus*
*Sphacella subtilissima*
Sphacelaria britannica
*Sphacelaria cirrosa*
Sphacelaria cirrosa var. pennata
Sphacelaria filicina
Sphacelaria furcigera
*Sphacellaria fusca*
Sphacellaria hystrix
Sphacelaria irregularis
*Sphacelaria nana*
Sphacelaria pennata
*Sphacellaria plumula*
*Sphacellaria rigidula*
Sphacelaria scoparia
*Sphacellaria tribuloides*
Sporochnus dichotomus
*Sporochnus pedunculatus*
*Stictyosiphon adriaticus*
*Stictyosiphon tortilis*
*Stypocaulon scoparium*
Stilophora rhizodes
*Stilophora tenella*
Streblonema effusum
*Streblonema infestans*
Streblonema oligosporum
Streblonema sphaericum
*Streblonemopsis irritans*
*Striaria attenuata*
*Taonia atomaria*
*Zanardinia typus*
*Zosterocarpus oedogonium*
Zanardinia collaris
Zanardinia prototypus