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Seaweeds of the Greek coasts: Rhodophyta: Ceramiales

Konstantinos TSIAMIS[*1] and Panayotis PANAYOTIDIS[1]

[1]Hellenic Centre for Marine Research (HCMR), Institute of Oceanography, Anavyssos 19013, Attica, Greece

**Corresponding author: kostas.tsiamis@gmail.com*

An updated checklist of the red seaweeds (Rhodophyta) of the Order Ceramiales of the Greek coasts is provided, based on literature records, critically reviewed from present-day taxonomic and nomenclatural aspects. The total number of genera, species and infraspecific taxa currently accepted is 60, 118 and 2, respectively. The occurrence of each taxon in the North Aegean, South Aegean and Ionian Seas is given. Knowledge gaps are pointed, with 70 taxa pending confirmation of their presence marked. Moreover, 15 excludenda *and 20* inquirenda *taxa are briefly discussed. In this paper is given an updated base of the Ceramiales taxa occurrence in Greece, needed for future targeted seaweed studies.*

Key words: Aegean Sea, red algae, Ceramiales, checklist, Ionian Sea

INTRODUCTION

Phycological studies on marine macroalgae have been carried out along the Greek coasts since the early 19th century (SIBTHORP, 1813; GREVILLE, 1826; BORY DE SAINT-VINCENT, 1832), resulting in descriptions of several new species and genera and in records of numerous common Mediterranean taxa. However, the major part of these studies has not been updated in a modern context, while the provided data in the classical publications are usually too limited to allow unequivocal identification, frequently resulting in taxonomic confusion (TSIAMIS *et al.,* 2013a, 2014).

The first checklist of Greek seaweeds by DIANNELIDIS (1950) and the following work of GERLOFF & GEISSLER (1974) have been surpassed. ATHANASIADIS (1987) compiled a critically reviewed catalog of marine seaweeds, but concerning only the Aegean Sea. In addition, the annotated checklists of the Mediterranean seaweed flora by RIBERA *et al.* (1992), GALLARDO *et al.* (1993) and GÓMEZ GARRETA *et al.* (2001) included seaweeds occurring in Greece.

Aiming to update the knowledge of the Greek marine flora, the present work is focusing exclusively on the red algae of the order Ceramiales Oltmanns, aiming to deliver a solid updated baseline of the Greek taxa, critical for future tailor-targeting studies. Our work is the third part in a series that previously treated the Phaeophyceae and the Ulvophyceae (TSIAMIS *et al.,* 2013a, 2014).

MATERIALS AND METHODS

From the early 19th century until 2015, 13 PhD theses and about 140 research papers have been published on seaweeds from Greece. Master and Bachelor Degree theses, as well as conference contributions, have not been taken

into account for this study. Records of Rhodophytes in all other publications have been critically reviewed from present-day taxonomic and nomenclatural aspects, taking also into account the on-line data provided by SILVA (2015) and GUIRY & GUIRY (2015).

The checklist has been compiled following the scheme as follows:

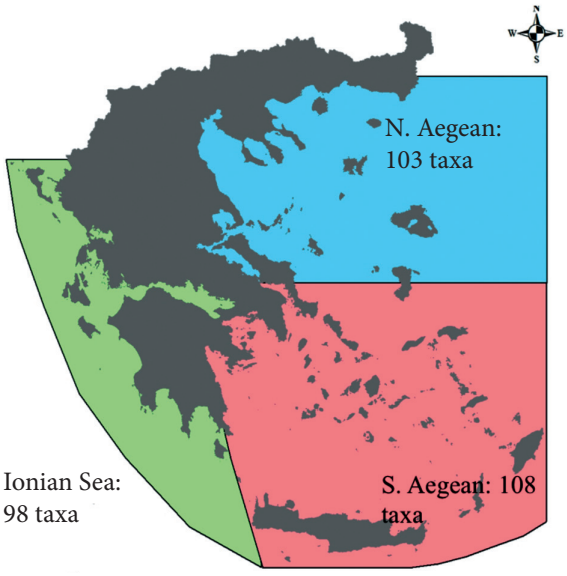

Fig. 1. Accepted Ceramiales algal taxa within each biogeographic region of the Greek seas

- accepted taxa: there is at least one documented record from Greece, in the form of description and/or illustration(s),
- pending confirmation of their presence: undocumented records or records with no sufficient documentation to permit accurate identification under modern standards,
- *excludenda*: misidentifications,
- *inquirenda*: taxa not typified, with an uncertain taxonomic application.

Taxa are listed alphabetically. For each taxon previously applied, synonyms are provided. The distribution of each accepted taxon is given for the three biogeographic regions: North Aegean, South Aegean and Ionian Sea (Fig. 1). Due to space limitation, only one reference is given for each region, giving priority to publications that include descriptions and/or illustration(s). Additional references are available from the authors upon request.

RESULTS

The present checklist recognizes at least 120 Ceramiales species and infraspecific taxa, within 60 genera, to occur in Greece (Table 1). In addition, there are 70 taxa pending confirmation of their presence on the Greek coasts (Table 2).

Table 1. Accepted Ceramiales algal taxa in the North and South Aegean, and the Ionian Seas. For each taxon a basic reference is provided together with previously applied synonyms

Taxa	North Aegean	South Aegean	Ionian Sea
Acanthophora nayadiformis (Delile) Papenfuss = *Acanthophora delilei* J.V. Lamouroux	ANAGNOSTIDIS, 1968	TSIAMIS, 2012	TSIAMIS, 2012
Acrosorium venulosum (Zanardini) Kylin = *Nitophyllum venulosum* Zanardini = *Acrosorium uncinatum* (Turner) Kylin *sensu* Kylin [(1)]	ATHANASIADIS, 1987	PETERSEN, 1918	SCHNETTER & SCHNETTER, 1981
Aglaothamnion caudatum (J. Agardh) Feldmann-Mazoyer [(2)]		LAZARIDOU, 1994	SCHNETTER & SCHNETTER, 1981
Aglaothamnion cordatum (Børgesen) Feldmann-Mazoyer = *Callithamnion cordatum* Børgesen = *Aglaothamnion neglectum* Feldmann-Mazoyer	ATHANASIADIS, 1987	TSIAMIS *et al.*, 2013b	SCHNETTER & SCHNETTER, 1981

Aglaothamnion tenuissimum (Bonnemaison) Feldmann-Mazoyer var. *tenuissimum* = *Callithamnion tenuissimum* (Bonnemaison) Zanardini = *Callithamnion byssoides* Arnott *ex* Harvey [(3)] = *Aglaothamnion furcellariae* (J. Agardh) Feldmann-Mazoyer [(3)]	ATHANASIADIS, 1987	LAZARIDOU, 1994	SCHNETTER & SCHNETTER, 1981
Aglaothamnion tripinnatum (C. Agardh) Feldmann-Mazoyer = *Callithamnion decompositum* Auctorum mediterr. = *Compsothamnion decompositum* Auctorum mediterr. [(4)]	ATHANASIADIS, 1987	DIAPOULIS & HARITONIDIS, 1987a	SCHNETTER & SCHNETTER, 1981
Alsidium corallinum C. Agardh	ATHANASIADIS, 1987		SCHNETTER & SCHNETTER, 1981
Alsidium helminthochorton (Schwendimann) Kützing	ATHANASIADIS, 1987	CATRA & GIARDINA, 2009	SCHNETTER & SCHNETTER, 1981
Anotrichium barbatum (C. Agardh) Nägeli = *Griffithsia barbata* C. Agardh	ATHANASIADIS, 1987	LAZARIDOU, 1994	BITIS, 1988
Anotrichium furcellatum (J. Agardh) Baldock = *Anotrichium okamurae* Baldock = *Neomonospora furcellata* (J. Agardh) Feldmann-Mazoyer *&* Meslin	HARITONIDIS, 1978	LAZARIDOU, 1994	HARITONIDIS & TSEKOS, 1976
Anotrichium tenue (C. Agardh) Nägeli = *Griffithsia tenuis* C. Agardh	DIAPOULIS & HARITONIDIS, 1984	LAZARIDOU, 1994	SCHNETTER & SCHNETTER, 1981
Antithamnion cruciatum (C. Agardh) Nägeli	ATHANASIADIS, 1987	LAZARIDOU, 1994	BITIS, 1988
Antithamnion decipiens (J. Agardh) Athanasiadis = *Antithamnion cruciatum* f. *fragilissimum* (Zanardini) Hauck = *Antithamnion ogdeniae* I.A. Abbott	ATHANASIADIS, 1987	DIANNELIDIS *et al.*, 1977	HARITONIDIS & TSEKOS, 1976
Antithamnion heterocladum Funk	ATHANASIADIS, 1987	KOUSSOURIS, 1976	BITIS, 1988
Antithamnion piliferum Cormaci *&* G. Furnari		LAZARIDOU, 1994	ATHANASIADIS, 1996a
Antithamnion tenuissimum (Hauck) Schiffner = *Antithamnion cruciatum* f. *tenuissimum* Hauck	ATHANASIADIS, 1987	LAZARIDOU, 1994	
Antithamnionella elegans (Berthold) J.H. Price *&* D.M. John = *Antithamnion elegans* Berthold	TSIAMIS *et al.*, 2011	TSIAMIS *et al.,* 2011	TSIAMIS, 2012
Apoglossum gregarium (E.Y. Dawson) M.J. Wynne			TSIAMIS & BELLOU, 2010
Apoglossum ruscifolium (Turner) J. Agardh	ATHANASIADIS, 1987	LAZARIDOU, 1994	TSIRIKA & HARITONIDIS, 2005
Balliella cladoderma (Zanardini) Athanasiadis	ATHANASIADIS, 1987		
Boergeseniella fruticulosa (Wulfen) Kylin = *Polysiphonia fruticulosa (*Wulfen) Sprengel = *Polysiphonia wulfenii* (Roth) J. Agardh	ATHANASIADIS, 1987	LAZARIDOU, 1994	SCHNETTER & SCHNETTER, 1981
Brongniartella byssoides (Goodenough *&* Woodward) F. Schmitz	ATHANASIADIS, 1987	TSIAMIS, 2012	TSIRIKA & HARITONIDIS, 2005

Callithamniella tingitana (Schousboe *ex* Bornet) Feldmann-Mazoyer	ATHANASIADIS, 1987		
Callithamnion corymbosum (J.E. Smith) Lyngbye	ATHANASIADIS, 1987	LAZARIDOU, 1994	BITIS, 1988
Callithamnion granulatum (Ducluzeau) C. Agardh	CHRYSSOVERGIS, 1995	DIAPOULIS & HARITONIDIS, 1987a	BITIS, 1988
Centroceras gasparrinii (Meneghini) Kützing	TSIAMIS, 2012	TSIAMIS *et al*., 2010	TSIAMIS, 2012
Ceramium bertholdii Funk	ATHANASIADIS, 1987	KOUSSOURIS *et al*., 1973	
Ceramium bisporum D.L. Ballantine [5]	SARTONI & BODDI, 2002		
Ceramium ciliatum (J. Ellis) Ducluzeau	ATHANASIADIS, 1987	LAZARIDOU, 1994	BITIS, 1988
Ceramium circinatum (Kützing) J. Agardh = *Ceramium circinatum* var. *syntrophum* (Kützing) Schiffner = *Hormoceras syntrophum* Kützing	ATHANASIADIS, 1987	LAZARIDOU, 1994	SCHNETTER & SCHNETTER, 1981
Ceramium codii (H. Richards) Mazoyer = *Ceramothamnion codii* H. Richards = *Ceramothamnion adriaticum* Schiller	CHRYSSOVERGIS, 1995	LAZARIDOU, 1994	BITIS, 1988
Ceramium comptum Børgesen	ANAGNOSTIDIS, 1968	LAZARIDOU, 1994	SCHNETTER & SCHNETTER, 1981
Ceramium deslongchampsii Chauvin *ex* Duby = *Ceramium strictum* (Kützing) Harvey *nom. illeg.*	HARITONIDIS, 1978	NIZAMUDDIN & LEHNBERG, 1970	HARITONIDIS & TSEKOS, 1976
Ceramium echionotum var. *mediterraneum* Feldmann-Mazoyer			BITIS, 1988
Ceramium giacconei Cormaci & G. Furnari		LAZARIDOU, 1994	
Ceramium graecum Lazaridou & Boudouresque	TSIAMIS, 2012	LAZARIDOU, 1994	
Ceramium virgatum Roth [6] = *Ceramium rubrum* (Hudson) C. Agardh	ATHANASIADIS, 1987	DIANNELIDIS *et al*., 1977	DIAPOULIS & HARITONIDIS, 1987b
Chondria boryana (De Notaris *ex* J. Agardh) Bornet		TSIAMIS & PANAYOTIDIS, 2016	SCHNETTER & SCHNETTER, 1981
Chondria capillaris (Hudson) M.J. Wynne = *Chondria tenuissima* (Withering) C. Agardh *nom. illeg.* = *Alsidium subtile* Kützing	ATHANASIADIS, 1987	LAZARIDOU, 1994	SCHNETTER & SCHNETTER, 1981
Chondria coerulescens (J. Agardh) Falkenberg	ATHANASIADIS, 1987	TSIAMIS, 2012	SCHNETTER & SCHNETTER, 1981
Chondria dasyphylla (Woodward) C. Agardh	ATHANASIADIS, 1987	LAZARIDOU, 1994	SCHNETTER & SCHNETTER, 1981
Chondria polyrhiza Collins & Hervey	ATHANASIADIS, 1987		
Compsothamnion thuyoides (J.E. Smith) Nägeli	ATHANASIADIS, 1987	LAZARIDOU, 1994	BITIS, 1988

Corallophila cinnabarina (Grateloup *ex* Bory de Saint-Vincent) R.E. Norris = *Centroceras cinnabarinum* (Grateloup *ex* Bory de Saint-Vincent) J. Agardh = *Centroceras pignattii* Giaccone = *Ceramium cinnabarinum* (Grateloup *ex* Bory de Saint-Vincent) Hauck	ATHANASIADIS, 1987	LAZARIDOU, 1994	SCHNETTER & SCHNETTER, 1981
Cottoniella filamentosa var. *algeriensis* (Schotter) Cormaci & G. Furnari		TSIAMIS *et al*., 2011	
Crouania attenuata (C. Agardh) J. Agardh	ATHANASIADIS, 1987	LAZARIDOU, 1994	BITIS, 1988
Crouania francescoi Cormaci, G. Furnari & Scammacca	ATHANASIADIS, 1987	TSIAMIS *et al*., 2013c	
Dasya baillouviana (S.G. Gmelin) Montagne = *Dasya elegans* (G. Martens) C. Agardh = *Dasya pedicellata* (C. Agardh) C. Agardh	ATHANASIADIS, 1987	LAZARIDOU, 1994	SCHNETTER & SCHNETTER, 1981
Dasya corymbifera J. Agardh	ATHANASIADIS, 1987	LAZARIDOU, 1994	SCHNETTER & SCHNETTER, 1981
Dasya hutchinsiae Harvey = *Dasya arbuscula* (Brown *ex* Dillwyn) C. Agardh *sensu* Harvey [7]	ATHANASIADIS, 1987	DIANNELIDIS *et al.,* 1977	SCHNETTER & SCHNETTER, 1981
Dasya ocellata (Grateloup) Harvey	ATHANASIADIS, 1987	LAZARIDOU, 1994	BITIS, 1988
Dasya punicea (Zanardini) Meneghini *ex* Zanardini	ATHANASIADIS, 1987	DIANNELIDIS *et al*., 1977	SCHNETTER & SCHNETTER, 1981
Digenea simplex (Wulfen) C. Agardh = *Digenea wulfenii* Kützing *nom. illeg.* = *Fucus lycopodium* Turner *nom. illeg.*	ATHANASIADIS, 1987	LAZARIDOU, 1994	SCHNETTER & SCHNETTER, 1981
Dipterosiphonia dendritica (C. Agardh) F. Schmitz	TSIAMIS & PANAYOTIDIS, 2016		
Dipterosiphonia rigens (C. Agardh) Falkenberg = *Polysiphonia rigens* (C. Agardh) Zanardini	ATHANASIADIS, 1987	LAZARIDOU, 1994	SCHNETTER & SCHNETTER, 1981
Erythrocystis montagnei (Derbès & Solier) P.C. Silva = *Ricardia montagnei* Derbès & Solier	ATHANASIADIS, 1987	COPPEJANS, 1974	
Erythroglossum sandrianum (Kützing) Kylin	ATHANASIADIS, 1987		
Eupogodon planus (C. Agardh) Kützing = *Dasya plana* C. Agardh = *Dasyopsis plana* (C. Agardh) Zanardini *ex* Falkenberg = *Dasyopsis cervicornis* (J. Agardh) F. Schmitz = *Dasyopsis spinella* (C. Agardh) Zanardini *ex* Falkenberg = *Eupogodon spinellus* (C. Agardh) Kützing	ATHANASIADIS, 1987	LAZARIDOU, 1994	SCHNETTER & SCHNETTER, 1981
Griffithsia opuntioides J. Agardh	ATHANASIADIS, 1987	DIANNELIDIS, 1950	DIAPOULIS & HARITONIDIS, 1987b
Griffithsia phyllamphora J. Agardh	ATHANASIADIS, 1987	TSIAMIS *et al*., 2013c	TSIAMIS, 2012
Gulsonia nodulosa (Ercegović) J. Feldmann & Feldmann-Mazoyer	ATHANASIADIS, 1987	LAZARIDOU, 1994	TSIRIKA & HARITONIDIS, 2005

Gymnothamnion elegans (Schousboe *ex* C. Agardh) J. Agardh	ATHANASIADIS, 1987	LAZARIDOU, 1994	SCHNETTER & SCHNETTER, 1981
Halopitys incurva (Hudson) Batters = *Halopitys pinastroides* (Gmelin) Kützing = *Rhodomela pinastroides* (Gmelin) C. Agardh = *Rytiphlaea pinastroides* (Gmelin) C. Agardh	ATHANASIADIS, 1987	LAZARIDOU, 1994	SCHNETTER & SCHNETTER, 1981
Halydictyon mirabile Zanardini	ATHANASIADIS, 1987	LAZARIDOU, 1994	SCHNETTER & SCHNETTER, 1981
Herposiphonia secunda (C. Agardh) Ambronn = *Polysiphonia secunda* (C. Agardh) Zanardini	ATHANASIADIS, 1987	LAZARIDOU, 1994	BITIS, 1988
Herposiphonia tenella (C. Agardh) Ambronn = *Polysiphonia tenella* (C. Agardh) Moris & De Notaris	ATHANASIADIS, 1987	LAZARIDOU, 1994	BITIS, 1988
Heterosiphonia crispella (C. Agardh) M.J. Wynne = *Heterosiphonia wurdemannii* (Bailey *ex* Harvey) Falkenberg = *Dasya wurdemannii* Bailey *ex* Harvey	ATHANASIADIS, 1987	LAZARIDOU, 1994	SCHNETTER & SCHNETTER, 1981
Hypoglossum hypoglossoides (Stackhouse) Collins & Hervey = *Hypoglossum crispum* (Zanardini) Kützing = *Hypoglossum woodwardii* Kützing	ATHANASIADIS, 1987	LAZARIDOU, 1994	BITIS, 1988
Laurencia caduciramulosa Masuda & Kawaguchi		TSIAMIS *et al*. 2011	TSIRIKA & HARITONIDIS, 2005
Laurencia microcladia Kützing = *Laurencia obtusa* var. *crucifera* Kützing = *Laurencia obtusa* var. *gracilis* (C. Agardh) Zanardini	ATHANASIADIS, 1987	LAZARIDOU, 1994	TSIRIKA & HARITONIDIS, 2005
Laurencia obtusa (Hudson) J.V. Lamouroux = *Laurencia obtusa* f. *genuina* (Hauck) Schiffner = *Chondria obtusa* (Hudson) C. Agardh = *Fucus obtusus* Hudson	ATHANASIADIS, 1987	LAZARIDOU, 1994	BITIS, 1988
Lejolisia mediterranea Bornet	ATHANASIADIS, 1987	LAZARIDOU, 1994	SCHNETTER & SCHNETTER, 1981
Lophocladia lallemandii (Montagne) F. Schmitz	ZENETOS *et al.,* 2013	TSIAMIS, 2012	TSIAMIS, 2012
Lophosiphonia cristata Falkenberg	ATHANASIADIS, 1987	LAZARIDOU, 1994	DIAPOULIS & HARITONIDIS, 1987b
Lophosiphonia obscura (C. Agardh) Falkenberg = *Lophosiphonia subadunca* (Kützing) Falkenberg = *Polysiphonia obscura* (C. Agardh) J. Agardh = *Polysiphonia uncinata* var. *intricata* (C. Agardh) Kützing	ATHANASIADIS, 1987	LAZARIDOU, 1994	SCHNETTER & SCHNETTER, 1981
Lophosiphonia reptabunda (Suhr) Kylin	ATHANASIADIS, 1987	LAZARIDOU, 1994	TSIRIKA & HARITONIDIS, 2005

Monosporus pedicellatus (J.E. Smith) Solier var. *pedicellatus* = *Monospora pedicellata* (J.E. Smith) Solier = *Corynospora pedicellata* (J.E. Smith) J. Agardh = *Neomonospora pedicellata* (J.E. Smith) Feldmann-Mazoyer & Meslin	ATHANASIADIS, 1987	LAZARIDOU, 1994	BITIS, 1988
Myriogramme distromatica Boudouresque [8]	ATHANASIADIS, 1987	LAZARIDOU, 1994	
Myriogramme minuta Kylin [8] = *Drachiella minuta* (Kylin) Maggs & Hommersand	ATHANASIADIS, 1987	DIAPOULIS & HARITONIDIS, 1987a	DIAPOULIS & HARITONIDIS, 1987b
Neosiphonia harveyi (Bailey) M.S. Kim, H.G. Choi, Guiry & G.W. Saunders = (?) *Polysiphonia mottei* Lauret	TSIAMIS & PANAYOTIDIS, 2016	CATRA & GIARDINA, 2009	
Nitophyllum micropunctatum Funk	TSIAMIS, 2012	LAZARIDOU, 1994	TSIRIKA & HARITONIDIS, 2005
Nitophyllum punctatum (Stackhouse) Greville	ATHANASIADIS, 1987	DIAPOULIS & HARITONIDIS, 1987a	SCHNETTER & SCHNETTER, 1981
Ophiocladus simpliciusculus (P. Crouan & H. Crouan) Falkenberg [9]		TSIAMIS *et al*., 2010	
Osmundaria volubilis (Linnaeus) R.E. Norris = *Dictyomenia volubilis* (Linnaeus) Greville = *Vidalia volubilis* (Linnaeus) J. Agardh = *Volubilaria mediterranea* Bory de Saint-Vincent	DIANNELIDIS, 1953	KOUSSOURIS, 1976	SCHNETTER & SCHNETTER, 1981
Osmundea verlaquei G. Furnari			CATRA & ALONGI, 2013
Palisada maris-rubri (K.W. Nam & Saito) K.W. Nam		TSIAMIS *et al*., 2015	
Palisada thuyoides (Kützing) Cassano, Sentíes, Gil-Rodríguez & M.T. Fujii = *Chondrophycus thuyoides* (Kützing) G. Furnari = *Laurencia paniculata* (C. Agardh) J. Agardh *nom. illeg.*	ATHANASIADIS, 1987	LAZARIDOU, 1994	SCHNETTER & SCHNETTER, 1981
Pleonosporium borreri (J.E. Smith) Nägeli = *Ceramium miniatum* C. Agardh	ATHANASIADIS, 1987	LAZARIDOU, 1994	SCHNETTER & SCHNETTER, 1981
Polysiphonia atlantica Kapraun & J. Norris = *Polysiphonia macrocarpa* Harvey *nom. illeg.*	CHRYSSOVERGIS, 1995	LAZARIDOU, 1994	TSIRIKA & HARITONIDIS, 2005
Polysiphonia breviarticulata (C. Agardh) Zanardini	DIANNELIDIS, 1953	DIANNELIDIS, 1950	BITIS, 1988
Polysiphonia brodiei (Dillwyn) Sprengel		LAZARIDOU, 1994	
Polysiphonia denudata (Dillwyn) Greville = *Polysiphonia variegata* (C. Agardh) Zanardini = *Polysiphonia variegata* Zanardini var. *leptura* (Kützing) Schiffner = *Polysiphonia vidovichii* Meneghini *ex* Kützing	HARITONIDIS, 1978	DIAPOULIS & HARITONIDIS, 1987a	BITIS, 1988
Polysiphonia elongata (Hudson) Sprengel	ATHANASIADIS, 1987	LAZARIDOU, 1994	BITIS, 1988

Polysiphonia fucoides (Hudson) Greville = *Polysiphonia nigrescens* (Hudson) Greville = *Polysiphonia violacea* (Roth) Sprengel	HARITONIDIS & TSEKOS, 1974	LAZARIDOU, 1994	BITIS, 1988
Polysiphonia funebris De Notaris *ex* J. Agardh		TSIAMIS *et al*., 2011	TSIAMIS, 2012
Polysiphonia furcellata (C. Agardh) Harvey	ATHANASIADIS, 1987	LAZARIDOU, 1994	BITIS, 1988
Polysiphonia opaca (C. Agardh) Moris & De Notaris = *Polysiphonia opaca* var. *repens* (Kützing) Schiffner = (?) *Polysiphonia virens* Kützing	ATHANASIADIS, 1987	DIAPOULIS & HARITONIDIS, 1987a	BITIS, 1988
Polysiphonia ornata J. Agardh	ATHANASIADIS, 1987	GIACCONE, 1968a	SCHNETTER & SCHNETTER, 1981
Polysiphonia scopulorum Harvey = *Lophosiphonia scopulorum* (Harvey) Womersley	ATHANASIADIS, 1987	LAZARIDOU, 1994	BITIS, 1988
Polysiphonia sertularioides (Grateloup) J. Agardh [(10)]	ATHANASIADIS, 1987	DIANNELIDIS *et al.*, 1977	BITIS, 1988
Polysiphonia subulifera (C. Agardh) Harvey	ATHANASIADIS, 1987	DIANNELIDIS, 1950	HARITONIDIS & TSEKOS, 1976
Polysiphonia tenerrima Kützing = *Polysiphonia sertularioides* var. *tenerrima* (Kützing) Hauck	ATHANASIADIS, 1987	DIANNELIDIS *et al.*, 1977	SCHNETTER & SCHNETTER, 1981
Polysiphonia tripinnata J. Agardh	CHRYSSOVERGIS, 1995	PANAYOTIDIS & CHRYSSOVERGIS, 1998	CATRA & ALONGI, 2013
Pterosiphonia pennata (C. Agardh) Sauvageau = *Polysiphonia pennata* (C. Agardh) Montagne	HARITONIDIS & TSEKOS, 1975	DIANNELIDIS *et al*., 1977	BITIS, 1988
Pterothamnion crispum (Ducluzeau) Nägeli = *Antithamnion plumula* var. *crispum* (Ducluzeau) Hauck	ATHANASIADIS, 1987	LAZARIDOU, 1994	SCHNETTER & SCHNETTER, 1981
Pterothamnion polyacanthum (Kützing) Nägeli			ATHANASIADIS, 1996a
Ptilothamnion pluma (Dillwyn) Thuret	ATHANASIADIS, 1987	LAZARIDOU, 1994	DIAPOULIS & HARITONIDIS, 1987b
Radicilingua reptans (Kylin) Papenfuss	DIAPOULIS & HARITONIDIS, 1984	LAZARIDOU, 1994	
Radicilingua thysanorhizans (Holmes) Papenfuss		TSIAMIS *et al*., 2010	
Rodriguezella ligulata Auctorum, *nomen nudum*	TSIAMIS *et al*., 2010		
Rodriguezella pinnata (Kützing) F. Schmitz *ex* Falkenberg = *Rodriguezella pennata* Ercegović		DIAPOULIS & HARITONIDIS, 1987a	CATRA & ALONGI, 2013
Rytiphloea tinctoria (Clemente) C. Agardh = *Rytiphlaea semicristata* J. Agardh = *Fucus purpureus* Turner *nom. illeg.*	ATHANASIADIS, 1987	LAZARIDOU, 1994	SCHNETTER & SCHNETTER, 1981
Spermothamnion flabellatum Bornet	ATHANASIADIS, 1987	TSIAMIS *et al*., 2013c	BITIS, 1988

Spermothamnion repens (Dillwyn) Rosenvinge = *Spermothamnion repens* var. *turneri* (Roth) Miranda = *Griffithsia repens* Zanardini	ATHANASIADIS, 1987	LAZARIDOU, 1994	SCHNETTER & SCHNETTER, 1981
Sphondylothamnion multifidum (Hudson) Nägeli = *Sphondylothamnion multifidum* f. *distichum* Feldmann-Mazoyer	ATHANASIADIS, 1987	DIANNELIDIS *et al.*, 1977	DIAPOULIS & HARITONIDIS, 1987b
Spyridia filamentosa (Wulfen) Harvey = *Polysiphonia filamentosa* (Wulfen) Sprengel	ATHANASIADIS, 1987	LAZARIDOU, 1994	BITIS, 1988
Taenioma nanum (Kützing) Papenfuss = *Taenioma macrourum* Thuret	TSIAMIS, 2012	TSIAMIS & PANAYOTIDIS, 2016	BITIS 1988
Vickersia baccata (J. Agardh) Karsakoff		TSIAMIS *et al*., 2011	
Womersleyella setacea (Hollenberg) R.E. Norris = *Polysiphonia setacea* Hollenberg	ATHANASIADIS, 1997	TSIAMIS, 2012	TSIAMIS, 2012
Wrangelia penicillata (C. Agardh) C. Agardh = *Wrangelia penicillata* var. *tenera* (C. Agardh) Kützing	ATHANASIADIS, 1987	LAZARIDOU, 1994	BITIS 1988

1. Acrosorium uncinatum is actually a synonym of *Cryptopleura ramosa* (Hudson) Kylin *ex* Newton. However, Greek records of *A. uncinatum* are here tentatively referred to *A. venulosum* (see also FURNARI *et al*., 1999). It should be noted that KYLIN (1929: 13) considered *A. venulosum* not to be specifically distinct from *A. ciliolatum* (Harvey) Kylin.

2. Based on McIVOR *et al*. (2002) phylogenetic study, it remains unclear whether the genus *Aglaothamnion* is separate from the genus *Callithamnion*, and we chose to tentatively retain the generic name *Aglaothamnion* for the present study.

3. We follow GÓMEZ GARRETA *et al*. (2001) in considering *Callithamnion byssoides* and *Aglaothamnion furcellariae* as taxonomic synonyms of *A. tenuissimum* var. *tenuissimum.*

4. Based on GÓMEZ GARRETA *et al*. (2001) *Compsothamnion decompositum* (basionym *Callithamnion decompositum*) is not present in the Mediterranean Sea and the records should be referred to *Aglaothamnion tripinnatum*.

5. According to SARTONI & BODDI (2002), the record by ATHANASIADIS (1987: 75) as *Ceramium codii* fits to *C. bisporum* based on the description of bisporangia, axial cells diameter and habitat (attached on *Peyssonnelia* sp.). Therefore, such a record should correspond to the earliest one of the species in the Mediterranean Sea.

6. Based on SPENCER *et al.* (2009), the earliest name for this taxon is *Ceramium polymorphum* (Linnaeus) De Candolle which, however, has been proposed as a *nomen rejiciendum*.

7. Although *Dasya arbuscula* (Brown *ex* Dillwyn) C. Agardh is a taxonomic synonym of *Aglaothamnion sepositum* (Gunnerus) Maggs & Hommersand, we follow GÓMEZ GARRETA *et al.* (2001) in considering Greek records of *D. arbuscula* (which all lack documentation) referring to *D. hutchinsiae*, based on DIXON (1960: 315) study.

8. Since the plastid morphology does not correspond with that of the genus *Myriogramme* Kylin, as defined by HOMMERSAND & FREDERICQ (1997), the taxonomic status of this species remains uncertain (GÓMEZ GARRETA *et al.,* 2001).

9. The correct orthography of *Ophidocladus* should be *Ophiocladus*, based on the first greek word "οφις", genitive: "όφεως".

10. Transferred by NAM & KANG (2012) to *Neosiphonia sertularioides* (Grateloup) K.W. Nam & P.J. Kang. However, the acceptance of this combination must be checked again since previous records of *Polysiphonia sertularioides* by FALKENBERG (1901) and ROJAS-GONZÁLEZ & AFONSO-CARRILLO (2010) show 4-celled carpogonial branches, while *Neosiphonia* species have 3-celled carpogonial branches (CHOI *et al*., 2001).

Table 2. Ceramiales algal taxa pending confirmation in Greece, based on undocumented records. For each taxon a basic reference is provided together with previously applied synonyms. Additional references are available by the authors on request.

Taxa	**Greece**
Aglaothamnion gallicum (Nägeli) L' Hardy-Halos *ex* Ardré = *Aglaothamnion brodiei* (Harvey) Feldmann-Mazoyer [(1)]	CHRYSSOVERGIS, 1995
Aglaothamnion scopulorum (C. Agardh) Feldmann-Mazoyer	GIACCONE, 1968a
Antithamnionella spirographidis (Schiffner) Wollaston = *Antithamnion spirographidis* Schiffner	CHRYSSOVERGIS, 1995
Arachnophyllum confervaceum (Meneghini) Zanardini	GIACCONE, 1968a
Bornetia secundiflora (J. Agardh) Thuret	TSEKOS & HARITONIDIS, 1977
Callithamnion tetragonum (Withering) S.F. Gray	HARITONIDIS & TSEKOS, 1974
Centroceras clavulatum (C. Agardh) Montagne [(2)]	HARITONIDIS & TSEKOS, 1974
Ceramium ciliatum var. *echinatum* Hauck	TSEKOS & HARITONIDIS, 1977
Ceramium cimbricum H.E. Petersen f. *cimbricum* = *Ceramium fastigiatum* Harvey *nom. Illeg.*	DIAPOULIS & HARITONIDIS, 1987a
Ceramium cimbricum f. *flaccidum* (H.E. Petersen) G. Furnari *&* D. Serio = *Ceramium fastigiatum* f. *flaccidum* H.E. Petersen	TSIRIKA, 2005
Ceramium diaphanum (Lightfoot) Roth [(3)] = *Ceramium nodiferum* (Kützing) Spherk = *Ceramium tenuissimum* (Roth) Areschoug *nom. illeg.* = *Ceramium tenuissimum* (Roth) J. Agardh *nom. illeg.* = *Ceramium tenuissimum* (Lyngbye) J. Agardh *nom. illeg.* = *Boryna diaphana* (Lightfoot) Grateloup *ex* Bory de Saint-Vincent = *Gongroceras nodiferum* Kützing	LAZARIDOU, 1994
Ceramium echionotum J. Agardh var. *echionotum*	HARITONIDIS & TSEKOS, 1976
Ceramium gaditanum (Clemente) Cremades = *Ceramium flabelligerum* J. Agardh	HARITONIDIS & TSEKOS, 1976
Ceramium inconspicuum Zanardini = *Hormoceras inconspicuum* (Zanardini) Frauenfeld	GRUNOW, 1861
Ceramium secundatum Lyngbye = *Ceramium barbatum* Kützing *nom. illeg* = *Ceramium rubrum* auctorum var. *barbatum* (Kützing) J. Agardh	GIACCONE, 1968a
Ceramium siliquosum (Kützing) Maggs *&* Hommersand var. *siliquosum* = *Ceramium diaphanum* (Roth) Harvey	SCHNETTER & SCHNETTER, 1981
Ceramium siliquosum var. *elegans* (Roth) G. Furnari = *Ceramium elegans* (Roth) Ducluzeau = *Ceramium diaphanum* var. *elegans* (Ducluzeau) Feldmann-Mazoyer	HARITONIDIS & TSEKOS, 1976
Ceramium siliquosum var. *lophophorum* (Feldmann-Mazoyer) Serio = *Ceramium diaphanum* var. *lophophorum* Feldmann-Mazoyer	DIAPOULIS & HARITONIDIS, 1987a
Ceramium siliquosum var. *zostericola* f. *acrocarpum* (Feldmann-Mazoyer) G. Furnari = *Ceramium strictum* var. *acrocarpum* (Kützing) Schiffner	SCHIFFNER & SCHUSSNIG, 1943
Ceramium strobiliforme G.W. Lawson *&* D.M. John	TSIRIKA & HARITONIDIS, 2005
Ceramium tenerrimum (G. Martens) Okamura [(4)]	BITIS, 1988
Chondria collinsiana Howe [(5)]	ATHANASIADIS, 1987
Chondria mairei Feldmann-Mazoyer	CHRYSSOVERGIS, 1995
Chondria scintillans Feldmann-Mazoyer	CATRA & GIARDINA, 2009

Dasya rigidula (Kützing) Ardissone [6] = *Dasya squarrosa* (Kützing) Rabenhorst	BITIS, 1988
Dasya penicillata Zanardini	TSEKOS & HARITONIDIS, 1977
Gayliella flaccida (Harvey *ex* Kützing) T.O. Cho & L.J. McIvor [7] = *Ceramium flaccidum* (Harvey *ex* Kützing) Ardissone = *Ceramium gracillimum sensu* Griffiths & Harvey	TSIRIKA & HARITONIDIS, 2005
Gayliella mazoyerae T.O. Cho, Fredericq & Hommersand [8] = *Ceramium byssoideum* Harvey *nom. illeg.* = *Ceramium gracillimum* var. *byssoideum* (Harvey) Feldmann-Mazoyer	LAZARIDOU, 1994
Griffithsia schousboei Montagne	SCHNETTER & SCHNETTER, 1981
Halurus flosculosus (Ellis) Maggs & Hommersand var. *flosculosus* = *Griffithsia flosculosa* (Ellis) Ruprecht = *Griffithsia setacea* (Hudson) C. Agardh	SCHNETTER & SCHNETTER, 1981
Halurus flosculosus var. *irregularis* (C. Agardh) Gómez Garreta *et al.* = *Griffithsia flosculosa* var. *irregularis* (C. Agardh) Feldmann-Mazoyer = *Griffithsia irregularis* C. Agardh = *Griffithsia setacea* var. *irregularis* (C. Agardh) Hauck	HARITONIDIS, 1978
Halurus flosculosus var. *sphaericus* (Schousboe *ex* C. Agardh) Gómez Garreta *et al.* = *Griffithsia flosculosa* var. *sphaerica* (Schousboe *ex* C. Agardh) Feldmann-Mazoyer	SCHNETTER & SCHNETTER, 1981
Haraldia lenormandii (Derbès & Solier) J. Feldmann	SCHNETTER & SCHNETTER, 1981
Janczewskia verruciformis Solms-Laubach	SCHNETTER & SCHNETTER, 1981
Laurencia chondrioides Børgesen	TSIRIKA & HARITONIDIS, 2005
Laurencia glandulifera (Kützing) Kützing	CATRA & GIARDINA, 2009
Laurencia intricata J.V. Lamouroux	TSIRIKA & HARITONIDIS, 2005
Laurencia majuscula (Harvey) Lucas	TSIRIKA & HARITONIDIS, 2005
Laurencia minuta spp. *scammaccae* G. Furnari & Cormaci	TSIRIKA & HARITONIDIS, 2005
Laurencia pyramidalis Bory de Saint-Vincent *ex* Kützing = *Laurencia obtusa* var. *pyramidata* J. Agardh *nom. illeg.*	HARITONIDIS, 1978
Monosporus pedicellatus var. *tenuis* (Feldmann-Mazoyer) Huisman & Kraft = *Neomonospora pedicellata* var. *tenuis* Feldmann-Mazoyer	SCHNETTER & SCHNETTER, 1981
Myriogramme unistromaticum Coppejans *nomen nudum*	CATRA & GIARDINA, 2009
Neosiphonia sphaerocarpa (Børgesen) M.S. Kim & I.K. Lee [9] = *Polysiphonia sphaerocarpa* Børgesen	LAZARIDOU, 1994
Osmundea pelagosae (Schiffner) K.W. Nam	CATRA & GIARDINA, 2009
Osmundea truncata (Kützing) K.W. Nam & Maggs	MALEA & HARITONIDIS, 2001
Palisada patentiramea (Montagne) Cassano, Sentíes, Gil-Rodríguez & M.T. Fujii = *Chondrophycus patentirameus* (Montagne) K.W. Nam = *Laurencia obtusa* var. *patentiramea* (Montagne) Rabenhorst = *Laurencia paniculata* f. *patentiramea* (Kützing) Hauck	ANAGNOSTIDIS, 1968
Palisada perforata (Bory de Saint-Vincent) K.W. Nam [10] = (?) *Chondrophycus papillosus* (C. Agardh) Garbary & Harper = (?) *Laurencia papillosa* (C. Agardh) Greville = (?) *Laurencia thyrsoides* (Turner) Gaillon = (?) *Fucus thyrsoides* Turner = (?) *Gigartina julacea* Bory de Saint-Vincent	BITIS, 1988
Palisada tenerrima (Cremades) Serio, Cormaci, G. Furnari & Boisset = *Chondrophycus tenerrimus* (Cremades) G. Furnari, Boisset, Cormaci & Serio	CATRA & GIARDINA, 2009

Polysiphonia biformis Zanardini = *Dasya corallicola* Funk	GIACCONE, 1968a
Polysiphonia ceramiiformis P.L. Crouan & H.M. Crouan	KOUSSOURIS *et al.*, 1973
Polysiphonia derbesii Solier *ex* Kützing	SCHNETTER & SCHNETTER, 1981
Polysiphonia deusta (Roth) Sprengel	HARITONIDIS, 1978
Polysiphonia dichotoma Kützing	CATRA & GIARDINA, 2009
Polysiphonia fibrillosa (Dillwyn) Sprengel = *Polysiphonia spinulosa* Greville = (?) *Polysiphonia pilosa* (Naccari) Zanardini	GRUNOW, 1861
Polysiphonia foeniculacea (C. Agardh) Sprengel	SCHNETTER & SCHNETTER, 1981
Polysiphonia foetidissima Cocks *ex* Bornet	SCHNETTER & SCHNETTER, 1981
Polysiphonia sanguinea (C. Agardh) Zanardini	HARITONIDIS, 1978
Polysiphonia setigera Kützing	GIACCONE, 1968a
Polysiphonia spinosa (C. Agardh) J. Agardh	SCHNETTER & SCHNETTER, 1981
Polysiphonia stricta (Dillwyn) Greville = *Polysiphonia urceolata* (Lightfoot *ex* Dillwyn) Greville	HARITONIDIS & TSEKOS, 1975
Polysiphonia stuposa Zanardini *ex* Kützing	COPPEJANS, 1974
Polysiphonia subtilissima Montagne	GIACCONE, 1968a
Pterosiphonia complanata (Clemente) Falkenberg	DIANNELIDIS *et al.*, 1977
Pterosiphonia parasitica (Hudson) Falkenberg	HARITONIDIS & TSEKOS, 1974
Pterothamnion plumula (J. Ellis) Nägeli [11] = *Antithamnion plumula* (J. Ellis) Thuret = (?) *Antithamnion plumula* var. *genuinum* Hauck	SCHNETTER & SCHNETTER, 1981
Seirospora apiculata (Meneghini) Feldmann-Mazoyer = *Phlebothamnion graniferum* (Meneghini) Kützing	SCHNETTER & SCHNETTER, 1981
Seirospora giraudyi (Kützing) De Toni	SCHNETTER & SCHNETTER, 1981
Seirospora interrupta (J.E. Smith) F. Schmitz [12] = *Seirospora griffithsiana* Harvey *nom. illeg.* = *Seirospora seirosperma* (Harvey) Dixon = *Callithamnion seirospermum* (Harvey) Harvey	BITIS, 1988
Seirospora sphaerospora J. Feldmann	SCHNETTER & SCHNETTER, 1981
Spermothamnion irregulare (J. Agardh) Ardissone	DIANNELIDIS, 1950

1. Based on MAGGS & HOMMERSAND (1993: 99) concept all records of *Aglaothamnion brodiei* from the Mediterranean Sea refer to *A. gallicum*.
2. In the light of recent findings by WON *et al*. (2009), Mediterranean records of *Centroceras clavulatum* are misidentifications of *C. gasparrinii* (Meneghini) Kützing and/or *C. micracanthum* Kützing, while *C. clavulatum* is restricted to the Pacific Ocean. Consequently, the rather numerous Greek records of *C. clavulatum* most probably belong to another taxon and require re-examination.
3. Due to the taxonomic confusion regarding *Ceramium diaphanum* (MAGGS & HOMMERSAND, 1993) the Greek records should be regarded with caution, since several of them may actually refer to *C. siliquosum.*
4. BITIS (1988: 96) description is not detailed enough to confirm the species occurrence in Greece.
5. This Indo-Pacific species was first reported from the Mediterranean Sea by ATHANASIADIS (1987: 91) based on a single infertile plant collected in Sithonia Peninsula (North Aegean Sea). However, his record was later questioned by VERLAQUE (1994: 5) who stated that it might correspond to the Atlantic species *Chondria curvilineata* Collins & Hervey. Pending new findings, ATHANASIADIS (1987) record should be referred as debatable.
6. Numerous records of this species exist from Greece, including several ones provided with descriptions (DIANNELIDIS,

1953; BITIS, 1988; LAZARIDOU, 1994). However, these are too vague and do not match with published descriptions of *D. rigidula* (e.g. BALLANTINE & APONTE, 2004), and thus we include the species within the list of taxa pending confirmation.
7. The presence of this species in Greece, reported by numerous studies (see ATHANASIADIS, 1987 and references therein), should be confirmed since Mediterranean records of *Ceramium flaccidum* and its synonym *C. gracillimum* probably correspond to *Gayliella mazoyerae* based on CHO *et al*. (2008) recent study.
8. The descriptions provided by BITIS (1988: 93, *as Ceramium byssoideum*) and LAZARIDOU (1994: 83, as *C. byssoideum*) are too general compared with the modern taxonomic concept of the species (CHO *et al*., 2008), and thus we prefer to cite the Greek records within the list of taxa pending confirmation.
9. LAZARIDOU (1994: 118) description and illustrations (Figs. 62, 63; Annex) lack sufficient details necessary for accurate species-level identification.
10. Despite frequently reported from the Greek coasts, only two studies provide descriptions (BITIS, 1988: 106; LAZARIDOU, 1994: 111), but both of them lack sufficient details for accurate identification under modern taxonomic concept.
11. Based on ATHANASIADIS (1996a), the binomial *Pterothamnion plumula* has been commonly used to accommodate several different taxa (in species and infraspecific level) from both Northern and Southern Hemisphere. As a result, Mediterranean records, including the numerous Greek ones which all date before ATHANASIADIS (1996a) revision (e.g. HARITONIDIS, 1978; SCHNETTER & SCHNETTER, 1981; LAZARIDOU, 1994) should be considered with caution.
12. The description provided by BITIS (1988: 99) is too vague to permit an accurate identification in species level.

Taxa Excludenda

***Ceramium ciliatum* var. *robustum* (J. Agardh) Feldmann-Mazoyer**

According to DIXON (1962), there is no conclusive evidence that Mediterranean specimens referred to as this variety are distinct from *C. ciliatum* (J. Ellis) Ducluzeau. The single description provided by BITIS (1988: 94) is too vague to provide solid justification of this taxon occurrence in Greece.

Ceramium sericeum* Bory de Saint-Vincent *nom. illeg.

This binomial is a late homonym of *Ceramium sericeum* (Hudson) A.P. de Candolle. BORY DE SAINT-VINCENT (1832: 332) cited this taxon from Navarino Bay and Evrotas (Lakonikos Gulf, SE Ionian Sea).

Ceramium strictum* Greville & Harvey *nom. illeg. [not *Ceramium strictum* (Kützing) Rabenhorst = *C. deslongchampsii*]

According to ATHANASIADIS (1987, cited as *C. strictum* Harvey), the Aegean plants were in good agreement with *Ceramium tenerrimum* (Martens) Okamura var. *brevizonatum* (Petersen) Mazoyer as illustrated by COPPEJANS (1983), although apparently different from the type specimen of *Ceramium brevizonatum* Petersen. Their specific attribution remains doubtful as also later stated by ATHANASIADIS (1996b, note 197). Other Greek records from the Aegean Sea (e.g. DIANNELIDIS, 1950; HARITONIDIS & TSEKOS, 1974) most probably refer to C. *deslongchampsii*.

***Dasya elongata* Sonder**

The only Mediterranean record of *Dasya elongata* is that by GIACCONE (1968a) from the South Aegean Sea, but lacking description or illustrations. We agree with ATHANASIADIS (1987) that Giaccone's record is a misidentification since this Australian species does not occur in the Mediterranean Sea.

***Dasya villosa* Harvey**

Similar to *Dasya elongata*, this species reported by GIACCONE (1968a) from the South Aegean Sea corresponds probably to a misidentification, since there are no documented records of this Pacific species from the Mediterranean Sea.

***Delesseria sanguinea* (Hudson) J.V. Lamouroux**

This North Atlantic alga does not occur in the Mediterranean Sea and the Greek records from the North Aegean Sea (TSEKOS *et al*., 1982) and from the Ionian Sea (TSEKOS & HARITONIDIS, 1977; HARITONIDIS *et al.,* 1986), which all lack documentation, should be considered as misidentifications.

***Gayliella taylorii* (E.Y. Dawson) T.O. Cho & S.M. Boo**

= *Ceramium taylorii* E.Y. Dawson

Although *Ceramium taylorii* was originally considered as a synonym of *Ceramium flaccidum sensu lato* (GÓMEZ GARRETA *et al*., 2001), CHO *et al.* (2008) study revealed that *Gayliella taylorii* (= *C. taylorii*) is a distinct taxon, restricted in the Pacific Ocean. Thus, the single undocumented Greek record by PANAYOTIDIS & CHRYSSOVERGIS (1998) as *C. taylorii* from Athens coasts (Aegean Sea) should be excluded from the Greek flora, probably being a misidentification of *G. mazoyerae.*

***Heterosiphonia plumosa* (J. Ellis) Batters**

The Greek records from the North Aegean Sea (TSEKOS *et al*., 1982; NIKOLAIDIS & HARITONIDIS, 1990) and Ionian Sea (TSEKOS & HARITONIDIS, 1977; TSEKOS *et al*., 1982; HARITONIDIS *et al*., 1986), which all lack descriptions or illustrations, should be excluded from the Greek flora as misidentifications, since this North Atlantic species does not seem to occur in the Mediterranean Sea.

***Laurencia botryoides* (C. Agardh) Gaillon**

BORY DE SAINT-VINCENT (1832: 324) described *Laurencia botryoides* Bory de Saint-Vincent from Methana (Aegean Sea), an invalid name, being late homonym of *L. botryoides* (C. Agardh) Gaillon, which is based on *Chondria botryoides* C. AGARDH (1822: 346) [=*Fucus botryoides* Brown *ex* Turner *nom. illeg*., a plant of Australian origin (TURNER 1809-11: 103-4, pl. 178)]. We agree with ATHANASIADIS (1987: 103) that Bory's plant is probably a misidentification. BORY DE SAINT-VINCENT (1832) also cited *Fucus uvifer* Forsskål in synonymy, a plant originally collected from Constantinople (FORSSKÅL, 1775) and associated with *Laurencia uvifera* (Forsskål) Børgesen, which was recently reinstated by LIPKIN & SILVA (2002).

***Membranoptera alata* (Hudson) Stackhouse**

= *Delesseria alata* (Hudson) J.V. Lamouroux

The single undocumented record by PETKOFF (1943) as *Delesseria alata* from the North Aegean Sea should be a misidentification since this North Atlantic species does not occur in the Mediterranean Sea.

***Neosiphonia collabens* (C. Agardh) Díaz-Tapia & Bárbara**

= *Strebloclad*ia *collabens* (C. Agardh) Falkenberg

= (?) *Polysiphonia platyspira* Kützing

= (?) *Polysiphonia sericea* Hauck

This species is distributed in the Atlantic Ocean from the Iberian Peninsula to Cape Verde and the northern coast of the Mediterranean Sea (DÍAZ-TAPIA & BÁRBARA, 2013). The Greek records from Thasos Island in the North Aegean Sea (HARITONIDIS & TSEKOS, 1974, as *Polysiphonia sericea*; TSEKOS *et al*., 1982, as *Strebloclad*ia *collabens*) and from Zakinthos Island in the Ionian Sea (GRUNOW, 1861) as *P. platyspira* are without documentation and probably correspond to misidentifications.

***Osmundea pinnatifida* (Hudson) Stackhouse**

= *Laurencia pinnatifida* (Hudson) J.V. Lamouroux

Several similar species have been recorded from the Mediterranean Sea, such as *Osmundea truncata*, *O. verlaquei* and *O. oederi* (Gunnerus) G. Furnari. Greek records of *O. pinnatifida* (e.g. DIANNELIDIS *et al*., 1977; BITIS, 1988; CHRYSSOVERGIS, 1995), which all lack sufficient documentation, should be excluded, since it is not possible to suggest any affiliation of these records under the modern taxonomic concept (see also SERIO *et al.,* 2008).

***Rhodomela lycopodioides* (Linnaeus) C. Agardh**

= *Fucus lycopodioides* Linnaeus

The single undocumented Greek record by SIBTHORP (1813) as *Fucus lycopodioides* should be treated as a misidentification, since this species is not known to occur in the Mediterranean Sea.

***Rhodoptilum plumosum* (Harvey & Bailey) Kylin**

= *Dasyopsis plumosa* (Harvey & Bailey) Schmitz

The single undocumented record by GIACCONE (1968a) as *Dasyopsis plumosa* from the South Aegean Sea should be a misidentification since this Pacific species does not occur in the Mediterranean Sea.

***Vertebrata lanosa* (Linnaeus) Christensen**

= *Polysiphonia fastigiata* (Roth) Greville

= *Fucus lanosus* Linnaeus

This Atlantic species is not known to occur in the Mediterranean Sea and the undocumented Greek records (SIBTHORP, 1813, as *Fucus lanosus*; HARITONIDIS & TSEKOS, 1974, as *Polysiphonia fastigiata*; HARITONIDIS, 1978) should be considered as misidentifications.

Taxa Inquirenda

***Antithamnion cruciatum* var. *tenerum* Schiffner**

Originally described from Venice lagoon (SCHIFFNER & VATOVA, 1938). Since a type element has not been designated and original material is untraceable (ATHANASIADIS, 1996a) its taxonomic status remains unclarified. In Greece, it has been reported from the North Aegean Sea by HARITONIDIS & TSEKOS (1974), but in the absence of description or illustration, the identity of their material is unknown. It should be noted that ATHANASIADIS (1996a) did not recognize infraspecific taxa within *Antithamnion cruciatum*.

***Boryna ciliata* var. *ferruginea* Grateloup**

This taxon was erected by BORY DE SAINT-VINCENT (1832: 332) based on plants collected from Cape Tainaro. Although we did not manage to trace the type specimen, Bory's description seems to fall within *Boryna ciliata* (J. Ellis) Grateloup (= *Ceramium* ciliatum).

***Callithamnion peregrinum* Kützing**

KÜTZING (1849: 896) originally described this species based on plants collected from the Ionian Sea. The same author reported it from the Adriatic Sea (KÜTZING, 1861: 25), providing also illustrations (plate 78, figure 1). The species was no more reported, but, in our opinion, Kützing protologue and illustrations could well correspond to *Callithamnion corymbosum*.

***Callithamnion rabenhorstii* (Kützing) P.L. Crouan & H.M. Crouan**

= *Leptothamnion rabenhorstii* Kützing

KÜTZING (1849: 896) erected *Leptothamnion rabenhorstii* based on material collected by G.L. Rabenhorst from the Ionian Sea. The taxon was later transferred to *Callithamnion* Lyngbye by CROUAN & CROUAN (1867: 136), based on plants from the Atlantic coast of France. The latter authors stated that their material was similar to *Callithamnion spinosum* P.L. Crouan & H.M. Crouan *nom. illeg.* [not *C. spinosum* Harvey = *Aglaothamnion hookeri* (Dillwyn) Maggs & Hommersand], but the taxonomic status of the species remains obscure.

***Ceramium hellenicum* Giaccone**

Originally described by GIACCONE (1968b: 406) on plants collected close to Kithira Island (SE Ionian Sea). ATHANASIADIS (1987: 78) questioned the taxonomic identity of it since it could be associated with *Ceramium echionotum*. *C. hellenicum* was no more reported to our knowledge and we prefer to cite it within the list of *taxa inquirenda* until the type specimen is reinvestigated.

***Ceramium ramulosum* Meneghini**

Originally described from Venice lagoon (MENEGHINI, 1844: 185). The taxonomic identity of this species was questioned by PREDA (1908-09), who associated it with *Ceramium circinatum*. In Greece, *C. ramulosum* has been reported from the Cyclades, Aegean Sea (SCHIFFNER & SCHUSSNIG, 1943), but without documentation.

***Crouania ischiana* (Funk) Boudouresque & M. Perret-Boudouresque**

= *Pseudocrouania ischiana* Funk

The specific status of this taxon remains unclear and requires taxonomic re-investigation (GÓMEZ GARRETA *et al.*, 2001). In Greece, it was

reported by DIAPOULIS & VERLAQUE (1981, as *Pseudocrouania ischiana*), but without documentation.

***Delesseria tenerrima* Greville**

GREVILLE (1826: 339) originally described this species based on specimens collected from the Ionian Sea as well as from England. Based on both ARDISSONE (1875) and DE TONI (1903) this species should be referred to a *Nitophyllum* species.

***Echinoceras julaceum* var. *villosum* Kützing**

Originally described by KÜTZING (1849: 897) from the Ionian Sea, and later reported from the Adriatic Sea (KÜTZING, 1862: 27, pl. 88). GRUNOW (1861) also reported this species from the Ionian Sea, but without documentation. Judging from the original diagnosis and illustrations, this taxon should probably belong to *Ceramium ciliatum* var. *ciliatum*.

***Hormoceras parvulum* Zanardini *ex* Frauenfeld**

= (?) *Hormoceras moniliforme* Kützing

GRUNOW (1861) reported from the Ionian Sea *Hormoceras parvulum* as a synonym of *H. moniliforme*. The latter species was instead considered as a synonym of *Ceramium strictum* (Kützing) Harvey (=*C. deslongchampsii*) by GERLOFF & GEISSLER (1974). However, no documentation was provided in any case. Both *Hormoceras parvulum* and *H. moniliforme* were originally described from the Adriatic Sea by FRAUENFELD (1855) and KÜTZING (1841), respectively. Their type specimens should be re-investigated.

***Laurencia cyanosperma* (Delile) Gaillon**

BORY DE SAINT-VINCENT (1832: 325) reported this species from SE Ionian Sea and the Saronikos Gulf (Aegean Sea), based on *Fucus cyanospermus* DELILE (1813: 296) collected from Alexandria, a plant associated also with *Laurencia cyanosperma* J.V. Lamouroux *nom. inval.* (LAMOUROUX, 1813). LAMOUROUX's (1813) paper appeared first, followed by DELILE's (1813), but only Delile provided an account of the species, and hence the basionym must be ascribed to Delile. Bory's description is too vague to permit a taxonomic conclusion under modern standards (see also ATHANASIADIS, 1987: 103-104). Based on a scanned photo of Bory's authentic material from the Saronikos Gulf (PC0059597), we state that Bory's *L. cyanosperma* is not related with DELILE's (1813) original material from Alexandria (PC0059598), but a detailed study of all Bory's plants is still necessary.

***Laurencia gelatinosa* J.V. Lamouroux**

This binomial should be treated as *nomen novum* since the intended basionym *Fucus gelatinosus* DESFONTAINES (1799) is illegitimate, being a later homonym of *Fucus gelatinosus* HUDSON (1762). In Greece, this red alga has been reported by BORY DE SAINT-VINCENT (1832: 325) from Cape Tainaro, by RAULIN (1869: 893) from Crete Island (South Aegean Sea) and by DIANNELIDIS (1950) from the Cyclades. In literature, the species has been also reported as *L. obtusa* var. *gelatinosa* (J.V. Lamouroux) J. Agardh. Still, *L. gelatinosa* needs to be typified.

***Laurencia obtusa* var. *laxa* (Turner) Ardissone**

This taxon is frequently found in the Greek literature, erronouesly cited as *L. obtusa* var. *laxa* Kützing (DIANNELIDIS, 1950) and *L. obtusa* var. *laxa* Hauck (HARITONIDIS, 1978). The taxonomic combination is actually based on *Fucus laxus* Turner, a species described from South Africa (TURNER, 1811-19), and later transferred to the genus *Laurencia*, reported as *L. laxa* (Turner) Gaillon (1828) and *L. obtusa* var. *laxa* (Turner) Ardissone (1883). Although it has been regarded as a synonym of *L. obtusa* by several authors (GERLOFF & GEISSLER, 1974; FURNARI *et al*., 1999), we agree with GÓMEZ GARRETA *et al.* (2001) that it should be treated as *taxon inquirendum* until examination of the type specimen is performed under modern taxonomic concept.

***Polysiphonia caspica* Kützing**

KÜTZING (1843: 430) originally described this species based on material from the Caspian Sea and later reported it as *P. "caspia*" from the

same area (KÜTZING, 1849: 832). In both cases, the original description is too vague to permit a taxonomic conclusion while illustrations are lacking. GERLOFF & GEISLLER (1974: 786) include *P. caspica* in the Greek macroalgal flora, based on a K.H. Rechinger herbarium from an unknown location, but without providing any comments.

***Polysiphonia cladorhiza* Ardissone**

The single Greek record by GIACCONE (1968a) from the S. Aegean Sea is without documentation, and according to ATHANASIADIS (1987), this species needs taxonomic re-investigation, since it could be related with *Polysiphonia atlantica* based on PREDA (1908-09) remarks.

***Polysiphonia leptothrix* Zanardini *ex* Frauenfeld**

GRUNOW (1861: 429) reported *Polysiphonia leptothrix* from Kithira Island (Ionian Sea). He associated it with *P. grisea* Kützing, a species described from the Adriatic Sea (KÜTZING, 1843: 423), which is currently regarded as a synonym of *Polysiphonia sertularioides.*

***Polysiphonia pulvinata* (Roth) Sprengel**

An entity of uncertain taxonomic status since no type has been designated (FURNARI *et al*., 1999), possibly associated to *Polysiphonia hemisphaerica* Areschoug, a species known from Northern Europe (ATHANASIADIS, 1996b; DÍAZ-TAPIA & BÁRBARA, 2013). In Greece, it has been reported by SCHNETTER & SCHNETTER (1981) from Kephallonia Island, but in the absence of documentation, the identity of their material is unknown.

***Seirospora flaccida* Kützing**

This species was originally described by KÜTZING (1849: 896) based on material collected from the Ionian Sea. It was later tentatively reported by NÄGELI (1861-62: 366) as *Poecilothamnion flaccidum* (Kützing) Nägeli, a Ceramiaceae species with uncertain taxonomic status.

***Seirospora humilis* Kützing**

Similar to *Seirospora flaccida*, *S. humilis* was also described by KÜTZING (1849: 897), based on specimens collected from the Ionian Sea. Again, NÄGELI (1861-62: 366) tentatively transferred this species to *Poecilothamnion,* citing it as *P. humile* (Kützing) Nägeli, a Ceramiaceae species with also obscure taxonomic status

***Spyridia cuspidata* var. *arcuata* (Kützing) Grunow**

Based on Prof. A.D. Mazziari material (No. 1894) originating from the Ionian Sea, GRUNOW (1861: 426) introduced *Spyridia cuspidata* var. *arcuata*, based on *S. arcuata* Kützing from the West Indies, a species with uncertain taxonomic status.

DISCUSSION

The first checklist of Greek seaweeds (DIANNELIDIS, 1950) included 35 currently accepted species and infraspecific taxa of Ceramiales. Later on, GERLOFF & GEISSLER (1974) listed 57, while ATHANASIADIS (1987) reported 93 taxa for the Aegean Sea only. In the latest survey of the order in the Mediterranean, GÓMEZ GARRETA *et al.* (2001) included 105 reported taxa from Greece, and this number has presently increased to 120 confirmed taxa, following the several new studies during the past 14 years (e.g. TSIAMIS *et al.,* 2010, 2011; CATRA & ALONGI, 2013).

The distribution of these 120 Ceramiales along the Greek coasts is as follows: 103 taxa have been found in the North Aegean, 108 taxa in the South Aegean and 98 taxa in the Ionian Sea (Fig. 1).

The Greek marine flora seems to host by far fewer Ceramiales taxa comparing with the neighboring Italian coasts, where 241 taxa have been recorded (FURNARI *et al.,* 2010). This difference definitely reflects the limited studies that have been hitherto conducted in Greece, and generally in the eastern Mediterranean Sea, with several coastal regions and islands still remaining poorly surveyed, particularly in the sublittoral and circalittoral zones.

All taxa reported in the current study have been critically reviewed from present-day taxonomic and nomenclatural aspects, providing also all synonyms ever cited in the literature

of Greek seaweeds, minimizing thus the vast taxonomic confusion of the Greek records. Still, too many taxa (70) are pending confirmation in Greece. This is due to the lack of documentation since most records have been given in form of species names without deposition of material in public herbaria. Several other taxa are treated as *excludenda* or *inquirenda* (15 and 20 taxa respectively), what highlights the taxonomic difficulties, particularly concerning the identification of members of the genera *Aglaothamnion*, *Ceramium*, *Chondria*, *Laurencia* and *Polysiphonia.*

We conclude that there are still major gaps in the documentation of the marine flora of the Aegean and Ionian Seas, and surveys in the unexplored areas and particularly in deeper habitats will further increase the number of taxa. Our study can offer a solid updated baseline of the current knowledge of Ceramiales taxa in Greece, critical for future tailor-targeting seaweed studies.

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Konstantinos TSIAMIS*i Panayotis PANAYOTIDIS

**Kontakt e-adresa: kostas.tsiamis@gmail.com*

SAŽETAK

Ažurirani popis crvenih algi (Rhodophyta) iz reda Ceramiales na grčkim obalama napravljen je na temelju zapisa iz stručne literature i kritički je preispitan s današnjih aspekata taksonomije i nomenklature. Ukupan broj rodova, vrsta i intraspecijskih taksonomskih kategorija koje su danas prihvaćene je 60, 118, odnosno 2. Prikazana je pojava svake svojte u sjevernom i južnom Egejskom moru te u Jonskom moru. Ukazano je na propuste u dosadašnjim istraživanjima, uključivo za 70 svojti za koje je u tijeku potvrda da je zabilježena njihova prisutnost. Štoviše, u raspravi su izneseni podaci o 15 neprihvaćenih i problematičnih svojti kao i o 20 svojti upitnog i sumnjivog taksonomskog statusa. U ovom radu su prikazani ažurirani podaci o pojavljivanju crvenih algi Ceramiales u Grčkoj, a koji su neophodni za izradu budućih ciljanih studija.

Ključne riječi: Egejsko more, crvene alge, Ceramiales, popis, Jonsko more