

Reinstatement of the genera *Gongolaria* Boehmer and *Ericaria* Stackhouse (*Sargassaceae*, *Phaeophyceae*)

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In their treatment of *Cystoseira* C.Agardh, 1820, *nom. cons.*, Orellana & al. (2019) concluded that the genus as then constituted was polyphyletic and proposed the reinstatement of the genera *Treptacantha* Kützing, 1843 and *Carpodesmia* Greville, 1830 for species of the genus outside the clade of *Cystoseira sensu stricto* in order to achieve monophyly in the classification of the group. Seventeen combinations were introduced by the authors for species in the reinstated genera.

However, both *Treptacantha* and *Carpodesmia* are predated by *Gongolaria* Boehmer, 1760 and *Ericaria* Stackhouse, 1809, respectively, both of which were rejected names against the conserved genus name *Cystoseira* C.Agardh. However, when the type of *Cystoseira*, *Cystoseira concatenata* (Linnaeus) C.Agardh [= *Cystoseira foeniculacea* (Linnaeus) Greville] is no longer involved, these names become available and have priority over *Treptacantha* Kützing, *Carpodesmia* Greville, *Monilifera* Stackhouse and *Baccifer* Roussel. Accordingly, *Gongolaria* and *Ericaria* are the correct names for the “*Cystoseira* 2” and “*Cystoseira* 3” clades as defined by Orellana & al. (2019).

Twenty species are currently included in *Treptacantha* and *Carpodesmia*: twelve in the “*Cystoseira* 2” clade (*Gongolaria*) and eight in the “*Cystoseira* 3” clade (*Ericaria*).

Gongolaria Boehmer (in Ludwig), *Definitiones Generum Plantarum*, ed. 3: 503, 1760.

Type: “*Gongolaria seu abies marina* Imperato” *nom. inval.* ≡ *Fucus abies-marina* S.G.Gmelin, ≡ *Gongolaria abies-marina* (S.G.Gmelin) Kuntze.

Homotypic synonym: *Treptacantha* Kützing, *Phycologia generalis*: 353, 1843.

Heterotypic synonyms: *Baccifer* Roussel, *Flore du Calvados*: 94, 1806. Type: *Fucus baccatus* S.G.Gmelin. *Monilifera* Stackhouse, *Mémoires de la Société Impériale des Naturalistes de Moscou* 2: 57, 1809, *nom. illeg.*, non *Monilifera* Adanson (Asteraceae). Type: *Fucus fibrosus* Hudson (=*Fucus baccatus* S.G.Gmelin).

Description: The genus has the characters of *Treptacantha* Kützing as amended by Orellana & al. (2019: [8] 484).

Note: *Gongolaria* Boehmer (in Ludwig 1760) was published as a new genus name for the pre-Linnaean polynomial “*Gongolaria seu abies marina*” of Imperato (1695: 844), simultaneously excluding *Acinaria* Donati, 1758 (Donati 1758: 26, 33, pl. V: fig. 1) with the statement “... ad fucum refertur a Linnaeo” [to *Fucus* referred by Linnaeus]. No designations for the species were introduced until Kuntze (1891: 895) typified it with *G. abies-marina* (S.G.Gmelin) Kuntze.

Gongolaria abies-marina (S.G.Gmelin) Kuntze, *Revisio generum plantarum* 2: 895, 1891.

Basionym: *Fucus abies-marina* S.G.Gmelin, *Historia fucorum*: 83, 1768.

Homotypic synonyms: *Cystoseira abies-marina* (S.G.Gmelin) C.Agardh, *Species algarum* 1(1): 54, 1820. *Fucus corniculatus* Wulfen in Jacquin, *Collectanea*: 358, 1786, *nom. illeg.* *Gongolaria corniculata* (Wulfen) Kuntze, *Revisio generum plantarum* 2: 895, 1891, *nom. illeg.*

Heterotypic synonyms: *Treptacantha gracillima* Kützing *Phycologia generalis*: 354, 1843.

Phyllacantha moniliformis Kützing, *Phycologia generalis*: 356, 1843. *Treptacantha montagnei* Kützing *Species algarum*: 594, 1849.

Gongolaria algeriensis (Feldmann) comb. nov.

Basionym: *Cystoseira algeriensis* Feldmann, *Bulletin de la Société d'Histoire Naturelle de l'Afrique du Nord* 35: 7, 1945.

Homotypic synonym: *Treptacantha algeriensis* (Feldmann) Orellana & Sansón, *European Journal of Phycology* 54(3): 461, 2019.

Gongolaria baccata (S.G.Gmelin) comb. nov.

Basionym: *Fucus baccatus* S.G.Gmelin, *Historia fucorum*: 90, pl. III: fig. 2, 1768.

Homotypic synonyms: *Cystoseira baccata* (S.G.Gmelin) P.C.Silva, *University of California Publications in Botany* 25: 280, 1952. *Treptacantha baccata* (S.G.Gmelin) Orellana & Sansón, *European Journal of Phycology* 54(3): 456, 2019.

Heterotypic synonyms: *Fucus abrotanoides* S.G.Gmelin, *Historia fucorum*: 90, 1768. *Fucus fibrosus* Hudson, *Flora anglica*: 575, 1778. *Cystoseira fibrosa* (Hudson) C.Agardh, *Species algarum* 1(1): 65, 1820. *Mackaia fibrosa* (Hudson) S.F.Gray, *A natural arrangement of British plants* 1: 392, 1821. *Phyllacantha fibrosa* (S.G.Gmelin) Kützing, *Phycologia generalis*: 356, 1843. *Gongolaria fibrosa* (Hudson) Kuntze, *Revisio generum plantarum* 2: 895, 1891. *Cystoseira thesiophylla* Duby, *Botanicum gallicum* 2: 937, 1830. *Phyllacantha thesiophylla* (Duby) Kützing, *Tabulae phycologicae* 10: 13, pl. 35: fig. II, 1860.

Gongolaria barbata (Stackhouse) Kuntze, *Revisio generum plantarum* 2: 895, 1891.

Basionym: *Abrotanifolia barbata* Stackhouse, *Mémoires de la Société Impériale des Naturalistes de Moscou* 2: 81, 1809.

Homotypic synonyms: *Fucus barbatus* Goodenough & Woodward, *Transactions of the Linnean Society of London* 3: 103, 1797, nom. illeg., non *Fucus barbatus* Linnaeus, 1753. *Phryganella barbata* (Stackhouse) Stackhouse, *Nereis britannica*: xi, 1816. *Cystoseira barbata* (Stackhouse) C.Agardh, *Species algarum* 1(1): 57, 1820. *Treptacantha barbata* (Stackhouse) Orellana & Sansón, *European Journal of Phycology* 54(3): 456, 2019.

Heterotypic synonyms: *Cystoseira hoppei* C.Agardh, *Species algarum* 1(1): 59, 1820 ('*hoppii*').

Cystoseira barbata var. *hoppei* (C.Agardh) J.Agardh, *Algae maris Mediterranei et Adriatici*: 51, 1842. *Cystoseira barbata* f. *hoppei* (C.Agardh) Woronichin, *Russkiĭ botanicheskii zhurnal* 1908 (3-4): 117, 1908.

Gongolaria elegans (Sauvageau), comb. nov.

Basionym: *Cystoseira elegans* Sauvageau, *Bulletin de la Station Biologique d'Arcachon* 14: 292, 517, 1912.

Homotypic synonym: *Treptacantha elegans* (Sauvageau) Orellana & Sansón, *European Journal of Phycology* 54(3): 457, 2019.

Gongolaria mauritanica (Sauvageau) comb. nov.

Basionym: *Cystoseira mauritanica* Sauvageau (in Hariot), *Bulletin de la Société Botanique de France* 58: 440, 1911.

Homotypic synonym: *Treptacantha mauritanica* (Sauvageau) Orellana & Sansón, *European Journal of Phycology* 54(3): 458, 2019.

Heterotypic synonyms: *Cystoseira selaginoides* var. *gibraltarica* Sauvageau, *Bulletin de la Station Biologique d'Arcachon* 22: 20, 1920. *Cystoseira sauvageauana* var. *gibraltarica* (Sauvageau) Hamel, *Phéophycées de France. Fasc. V.*: 400, 1939. *Cystoseira gibraltarica* (Sauvageau) P.J.L.Dangeard, *Le Botaniste* 34: 128, 1949.

Gongolaria montagnei (C.Agardh) Kuntze, *Revisio generum plantarum* 2: 895, 1891.

Basionym: *Cystoseira montagnei* J.Agardh, *Algae maris Mediterranei et Adriatici*: 47, 1842.

Homotypic synonyms: *Phyllacantha montagnei* (J.Agardh) Kützing, *Species algarum*: 597, 1849. *Treptacantha montagnei* (J.Agardh) Orellana & Sansón, *European Journal of Phycology* 54(3): 458, 2019, nom. illeg., non *Treptacantha montagnei* Kützing, 1849. *Treptacantha ballesterosii* Orellana & Sansón, *Notulae Algarum* 109: 1, 2019.

Heterotypic synonyms: *Cystoseira spinosa* Sauvageau, *Bulletin de la Station Biologique d'Arcachon* 14: 201, 519, 1912. *Cystoseira adriatica* Sauvageau, *Bulletin de la Station Biologique d'Arcachon* 14: 249, 518, 1912.

Note: Orellana & al. (2019) included *Fucus erica-marina* S.G.Gmelin, 1768, nom. illeg. (Gmelin 1768: 128, pl. 11: fig. 2, 'Fucus erica marina'), as a synonym of this species, despite its being based on the same designation by Ray (1724) used by Linnaeus (1763) for his *Fucus ericoides* and including *Fucus tamariscifolia* Hudson (Hudson 1762: 467) in synonymy (Gmelin 1768: 128, "fl. angl. p. 469. n. 13").

***Gongolaria montagnei* var. *tenuior* (Ercegović) comb. nov.**

Basionym: *Cystoseira adriatica* subsp. *tenuior* Ercegović, *Fauna i Flora Jadrana. Jadranske cistozire. Njihova morfologija, ekologija i razvitak* 2: 107, 1952.

Homotypic synonyms: *Cystoseira adriatica* f. *tenuior* (Ercegović) Giaccone, *Bollettino delle sedute della Accademia Gioenia di Scienze Naturali in Catania* 18(326): 906, 1985. *Cystoseira spinosa* var. *tenuior* (Ercegović) Cormaci, G.Furnari, Giaccone, Scammacca, & Serio, *Bulletin de l'Institut Océanographique de Monaco* 9: 30, 1992. *Cystoseira montagnei* var. *tenuior* (Ercegović) Verlaque, Blanfuné, Boudouresque, Thibaut & Sellam, *Cryptogamie Algologie* 38(2): 153, 2017.

Heterotypic synonyms: *Cystoseira adriatica* subsp. *reducta* Ercegović, *Fauna i Flora Jadrana. Jadranske cistozire. Njihova morfologija, ekologija i razvitak* 2: 108, 1952. *Cystoseira adriatica* f. *reducta* (Ercegović) Giaccone, *Bollettino delle sedute della Accademia Gioenia di Scienze Naturali in Catania* 18(326): 906, 1985. *Cystoseira jabukae* Ercegović, *Fauna i Flora Jadrana. Jadranske cistozire. Njihova morfologija, ekologija i razvitak* 2: 109, pl. XIV a, 1952.

***Gongolaria nodicaulis* (Withering) comb. nov.**

Basionym: *Fucus nodicaulis* Withering, *An arrangement of British plants* Ed. 3, 4: 111, 1796.

Homotypic synonyms: *Cystoseira nodicaulis* (Withering) M.Roberts, *British Phycological Bulletin* 3: 349, 1967. *Treptacantha nodicaulis* (Withering) Orellana & Sansón, *European Journal of Phycology* 54(3): 459, 2019.

Heterotypic synonyms: *Fucus mucronatus* Turner, *A synopsis of the British Fuci* 1: xxxii, 73, 1802, nom. illeg. *Mackaia mucronata* (Hudson) S.F.Gray, *A natural arrangement of British plants* 1: 392, 1821.

Note: *Fucus mucronatus* Turner (Turner 1802: xxxii, 73) is illegitimate as it included *Fucus nodicaulis* Withering in synonymy.

***Gongolaria sauvageauana* (Hamel) comb. nov.**

Basionym: *Cystoseira sauvageauana* Hamel, *Phéophycées de France. Fasc. V.*: 399, 1939 ('*sauvageauiana*').

Homotypic synonyms: *Treptacantha sauvageauana* (Withering) Orellana & Sansón, *European Journal of Phycology* 54(3): 459, 2019.

Heterotypic synonyms: *Cystoseira selaginoides* var. *polyoedematis* Sauvageau, *Bulletin de la Station Biologique d'Arcachon* 14: 288, 1912. *Cystoseira sauvageauana* var. *polyoedematis* (Sauvageau) Hamel, *Phéophycées de France. Fasc. V.*: 399, 1939. *Cystoseira sicula* Schiffner ex Gerloff & Nizamuddin, *Nova Hedwigia* 27: 169, pls 9-11, 1976.

Gongolaria squarrosa (De Notaris) Kuntze, *Revisio generum plantarum* 2: 895, 1891.

Basionym: *Cystoseira squarrosa* De Notaris, *Atti della seconda riunione degli scienziati italiani tenuta in Torino nel settembre del 1840*: 200, 1841.

Homotypic synonyms: *Cystoseira erica-marina* var. *squarrosa* (De Notaris) De Toni & Levi, *Atti del Reale Istituto Veneto di Scienze, Lettere ed Arti*, ser. 6, 4: 1651, 1886. *Cystoseira spinosa* var. *squarrosa* (De Notaris) Giaccone, *Atti del Reale Istituto Veneto di Scienze, Lettere ed Arti* 131: 74, 1973, comb. inval. *Treptacantha squarrosa* (De Notaris) Orellana & Sansón, *European Journal of Phycology* 54(3): 459, 2019.

Gongolaria susanensis (Nizamuddin) comb. nov.

Basionym: *Cystoseira susanensis* Nizamuddin, *Nova Hedwigia* 42: 119, pl. 1; pl. 2: figs A-D, 1985.

Homotypic synonym: *Treptacantha susanensis* (Nizamuddin) Orellana & Sansón, *European Journal of Phycology* 54(3): 459, 2019.

Gongolaria usneoides (Linnaeus) comb. nov.

Basionym: *Fucus usneoides* Linnaeus, *Systema naturae, editio decima* 2: 1345, 1759.

Homotypic synonyms: *Cystoseira usneoides* (Linnaeus) M. Roberts, *Journal of the Linnean Society of London, Botany* 60: 259, 1968. *Treptacantha usneoides* (Linnaeus) Orellana & Sansón, *European Journal of Phycology* 54(3): 459, 2019. *Fucus granulatus* Linnaeus, *Species plantarum* 2: 1629, 1763, nom. illeg. *Cystoseira granulata* (Linnaeus) C. Agardh, *Species algarum* 1(1): 55, 1820, nom. illeg. *Gongolaria granulata* (Linnaeus) Kuntze, *Revisio generum plantarum* 2: 895, 1891, nom. illeg.

Heterotypic synonyms: *Fucus aculeatus* Esper, *Icones fucorum*: pl. 33, 1798, nom. illeg., non *Fucus aculeatus* Linnaeus.

Note: Linnaeus (1759: 1345) did not specify a type locality for *Fucus usneoides*. *Fucus granulatus* is a superfluous name for *F. usneoides*, and thus illegitimate, as both names are based on the same three sheets in Linnaeus's herbarium (Roberts 1968: 260). Linnaeus's indication of "Oceano Indico" [from the Indian Ocean] for both names (Linnaeus 1963: 1629) is "undoubtedly an error" (Silva, Basson & Moe 1996: 900).

Ericaria Stackhouse, *Mémoires de la Société Impériale des Naturalistes de Moscou* 2: 56, 1809.

Type: *Fucus ericoides* Linnaeus [= **Ericaria selaginoides** (Linnaeus) comb. nov.]

Heterotypic synonym: *Carpodesmia* Greville, *Algae britannicae*: xxxiv, 1830.

Description: The genus *Ericaria* has the characters of *Carpodesmia* Kützing as amended by Orellana & al. (2019: [13] 489).

Notes: Although *Ericaria* Stackhouse, 1809 initially included two species, *Ericaria tamarisca* Stackhouse and *E. selago* Stackhouse ('Selago'), the genus was typified by Papenfuss (1950) with *Fucus ericoides* Linnaeus, "...the name-bringing, or type species of the genus *Ericaria* Stackhouse." long considered synonymous with *Fucus tamariscifolius* Hudson. This is a valid typification as it is in accordance with ICN Art. 10.3 (Turland & al. 2018) "For the purposes of Art. 10.2, definite inclusion of the type of a name of a species is effected by citation of, or reference (direct or indirect) to, a validly published species name, whether accepted or synonymized by the author, or by citation of the holotype or lectotype of a previously or simultaneously published species name.". Stackhouse (1809: 56) cited "L. Tr. III. 130." referring to Goodenough & Woodward in *Trans. Linn. Soc.* Vol. 3: 130. 1797, which is an account of "*Fucus ericoides*". Although Goodenough & Woodward (1797: 130) make no direct mention of Linnaeus's publication of the name, by their first synonym, "Fucus erica marina. *Gmelin* p. 128. t. 11. f. 2.", they include, as noted above, *F. ericoides* L., and so their "*Fucus ericoides*" is not an independent name but a usage of Linnaeus's, and so Papenfuss's typification is valid. It should also be noted that Gil Rodríguez & Wildpret de la Torre (1983) mistakenly treated this genus as

“*Erica*”, and considered it illegitimate due to supposed homonymy with *Erica* Linnaeus, 1753 (*Ericaceae*).

***Ericaria amentacea* (C.Agardh) comb. nov.**

Basionym: *Cystoseira ericoides* var. *amentacea* C.Agardh, *Species algarum* 1(1): 53, 1821.

Homotypic synonyms: *Cystoseira amentacea* (C.Agardh) Bory, *Expédition scientifique de Morée. Section des sciences physiques. Tome III. 2e partie. Botanique*: 319, 1832. *Halerica amentacea* (C.Agardh) Kützing, *Phycologia generalis*: 354, 1843. *Gongolaria amentacea* (C.Agardh) Kuntze, *Revisio generum plantarum* 2: 895, 1891. *Cystoseira stricta* var. *amentacea* (C.Agardh) Giaccone, *Atti del Reale Istituto Veneto di Scienze, Lettere ed Arti* 131: 73, 1973, comb. inval. *Carpodesmia amentacea* (C.Agardh) Orellana & Sansón, *European Journal of Phycology* 54(3): 460, 2019.

Heterotypic synonyms: *Cystoseira amentacea* var. *stricta* Montagne, *Exploration scientifique de l'Algérie pendant les années 1840, 1841, 1842. Sciences physiques. Botanique. Cryptogamie* 1: 10, 1846. *Cystoseira stricta* (Montagne) Sauvageau, *Compte Rendu Hebdomadaire des Séances de l'Académie des Sciences. Paris* 17: 468, 1911. *Cystoseira spicata* Ercegović, *Fauna i Flora Jadrana. Jadranske cistozire. Njihova morfologija, ekologija i razvitak* 2: 110, 1952. *Cystoseira stricta* var. *spicata* (Ercegović) Giaccone, *Atti del Reale Istituto Veneto di Scienze, Lettere ed Arti* 131: 73, 1973, comb. inval.. *Cystoseira amentacea* var. *spicata* (Ercegović) Giaccone in Gallardo, *Taxon* 41: 324, 1992. *Cystoseira spicata* subsp. *crassa* Ercegović, *Fauna i Flora Jadrana. Jadranske cistozire. Njihova morfologija, ekologija i razvitak* 2: 111, 1952. *Cystoseira spicata* subsp. *elegans* Ercegović, *Fauna i Flora Jadrana. Jadranske cistozire. Njihova morfologija, ekologija i razvitak* 2: 111, 1952.

***Ericaria barbatula* (Kützing) comb. nov.**

Basionym: *Cystoseira barbatula* Kützing, *Tabulae phycologicae* 10: 17, pl. 46: fig. I, 1860.

Homotypic synonyms: *Carpodesmia barbatula* (C.Agardh) Orellana & Sansón, *European Journal of Phycology* 54(3): 460, 2019.

Heterotypic synonyms: *Cystoseira graeca* Schiffner ex Gerloff & Nizamuddin, *Willdenowia* 7: 565, 1975.

***Ericaria brachycarpa* (J.Agardh) comb. nov.**

Basionym: *Cystoseira brachycarpa* J.Agardh, *Lunds Universitets Års-Skrift, Andra Afdelningen, Kongl. Fysiografiska Sällskapets i Lund Handlingar* 32(2): 38, 1896.

Homotypic synonyms: *Carpodesmia brachycarpa* (J.Agardh) Orellana & Sansón, *European Journal of Phycology* 54(3): 460, 2019.

Heterotypic synonyms: *Cystoseira balearica* Sauvageau, *Bulletin de la Station Biologique d'Arcachon* 14: 390, 528, 1912. *Cystoseira brachycarpa* var. *balearica* (Sauvageau) Giaccone, *Botanica marina* 35: 124, 1992. *Cystoseira caespitosa* Sauvageau, *Bulletin de la Station Biologique d'Arcachon* 14: 223, 526, 1912.

***Ericaria crinita* (Duby) comb. nov.**

Basionym: *Cystoseira crinita* Duby, *Botanicon gallicum* 2: 936, 1830.

Homotypic synonyms: *Fucus crinitus* Desfontaines, *Flora atlantica* 2: 425, 1799, nom. illeg., non *Fucus crinitus* S.G.Gmelin. *Gongolaria crinita* (Duby) Kuntze, *Revisio generum plantarum* 2: 895, 1891. *Carpodesmia crinita* (Duby) Orellana & Sansón, *European Journal of Phycology* 54(3): 460, 2019.

Heterotypic synonyms: “*Cystoseira granulata* Schousboe” in Bornet, *Mémoires de la Société des Sciences Naturelles et Mathématiques de Cherbourg* 28: 256, 1892, nom. inval.

Note: “*Cystoseira granulata* Schousboe” is an invalid designation as it was included in synonymy.

***Ericaria funkii* (Schiffner ex Gerloff & Nizamuddin) *comb. nov.***

Basionym: *Cystoseira funkii* Schiffner ex Gerloff & Nizamuddin, *Nova Hedwigia* 27: 167, 1976.

Homotypic synonym: *Carpodesmia funkii* (Schiffner ex Gerloff & Nizamuddin) Orellana & Sansón, *European Journal of Phycology* 54(3): 460, 2019.

Ericaria mediterranea* (Sauvageau) *comb. nov.

Basionym: *Cystoseira mediterranea* Sauvageau, *Bulletin de la Station Biologique d'Arcachon* 14: 341, 515, 1912.

Homotypic synonyms: *Carpodesmia mediterranea* (Sauvageau) Orellana & Sansón, *European Journal of Phycology* 54(3): 460, 2019.

Heterotypic synonyms: *Cystoseira mediterranea* var. *valiantei* Sauvageau, *Bulletin de la Station Biologique d'Arcachon* 14: 355, 546, 1912.

Ericaria selaginoides* (Linnaeus) *comb. nov.

Basionym: *Fucus selaginoides* Linnaeus, *Systema Naturae, editio decima* Vol. 2: 1345, 1759.

Homotypic synonyms: *Ericaria selago* Stackhouse, *Mémoires de la Société Imperiale des Naturalistes de Moscou* 2: 80, 1809, *nom. illeg.* *Cystoseira selaginoides* (Linnaeus) Bory, *Expédition scientifique de Morée. Section des sciences physiques. Tome III. 2e partie. Botanique*: 319, 1832, *nom. illeg.*, *non Cystoseira selaginoides* Naccari, 1828.

Heterotypic synonyms: *Fucus tamariscifolius* Hudson, *Flora anglica* 469, 1762. *Cystoseira tamariscifolia* (Hudson) Papenfuss, *Hydrobiologia* 2: 185, 1950. *Carpodesmia tamariscifolia* (Hudson) Orellana & Sansón, *European Journal of Phycology* 54(3): 461, 2019. **Lectotype (designated here)** for *Fucus tamariscifolius* Hudson: Sheet at the Sherard Herbarium, numbered 1920 (**OXF**, Fig. 1). *Fucus ericoides* Linnaeus, *Species plantarum, editio secunda* 2: 1631, 1763. *Ericaria tamarisca* Stackhouse, *Mémoires de la Société Impériale des Naturalistes de Moscou* 2: 80, 1809, *nom. illeg.* *Phryganella ericoides* Stackhouse, *Nereis britannica* Ed. 2: xi, 1816. *Cystoseira ericoides* (Linnaeus) C.Agardh, *Species algarum* 1(1): 52, 1820. *Mackaia ericoides* (Hudson) S.F.Gray, *A natural arrangement of British plants* 1: 393, 1821. *Gongolaria ericoides* (Linnaeus) Kuntze, *Revisio generum plantarum* 2: 895, 1891. **Lectotype (designated here):** Sheet No. 1920 at the Sherard Herbarium (**OXF**, Fig. 1). *Fucus erica-marina* S.G.Gmelin, *Historia fucorum*: 128, 1768. *Cystoseira erica-marina* (S.G.Gmelin) Naccari, *Flora Veneta*: 96, 1828. **Lectotype (designated here):** Sheet at the Sherard Herbarium No. 1920 (**OXF, Fig. 1**).

Note: The combination *Carpodesmia tamariscifolia* made by Orellana & al. (2019) was illegitimate as its concept included *Fucus selaginoides* Linnaeus. While the epithet *tamariscifolia* was the earliest available within the genus *Cystoseira* (due to the pre-existence of *Cystoseira selaginoides* Naccari, 1828), it is not the earliest when included under *Ericaria*. According to ICN Art. 11.4 (Turland & al. 2018), the correct combination of a final epithet is the earliest legitimate one available at the same rank that is not limited by conservation, rejection, or homonymy. The lectotype of *Fucus selaginoides* Linnaeus (designated by Roberts 1968: 256) at **LINN** (Savage No. 1274.12), has manuscript annotations by Linnaeus and J.E. Smith (Fig. 2).



Fig. 1. *Ericaria selaginoides* (Linnaeus) comb. nov. Lectotype (designated here) of *Fucus tamariscifolius* Hudson, *Fucus ericoides* Linnaeus and *Fucus erica-marina* S.G.Gmelin. Sheet No. 1920, Sherard Herbarium (OXF).

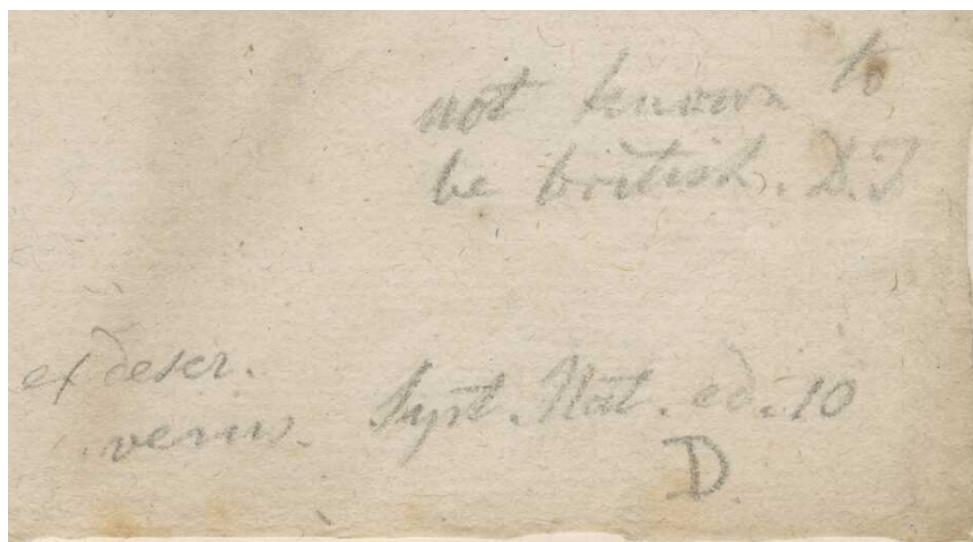


Fig. 2. Manuscript annotations on LINN 1274.12: the “D” was written by Linnaeus, “*ex descr. verus* Syst. Nat. ed. 10 not known to be British D.T.” was written by Smith (Savage 1945). The “D.T” stands for “Dawson Turner”.

According to Dixon (1959: 38), “...there is only a very slight chance” that the material upon which Hudson’s *Flora anglica* was based survived a fire of 1783 and none such has been found for *Fucus tamariscifolius* Hudson. The type of *Fucus tamariscifolius* should therefore be chosen from the other elements in the protologue. Roberts (1968) mentioned a plant at OXF which Ray used as original material for his brief description of his *Fucus* 44: “*Fucus foliis Ericæ seu Tamarisci*” (Ray 1724), the validating description for *Fucus tamariscifolius* Hudson (1762) and is **here designated** as lectotype. Since Linnaeus (1763) and Gmelin (1768) also used the same description as Ray in their protalogues, the same herbarium sheet constitutes part of the original material of *F. ericoides* and *F. erica-marina*, they are lectotypified with the same material, fixing the synonymy of all three names.

***Ericaria zosteroides* (C.Agardh) comb. nov.**

Basionym: *Cystoseira zosteroides* C.Agardh, *Species algarum* 1(1): 71, 1821.

Homotypic synonyms: *Fucus zosteroides* Turner, *Fuci* 4: 83, 1819, *nom. illeg., non Fucus zosteroides* J.V.Lamouroux, 1805. *Carpodesmia zosteroides* (C.Agardh) Greville, *Algae britannicae*: xxxiv, 1830.

Heterotypic synonyms: *Cystoseira opuntioides* Bory ex Montagne, *Exploration scientifique de l'Algérie pendant les années 1840, 1841, 1842. Sciences physiques. Botanique. Cryptogamie* 1: 14, 1846. *Phyllacantha opuntioides* (Bory ex Montagne) Kützing, *Species algarum*: 598, 1849. *Carpodesmia opuntioides* (Bory ex Montagne) Kützing *Tabulae phycologicae* 10: 13, 1860. *Gongolaria opuntioides* (Bory ex Montagne) Kuntze, *Revisio generum plantarum* 2: 895, 1891.

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Dixon, P.S. (1959). Notes on two important algal herbaria. *British Phycological Bulletin* 1(7): 35-42.

Donati, V. (1758). *Essai sur l'histoire naturelle de la mer Adriatique*. pp. [i]-vi, [1]-73, 11 pls [I-XI]. La Haye [The Hague]: chez Pierre De Hondt.

Gil Rodríguez, M.C. & Wildpret de la Torre, W. (1983). Contribución al estudio del género *Cystoseira* C. Ag. en el Archipiélago Canario. In: *Comunicações apresentadas ao II Congresso Internacional pró Flora Macaronésica*. (Anon. Eds), pp. 373-383. Funchal: [Congresso

- internacional pró flora macaronésica].
- Gmelin, S.G. (1768). *Historia fucorum*. pp. [i-xiii], [i]-239, [i]-6 expl. tab., 35 pls [1A, IB, IIA, IIB, III-XXXIII]. Petropoli [St. Petersburg]: Ex typographia Academiae scientiarum.
- Goodenough, S. & Woodward, T.J. (1797). Observations on the British Fuci, with particular descriptions of each species. *Transactions of the Linnean Society of London* 3: 84-235, pls 16-19.
- Hudson, [W.] (1762). *Flora anglica; exhibens plantas per regnum angliae sponte crescentes, distributas secundum systema sexuale: cum differentiis specierum, synonymis auctorum, nominibus incolarum, solo locorum, tempore florendi, officinalibus pharmacopoeorum*. pp. [i]-viii, [1- 8], 1-506, [1-22, ind.]. Londini [London]: Impensis auctoris: Prostant venaes apud J. Nourse in the Strand, et C. Moran in Covent-Garden.
- Imperato, F. (1695). *Historiae naturalis Libri XXIX Accesserunt nonnullæ Johannis Mariæ Ferro annotationes ad librum vigesimum octavum. Nunc primum ex Italica in linguam conversa Latinam, cum indice locupletissimo*. pp. 1-918. Coloniae [Cologne]: Philippi Gothofredi Saurmanni.
- Kuntze, O. (1891). *Revisio generum plantarum. Pars II*. pp. 375-1011. Leipzig, London, Milano, New York, Paris: Arthur Felix, Dulau & Co., U. Hoepli, Gust. A. Schechert, Charles Klincksierck.
- Linnaeus, C. (1759). *Systema naturae per regna tria naturae, secundum classes, ordines, genera, species, cum characteribus, differentiis, synonymis, locis*. Tomus I. Editio decima, reformata. Editio decima revisa. Vol. 2 pp. 825-1384. Holmiae [Stockholm]: impensis direct. Laurentii Salvii.
- Linnaeus, C. (1763). *Species plantarum*, exhibentes plantas rite cognitas, ad genera relatas, cum differentiis specificis, nominibus trivialibus, synonymis selectis, locis natalibus, secundum systema sexuale digestas. Tomus II. Editio secunda, aucta. pp. 785-1684, [1-64, Indices]. Homiae [Stockholm]: Impensis direct. Laurentii Salvii.
- Ludwig, C.G. (1760). *Definitiones generum plantarum* olim in usum auditorum collectas nunc auctas et emendates edidit D. Georgius Rudolphus Boehmer Medic. Prof. Publ. Ord. Wittebergensis. [Ed. 3]. pp. [i]-xlviii, [1]-516, [1-43, index; 1 Erratum]. Lipsiae [Leipzig]: ex officina Joh. Frideric. Gleditschii. [Diagnoses prepared by G.R. Boehmer]
- Naccari, [F.] L. (1828). *Flora veneta o descrizione delle piante che nascono nella provincia di Venezia disposta secondo il sistema Linneano e colla indicazione al metodo di Jussieu modificato dal De-Candolle arricchita di osservazioni medico-economiche di Fortunato Luigi Naccari*. Vol. VI. pp. [1] 4-133, 3 figs in 1 pl.. Venezia [Venice]: Presso Leone Bonvecchiato Editore Libraio in Merceria A S. Bartolomeo.
- Orellana, S., Hernández, M. & Sansón, M. (2019). Diversity of *Cystoseira sensu lato* (Fucales, Phaeophyceae) in the eastern Atlantic and Mediterranean based on morphological and DNA evidence, including *Carpodesmia* gen. emend. and *Treptacantha* gen. emend. *European Journal of Phycology* 54(3): [1-19], 447-465, 85 figs, 3 tables.
- Papenfuss, G.F. (1950). Review of the genera of algae described by Stackhouse. *Hydrobiologia* 2: 181-208.
- Ray, J. (1724). *Synopsis methodica stirpium britannicarum. Editio tertia*. pp. [i-xvi], 1-482, [1-20], 14 pl. London: Impensis Gulielmi & Joannis Innys Regiae Societatis Typographorum.
- Roberts, M. (1968). Taxonomic and nomenclatural notes on the genus *Cystoseira* C. Ag. *Journal of the Linnean Society of London, Botany* 60: 251-264, 5 pls.
- Savage, S. (1945). *A Catalogue of the Linnaean Herbarium*. pp. [i]-xxiii, 1-225, 1 pull-out leaf. London: The Linnean Society.
- Silva, P.C., Basson, P.W. & Moe, R.L. (1996). Catalogue of the benthic marine algae of the Indian Ocean. *University of California Publications in Botany* 79: [i]-xiv, 1-1259.
- Stackhouse, J. (1809). *Tentamen marino-cryptogamicum, ordinem novum; in genera et species*

distributum, in Classe XXIVta Linnaei sistens. *Mémoires de la Société Imperiale des Naturalistes de Moscou* 2: [50]-97.

Turland, N.J., Wiersema, J.H., Barrie, F.R., Greuter, W., Hawksworth, D.L., Herendeen, P.S., Knapp, S., Kusber, W.-H., Li, D.-Z., Marhold, K., May, T.W., McNeill, J., Monro, A.M., Prado, J., Price, M.J. & Smith, G.F., editors (2018). *International Code of Nomenclature for algae, fungi, and plants (Shenzhen Code)* adopted by the Nineteenth International Botanical Congress Shenzhen, China, July 2017. *Regnum Vegetabile*, Vol. 159. pp. [i]-xxxviii, 1-253. Glashütten: Koeltz Botanical Books.

Turner, D. (1802). *A synopsis of the British Fuci* [2 vols in one]. pp. [i]-xlvi, [i]-189; [192]-400. London: Sold by J. White, Fleet-Street; and T. Longman and O. Rees, Paternoster-Row (Printed by F. Bush, Yarmouth.).