

**A reinvestigation of Macaronesian seaweeds
as studied by A. Piccone
With remarks on those studied by A. Grunow**

by

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With 12 figures and 3 tables

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Abstract: In his publications about benthic marine algae A. Piccone recorded 185 names of taxa collected from shores of islands in Macaronesia. About his identifications he was often in contact with A. Grunow. Of the specimens studied by Piccone the majority (171 names) was found again in herbaria in Padova, Paris and Vienna. These specimens were studied and all specimens are now discussed in alphabetical order. Many changes are proposed, viz. nomenclatural changes as well as new identifications. Some remarks are added about records published for Madeira by A. Grunow in 1868. New records for Macaronesia are *Halymenia latifolia* forma *trabaeculata*, *Halymenia* cf. *vinacea*, *Laurencia chondrioides*, *Laurencia microcladia*, *Laurencia poiteaui*, *Meristiella echinocarpa* and *Rhodymenia holmesii*.

Introduction

Studies on biogeography of areas are only possible when reliable lists of records are available. For seaweeds of Macaronesia (see Prud'homme van Reine & van den Hoek 1990 for discussion of the status of that biogeographical name) records from publications by Piccone (1884, 1886a, 1886b, 1889, 1890 and 1901) are problematic because the voucher material was often not available to later phycologists. Only F. Boergesen studied several of Piccone's samples, but he could often not trace the specimens listed as "Elenco delle specie raccolte a Madera dal signor Dott. Liebethuth" and as "Elenco delle specie raccolte alle isole Canarie dal signori Carlo Bolle e Dott. Liebethuth" (Piccone 1884).

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During studies on biogeography of Macaronesian marine algae (Prud'homme van Reine 1988, Prud'homme van Reine & van den Hoek 1988, 1990) the above mentioned imperfection was often felt and resulted in efforts to locate and study the specimens cited by Piccone.

Antonio Piccone (1844-1901) was a botanist and high school teacher at the Liceo Cristoforo Colombo in Genova, Italy. According to Stafleu & Cowan (1983) his main collections are preserved at the herbarium in Verona (VER), but the Macaronesian marine algae became part of the A.I. Forti collection, which is now disposed at the Erbario Patavianum (PAD) in Padova, Italy. For Enrico d'Albertis, the captain of a small research vessel built to collect marine organisms in the Mediterranean, Piccone identified the collected algae and subsequently published the results (Piccone 1879, 1883). When d'Albertis got a larger vessel, scientific expeditions to areas in the Atlantic Ocean were made, and Piccone again studied the collected marine algae (Piccone 1884). When working on these collections, Piccone contacted Albert Grunow, a German chemist working in Austria, who had already cooperated in earlier publications by Piccone from 1878 on and who was the author of the physiological report of a world tour of the Austrian navy ship "Novara" (Grunow 1868). Grunow, who lived from 1826 till 1914, was a very helpful and learned amateur, mainly interested in diatoms but also in seaweeds, especially in the genus *Sargassum* (see Forti 1915 and Grunow 1916). Later collections of seaweeds from Italian marine expeditions were usually also sent to Piccone, who usually cooperated with Grunow when identifying them. These collections were worldwide, not restricted to Macaronesia.

The majority of the specimens directly studied by Piccone is available in the Piccone-Forti collection in Padova. Most of the specimens listed by Piccone and Grunow as collected by Bolle and Liebetruth (Piccone 1884) are now in the Department of Botany of the Naturhistorisches Museum Wien (W). Specimens listed as collected by Liebetruth (Piccone 1884) from Madeira are often actually part of the Novara Expedition collections. The Canary Island collections of C.A. Bolle, a collector who visited most of the Macaronesian archipelagos, have partly been studied by Montagne (1856), and thus several species, when not present in PAD or W, could be located in the Montagne herbarium in Paris (in PC). The original Bolle herbarium in Berlin has not survived the second world war.

In the present paper the status of most of the Piccone and Grunow specimens is discussed after verification of the voucher specimens.

Materials and methods

Voucher specimens of species described by Piccone were selected from collections of algae in herbaria in Padova, Italy (PAD) and Vienna, Austria (W). Herbarium abbreviations are from the Index Herbariorum (Holmgren et al. 1990). The first author of the present paper investigated the algae on the spot and selected specimens for a further detailed study in Leiden.

For identification small pieces of selected specimens were prepared for light microscope examination. For the used techniques see Tsuda & Abbott (1985).

Results

In the following list we include, in alphabetical order, all names of taxa that are of relevance for the present study. For names published by Piccone we cite the records and their publication as well as collector names. For the names of Bolle and Liebetruht we use the abbreviations B. and L. respectively. We also give information about the herbaria (abbreviated) where we located the specimens, observations and annotations, the correct names of the taxa and the names of the consulted authorities. Usually consultation was through the cited published papers.

N.B. The often cited locality "Puerto Orotava", also shortened as "Orotava", stands for the locality now named Puerto de a Cruz.

List of taxa

Acanthoceras transcurrens, see *Ceramium echionotum* var. *transcurrens*.

Acetabularia acetabulum, see *Acetabularia mediterranea*.

Acetabularia calyculus, see *Acetabularia mediterranea*.

Acetabularia mediterranea Lamour.

Canary Islands: Lanzarote: 1884, 21; Graciosa: 1884, 21.

Herbarium: PAD.

Obs.: Both present, specimen from Lanzarote was collected in Arrecife. Needs further confirmation; after this study was completed also *Acetabularia calyculus* Quoi et Gaimard was found in the Canary Islands.

Correct name: *Acetabularia acetabulum* (L.) Silva.

Authorities: Valet (1969), Gil-Rodríguez & Afonso-Carrillo (1982).

Acrosorium venulosum, see *Nitophyllum uncinatum*.

Aegagropila enormis, see *Cladophora enormis*.

Aegagropila socialis, see *Cladophora socialis*.

Alsidium corallinum C. Ag.

Canary Islands: Lanzarote, Arrecife: 1884, 49.

Herbarium: PAD.

Obs.: Present.

Correct name: *Alsidium corallinum* C. Ag.

Authorities: Falkenberg (1901) and Boergesen (1930).

Alsidium subtile, see *Chondriopsis subtilis*.

Amphiroa beauvoisii, see *Amphiroa exilis*.

Amphiroa cryptarthrodia Zan.

Canary Islands: Tenerife, Santa Cruz: 1884, 42.

Herbarium: PAD.

Obs.: Present. Grunow (1868) 79 recorded *Amphiroa fragilissima* from Madeira.

That material was not studied by us.

Correct name: *Amphiroa fragilissima* (L.) Lamour.

Authorities: Afonso-Carrillo et al. (1984).

Amphiroa exilis Harv.

Azores: Fayal, Baja di Horta: 1889, 209.

Herbarium: PAD.

Obs.: Present.

Correct name: *Amphiroa beauvoisii* Lamour.

Authorities: Price et al. (1986).

Amphiroa fragilissima, see *Amphiroa cryptarthrodia*.

Anadyomene flabellata Lamour.

Canary Islands: Tenerife (L.): 1884, 53.

Herbarium: not found in PAD or W.

Correct name: *Anadyomene stellata* (Wulf.) C. Ag.

Authorities: Lawson & Price (1969).

Anadyomene stellata, see *Anadyomene flabellata*.

Asparagopsis delilei Mont.

Canary Islands: Gran Canaria (L.): 1884, 56; Tenerife (L.): 1884, 56.

Herbarium: W.

Obs.: Both present.

Correct name: *Asparagopsis taxiformis* (Delile) Coll. et Herv.

Authorities: Price et al. (1986).

Asparagopsis taxiformis, see *Asparagopsis delilei*.

Asperococcus sinuosus, see *Colpomenia sinuosa*.

Blidingia minima var. *minima*, see *Enteromorpha micrococca*.

Botryocladia botryooides, see *Chrysomenia uvaria*.

Bryopsis corymbosa J. Ag.

Madeira (L.): 1884, 51.

Herbarium: W.

Obs.: Present.

Correct name: *Bryopsis corymbosa* J. Ag.

Authorities: Hamel (1930) and Lawson & Price (1969).

Bryopsis plumosa, see *Bryopsis ramulosa*.

Bryopsis ramulosa Mont.

Canary Islands: Tenerife (L.): 1884, 53.

Herbarium: W.

Obs.: From Santa Cruz, 1863.

Correct name: *Bryopsis plumosa* (Huds.) C. Ag.

Authorities: Taylor (1960) and Lawson & Price (1969).

Callithamnion spec.

Canary Islands: Lanzarote, Arrecife: 1884, 35.

Herbarium: not found in PAD or W.

Callithamnion borneri (Sm.) Harv.

Madeira (L.): 1884, 52.

Herbarium: W, specimens: Grunow 5237: Madeira 1864, leg. Liebetruh (as var. *flabellata* and another specimen with remark: "cum tetrasporis") and Grunow 5250: Madeira, Exped. Novara No 35, coll. Jelinek. This is probably the same material as recorded in Grunow (1868) 60 as var. *rigidum*. Also Grunow 5241: Gran Canaria, leg. Liebetruh 1863, ded. Bauer.

Obs.: All specimens probably belong to the same species, although specimens Grunow 5250 are sterile. The other ones have polysporangia.

Correct name: *Pleonosporium borneri* (Sm.) Naeg.

Authority: Feldmann-Mazoyer (1940).

Callithamnion tetragonum (With.) Gray

Canary Islands: Tenerife, Orotava (Christ): 1886a, 120.

Herbarium: PAD.

Obs.: Present, small specimens on *Gelidium arbuscula*.

Correct name: *Callithamnion tetragonum* (With.) Gray.

Authorities: Dixon & Price (1981).

Callithamnion thuyoides (Sm.) C. Ag. forma *breviarticulata*

Canary Islands: Gran Canaria (L.): 1884, 55.

Herbarium: W.

Obs.: With tetraspores.

Correct name: *Compsothamnion thuyoides* (Sm.) Schmitz.

Authority: Feldmann-Mazoyer (1940).

Callophyllis fastigiata (J. Ag.) J. Ag.

Canary Islands: Tenerife (L.): 1884, 56.

Herbarium: W.

Obs.: A fragment only. Not a *Callophyllis* species, must be deleted from the list of records for Macaronesia.

Correct name: Unknown, no *Ahnfeldtia* or *Chondriella*, possibly in Gigartinales.

Authorities: M. Guiry and C.A. Maggs also tried to name this specimen (pers. comm.).

Carpocaulon digitatum, see *Chondriopsis digitata*.

Carpomitra cabreræ (Clem.) Kütz.

Azores: Formigas: 1889, 189.

Herbarium: PAD.

Obs.: Dredged from a depth of 90 m.

Correct name: *Carpomitra costata* (Stackh.) Batt.

Authority: Fletcher (1987).

Carpomitra costata, see *Carpomitra cabreræ*.

Caulerpa chemnitzia (Turn.) Lamour. forma *minor*

Canary Islands: Lanzarote, Arrecife: 1884, 19.

Herbarium: PAD.

Obs.: Present.

Correct name: *Caulerpa racemosa* (Forssk.) J. Ag. var. *peltata* (Lamour.) Eubank.

Authorities: Lawson & Price (1969).

Caulerpa crassifolia (C. Ag.) J. Ag.

Canary Islands: Gran Canaria (L.): 1884, 53.

Herbarium: W.

Obs.: Present.

Correct name: *Caulerpa taxifolia* (Vahl) C. Ag.

Authorities: Lawson & Price (1969).

Caulerpa peltata Lamour.

Canary Islands: without locality (L.): 1884, 53.

Herbarium: W., Canary Islands without locality, but also from Tenerife, Santa Cruz, both leg. Liebetrueth.

Obs.: Both collections belong to the same species.

Correct name: *Caulerpa racemosa* (Forssk.) J. Ag. var. *peltata* (Lamour.) Eubank.

Authorities: Lawson & Price (1969).

Caulerpa prolifera (Forssk.) Lamour.

Canary Islands: Lanzarote, Arrecife: 1884, 18; Graciosa: 1884, 18.

Herbarium: PAD.

Obs.: Both present, specimens from Arrecife till 15 cm high.

Correct name: *Caulerpa prolifera* (Forssk.) Lamour.

Authorities: Lawson & Price (1969).

Caulerpa racemosa var. *peltata*, see *Caulerpa chemnitzia* var. *minor* and *Caulerpa peltata*.

Caulerpa taxifolia, see *Caulerpa crassifolia*.

Caulerpa webbiana Mont.

Canary Islands: La Palma (L.): 1884, 53.

Herbarium: W.

Obs.: Also from Canary Islands: Tenerife, Orotava (L.).

Correct name: *Caulerpa webbiana* Mont.

Authorities: Lawson & Price (1969).

Ceramium ciliatum (Ell.) Ducluz.

Canary Islands: Gran Canaria (L.): 1884, 55.

Herbarium: W, labelled: "Islas Canarias, leg. Liebetrueth 1863".

Obs.: Also from Madeira, Novara Exp. No 31, leg. Jelinek. Named *Ceramium ciliatum* var., *C. ciliatum* forma *uncinatum* Grun. and *Echinoceras armatum* Kütz. This sample is probably also recorded in Grunow (1868) 63.

Correct name: *Ceramium ciliatum* (Ell.) Ducluz.

Authorities: Price et al. (1986).

Ceramium diaphanum (Lightf.) Roth
Azores: Fayal, Baja di Horta: 1889, 192.
Herbarium: PAD.

Obs.: Present.

Correct name: *Ceramium diaphanum* (Lightf.) Roth
Authority: Feldmann-Mazoyer (1940).

Ceramium diaphanum, see also *Ceramium fastigiatum* var. *pubescens*.

Ceramium echionotum J. Ag.

Canary Islands: Tenerife, Orotava (Christ): 1886a, 120.

Herbarium: PAD.

Obs.: Also (in W) from same locality, leg. Liebetruth 1863, as var.

Correct name: *Ceramium echionotum* J. Ag.

Authority: Feldmann-Mazoyer (1940).

Ceramium echionotum J. Ag. var. *azorica* (Kütz.)

Madeira (L.): 1884, 52.

Herbarium: W.

Obs.: As “*Ceramium echionotum* var., cum tetrasporis, = *Hormoceras azoricum* Kütz.”

Correct name: *Ceramium echionotum* J. Ag.

Authority: Schmidt (1931).

Ceramium echionotum J. Ag. var. *transcurrens* (Kütz.)

Madeira (L.): 1884, 52.

Herbarium: W.

Obs.: As “*Ceramium echionotum* var., cum favelli et cum tetrasporia, = *Acanthoceras transcurrens* Kütz.”

Correct name: *Ceramium echionotum* J. Ag.

Authority: Feldmann-Mazoyer (1940).

Ceramium fastigiatum (Roth) Harv. in Hook var. *pubescens* (Kütz.)

Madeira (L.): 1884, 52.

Herbarium: Not found.

Obs.: In W is a specimen labelled: “*Ceramium fastigiatum* Harv.?, steril, Madeira 45d, Exped. Novara”. This is probably the specimen recorded from Madeira by Grunow (1868) 52.

Correct name: *Ceramium diaphanum* (Lightf.) Roth, probably.

Authority: Feldmann-Mazoyer (1940).

Ceramium liebetruthii, see *Ceramium rubrum* var. *liebetruthii*.

Ceramium rubrum (Huds.) C. Ag. var. *liebetruthii* Grun. in Picc.

Canary Islands: Gran Canaria (L.): 1884, 55.

Herbarium: W, see fig. 1.

Obs.: As: “*Ceramium liebetruthii* Grunow, cum favelli”. This is the holotype of *Ceramium rubrum* var. *liebetruthii*. In the accompanying drawing (by Grunow) a transverse section occurs, showing eight pericentrals and two layers of small cortex cells and a habitus with a stolon from which several erect, much branched axes arise.



Fig. 1. *Ceramium rubrum* var. *liebethuthii* from Gran Canaria, Canary Islands. Holotype. Specimen mounted on mica. Drawings made by Grunow. Material kept in W.

Correct name: *Ceramium rubrum* (Huds.) J. Ag.

Authorities: Price et al. (1986).

Chaetomorpha aerea, see *Chaetomorpha fibrosa*.

Chaetomorpha fibrosa Kütz.

Azores: S. Miguel, Testa de Caos: 1889, 181.

Herbarium: PAD.

Obs.: Cells are shorter than broad and their diameter is $< 200 \mu\text{m}$; identification was not correct. Grunow (1868) 36, 37 described this species and several other *Chaetomorpha* species from Madeira; these have not been studied by us.

Correct name: *Chaetomorpha aerea* (Dillw.) Kütz.

Authority: Schmidt (1931).

Chondria digitata, see *Chondriopsis digitata*.

Chondria spec., see *Laurencia obtusa*.

Chondriella spec., see *Chondrus crispus*.

Chondriopsis dasyphylla (Woodw.) J. Ag.

Canary Islands: Lanzarote, Arrecife: 1884, 46.

Herbarium: PAD.

Obs.: Identification was not correct.

Correct name: *Laurencia chondrioides* Boerg., a new record for Macaronesia.

Authority: Confirmed by M.C. Gil-Rodríguez.

Chondriopsis digitata = *Carpocaulon digitatum* Kütz.

Madeira (L.): 1884, 52.

Herbarium: W.

Obs.: As "*Chondria (Carpocaulon) digitatum* = *Chondriopsis*, Madeira, Exped. Novara No 39, leg. Jelinek". Also recorded and discussed by Grunow (1868) 92.

Correct name: *Laurencia majuscula* (Harv.) Lucas.

Authorities: Confirmed by M.C. Gil-Rodríguez & R.J. Haroun. See also Afonso-Carrillo & Sansón (1989).

Chondriopsis subtilis = *Alsidium subtile* (Kütz.)

Madeira (L.): 1884, 52.

Herbarium: W.

Obs.: Present: Jelinek 44 and 44a. Also recorded and discussed by Grunow (1868) 92.

Correct name: *Laurencia obtusa* (Huds.) Lamour.

Authorities: Confirmed by M.C. Gil-Rodríguez & R.J. Haroun.

Chondrus crispus Stackh.

Cape Verde Islands: St. Vincent: 1886b, 56; 1889, 35.

Herbarium: PAD, only those described in 1886.

Obs.: Two different collections, both by Marcacci (see 1886b, 56). The largest specimens are light in colour, have a cellular medulla and internal cystocarps, the other, smaller, much branched and dark red specimens have a filamentous medulla, a cortex with anticlinal rows of small cells and internal groups of tetraspores.

Correct name: *Gymnogongrus devoniensis* (Greville) Schotter, the larger specimens only. The other specimens are rather similar to *Chondrus crispus* Stackh. According to M. Guiry (pers. comm.) they probably belong to the genus *Chondriella*.

Authority: Ardré (1978).

Chondrus crispus Stackh.

Azores: S. Miguel, Testa de Caos: 1889, 193.

Herbarium: PAD.

Obs.: Identification was not correct.

Correct name: *Gymnogongrus crenulatus* (Turn.) J. Ag.

Authority: Ardré (1978).

Chrysomenia uvaria (L.) J. Ag.

Canary Islands: without locality (B.): 1884, 56

Herbarium: PAD.

Obs.: As “*Lomentaria uvaria*, Puerto Orotava, C. Bolle”.
Correct name: *Botryocladia botryoides* (Wulf.) J. Feldm.
Authority: G. Feldmann (1944).

Chylocladia albertisii Picc.

Canary Islands: Lanzarote, Arrecife: 1884, 37.

Herbarium: PAD.

Obs.: This is the specimen depicted by Piccone 1884, in his figs 3-5, thus the holotype.

Correct name: *Coelarthrum albertisii* (Picc.) Boerg.

Authority: Boergesen (1929).

Chylocladia articulata Grev. in Hook.

Azores: S. Miguel, Testa de Caos: 1889, 195.

Herbarium: PAD.

Obs.: A small, but characteristic, fragment.

Correct name: *Lomentaria articulata* (Huds.) Lyngb.

Authority: Schmidt (1931).

Chylocladia articulata Grev. in Hook

Canary Islands: Tenerife (L.): 1884, 56.

Herbarium: W.

Obs.: From Orotava.

Correct name: *Lomentaria articulata* (Huds.) Lyngb.

Authority: Irvine (1983).

Cladophora brachyclona Mont.

Madeira (L.): 1884, 51.

Herbarium: W.

Obs.: Diameter of apical cells 135-180 μm ; identification was not correct.

Correct name: *Cladophora pellucida* Kütz.

Authority: Van den Hoek (1963).

Cladophora bryopsis, see *Cladophora enormis*.

Cladophora ceratina Kütz.

Canary Islands: Gran Canaria (L.): 1884, 53.

Herbarium: W.

Obs.: “auf *Phycoseris*” (= *Ulva*), as forma *squarrosa*.

Correct name: *Cladophora vagabunda* (L.) Hoek, probably.

Authority: Van den Hoek (1963).

Cladophora coelothrix, see *Cladophora repens* and *Cladophora socialis*.

Cladophora enormis (Mont.) Kütz.

Canary Islands: Gran Canaria (L.): 1884, 53.

Herbarium: W.

Obs.: As “*Cladophora bryopsis* C. Ag. = *Aegagropila enormis* Kütz.” (scr. Grunow). Specimen with long cells, till $25 \times$ their diam., sparsely branched in the upper parts. Apical cells diam. 200-250 μm . The type of *Conferva enormis* Mont. in PC

could not be located (pers. comm. Dr. André) and the type duplicate in L (H.L.B. 937.186, 82, as *Cladophora aegagropila enormis*) is probably *Cladophora lehmanniana* (Lindenb.) Kütz. There is no reason to suppose that *Cladophora enormis* (Mont.) Kütz. belongs to the genus *Cladophoropsis*. The specimen in W was probably incorrectly identified.

Correct name: *Cladophora pellucida* (Huds.) Kütz., probably.

Authorities: Boergesen (1925) and Van den Hoek (1963).

Cladophora glomerata Kütz. var.

Madeira (L.): 1884, 51.

Herbarium: Not found in PAD or W, not seen by Van den Hoek either.

Obs.: *Cladophora glomerata* (L.) Kütz. is a freshwater species that occasionally also occurs in brackish waters.

Authority: Van den Hoek (1963).

Cladophora laetevirens, see *Cladophora lutescens*.

Cladophora lehmanniana, see *Cladophora enormis* and *Cladophora utriculosa*.

Cladophora liebetruthii Grun. in Picc.

Canary Islands: Gran Canaria (L.): 1884, 53.

Herbarium: W.

Obs.: Present. Van de Hoek (1963) selected a specimen from the Ionian sea in L (H.L.B. 937.264, 51) as iso(lecto)type.

Correct name: *Cladophora liebetruthii* Grun. in Picc.

Authority: Van den Hoek (1963).

Cladophora lutescens Kütz.

Salvage Islands: Selvagem Grande: 1884, 17.

Herbarium: PAD.

Obs.: Regular acropetal growth, apical cells $< 70 \mu\text{m}$ diam.

Correct name: *Cladophora laetevirens* (Dillw.) Kütz., probably.

Authority: Van den Hoek (1963).

Cladophora pellucida (Huds.) Kütz.

Salvage Islands: Selvagem Grande: 1884, 17; Madeira (L.): 1884, 51; Canary Islands: Gran Canaria (L.): 1884, 53; Tenerife (L.): 1884, 53.

Herbarium: PAD and W.

Obs.: The Salvage samples (in PAD) contain only a few small specimens. All other samples are in W, the Tenerife sample is from Orotava.

Correct name: *Cladophora pellucida* (Huds.) Kütz.

Authority: Van den Hoek (1963).

Cladophora pellucida, see also *Cladophora brachyclona*, *Cladophora enormis* and *Cladophora utriculosa*.

Cladophora pellucida (Huds.) Kütz. var. *maderensis* Grun. in Picc.

Madeira (L.): 1884, 51.

Herbarium: W.

Obs.: Diameter of apical cells 66-99 μm . Type consists of several specimens. Lecto-

type on mica in small capsule (fig. 2). According to the descriptions by Van den Hoek (1963) this specimen is *Cladophora pseudopellucida* Hoek, but in 1982 he reunited that species with *Cladophora pellucida*.

Correct name: *Cladophora pellucida* (Huds.) Kütz.

Authority: Van den Hoek (1982).

Cladophora prolifera (Roth) Kütz.

Canary Islands: Graciosa: 1884, 16; Tenerife (L.): 1884, 53.

Herbarium: respectively in PAD and W.

Obs.: The Tenerife specimen is from Orotava.

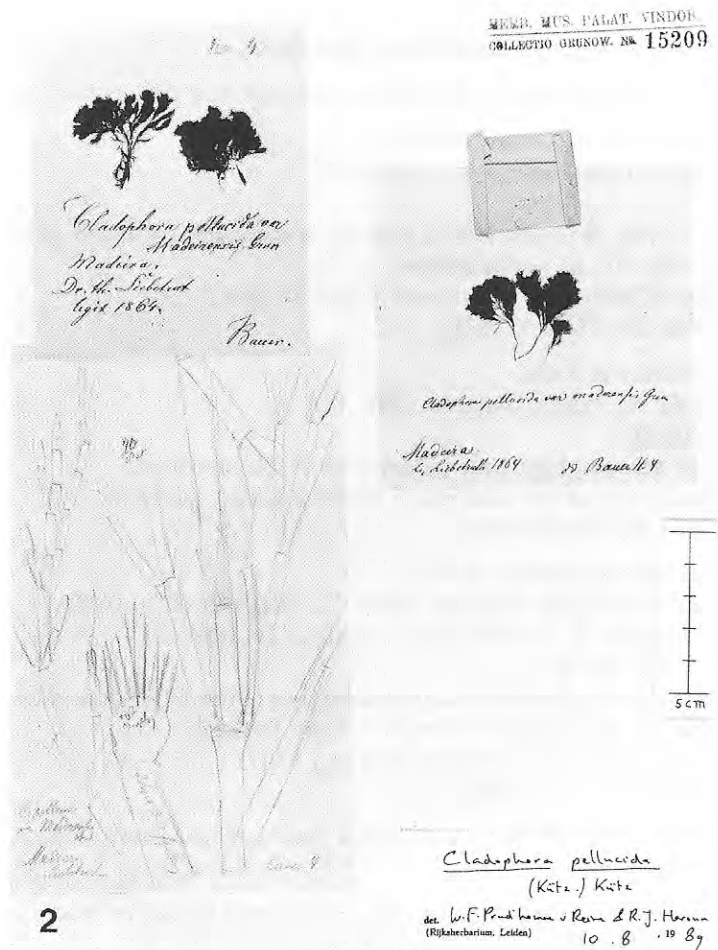


Fig. 2. *Cladophora pellucida* var. *maderensis* from Madeira. Type material. Lectotype specimen on mica in the small capsule. Drawing made by Grunow. Material kept in W.

Correct name: *Cladophora prolifera* (Roth) Kütz.

Authority: Van den Hoek (1963).

Cladophora pseudopellucida, see *Cladophora pellucida* var. *maderensis*.

Cladophora repens (J. Ag.) Harv.

Madeira (L.): 1884, 51; Canary Islands: Gran Canaria (L.): 1884, 53.

Herbarium: W.

Obs.: Specimen from the Canary Islands, leg. Liebetruth, is from Tenerife, Orotava. Grunow (1868) 40 recorded and discussed this species as well as its variety *crassior* from Madeira. He also discussed Liebetruth material from Gran Canaria and Tenerife. In each case he stated that he was not able to separate his specimens from *Cladophora coelothrix*.

Correct name: *Cladophora coelothrix* Kütz.

Authority: Van den Hoek (1963).

Cladophora repens, see also *Cladophora socialis*.

Cladophora socialis Kütz.

Madeira (L.): 1884, 51.

Herbarium: W.

Obs.: Two samples, both from Madeira, leg. Liebetruth 1864. One sample, marked: "*Aegagropila socialis* Kütz. var.", the second has originally been identified as *Cladophora repens*, but this name was erased and changed into "*Cladophora socialis* Kz". In this second sample both *Cladophora coelothrix* and an alga with narrower filaments (diam. apical cells 45-73 μm) occur.

Correct name: *Cladophora socialis* Kütz., second sample, probably. In both the first and the second sample we found *Cladophora coelothrix* Kütz.

Authority: Van den Hoek (1963).

Cladophora utriculosa Kütz.

Cape Verde Islands: St. Vincent: 1886b, 27.

Herbarium: not found in PAD or W.

Cladophora utriculosa Kütz.

Canary Islands: Gran Canaria (L.): 1884, 53.

Herbarium: not found in PAD or W, in W there is, however, a specimen from Madeira.

Obs.: Specimen observed: Madeira, Exped. Novara No. 6, leg. Jelinek. This specimen is identified by us as *Cladophora pellucida* (Huds.) Kütz. The type of *Cladophora utriculosa*, however, can be synonymized with *Cladophora lehmanniana* (Lindenb.) Kütz.

Correct name: not yet certain.

Authority: Van den Hoek (1963).

Cladophora vagabunda, see *Cladophora ceratina*.

Cladophoropsis spec., see *Cladophora enormis*.

Cladostephus bolleanus Mont.

Canary Islands: Lanzarote (B.): Arrecife. 1884, 54.

Herbarium: PAD and W.

Obs.: Denuded specimens, probably washed up at the beach. In PAD as *Cladostephus bollei* Montagne.

Correct name: *Cladostephus spongiosus* (Huds.) C. Ag. forma *verticillatus* (Lightf.) P. v. R.

Authority: Prud'homme van Reine (1972).

Cladostephus spongiosus (Huds.) C. Ag.

Canary Islands: Tenerife (B.): Santa Cruz. 1884, 54.

Herbarium: PC.

Obs.: fertile.

Correct name: *Cladostephus spongiosus* (Huds.) C. Ag. forma *verticillatus* (Lightf.) P. v. R.

Authority: Prud'homme van Reine (1972).

Cladostephus spongiosus forma *verticillatus*, see *Cladostephus bolleanus*, *Cladostephus spongiosus* and *Cladostephus verticillatus*.

Cladostephus verticillatus (Lightf.) C. Ag.

Canary Islands: without locality (L.): 1884, 54; Lanzarote (B.): 1884, 54; Azores: Fayal, Baja di Horta: 1889, 183.

Herbarium: PAD and W.

Obs.: The first collection is in W, specimens from Lanzarote, Arrecife, leg. Bolle are both in PAD and W, the Fayal specimens are only in PAD.

Correct name: *Cladostephus spongiosus* (Huds.) C. Ag. forma *verticillatus* (Lightf.) P. v. R.

Authority: Prud'homme van Reine (1972).

Codium decorticatum, see *Codium tomentosum*.

Codium taylorii, see *Codium tomentosum*.

Codium tomentosum Stackh.

Canary Islands: Lobos (B.): 1884, 53.

Herbarium: Not found in PAD or W.

Obs.: Specimens collected by C. Bolle in PC and W are from the Cape Verde Islands. They have been checked by P.C. Silva, who identified a specimen from St. Vincent as *Codium taylorii* Silva and a specimen from S. Nicolas as *Codium decorticatum* (Woodw.) Howe.

Correct name: not yet clear.

Authority: Silva (1960).

Coelarthum albertisii, see *Chylocladia albertisii*.

Colpomenia sinuosa (Roth) Derb. & Sol., see *Leathesia marina*.

Obs.: Also recorded (as *Asperococcus sinuosus*) from Madeira by Grunow (1868) 49.

Correct name: *Colpomenia sinuosa* (Roth) Derb. et Solier.

Authority: Taylor (1960).

Compsothamnion thuyoides, see *Callithamnion thuyoides* forma *breviarticulata*.

Conferva enormis, see *Cladophora enormis*.

Corallina elongata, see *Corallina officinalis*.

Corallina mediterranea, see *Corallina officinalis*.

Corallina officinalis L.

Azores: S. Miguel, Testa de Caos: 1889, 209; Canary Islands: Tenerife, Santa Cruz: 1884, 42; Salvage Islands: Selvagem Grande: 1884, 42.

Herbarium: PAD.

Obs.: Present, the sample from Santa Cruz contains a mixture of two species. Also recorded (as *Corallina mediterranea*) from Madeira by Grunow (1868) 77.

Correct name: *Corallina elongata* Ell. et Sol., in the Santa Cruz sample probably mixed with *Corallina officinalis* L.

Authority: J. Afonso-Carrillo, pers. comm.

Corallina squamata, see *Corallina virgata*.

Corallina virgata Zan.

Azores: Fayal, Baja di Horta: 1889, 210; Canary Islands: Tenerife, Santa Cruz: 1884, 43.

Herbarium: PAD.

Obs.: Epiphytic on *Gelidium* spec. (Santa Cruz) or *Cladostephus* spec. (Fayal). Also recorded from Madeira by Grunow (1868) 78, who also recorded *Corallina squamata* [= *Haliptilon squamatum* (Ell. & Soland.) Joh.]. This was not checked by us.

Correct name: *Haliptilon virgatum* (Zan.) Garb. et Joh.

Authorities: Afonso-Carrillo et Sansón (1989).

Cordylecladia(?) conferta J. Ag.

Madeira (L.): 1884, 52.

Herbarium: W.

Obs.: Note on label: *Hypnea* sp.

Correct name: *Gracilaria conferta* (Schousb.) Feldm. et Feldm.

Authority: G. Feldmann (1967).

Cymopolia barbata (L.) Lamour.

Canary Islands: Gran Canaria (B. & L.): 1884, 53; Lanzarote, Arrecife: 1884, 22.

Herbarium: PAD, PC and W.

Obs.: Samples from Gran Canaria: Las Palmas in all three herbaria (in PC as *Cymopolia penicellata* Lamour.), sample from Arrecife in PAD.

Correct name: *Cymopolia barbata* (L.) Lamour.

Authority: Valet (1969).

Cymopolia penicellata, see *Cymopolia barbata*.

Cystoseira spec.

Madeira: Funchal: 1884, 31.

Herbarium: not found in PAD or W.

Cystoseira abies-marina, see also *Cystoseira sonderi* and *Sargassum desfontainesii*.

Cystoseira abies-marina (Gmel.) C. Ag.

Azores: Formigas: 1889, 190; Madeira: Funchal: 1884, 29; Salvage Islands: Selvagem Grande: 1884, 29; Canary Islands: Graciosa: 1884, 29; Tenerife (B.): 1884, 55; Tenerife, Orotava (Christ): 1886a, 120.

Herbarium: PAD.

Obs.: All present, some also in W. The record by Grunow (1868) 53 from the Novara Expedition is not mentioned by Piccone, but the material was checked by us. The Christ specimen may be a fragment of *Cystoseira tamariscifolia* (Huds.) Papenf. Correct name: *Cystoseira abies-marina* (Gmel.) C. Ag.

Authority: Gil-Rodríguez (1980).

Cystoseira abrotanifolia C. Ag.

Salvage Islands: Selvagem Grande: 1884, 30; Canary Islands: Graciosa: 1884, 30; Gran Canaria (B.): Las Palmas. 1884, 55.

Herbarium: PAD.

Obs.: Bolle specimens not from Gran Canaria, but from Tenerife, near Paso Alto and near Santa Cruz. A specimen in PAD, collected by d'Albertis in 1882 from Funchal, Madeira, is not listed by Piccone, but this species has already been recorded from Madeira by Grunow (1868) 53.

Correct name: *Cystoseira compressa* (Esp.) Gerl. et Nizam.

Authority: Gil-Rodríguez (1980).

Cystoseira abrotanifolia C. Ag.

Cape Verde Islands: St. Vincent: 1886b, 42.

Herbarium: not found in PAD or W.

Cystoseira barbata J. Ag.

Madeira: Funchal: 1884, 30; Salvage Islands: Selvagem Grande: 1884, 30.

Herbarium: PAD.

Obs.: Only samples from Selvagem Grande.

Correct name: *Cystoseira humilis* Schousb. in Kütz.

Authority: Gil-Rodríguez (1980).

Cystoseira barbata J. Ag. var. *pumila* Mont.

Madeira: Funchal: 1884, 30; Canary Islands: Graciosa: 1884, 30.

Herbarium: PAD and W.

Obs.: Funchal specimens only in PAD, Graciosa specimens both in PAD and W.

Correct name: *Cystoseira humilis* Schousb. in Kütz. var. *humilis*.

Authority: Gil-Rodríguez (1980).

Cystoseira barbata J. Ag. var. *pumila* Mont.

Canary Islands: Tenerife (B.), Santa Cruz: 1884, 55.

Herbarium: W.

Obs.: Remark by Grunow: "dürfte von *Cystoseira pumila* schwerlich verschieden sein". Identification was not correct. A specimen in PAD, annotated: "*Cystoseira barbata*, Ins. Canariae, C. Bolle" is *Cystoseira humilis*.

Correct name: *Cystoseira compressa* (Esp.) Gerl. et Nizam.

Authority: Gil-Rodríguez (1980).

Cystoseira compressa, see *Cystoseira abrotanifolia*, *Cystoseira barbata* var. *pumila* and *Sargassum desfontainesii*.

Cystoseira concatenata (L.) C. Ag.

Cape Verde Islands: St. Vincent: 1886b, 41; 1889, 28.

Herbarium: PAD, only those described in 1886.

Obs.: Two specimens, fragments only.

Correct name: *Cystoseira nodicaulis* (With.) Roberts or *Cystoseira usneoides* (L.) Roberts.

Authority: Roberts (1968).

Cystoseira ericoides (L.) C. Ag.

Cape Verde Islands: St. Vincent: 1886b, 42.

Herbarium: PAD.

Obs.: Fertile.

Correct name: *Cystoseira tamariscifolia* (Huds.) Papenf.

Authority: Gil-Rodríguez (1980).

Cystoseira granulata (Turn.) C. Ag. sensu Grev.

Madeira: Funchal: 1884, 28.

Herbarium: PAD.

Obs.: Fragments only.

Correct name: *Cystoseira nodicaulis* (With.) Roberts or *Cystoseira usneoides* (L.) Roberts.

Authority: Roberts (1968).

Cystoseira granulata (Turn.) C. Ag. sensu Grev.

Cape Verde Islands: St. Vincent: 1886b, 41; 1889, 28.

Herbarium: not in PAD or W.

Cystoseira humilis, see *Cystoseira barbata* and its var. *pumila*.

Cystoseira nodicaulis, see *Cystoseira concatenata* and *Cystoseira granulata*.

Cystoseira pumila, see *Cystoseira barbata* var. *pumila*.

Cystoseira sonderi (Kütz.) Picc.

Cape Verde Islands: St. Vincent: 1886b, 41; 1889, 29.

Herbarium: PAD, only specimens described in 1886.

Obs.: Looks like a coarse and compressed *Cystoseira abies-marina* with somewhat compressed, spineous and branched laterals, inconspicuous receptacula and a distinct main axis. The type of *Treptacantha sonderi* Kütz. in L is only a fragment, the specimens in PAD are much more complete and typical (fig. 3).

Correct name: *Cystoseira sonderi* (Kütz.) Picc.

Authority: Roberts (1978).

Cystoseira tamariscifolia, see *Cystoseira abies-marina* and *Cystoseira ericoides*.

Cystoseira usneoides, see *Cystoseira concatenata* and *Cystoseira granulata*.

Dasya arbuscula (Dillw.) C. Ag.

Canary Islands: Lanzarote, Arrecife: 1884, 50.

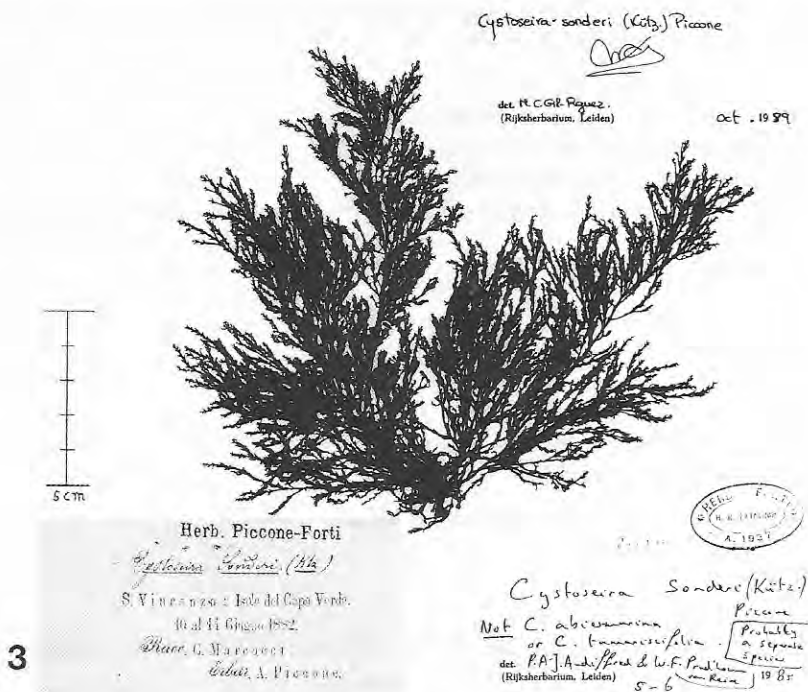


Fig. 3. *Cystoseira sonderi* from S. Vincente, Cape Verde Islands. Complete and typical specimen. Material kept in PAD.

Herbarium: PAD.

Obs.: Fragment only.

Correct name: *Dasya hutchinsiae* Harv.

Authorities: Afonso-Carrillo & Sansón (1989) and Price et al. (1986).

Dasya baillouviana, see *Dasya elegans*.

Dasya elegans (Mart.) C. Ag.

Canary Islands: Lanzarote, Arrecife: 1884, 50.

Herbarium: PAD.

Obs.: Boergesen (1930) has studied this specimen as well.

Correct name: *Dasya baillouviana* (Gmel.). Mont.

Authorities: Afonso-Carrillo & Sansón (1989) and Price et al. (1986).

Dasya hutchinsiae, see *Dasya arbuscula*.

Dasya plana C. Ag.

Canary Islands: Lanzarote, Arrecife: 1884, 50.

Herbarium: PAD.

Obs.: Present.

Correct name: *Eupogodon planus* (C. Ag.) Kütz.

Authorities: Afonso-Carrillo & Sansón (1989) and Silva et al. (1987).

Dasya trichocladus (Mert. in C. Ag.) J. Ag.
Canary Islands: Gran Canaria (L.): 1884, 56.
Herbarium: W.

Obs.: Present.

Correct name: *Lophocladia trichocladus* (C. Ag.) Schmitz.

Authorities: Afonso-Carrillo & Sansón (1989) and Boergesen (1930).

Dasya wurdemannii Bailey ex Harv.

Canary Islands: Gran Canaria (L.): 1884, 56.

Herbarium: W.

Obs.: Also a specimen (Grunow 23213) from Madeira, leg. Liebetruth 1864, this is var. *crispella*.

Correct name: *Heterosiphonia crispella* (C. Ag.) Wynne var. *laxa* (Boerg.) Wynne.

Authorities: Afonso-Carrillo & Sansón (1989) and Wynne (1985).

Dasycladus clavaeformis (Roth) C. Ag.

Canary Islands: Lanzarote, Arrecife: 1884, 21; Graciosa: 1884, 21.

Herbarium: PAD.

Obs.: One Lanzarote specimen was more than 6 cm long.

Correct name: *Dasycladus vermicularis* (Scop.) Krasser.

Authorities: Valet (1969).

Dasycladus vermicularis, see *Dasycladus clavaeformis*.

Dictyopteris ambigua, see *Halyseris polypodioides*.

Dictyopteris membranacea, see *Halyseris polypodioides*.

Dictyopteris polypodioides, see *Halyseris polypodioides*.

Dictyota angustissima, see *Dictyota linearis*.

Dictyota crenulata J. Ag. var. *canariensis* Grun. in Picc.

Canary Islands: without locality (L.): 1884, 54.

Herbarium: W.

Obs.: Partly (Grunow 18751) *Dictyota dichotoma* (Huds.) Lamour. The other sample is the lectotype of *Dilophus crenulatus* (J. Ag.) Nizam. et Gerl. forma *canariensis* (Grun. in Picc.) Nizam et Gerl. See plate 3, fig. 2 and plate 7, fig. 3 in Nizamuddin & Gerloff (1979).

Correct name: *Dictyota crenulata* J. Ag. var. *canariensis* Grun. in Picc.

Authorities: Hörnig et al. (1992).

Dictyota dichotoma (Huds.) Lamour.

Canary Islands: Lanzarote, Arrecife: 1884, 26.

Herbarium: PAD.

Obs.: Very narrow thalli.

Correct name: *Dictyota dichotoma* (Huds.) Lamour. var. *intricata* (C. Ag.) Grev.

Authorities: Hörnig et al. (1992).

Dictyota dichotoma (Huds.) Lamour.

Canary Islands: Gran Canaria (L.): 1884, 54.

Herbarium: W.

Obs.: Present.

Correct name: *Dictyota dichotoma* (Huds.) Lamour.

Authorities: Hörnig et al. (1992).

Dictyota dichotoma, see also *Dictyota crenulata* var. *canariensis*.

Dictyota dichotoma var. *intricata*, see *Dictyota dichotoma*, *Dictyota divaricata* and *Dictyota linearis*.

Dictyota divaricata Lamour.

Canary Islands: Tenerife, Santa Cruz: 1884, 25; Cape Verde Islands: St. Vincent: 1886b, 32.

Herbarium: PAD.

Obs.: Present.

Correct name: *Dictyota dichotoma* (Huds.) Lamour. var. *intricata* (C. Ag.) Grev.

Authorities: Hörnig et al. (1992).

Dictyota fasciola (Roth) Lamour.

Canary Islands: Graciosa: 1884, 25; Tenerife, Orotava (Christ): 1886a, 120; Cape Verde Islands: St. Vincent: 1886b, 31.

Herbarium: PAD.

Obs.: The Christ specimen is only a fragment.

Correct name: *Dictyota fasciola* (Roth) Lamour.

Authorities: Hörnig et al. (1992).

Dictyota linearis (C. Ag.) Grev.

Salvage Islands: Selvagem Grande: 1884, 25; Canary Islands: Lanzarote, Arrecife: 1884, 25.

Herbarium: PAD.

Obs.: The Selvagem Grande specimens also have “*Dictyota angustissima?* Ktz.” written on their labels.

Correct name: *Dictyota dichotoma* (Huds.) Lamour. var. *intricata* (C. Ag.) Grev.

Authorities: Hörnig et al. (1992).

Dictyota pinnatifida Kütz. var. *rigida* Grun. in Picc.

Canary Islands: without locality (L.): 1884, 54.

Herbarium: not in PAD or W.

Dilophus crenulatus forma *canariensis*, see *Dictyota crenulata* var. *canariensis*.

Dipterosiphonia dendritica, see *Polysiphonia dendritica*.

Dipterosiphonia rigens, see *Polysiphonia dendritica* and *Polysiphonia rigens*.

Echinoceras armatum, see *Ceramium ciliatum*.

Enteromorpha clathrata, see *Enteromorpha compressa*.

Enteromorpha compressa (L.) Grev.

Azores: S. Miguel, Testa de Caos: 1889, 179; Canary Islands: Graciosa: 1884, 16; Madeira: Funchal: 1884, 16; Salvage Islands: Selvagem Grande: 1884, 16.

Herbarium: PAD.

Obs.: Often only small bushes of unbranched thalli. The *Enteromorpha compressa*

var. *tenuior*, recorded by Grunow (1868) 44 is *Enteromorpha compressa* var. *compressa*.

Correct name: *Enteromorpha compressa* (L.) Grev.

Authority: Bliding (1963).

Enteromorpha compressa (L.) Grev.

Canary Islands: without locality (B.): 1884, 53.

Herbarium: PC.

Obs.: Small cells, < 15 μm , many pyrenoids: incorrect identification.

Correct name: *Enteromorpha clathrata* (Roth) Grev.

Authority: Bliding (1963).

Enteromorpha compressa var. *tenuior*, see *Enteromorpha compressa*.

Enteromorpha micrococca Kütz.

Madeira (L.): 1884, 51.

Herbarium: W.

Obs.: Novara Expedition, Jelinek 19 & 43. Identification was not correct.

Correct name: *Blidingia minima* (Nägl. ex Kütz.) Kylin var. *minima*.

Authority: Bliding (1963).

Enteromorpha muscoides, see *Enteromorpha ramulosa*.

Enteromorpha ramulosa (Sm.) Hook.

Canary Islands: Lanzarote, Arrecife: 1884, 16; Tenerife (L.): 1884, 53; Tenerife,

Orotava (Christ): 1886a, 120; Madeira (L.): 1884, 51.

Herbarium: PAD and W.

Obs.: Lanzarote and Christ samples are in PAD. Tenerife samples are from Orotava; all Liebetruth samples are in W, the ones from Madeira are from the Novara Expedition, coll. Jelinek. The Madeira collection studied by Grunow (1868) 44 is probably the same sample. The *Enteromorpha spinescens* Kütz. he recorded (same page) from that island is also the present species.

Correct name: *Enteromorpha muscoides* (Clem.) Cremades in Cremades et Perez-Cirera.

Authorities: Bliding (1963) and Cremades & Perez-Cirera (1990).

Enteromorpha spinescens, see *Enteromorpha ramulosa*.

Eucheuma schrammii, see *Meristotheca decumbens*.

Eupogodon planus, see *Dasya plana*.

Galaxaura cylindrica (Ell. & Sol.) Lamour.

Canary Islands: Tenerife, Santa Cruz: 1884, 34.

Herbarium: PAD.

Obs.: With short segments.

Correct name: *Tricleocarpa cylindrica* (Ell. et Sol.) Huism. et Borow.

Authorities: Papenfuss et al. (1982) and Huisman & Borowitzka (1990).

Galaxaura fragilis Lamour.

Canary Islands: Tenerife (L.): 1884, 55.

Herbarium: W.

Obs.: The label gives “Islas Canarias, Liebetruth 1863”, not “Teneriffa”. Identification was not correct.

Correct name: *Galaxaura rugosa* (Ell. et Sol.) Lamour.

Authorities: Papenfuss et al. (1982).

Galaxaura lapidescens (Ell. et Sol.) Lamour.

Canary Islands: Tenerife, Santa Cruz: 1884, 35; Tenerife, Orotava (Christ): 1886a, 120.

Herbarium: PAD.

Obs.: All are tetrasporangial plants, identification was not correct. Huisman & Borowitzka (1990) united *Galaxaura lapidescens* and *Galaxaura rugosa* under the latter name. We do not follow them yet, because they could not prove that these taxa are gametophytes and tetrasporophytes belonging to one single species. Thus we follow Papenfuss et al. (l.c.) in this respect.

Correct name: *Galaxaura rugosa* (Ell. et Sol.) Lamour.

Authorities: Papenfuss et al. (1982).

Galaxaura lapidescens (Ell. et Sol.) Lamour.

Canary Islands: Tenerife (B. & L.): 1884, 55.

Herbarium: PAD and W.

Obs.: In PAD labelled: “Canaries, C. Bolle” [but this specimen is *Galaxaura rugosa* (Ell. et Sol.) Lamour.]; in W labelled: “*Galaxaura lapidescens* var. *minor*, Ins. Canarias, leg. dr. Th. Liebetruth 1863”, the identification of the latter species is correct. For a discussion on *G. lapidescens* and *G. rugosa* see above.

Correct name: *Galaxaura lapidescens* (Ell. et Sol.) Lamour.

Authorities: Papenfuss et al. (1982).

Galaxaura lapidescens var. *minor*, see *Galaxaura lapidescens*.

Galaxaura lapidescens (Ell. et Sol.) Lamour. var. *tomentosa* (Kütz.)

Canary Islands: Tenerife (L.): 1884, 55.

Herbarium: W.

Obs.: Tetrasporangial.

Correct name: *Galaxaura lapidescens* (Ell. et Sol.) Lamour.

Authorities: Papenfuss et al. (1982).

Galaxaura lapidescens (Ell. et Sol.) Lamour. var. *tomentosa* (Kütz.)

Canary Islands: Tenerife, Orotava (Christ): 1886a, 120.

Herbarium: PAD.

Obs.: Identification was not correct.

Correct name: *Galaxaura rugosa* (Ell. et Sol.) Lamour.

Authorities: Papenfuss et al. (1982).

Galaxaura obtusata, see *Galaxaura rugosa*.

Galaxaura rugosa, see also *Galaxaura fragilis* and *Galaxaura lapidescens*, incl. its var. *tomentosa*.

Galaxaura rugosa (Ell. et Sol.) Lamour.

Canary Islands: Tenerife, Santa Cruz: 1884, 35; Tenerife (L.): 1884, 55.

Herbarium: PAD and W.

Obs.: Santa Cruz samples both in PAD and W. Liebethuth sample in W is labelled "Isl. Canarias". Identifications of all samples were incorrect.

Correct name: *Galaxaura obtusata* (Ell. et Sol.) Lamour.

Authorities: Papenfuss et al. (1982).

Gastroclonium reflexum, see *Lomentaria reflexa*.

Gelidium arbuscula Bory ex Boerg., see *Callithamnion tetragonum* and *Gelidium spinulosum*.

Gelidium canariense, see *Gelidium cartilagineum* var. *canariensis*.

Gelidium cartilagineum (L.) Gaillon var. *canariensis* Grun. in Picc.

Canary Islands: Tenerife, Orotava (L.): 1884, 56; Gran Canaria (L.): 1884, 56.

Herbarium: W.

Obs.: No Orotava samples, but samples labelled: "Islas Canarias". One of the species of these samples is chosen as the lectotype (fig. 4).

Correct name: *Gelidium canariense* (Grun. in Picc.) Seoane-Camba.

Authorities: Boergesen (1927) and Seoane-Camba (1979).

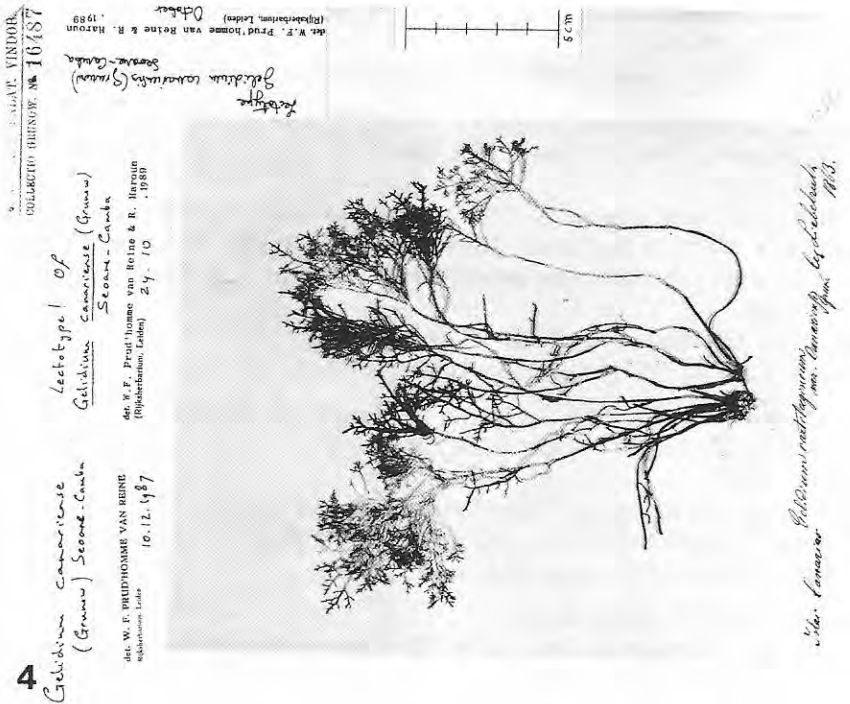


Fig. 4. *Gelidium cartilagineum* var. *canariensis* from Canary Islands. Lectotype. Material kept in W.

Gelidium corneum (Huds.) Lamour. var. *plumula* C. Ag.

Not recorded by Piccone.

Obs.: Recorded by Grunow (1868) 80 from Madeira, but not studied by us.

Gelidium latifolium, see also *Gelidium spinulosum* var. *microdon*.

Gelidium latifolium (Grev.) Born. et Thur.

Azores: S. Miguel, Testa de Caos: 1889, 201; Fayal, Baja di Horta: 1889, 201.

Herbarium: PAD.

Obs.: One specimen from S. Miguel is *Gelidium spinulosum*, the other one was correctly identified.

Correct name: *Gelidium latifolium* (Grev.) Born. et Thur.

Authorities: Schmidt (1931) and Price et al. (1988).

Gelidium microdon, see *Gelidium latifolium* and *Gelidium spinulosum*.

Gelidium microdon Kütz.

Madeira (L.): 1884, 52.

Herbarium: W.

Obs.: Present. Also recorded by Grunow (1868) 81 from Madeira as *Gelidium spinulosum*.

Correct name: *Gelidium spinulosum* (C. Ag.) J. Ag.

Authorities: Schmidt (1931) and Price et al. (1988).

Gelidium pulvinatum (Kütz.) Thur.

Not recorded by Piccone.

Obs.: Recorded by Grunow (1968) 81 from Madeira, but not studied by us.

Gelidium spinulosum (C. Ag.) J. Ag.

Azores: S. Miguel, Testa de Caos: 1889, 201.

Herbarium: PAD.

Obs.: Tetrasporiferous, very spiny. Also recorded by Grunow (1868) 81, who suggested that it also occurs in the Canary Islands (leg. Liebethuth). We studied both specimens. The Azores specimen was correctly identified, the Canary specimen is *Gelidium arbuscula*.

Correct name: *Gelidium spinulosum* (C. Ag.) J. Ag.

Authorities: Schmidt (1931) and Price et al. (1988).

Gelidium spinulosum (C. Ag.) J. Ag. var. *microdon* (Kütz.) Picc.

Azores: S. Miguel, Testa de Caos: 1889, 202.

Herbarium: PAD.

Obs.: Flattened and not spiny. Identification was not correct.

Correct name: *Gelidium latifolium* (Grev.) Born. et Thur.

Authorities: Schmidt (1931) and Price et al. (1988).

Gigartina acicularis (Roth) Lamour.

Salvage Islands: Selvagem Grande: 1884, 36; Canary Islands: Tenerife (L.): 1884, 56; Orotava (Christ): 1886a, 121.

Herbarium: PAD and W.

Obs.: The Liebethuth specimen, also collected from Orotava, is in W, the other ones are in PAD.

Correct name: *Gigartina acicularis* (Roth) Lamour.

Authorities: Dixon & Irvine (1977).

Gracilaria spec.

Cape Verde Islands: St. Vincent: 1886b, 72.

Herbarium: PAD.

Obs.: Identification was not correct. Annotation "sterile" not correct: cystocarpic.

Correct name: *Gymnogongrus devoniensis* (Grev.) Schotter.

Authority: Ardré (1978).

Gracilaria bursa-pastoris, see *Gracilaria compressa*.

Gracilaria compressa (C. Ag.) Grev.

Cape Verde Islands: St. Vincent: 1889, 40.

Herbarium: not found in PAD or W.

Correct name: probably *Gracilaria bursa-pastoris* (Gmel.) Silva.

Authorities: Price et al. (1988).

Gracilaria conferta, see *Cordylecladia conferta*.

Gracilaria corallicola Zan.

Canary Islands: Lanzarote, Arrecife: 1884, 44.

Herbarium: PAD.

Obs.: Identification was incorrect.

Correct name: *Gracilaria multipartita* (Clem.) Harv.

Authorities: Dixon & Irvine (1977) and Price et al. (1988).

Gracilaria dentata J. Ag.

Cape Verde Islands: St. Vincent: 1886b, 71.

Herbarium: PAD.

Obs.: Present, as forma *minuta*.

Correct name: *Hydropuntia dentata* (J. Ag.) Wynne.

Authorities: Lawson & John (1987) and Wynne (1989b).

Gracilaria dura (C. Ag.) J. Ag.

Canary Islands: Lanzarote, Arrecife: 1884, 43.

Herbarium: PAD.

Obs.: Identification was not correct. Probably this name can be deleted from the list of records. See Price et al. (1988) for the other recorded specimen under the name *Gracilaria dura* (C. Ag.) J. Ag.

Correct name: *Gracilaria verrucosa* (Huds.) Papenf.

Authority: Gayral (1958).

Gracilaria multipartita, see *Gracilaria corallicola*.

Gracilaria verrucosa, see *Gracilaria dura*.

Griffithsia barbata (Sm.) C. Ag.

Canary Islands: Tenerife (L.): 1884, 55.

Herbarium: W.

Obs.: Present.

Correct name: *Anotrichium barbatum* (Sm.) Näg.

Authorities: Feldmann-Mazoyer (1940) and Baldock (1976).

Gymnogongrus crenulatus, see also *Chondrus crispus*.

Gymnogongrus crenulatus (Turn.) J. Ag.

Azores: S. Miguel, Testa de Caos: 1889, 193.

Herbarium: PAD.

Obs.: Present, material is not homogeneous.

Correct name: Partly *Gymnogongrus crenulatus* (Turn.) J. Ag. and partly *Gymnogongrus devoniensis* (Grev.) Schotter.

Authority: Ardré (1978).

Gymnogongrus devoniensis, see *Chondrus crispus*, *Gracilaria* spec., *Gymnogongrus crenulatus* and *Gymnogongrus* spec.

Gymnogongrus spec.

Cape Verde Islands: St. Vincent: 1886b, 61.

Herbarium: PAD.

Obs.: Cystocarpic.

Correct name: *Gymnogongrus devoniensis* (Grev.) Schotter.

Authority: Ardré (1978).

Halarachnion latifolium, see *Halymenia latifolia*.

Halarachnion ligulatum, see *Halymenia ligulata* and *Halymenia* spec.

Halarachnion spec., see *Halymenia* spec.

Halimeda discoidea, see *Halimeda tuna*.

Halimeda tuna (Ell. et Sol.) Lamour.

Canary Islands: Lanzarote, Arrecife: 1884, 22.

Herbarium: PAD.

Obs.: Present. Needs further confirmation. After this study was completed, also *Halimeda discoidea* Decaisne was found in the Canary Islands.

Correct name: *Halimeda tuna* (Ell. et Sol.) Lamour.

Authority: Boergesen (1925).

Haliptilon squamatum, see *Corallina squamata*.

Haliptilon virgatum, see *Corallina virgata* and *Jania rubens*.

Haliseris polypodioides, see *Halyszeris polypodioides*.

Halopithys incurvus, see *Rytiphlaea pinastroides*.

Halymenia (*Halarachnion*) spec.

Canary Islands: Lanzarote, Arrecife: 1884, 36.

Herbarium: PAD.

Obs.: Present.

Correct name: *Halymenia latifolia* Crouan forma *trabeculata* (Erc.) Codom., new record for Macaronesia.

Authority: Codomier (1974).

Halymenia (Halarachnion) latifolia Crouan

Canary Islands: Lanzarote, Arrecife: 1884, 36.

Herbarium: PAD.

Obs.: Identification was not correct. Cortex of only one layer of cells.

Correct name: *Halymenia* cf. *vinacea* Howe et Tayl., a new record for Macaronesia.

Authorities: Howe & Taylor (1931) and Taylor (1960).

Halymenia latifolia forma *trabaeculata*, see *Halymenia* spec.

Halymenia (Halarachnion) ligulata (Woodw.) C. Ag.

Canary Islands: Lanzarote, Arrecife: 1884, 36.

Herbarium: PAD.

Obs.: Present.

Correct name: *Halarachnion ligulatum* (Woodw.) Kütz.

Authorities: Dixon & Irvine (1977).

Halymenia cf. *vinacea*, see *Halymenia (Halarachnion) latifolia*.

Halysersis polypodioides (Desf.) C. Ag., N.B. Correct spelling is *Haliseris*.

Azores: Formigas: 1889, 184; Canary Islands: Tenerife (L.): 1884, 55.

Herbarium: PAD and W.

Obs.: Azores sample, from a depth of 90 m in W; Canary Island specimen in PAD.

Needs further study. According to Nizamuddin (1981) *Dictyopteris membranacea*

and *Dictyopteris polypodioides* are separate species. They both may occur in the Ca-

nary Islands (Afonso-Carrillo & al. 1984). If the latter is a separate species its correct

name is *Dictyopteris ambigua* (Clem.) Cremades in Cremades & Pérez-Cirera

(1990).

Correct name: *Dictyopteris membranacea* (Stackh.) Batt.

Authorities: see Obs.

Hapalidium phyllactidium (Kütz.) Kütz.

Canary Islands: Lanzarote, Arrecife: 1884, 40.

Herbarium: PAD.

Obs.: Present, probably correct.

Correct name: *Pneophyllum confervicolum* (Kütz.) Chamb.

Authority: Chamberlain (1981).

Herposiphonia secunda, see *Polysiphonia secunda*.

Heterosiphonia crispella, see *Dasya wurdemanni(i)*.

Hormoceras azoricum, see *Ceramium echionotum* var. *azorica*.

Hydropuntia dentata, see *Gracilaria dentata*.

Hypnea musciformis (Wulf.) Lamour.

Canary Islands: Lanzarote, Arrecife: 1884, 38; Graciosa: 1884, 38; Canary Islands, without locality (L.): 1884, 56; Cape Verde Islands: St. Vincent: 1886b, 76; 1889a, 44.

Herbarium: PAD and W.

Obs.: Liebetruth specimen in W, others in PAD. Of Cape Verdes only 1886 specimens present.

Correct name: *Hypnea musciformis* (Wulf.) Lamour.
Authorities: Gayral (1958) and Schneider & Searles (1991).

Hypnea spinella (C. Ag.) J. Ag.
Cape Verde Islands: St. Vincent: 1886b, 78.
Herbarium: PAD.
Obs.: Present.

Correct name: *Hypnea spinella* (C. Ag.) J. Ag.
Authorities: Haroun & Prud'homme van Reine (1992).

Jania capillacea, see *Jania rubens*.

Jania rubens (L.) Lamour.
Canary Islands: Tenerife, Santa Cruz: 1884, 42.
Herbarium: PAD.
Obs.: Identification was not correct.

Correct name: *Haloptilon virgata* (Zan.) Garb. & Joh.
Authorities: Afonso-Carrillo & Sansón (1989) and Garbary & Johansen (1982).

Jania rubens (L.) Lamour.
Canary Islands: Lanzarote, Arrecife: 1884, 41; Canary Islands, without locality (B.): 1884, 56; Cape Verde Islands: St. Vincent: 1886b, 66.
Herbarium: PAD and W.

Obs.: The Cape Verde specimens (in PAD) and the Bolle specimens (in W), which are from Tenerife, were correctly identified. In the Lanzarote material also *Jania capillacea* Harv. and *Lithophyllum corallinae* (Crouan) Heydr. were observed. Grunow (1868) 78 recorded *Jania rubes* from Madeira.

Correct name: *Jania rubens* (L.) Lamour.
Authority: Taylor (1960).

Laurencia chondrioides, see *Chondriopsis dasyphylla*.

Laurencia hybrida (DC) Lenorm. ex Duby
Canary Islands: Graciosa: 1884: 45.
Herbarium: PAD.

Obs.: Identification was not correct: no palissade cells nor lenticular thickenings of the cell walls, no distichous branching and surface cells in the apical regions slightly projecting.

Correct name: *Laurencia obtusa* (Huds.) Lamour.
Authority: Yamada (1931).

Laurencia majuscula, see *Chondriopsis digitata*.

Laurencia microcladia, see *Laurencia obtusa*.

Laurencia obtusa (Huds.) Lamour.
Azores: Fayal, Baja di Horta: 1889, 202.
Herbarium: PAD.

Obs.: Present, partly as var. *gracilis*.
Correct name: *Laurencia obtusa* (Huds.) Lamour.
Authority: Yamada (1931).

Laurencia obtusa (Huds.) Lamour.

Canary Islands: Graciosa: 1884, 45.

Herbarium: PAD.

Obs.: Annotated as "var.". Also recorded by Grunow (1868) 87 from Madeira. That material (in W) was also checked by us. It was partly correctly identified, partly *Laurencia majuscula*.

Correct name: *Laurencia obtusa* (Huds.) Lamour.

Authority: Yamada (1931), specimens in W confirmed by M.C. Gil-Rodríguez and R.J. Haroun.

Laurencia obtusa (Huds.) Lamour.

Canary Islands: without locality (L.): 1884, 56.

Herbarium: W.

Obs.: From Gran Canaria; one specimen annotated as "*Chondria* sp.?", another one as "*Laurencia obtusa* var. *genuina* Kütz. (var. *clavata* J.A.)". Identification was not correct.

Correct name: *Laurencia microcladia* Kütz., a new record for Macaronesia.

Authority: Confirmed by M.C. Gil-Rodríguez.

Laurencia obtusa, see also *Chondriopsis subtilis* and *Laurencia hybrida*.

Laurencia obtusa (Huds.) Lamour. var. *gracilis* Kütz.

Canary Islands: without locality (L.): 1884, 56.

Herbarium: W.

Obs.: From Gran Canaria.

Correct name: *Laurencia obtusa* (Huds.) Lamour.

Authority: Confirmed by M.C. Gil-Rodríguez.

Laurencia papillosa (Forssk.) Grev.

Canary Islands: Graciosa: 1884, 44.

Herbarium: PAD.

Obs.: No palissade cells and no lenticular thickenings of cell walls, surface cells of small laterals slightly projecting: thus identification was not correct.

Correct name: *Laurencia poiteaui* (Lamour.) Howe, a new record for Macaronesia.

Authority: Taylor (1960) and Schneider & Searles (1991).

Laurencia perforata (Bory) Mont.

Canary Islands: La Palma (L.): 1884, 56.

Herbarium: W.

Obs.: Also some samples labelled "Islas Canarias, Liebetruth 1863".

Correct name: *Laurencia perforata* Mont.

Authority: Yamada (1931).

Laurencia pinnatifida (Huds.) Lamour.

Canary Islands: Graciosa: 1884, 46.

Herbarium: PAD.

Obs.: One small plant was too fragmentary, the other one was not correctly identified.

Correct name: *Laurencia poiteaui* (Lamour.) Howe.

Authority: Taylor (1960) and Schneider & Searles (1991).

Laurencia pinnatifida (Huds.) Lamour. var. *osmunda* (Gmel.) Kütz.

Not in Piccone.

Obs.: Recorded from Madeira by Grunow (1868) 87. The material was not studied by us.

Laurencia poiteau, see *Laurencia papillosa* and *Laurencia pinnatifida*.

Leathesia marina (C. Ag.) Endl.

Canary Islands: Tenerife, Orotava (Christ): 1886a, 120.

Herbarium: PAD.

Obs.: With punctiform sori of plurilocular zoidangia. Identification was not correct.

Correct name: *Colpomenia sinuosa* (Mert.) Derb. et Solier.

Authority: Taylor (1960).

Liagora albicans, see *Liagora decussata*.

Liagora canariensis, see *Liagora fragilis*.

Liagora ceranoides, see *Liagora maderensis*.

Liagora decussata Mont.

Canary Islands: Tenerife, Santa Cruz: 1884, 33; Gran Canaria (B.): 1884, 55.

Herbarium: PAD and W.

Obs.: Bolle specimen in W. Two other Bolle samples, from S. Nicolao, Prainha, 1851, in PAD. These are male plants.

Correct name: *Liagora albicans* Lamour.

Authority: Abbott 1990a.

Liagora distenta (Mert.) Lamour.

Canary Islands: Lanzarote, Arrecife: 1884, 34; Lobos (B.): 1884, 55; Tenerife (L.):

Orotava: 1884, 55.

Herbarium: PAD, PC and W.

Obs.: Lanzarote specimen in PAD, that from Lobos (male) in PC, the Liebetruth specimen in W, but annotated "Islas Canarias", not "Tenerife".

Correct name: *Liagora distenta* (Mert.) Lamour.

Authority: Abbott (1990a and pers. comm.).

Liagora distenta, see also *Liagora fragilis*.

Liagora elongata Zan.

Canary Islands: Tenerife, Santa Cruz: 1884, 33; Gran Canaria (L.): 1884, 55; Tene-

rife (L.): 1884, 55.

Herbarium: PAD and W.

Obs.: Liebetruth specimens (in W) are annotated by Grunow as "var. *canariensis* Grunow".

Correct name: *Liagora farinosa* Lamour.

Authority: Abbott 1990a.

Liagora farinosa, see *Liagora elongata*.

Liagora fragilis Zan.

Madeira (L.): 1884, 52; Canary Islands: Tenerife (L.): 1884, 55.

Herbarium: W.

Obs.: Most specimens are annotated by Grunow as “var. *articulata* Grunow”. Of the Madeira specimens one is *Tricleocarpa cylindrica* (Ell. & Sol.) Huism. & Borow. Another specimen, from Tenerife, Puerto de Orotava, leg. Liebetruth, is *Liagora distenta* (Mert.) Lamour. The other specimens are *Liagora canariensis*, for the Tenerife specimen cf. must be added. The material was not correctly identified. According to Abbott (1990b) the name *Liagora fragilis* as such is correct (see below). Correct name: *Liagora canariensis* Boerg.

Authority: Boergesen (1927).

Liagora fragilis, see *Liagora maderensis*.

Liagora maderensis Sond.

Madeira (L.): 1884, 52.

Herbarium: W.

Obs.: The two samples are both isotypes (the lectotype is in L). This name is often cited as a synonym for *Liagora ceranoides* Lamour. The non-powdery calcification and the characteristically broad carpogonia, however, resulted in the present identification.

Correct name: *Liagora fragilis* Zan.

Authority: Boergesen (1915-1920) and Abbott (1990b).

Liagora tetrasporifera, see *Liagora viscida*.

Liagora valida, see *Liagora maderensis*.

Liagora viscida (Forssk.) C. Ag.

Canary Islands: Lanzarote, Arrecife: 1884, 34; La Palma (L.): 1884, 55.

Herbarium: PAD and W.

Obs.: Both are in W, Lanzarote samples also in PAD, often with many tetraspores.

Correct name: *Liagora tetrasporifera* Boerg.

Authority: Boergesen (1927).

Lithophyllum corallinae, see *Jania rubens*.

Lithophyllum expansum, see *Melobesia strictaeformis*.

Lithothamnion coralloides Crouan

Canary Islands: Lanzarote, Arrecife: 1884, 41.

Herbarium: PAD.

Obs.: We have not verified this identification.

Correct name: *Lithothamnion corallioides* Crouan.

Authorities: South & Tittley (1986).

Lomentaria articulata, see *Chylocladia articulata*.

Lomentaria reflexa Chauvin

Canary Islands: Tenerife, Orotava (Christ): 1886a, 121.

Herbarium: PAD.

Obs.: Very young and small specimen.
Correct name: *Gastroclonium* cf. *reflexum* (Chauvin) Kütz.
Authority: Irvine (1983).

Lomentaria uvaria, see *Chrysomenia uvaria*.

Lophocladia trichoclados, see *Dasya trichoclados*.

Melobesia farinosa Lamour.

Cape Verde Islands: S. Thiago: 1901, 45; Canary Islands: Lanzarote, Arrecife: 1884, 41; Graciosa: 1884, 41; Madeira: Funchal: 1884, 41; Salvage Islands: Selvagem Grande: 1884, 41.

Herbarium: PAD.

Obs.: All present, except the Cape Verde specimen. In PAD there is a sample, labelled: "Azzorre, isola del Pico, 24/8/1886, d'Albertis". It consists of a piece of seagrass with epiphytic *Fosliella farinosa*. However, no seagrasses are known to occur in the Azores.

Correct name: *Fosliella farinosa* (Lamour.) Howe.

Authority: Chamberlain (1983).

Melobesia membranacea (Esp.) Lamour.

Azores: Pico: 1889, 204.

Herbarium: Not found in PAD or W.

Melobesia membranacea (Esp.) Lamour.

Canary Islands: Tenerife, Santa Cruz: 1884, 40; Tenerife, Orotava (Christ): 1886a, 121.

Herbarium: PAD.

Obs.: Both present.

Correct name: *Melobesia membranacea* (Esp.) Lamour.

Authorities: Hamel & Lemoine (1952) and South & Tittley (1986).

Melobesia pustulata Lamour.

Azores: Fayal, Baja di Horta: 1889, 205; Pico: 1889, 205; Canary Islands: Tenerife, Orotava (Christ): 1886a, 121.

Herbarium: PAD.

Obs.: Fayal sample not present.

Correct name: *Titanoderma pustulatum* (Lamour.) Näg.

Authorities: Hamel & Lemoine (1952) and Chamberlain (1991).

Melobesia strictaeformis Aresch. in J. Ag.

Salvage Islands: Selvagem Grande: 1884, 41.

Herbarium: PAD.

Obs.: Small crusts on *Gelidium* spec. or *Pterocladia capillacea*.

Correct name: *Lithophyllum expansum* Phil. forma *strictaeformis* (Aresch.) Foslie, temporary name only.

Authorities: Athanasiadis (1987) and J. Price (pers. comm.).

Meristiella echinocarpa, see *Meristotheca decumbens*.

Meristiella schrammii, see *Meristotheca decumbens*.

Meristotheca ? *decumbens* Grun. in Picc.

Madeira (L.): 1884, 52; Canary Islands, without locality (L.): 1884, 56; Cape Verde Islands: without locality, leg. Bornet: 1884, 52 and S. Thiago (Naumann): 1901, 47. Herbarium: W (except Naumann specimen).

Obs.: The Madeira specimen is the holotype (fig. 5). Both Liebetruth specimens have been annotated by Grunow as "*Rhabdonia decumbens* Grunow" (see fig. 5 & 6). This name has also been used by Askenasy (1888). Figure 9 of plate II in that publication is not from Madeira, but this is from S. Thiago, Cape Verde Islands, a sample in W, Grunow 3884. The correct name for the specimens figured by Askenasy is *Meristiella echinocarpa* (Aresch.) Cheney et Gabr. (fig. 7 & 8). In a later publication (1896), Askenasy suggested that the correct name for all specimens discussed here should be *Mychodea schrammii* Crouan [= *Eucheuma schrammii* (Crouan) J. Ag. and *Meristiella schrammii* (Crouan) Cheney et Gabr.]. We cannot, however, agree with that suggestion. For the specimens cited in the Piccone (1884) paper (our figs 5, 6 & 9) no new name or combination can be suggested by us.

Correct name: *Meristotheca decumbens* Grun. in Picc.

Authorities: Gabrielson & Cheney (1987).

Microdictyon boergesenii, see *Microdictyon umbilicatum*.



Fig. 5. *Meristotheca*? *decumbens* from Madeira. Holotype. Material kept in W.

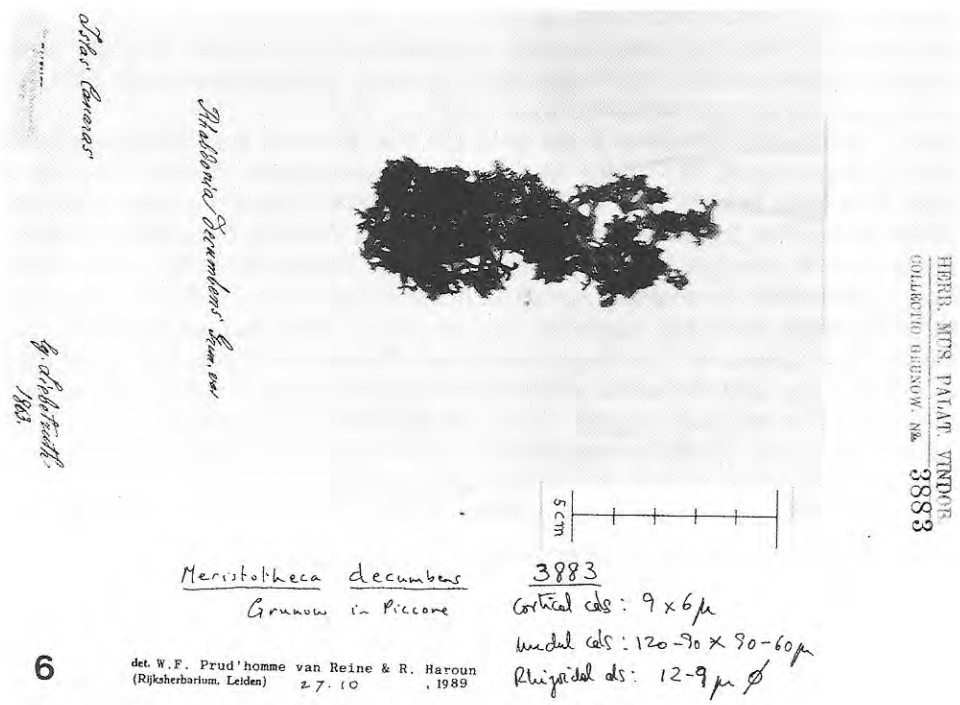


Fig. 6. *Meristotheca? decumbens* from Canary Islands. Material kept in W.

Microdictyon umbilicatum (Velley) Zan.
 Canary Islands: Lanzarote, Arrecife: 1884, 19; Gran Canaria (L.): 1884, 53; Tenerife, Orotava (Christ): 1886a, 120.
 Herbarium: PAD and W.
 Obs.: Gran Canaria sample in W, other ones in PAD.
 Correct name: *Microdictyon boergesensii* Setchell.
 Authority: Setchell (1929).

Mychodea schrammii, see *Meristotheca decumbens*.

Myrionema strangulans, see *Myrionema vulgare*.

Myrionema vulgare Thur. var. *maculaeformis* (Kütz.) Thur. in Le Jol.
 Azores: Fayal, Baja di Horta: 1889, 183.
 Herbarium: PAD.
 Obs.: As *Myrionema strangulans*, on *Ulva rigida*.
 Correct name: *Myrionema strangulans* Grev.
 Authority: Fletcher (1987).

Nereia filiformis (J. Ag.) Zan.
 Canary Islands: Lanzarote, Arrecife: 1884, 27.
 Herbarium: PAD.

Meristiella echinocarpa

(Areschoug) Chemy & Gabrielson

det. W.F. Prud'homme van Reine & R. Haroun
(Rijksherbarium, Leiden) 1989

27. 10

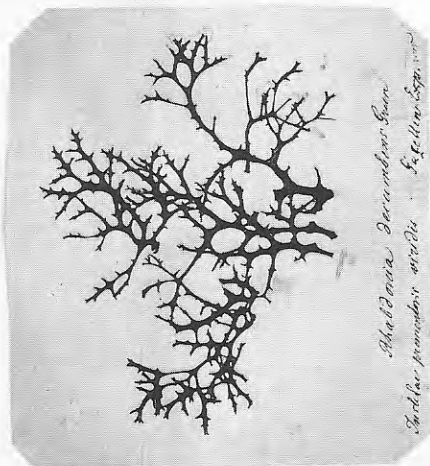
3884

Critical cels: 13.5 x 6 μ ~~10-15~~

budul. cels: 200-130 x 110-80 μ

Rhizoidal cels: 12-7 μ ♂

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Meristiella echinocarpa
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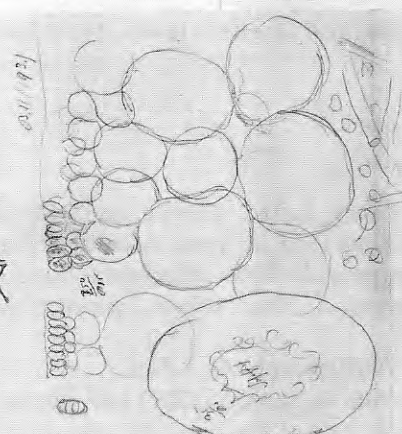
Meristiella echinocarpa

(Areschoug) Chemy & Gabrielson

det. W.F. Prud'homme van Reine & R. Haroun
(Rijksherbarium, Leiden) 1989

27. 10

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Meristiella echinocarpa
det. W.F. Prud'homme van Reine & R. Haroun
(Rijksherbarium, Leiden) 1989

8



Fig. 7, 8. *Meristiella echinocarpa* from Cape Verde Islands. Added drawing made by Grunow. Material kept in W.

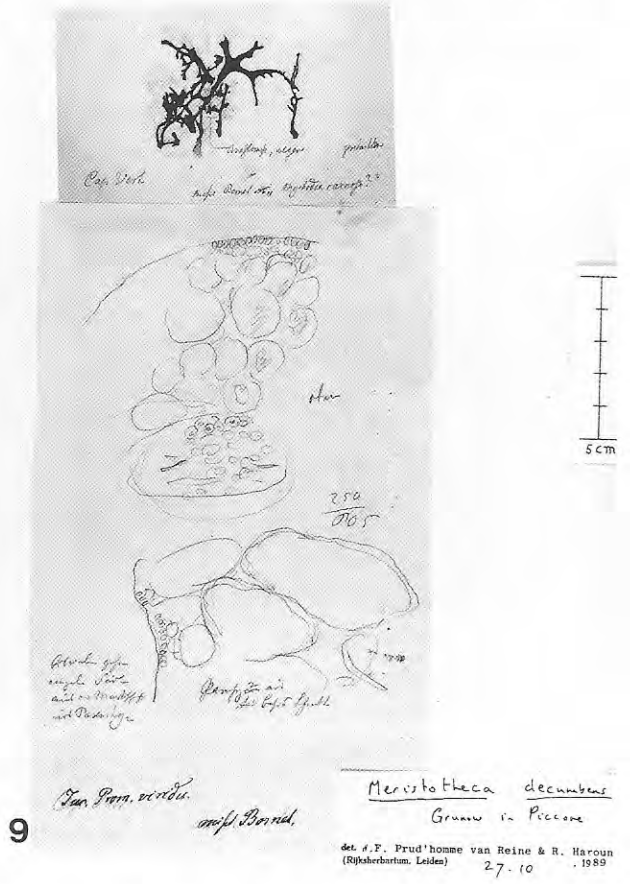


Fig. 9. *Meristotheca? decumbens* from Cape Verde Islands. Added drawings made by Grunow. Material kept in W.

Obs.: Only few hairs, hardly tufted. Comparison with herbarium specimens from the Mediterranean and from the Carribean made clear that few hairs or many hairs, as well as one-celled or two- to three-celled paraphyses are no suitable characters to separate taxa in this genus. Thus *Neireia tropica* (Tayl.) Tayl. is a synonym of *N. filiformis*.

Correct name: *Nereia filiformis* (J. Ag.) Zan.

Authority: Afonso-Carrillo & Sansón (1989) and Taylor (1960).

Nereia tropica, see *Nereia filiformis*.

Nitophyllum gmelini Grev.

Madeira (L.): 1884, 52.

Herbarium: W.

Obs.: Coll. J. Bauer.

Correct name: *Polyneura laciniata* (Lightf.) P. Dixon.

Authorities: Newton (1931) and South & Tittley (1986).

Nitophyllum uncinatum (Turn.) J. Ag.

Canary Islands: Tenerife, Orotava (Christ): 1886a, 121.

Herbarium: PAD.

Obs.: Present.

Correct name: *Acrosorium venulosum* (Zan.) Kylin.

Authority: Wynne (1989a).

Osmundaria volubilis, see *Vidalia volubilis*.

Padina pavonia (L.) Gaill.

Madeira: Funchal: 1884, 26 en (L.): 1884, 51; Canary Islands: Lanzarote, Arrecife: 1884, 26; Canary Islands, without locality (B.): 1884, 55.

Herbarium: PAD, PC and W.

Obs.: Funchal and Lanzarote samples in PAD, Liebetruth specimen in W [the material recorded by Grunow (1868) 50 from Madeira is probably the same sample], Bolle specimen, from Isla de Lobos, in PC.

Correct name: *Padina pavonica* (L.) Lamour.

Authorities: Boergesen (1926) and Price et al. (1978).

Padina pavonica, see *Padina pavonia*.

Peyssonnelia rubra (Grev.) J. Ag.

Canary Islands: Graciosa: 1884, 39.

Herbarium: PAD.

Obs.: Also a sample annotated: "Arrecife, Lanzarote, D'Albertis 14-16/8/1882", not recorded by Piccone.

Correct name: *Peyssonnelia rubra* (Grev.) J. Ag.

Authorities: Boudouresque & Denizot (1975).

Pleonosporium borneri, see *Callithamnion borneri*.

Plocamium cartilagineum, see *Plocamium coccineum*.

Plocamium coccineum (Huds.) Lyngb.

Canary Islands: Tenerife (L.): 1884, 56.

Herbarium: W.

Obs.: Present.

Correct name: *Plocamium cartilagineum* (L.) Dixon.

Authorities: Newton (1931) and South & Tittley (1986).

Pneophyllum confervicolum, see *Hapalidium phyllactidium*.

Polyneura laciniata, see *Nitophyllum gmelini*.

Polysiphonia atlantica, see *Polysiphonia havanensis*.

Polysiphonia coarctata, see *Polysiphonia furcellata*.

Polysiphonia dendritica (C. Ag.) J. Ag.

Canary Islands: without locality (L.): 1884, 56.

Herbarium: Not found.

Obs.: In W there is a sample, annotated as “*Polysiphonia rigens* var., Ins. Canarien, Liebethuth”. This sample, however, contains only *Dipterosiphonia rigens*.

Correct name: *Dipterosiphonia dentritica* (C. Ag.) Falkenb., probably.

Authority: Boergesen (1930).

Polysiphonia elongata (Huds.) Spreng.

Canary Islands: Graciosa: 1884, 47.

Herbarium: PAD.

Obs.: Present, as “var.”.

Correct name: *Polysiphonia elongata* (Huds.) Grev. ex Harv. in Hook.

Authorities: Batten (1923) and South & Tittley (1986).

Polysiphonia flexella (C. Ag.) J. Ag. var. *acanthotricha* (Kütz.)

Canary Islands: Graciosa: 1884, 47.

Herbarium: PAD.

Obs.: Present.

Correct name: *Polysiphonia flexella* (C. Ag.) J. Ag.

Authority: Boergesen (1930).

Polysiphonia furcellata (C. Ag.) Harv. in Hook. var. *patula* J. Ag.

Madeira (L.): 1884, 52.

Herbarium: W.

Obs.: In part as *Polysiphonia coarctata* Kütz.

Correct name: *Polysiphonia furcellata* (C. Ag.) Harv. in Hook.

Authorities: Batten (1923) and South & Tittley (1986).

Polysiphonia gonatophora Kütz.

Canary Islands: Tenerife (L.): 1884, 56.

Herbarium: Not found in PAD or W.

Polysiphonia havanensis Mont.

Azores: S. Miguel: Ponta Delgada: 1889, 203.

Herbarium: PAD.

Obs.: Identification was not correct.

Correct name: *Polysiphonia atlantica* Kapraun et J. Norris.

Authorities: Kapraun et al. (1983).

Polysiphonia myriococca Mont.

Madeira (L.): 1884, 52; Canary Islands: Tenerife (L.): 1884, 56.

Herbarium: W.

Obs.: Only four pericentrals, also in isotype material in L. This is in contradiction with Boergesen (1930), who observed eight pericentrals in type material in PC.

Correct name: *Polysiphonia violacea* (Roth) Spreng.

Authorities: Batten (1923) and South & Tittley (1986).

Polysiphonia opaca (C. Ag.) Mor. et DeNot.

Canary Islands: Graciosa: 1884, 48.

Herbarium: PAD.

Obs.: Present, as "var."

Correct name: *Polysiphonia opaca* (C. Ag.) Moris. et De Not.

Authority: Boergesen (1930).

Polysiphonia rigens J. Ag.

Madeira (L.): 1854, 52; Gran Canaria (L.): 1884, 56.

Herbarium: W.

Obs.: Only Gran Canaria samples, one of them as "var."

Correct name: *Dipterosiphonia rigens* (C. Ag.) Falkenb.

Authority: Boergesen (1930).

Polysiphonia rigens, see *Polysiphonia dendritica*.

Polysiphonia secunda (C. Ag.) Mont.

Canary Islands: Lanzarote, Arrecife: 1884, 47; Tenerife, Orotava (Christ): 1886a, 121; Canary Islands, without locality (L.): 1884, 56.

Herbarium: PAD and W.

Obs.: Liebetruth specimens in W.

Correct name: *Herposiphonia secunda* (C. Ag.) Ambr. var. *secunda*.

Authorities: Boergesen (1930) and Wynne (1986).

Polysiphonia violacea, see *Polysiphonia myriococca*.

Porphyra (*laciniata* var.?) *carnea* Grun. in Picc.

Madeira (L.): 1884, 51.

Herbarium: W.

Obs.: Holotype. On basis of the extant sample (fig. 10) no critical determination is possible.

Correct name: *Porphyra carnea* Grun. in Picc.

Authority: P. Kornmann (pers. comm.).

Pterocladia capillacea (Gmel.) Born. et Thur.

Canary Islands: Tenerife, Santa Cruz: 1884, 39; Tenerife, Orotava (Christ): 1886a, 121. Azores: S. Miguel, Testa de Caos: 1889, 200; Fayal, Baja di Horta: 1889, 200; Pico: 1889, 200.

Herbarium: PAD.

Obs.: Excl. forma *pinnata*.

Correct name: *Pterocladia capillacea* (Gmel.) Born. et Thur.

Authorities: Dixon & Irvine (1977).

Pterocladia capillacea (Gmel.) Born. et Thur. forma *pinnata* (Huds.)

Canary Islands: Tenerife, Orotava (Christ): 1886a, 121.

Herbarium: PAD.

Obs.: Identification was not correct.

Correct name: *Gelidium arbuscula* Bory ex Boerg.

Authorities: Boergesen (1927) and Price et al. (1988).

Holotype of
Porphyra carnea Grunow

HERB. MUS. PALAT. VIENNAE
COLLECTIO GRUNOW. N.º 20017

det. W.F. Prud'homme van Reine & R. Haroun
(Rijksherbarium, Leiden) 24. 10. 1989



Fig. 10. *Porphyra* (*laciniata* var.?) *carnea* from Madeira. Added drawings made by Grunow. Material kept in W.

Rhabdonia decumbens, see *Meristotheca decumbens*.

Rhodymenia holmesii, see *Rhodymenia palmetta*.

Rhodymenia palmetta (Esp.) Grev.

Canary Islands: Gran Canaria (L.): 1884, 56; Azores: S. Miguel, Testa de Caos: 1889, 195.

Herbarium: PAD and W.

Obs.: The Liebetruh specimen is in W and is annotated as "var.".

Correct name: *Rhodymenia pseudopalmata* (Lamour.) Silva.

Authority: Irvine (1983).

Rhodymenia palmetta (Esp.) Grev.

Canary Islands: Lanzarote, Arrecife: 1884, 38.

Herbarium: PAD.

Obs.: Present; identification was not correct.

Correct name: *Rhodymenia holmesii* Ardiss., a new record for Macaronesia.

Authority: Irvine (1983).

Rhodymenia palmetta (Esp.) Grev. var.

Canary Islands: Lanzarote (L.): 1884, 56.

Herbarium: W.

Obs.: This is not the same species as the Liebetruith specimen from Gran Canaria.

Identification was not correct.

Correct name: *Rhodymenia holmesii* Ardiss., a new record, see above.

Authority: Irvine (1983).

Rhodymenia pseudopalmata, see *Rhodymenia palmetta*.

Rytiphlaea pinastroides (Gmel.) C. Ag.

Canary Islands: Tenerife (B. & L.): 1884, 56.

Herbarium: W.

Obs.: Present, Liebetruith sample is from Puerto Orotava.

Correct name: *Halopithys incurvus* (Huds.) Batt.

Authorities: Newton (1931) and South & Tittley (1986).

Rytiphlaea tinctoria (Clem.) C. Ag.

Canary Islands: Lanzarote, Arrecife: 1884, 49; Graciosa: 1884, 49.

Herbarium: PAD.

Obs.: Present.

Correct name: *Rytiphlaea tinctoria* (Clem.) J. Ag.

Authority: Gayral (1966).

Sargassum spec.

Canary Islands: Lanzarote, Arrecife: 1884, 33.

Herbarium: Not found in PAD or W.

Sargassum albertisii Picc.

Salvage Islands: Selvagem Grande: 1884, 32.

Herbarium: PAD.

Obs.: Holotype (fig. 11). Grunow (1916) suggested that it may be a variety of *Sargassum desfontainesii* [var. *albertisii* (Picc. et Grun.) Grun.].

Correct name: *Sargassum vulgare* C. Ag.

Authority: Hamel (1939).

Sargassum bacciferum (Turn.) C. Ag.

Between the Salvage Islands and the Canary Islands: 1884, 32.

Herbarium: PAD.

Obs.: Small fragment.

Correct name: *Sargassum natans* (L.) Meyen.

Authority: Hamel (1939).

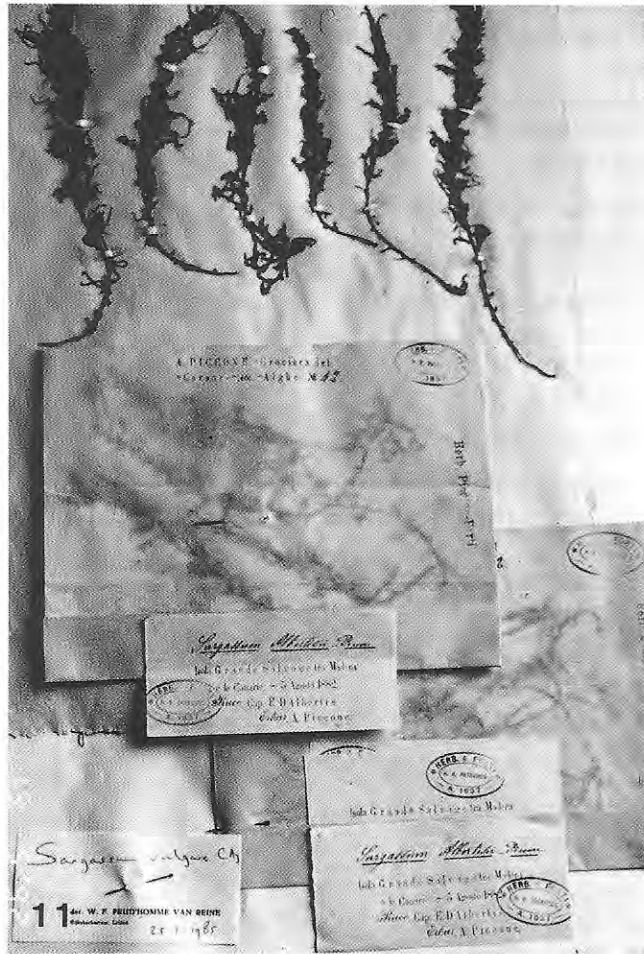


Fig. 11. *Sargassum albertisii* from Selvagem Grande, Salvagem Islands. Holotype. Material kept in PAD.

Sargassum comosum, see *Sargassum desfontainesii*.

Sargassum desfontainesii (Turn.) C. Ag.

Salvage Islands: Selvagem Grande: 1884, 31.

Herbarium: PAD.

Obs.: Present.

Correct name: *Sargassum desfontainesii* (Turn.) C. Ag.

Authorities: Boergesen (1926) and Afonso-Carrillo & Sansón (1989).

Sargassum desfontainesii (Turn.) C. Ag.

Madeira: Funchal: 1884, 31.

Herbarium: PAD.

Obs.: Identification was not correct.

Correct name: *Cystoseira abies-marina* (Gmel.) C. Ag.

Authority: Gil-Rodríguez (1980).

Sargassum desfontainesii (Turn.) C. Ag.

Canary Islands: Tenerife (B. & L.): 1884, 55.

Herbarium: Not available in W or PC, probably sent on loan.

Obs.: A sample in PAD, annotated “*Sargassum desfontainesii* (Turn.) C. Ag., *Sargassum comosum* Montagne, Gran Canaria, Las Palmas, 1856, C. Bolle” is a mixture of *Sargassum desfontainesii* and *Cystoseira compressa* (Esp.) Gerl. et Nizam.

Sargassum fissifolium Kütz.

Canary Islands: Graciosa: 1884, 31; Salvage Islands: Selvagem Grande: 1884, 31;

Madeira: Funchal: 1884, 31 and (L.): 1884, 51.

Herbarium: PAD and W.

Obs.: Liebetruth samples in W, other samples in PAD. Also recorded from Madeira by Grunow (1868) 57.

Correct name: *Sargassum vulgare* C. Ag.

Authority: Hamel (1939).

Sargassum fissifolium Kütz.

Canary Islands: Gran Canaria (B.): 1884, 55.

Herbarium: PAD.

Obs.: Annotated: “Ciudad de Las Palmas. Espèce très repandue sur la côte Nord de Tenerife, p. ex. a Taganana et de Tejina a la Punta del Hidalgo”, srips. Montagne, probably leg. Bolle. Identification was not correct. Specimens in PC, leg. C. Bolle, from Tenerife, are *Sargassum vulgare* C. Ag.

Correct name: *Sargassum desfontainesii* (Turn.) C. Ag.

Authorities: Boergesen (1926) and Afonso- Carrillo & Sansón (1989).

Sargassum lendigerum C. Ag. forma *humilis*

Madeira (L.): 1884, 51.

Herbarium: Not found.

Obs.: Probably sent out on loan from W.

Sargassum natans, see *Sargassum bacciferum*.

Sargassum obtusatum Bory

Cape Verde Islands: St. Vincent: 1886b, 51.

Herbarium: PAD.

Obs.: Probably not correctly identified.

Correct name: *Sargassum vulgare* C. Ag.

Authority: Hamel (1939).

Sargassum vulgare C. Ag.

Cape Verde Islands: S. Thiago (Fea): 1901, 45; Canary Islands: Gran Canaria (B.): 1884, 55.

Herbarium: PAD.

Obs.: The Bolle sample was not found in PAD, PC or W. There is also a record from Madeira by Grunow (1868) 57. This material has not been studied by us.

Correct name: *Sargassum vulgare* C. Ag.

Authority: Hamel (1939).

Sargassum vulgare, see also *Sargassum albertisii*, *Sargassum fissifolium* and *Sargassum obtusatum*.

Sphacelaria bipinnata (Kütz.) Sauv.

Madeira (L.): 1884, 51; Canary Islands: Tenerife (L.): 1884, 54.

Herbarium: W.

Obs.: Only the Tenerife sample is present. Identification was not correct.

Correct name: *Stypocaulon scoparium* (L.) Kütz.

Authority: Checked by W.F. Prud'homme van Reine.

Sphacelaria cirrhosa (Roth) C. Ag.

Canary Islands: Tenerife, Santa Cruz: 1884, 23.

Herbarium: PAD.

Obs.: Identification was not correct. Sample consists of rhizoids only.

Correct name: *Stypocaulon scoparium* (L.) Kütz.

Authority: Checked by W.F. Prud'homme van Reine.

Sphacelaria cirrhosa (Roth) C. Ag.

Canary Islands: Lanzarote, Arrecife: 1884, 23; Cape Verde Islands: St. Vincent: 1886b, 31.

Herbarium: PAD.

Obs.: No Cape Verde sample, the Lanzarote sample contains only a few fragments. Samples in W, as *Sphacelaria irregularis* var. from Madeira (Novara expedition) and from the Canary Islands (L.) are also *Sphacelaria cirrosa*.

Correct name: *Sphacelaria cirrosa* (Roth) C. Ag.

Authority: Prud'homme van Reine (1982).

Sphacelaria cirrhosa (Roth) C. Ag. var. *subsecunda* Grun. in Picc.

Canary Island: Gran Canaria (L.): 1884, 53.

Herbarium: W.

Obs.: Holotype (fig. 12).

Correct name: *Sphacelaria cirrosa* (Roth) C. Ag.

Authority: Prud'homme van Reine (1982).

Sphacelaria cirrosa, see *Sphacelaria cirrhosa* incl. its var. *subsecunda*.

Sphacelaria irregularis, see *Sphacelaria cirrhosa*.

Sphacelaria scoparia (L.) Lyngb.

Canary Islands: Tenerife, Santa Cruz: 1884, 24; Lanzarote, Arrecife: 1884, 23; Azores: S. Miguel, Ponta Delgada: 1889, 181; Fayal, Baja di Horta: 1889, 181.

Herbarium: PAD.

Obs.: All present.

Correct name: *Stypocaulon scoparium* (L.) Kütz.

Authority: Checked by W.F. Prud'homme van Reine.

Sphacelaria scoparia var. *corymbifera*, see *Sphacelaria scoparia* var. *glomerata*.

Sphacelaria cirrosa
(Roth) C. Ag.

det. W. F. PRUD'HOMME VAN REINE
Rijksherbarium, Leiden

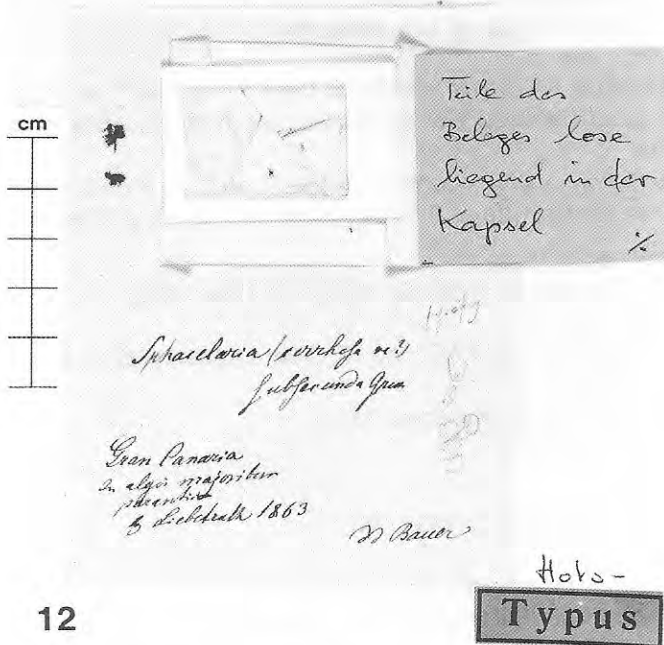


Fig. 12. *Sphacelaria cirrosa* var. *subsecunda* from Gran Canaria, Canary Islands. Holotype. Material kept in W.

Sphacelaria scoparia (L.) Lyngb. var. *disticha* (Lyngb.) Lenorm. ex Picc.
Canary Islands, without locality (B. & L.): 1884, 54.
Herbarium: W.
Obs.: Both present.
Correct name: *Stypocaulon scoparium* (L.) Kütz.
Authority: Checked by W.F. Prud'homme van Reine.

Sphacelaria scoparia (L.) Lyngb. var. *glomerata* (Kütz.) Grun.
Madeira (L.): 1884, 51.
Herbarium: W.
Obs.: Present. Also recorded by Grunow (1868) 47, together with var. *corymbifera*, also from Madeira. The latter taxon was not studied by us.

Correct name: *Stypocaulon scoparium* (L.) Kütz.
Authority: Checked by W.F. Prud'homme van Reine.

Sphacelaria scoparia (L.) Lyngb. var. *virgata* (Kütz.) Grun.
Canary Islands, without locality (L.): 1884, 54.
Herbarium: W.

Obs.: Present.

Correct name: *Stypocaulon scoparium* (L.) Kütz.
Authority: Checked by W.F. Prud'homme van Reine.

Sphaerococcus coronopifolius Stackh.

Canary Islands: Tenerife (B. & L.): 1884, 56.

Herbarium: PAD and W.

Obs.: Bolle sample in PAD, but labelled as from "Canaries"; in W only Liebetruuth samples from Gran Canaria. The species has not been recorded from Tenerife by other observers.

Correct name: *Sphaerococcus coronopifolius* (Good. et Woodw.) C. Ag.

Authorities: Afonso-Carrillo et Sansón (1989) and South & Tittley (1986).

Sporochnus bolleanus Mont.

Canary Islands: Lanzarote, Arrecife: 1884, 27; Lobos (B.): 1884, 55.

Herbarium: PAD and W.

Obs.: Lobos samples both in PAD and W, from Lanzarote there is only a fragmentary specimen in PAD.

Correct name: *Sporochnus bolleanus* Mont.

Authority: Taylor (1960).

Spyridia armata Kütz.

Canary Islands: Tenerife (L.): 1884, 56.

Herbarium: W.

Obs.: A nice and distinctive drawing is also present.

Correct name: *Spyridia hypnoides* (Bory) Papenf.

Authorities: Boergesen (1930), Taylor (1960) and Wynne (1986).

Spyridia filamentosa (Wulf.) Harv. in Hook.

Canary Islands: Lanzarote, Arrecife: 1884, 37; Graciosa: 1884, 37; Tenerife (B. & L.): 1884, 56.

Herbarium: PAD and W.

Obs.: All samples, except the Liebetruuth sample, are in PAD; in W both Tenerife samples are present. In W also a Liebetruuth sample from Gran Canaria.

Correct name: *Spyridia filamentosa* (Wulf.) Harv. in Hook.

Authority: Taylor (1960).

Spyridia hypnoides, see *Spyridia armata*.

Struvea anastomosans (Harv.) Picc. et Grun. var. *canariensis* Picc. et Grun.

Canary Islands: Lanzarote, Arrecife: 1884, 20.

Herbarium: PAD.

Obs.: Two specimens, one of them (figs. 1 and 2 in Piccone 1884) is the lectotype of *Struvea anastomosans* (Harv.) Picc. et Grun. var. *canariensis* Picc. et Grun.

Correct name: *Struvea anastomosans* (Harv.) Picc. et Grun.

Authority: Boergesen (1925) and Lawson & Price (1969).

Stypocaulon scoparium, see *Sphacelaria bipinnata*, *Sphacelaria cirrhosa*, and *Sphacelaria scoparia* and its varieties.

Titanoderma pustulatum, see *Melobesia pustulata*.

Treptacantha sonderi, see *Cystoseira sonderi*.

Tricleocarpa cylindrica, see *Galaxaura cylindrica* and *Liagora fragilis*.

Udotea desfontainii (Lamour.) Decaisne

Canary Islands: Lanzarote, Arrecife: 1884, 23; Graciosa: 1884, 23.

Herbarium: PAD.

Obs.: Both present.

Correct name: *Udotea petiolata* (Turra) Boerg.

Authorities: Hamel (1930) and Lawson & Price (1969).

Ulva fasciata Delile

Cape Verde Islands: St. Vincent: 1886b, 22; 1889, 17; S. Thiago (Fea): 1901, 45.

Herbarium: PAD.

Obs.: Only 1886 sample present.

Correct name: *Ulva fasciata* Delile.

Authorities: Hamel (1930) and Lawson & Price (1969).

Ulva lactuca L.

Madeira: Funchal: 1884, 14.

Herbarium: PAD.

Obs.: As forma *latissima*. Most cells higher than broad. Grunow (1868) 43 described in *Ulva* from Madeira another taxon, *Phycoseris nematoida* (Bory) Mont. var. *latior* forma *brevior*. This material was not studied by us.

Correct name: *Ulva rigida* C. Ag.

Authority: Bliding (1968).

Ulva rigida C. Ag.

Azores: S. Miguel: Ponta Delgada: 1889, 178; Fayal, Baja di Horta: 1889, 178.

Herbarium: PAD.

Obs.: As *Ulva lactuca* var. *rigida*. Several small spiny proliferations.

Correct name: *Ulva rigida* C. Ag.

Authority: Bliding (1968).

Ulva rigida, see also *Myrionema vulgare*.

Valonia ovalis C. Ag.

Canary Islands: Lanzarote, Arrecife: 1884, 18.

Herbarium: PAD.

Obs.: Two specimens, larger and greyer than *Valonia utricularis*. Identification was not correct.

Correct name: *Valonia macrophysa* Kütz.

Authorities: Hamel (1930) and Lawson & Price (1969).

Valonia utricularis (Roth) C. Ag.

Canary Islands: Lanzarote, Arrecife: 1884, 17; Madeira (L.): 1884, 51.

Herbarium: PAD and W.

Obs.: Liebetruth sample in W, this is most probably also the sample recorded by Grunow (1868) 35 from Madeira.

Correct name: *Valonia utricularis* (Roth) C. Ag.

Authorities: Hamel (1930) and Lawson & Price (1969).

Vidalia volubilis (L.) J. Ag.

Canary Islands: Lanzarote, Arrecife: 1884, 49; Graciosa: 1884, 49.

Herbarium: PAD.

Obs.: Both present and undeniable.

Correct name: *Vidalia volubilis* (L.) J. Ag. According to R.E. Norris (1991) it should be *Osmundaria volubilis* (L.) R.E. Norris.

Authority: Falkenberg (1901).

Wrangelia argus (Mont.) Mont.

Canary Islands: La Palma (L.): 1884, 56; Tenerife (L.): 1884, 56.

Herbarium: W.

Obs.: Both present.

Correct name: *Wrangelia argus* (Mont.) Mont.

Authorities: Boergesen (1915-1920) and Afonso-Carrillo & Sansón (1989).

Zonaria flava (Clem.) C. Ag.

Canary Islands: La Palma (L.): 1884, 55; Tenerife (L.): 1884, 55; Azores: S. Miguel, Punta Delgada: 1889, 186; Fayal, Baja di Horta: 1889, 186; Pico: 1889, 186.

Herbarium: PAD and W.

Obs.: Canary specimens in W; Azores specimens in PAD, also a sample from Formigas, dredged from a depth of 90 m. In W there is a specimen from Porto Santo, Madeira archipelago, leg. Bolle.

Correct name: *Zonaria tournefortii* (Lamour.) Mont.

Authority: Taylor (1960).

Zonaria lobata J. Ag.

Canary Islands: Tenerife (L.): 1884, 55.

Herbarium: W.

Obs.: Annotated "Islas Canarias", not: "Tenerife".

Correct name: *Stypopodium zonale* (Lamour.) Papenf.

Authority: Taylor (1960).

Zonaria variegata (Lamour.) C. Ag.

Canary Islands: Lanzarote, Arrecife: 1884, 26; Graciosa: 1884, 26; Tenerife (L.): 1884, 55.

Herbarium: PAD and W.

Obs.: Liebetruth material, from Orotava, in W; other samples in PAD.

Correct name: *Lobophora variegata* (Lamour.) Wom.

Authorities: Taylor (1960) and Price et al. (1978).

Zonaria variegata (Lamour.) C. Ag.

Azores: Formigas: 1889, 185.

Herbarium: PAD.

Obs.: Small fragment only. Identification was not correct.

Correct name: *Zonaria tournefortii* (Lamour.) Mont.

Authority: Taylor (1960).

Conclusions

Of the 185 names of seaweeds recorded by A. Piccone in publications published between 1884 and 1901 from shores of islands in Macaronesia we recovered specimens of 171 of these names in herbaria in Padova, Paris and Vienna. We also studied 3 specimens from Madeira studied by Grunow but not listed by Piccone.

Many of the names as published by Piccone and by Grunow have to be changed. This is necessary either because new taxonomic ideas and the rules of the international code of botanical nomenclature result in a different correct name for the in itself correctly identified specimens or because the identification as such was not correct.

Table 1. New records of marine algae for Macaronesia from collections studied by Piccone and Grunow.

<i>Halymenia latifolia</i> Crouan forma <i>trabaeculata</i> (Erc.) Codom.	<i>Laurencia poiteau</i> (Lamour.) Howe
<i>Halymenia</i> cf. <i>vinacea</i> Howe & Tayl.	<i>Meristiella echinocarpa</i> (Aresch.) Cheney & Gabr.
<i>Laurencia chondrioides</i> Boerg.	<i>Rhodymenia holmesii</i> Aresch.
<i>Laurencia microcladia</i> Kütz.	

Table 2. Marine algae in Macaronesia. Records to be deleted - incorrect identifications.

*) means: Added to this list on basis of probability; not all published records have been checked by us.

<i>Callophyllis fastigiata</i> (J. Ag.) J. Ag.	<i>Gracilaria dura</i> (C. Ag.) J. Ag.
<i>Carpocaulon digitatum</i> Kütz.	<i>Laurencia papillosa</i> (Forssk.) Grev. (perhaps present in Cape Verde Islands).
<i>Chaetomorpha fibrosa</i> Kütz. *)	<i>Leathesia marina</i> (C. Ag.) Endl.
<i>Chondria</i> (<i>Chondriopsis</i>) <i>digitata</i> (Kütz.) auct.	<i>Liagora maderensis</i> Sond.
<i>Chondriopsis dasyphylla</i> (Woodw.) J. Ag.	<i>Microdictyon umbilicatum</i> (Velley) Zan.
<i>Chondriopsis subtilis</i> (Kütz.) auct.	<i>Mychodea schrammii</i> Crouan
<i>Chondrus crispus</i> Stackh.	<i>Nereia tropica</i> (Tayl.) Tayl. *)
<i>Cladophora brachyclona</i> Mont.	<i>Polysiphonia coarctata</i> Kütz.
<i>Cladophora bryopsis</i> C. Ag.	<i>Polysiphonia havanensis</i> Mont.
<i>Cladophora ceratina</i> Kütz.	<i>Polysiphonia myriococca</i> Mont. *)
<i>Cladophora enormis</i> (Mont.) Kütz.	<i>Sargassum comosum</i> Mont.
<i>Cystoseira barbata</i> J. Ag.	<i>Sargassum obtusatum</i> Bory
<i>Cystoseira concatenata</i> (L.) C. Ag.	<i>Sphacelaria bipinnata</i> (Kütz.) Sauv.
<i>Dictyota divaricata</i> Lamour.	<i>Ulva lactuca</i> L. *)
<i>Gelidium cartilagineum</i> (L.) Gaillon	
<i>Gracilaria corallicola</i> Zan.	

Zonaria variegata (Lamour.) C. Ag.

Azores: Formigas: 1889, 185.

Herbarium: PAD.

Obs.: Small fragment only. Identification was not correct.

Correct name: *Zonaria tournefortii* (Lamour.) Mont.

Authority: Taylor (1960).

Conclusions

Of the 185 names of seaweeds recorded by A. Piccone in publications published between 1884 and 1901 from shores of islands in Macaronesia we recovered specimens of 171 of these names in herbaria in Padova, Paris and Vienna. We also studied 3 specimens from Madeira studied by Grunow but not listed by Piccone.

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<i>Halymenia</i> cf. <i>vinacea</i> Howe & Tayl.	<i>Meristiella echinocarpa</i> (Aresch.) Cheney & Gabr.
<i>Laurencia chondrioides</i> Boerg.	<i>Rhodymenia holmesii</i> Aresch.
<i>Laurencia microcladia</i> Kütz.	

Table 2. Marine algae in Macaronesia. Records to be deleted - incorrect identifications.

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<i>Callophyllis fastigiata</i> (J. Ag.) J. Ag.	<i>Gracilaria dura</i> (C. Ag.) J. Ag.
<i>Carpocaulon digitatum</i> Kütz.	<i>Laurencia papillosa</i> (Forssk.) Grev. (perhaps present in Cape Verde Islands)
<i>Chaetomorpha fibrosa</i> Kütz. *)	<i>Leathesia marina</i> (C. Ag.) Endl.
<i>Chondria</i> (<i>Chondriopsis</i>) <i>digitata</i> (Kütz.) auct.	<i>Liagora maderensis</i> Sond.
<i>Chondriopsis dasyphylla</i> (Woodw.) J. Ag.	<i>Microdictyon umbilicatum</i> (Velley) Zan.
<i>Chondriopsis subtilis</i> (Kütz.) auct.	<i>Mychodea schrammii</i> Crouan
<i>Chondrus crispus</i> Stackh.	<i>Nereia tropica</i> (Tayl.) Tayl. *)
<i>Cladophora brachyclona</i> Mont.	<i>Polysiphonia coarctata</i> Kütz.
<i>Cladophora bryopsis</i> C. Ag.	<i>Polysiphonia havanensis</i> Mont.
<i>Cladophora ceratina</i> Kütz.	<i>Polysiphonia myriococca</i> Mont. *)
<i>Cladophora enormis</i> (Mont.) Kütz.	<i>Sargassum comosum</i> Mont.
<i>Cystoseira barbata</i> J. Ag.	<i>Sargassum obtusatum</i> Bory
<i>Cystoseira concatenata</i> (L.) C. Ag.	<i>Sphaecularia bipinnata</i> (Kütz.) Sauv.
<i>Dictyota divaricata</i> Lamour.	<i>Ulva lactuca</i> L. *)
<i>Gelidium cartilagineum</i> (L.) Gaillon	
<i>Gracilaria corallicola</i> Zan.	

Table 3. Marine algae in Macaronesia. Names to be deleted - identifications correct, but new names provided - see paragraph on results.

<i>Acetabularia mediterranea</i> Lamour.	<i>Gelidium microdon</i> Kütz.
<i>Aloidium subtile</i> (Kütz.) aut.	<i>Gracilaria compressa</i> (C. Ag.) Grév.
<i>Anadyomene flabellata</i> Lamour.	<i>Gracilaria dentata</i> J. Ag.
<i>Asparagopsis delilei</i> Mont.	<i>Griffithsia barbata</i> (Sm.) C. Ag.
<i>Bryopsis ramulosa</i> Mont.	<i>Halyseris polypodioides</i> (Desf.) C. Ag.
<i>Callithamnion borrieri</i> (Sm.) Harv.	<i>Hapalidium phyllactidium</i> (Kütz.) Kütz.
<i>Callithamnion thuyoides</i> J. Ag.	<i>Liagora decussata</i> Mont.
<i>Carpomitra cabrerac</i> (Clem.) Kütz.	<i>Liagora elongata</i> Zan.
<i>Caulerpa chemnitzia</i> (Turn.) Lamour.	<i>Lomentaria reflexa</i> Chauvin
<i>Caulerpa crassifolia</i> (C. Ag.) J. Ag.	<i>Melobesia farinosa</i> Lamour.
<i>Caulerpa peltata</i> Lamour.	<i>Melobesia pustulata</i> Lamour.
<i>Chrysiomenia uvaria</i> (L.) J. Ag.	<i>Melobesia strictaeformis</i> Aresch. in J. Ag.
<i>Chylocladia albertisii</i> Picc.	<i>Myrionema vulgare</i> Thur.
<i>Chylocladia articulata</i> Grév.	<i>Nitophyllum gmelini</i> Grév.
<i>Cladophora pseudopellucida</i> Hoek	<i>Nitophyllum uncinatum</i> (Turn.) J. Ag.
<i>Cladophora repens</i> (J. Ag.) Harv.	<i>Padina pavonia</i> (L.) Gaill.
<i>Cladostephus bolleanus</i> Mont.	<i>Plocamium coccineum</i> (Huds.) Lyngb.
<i>Cladostephus verticillatus</i> (Lightf.) C. Ag.	<i>Polysiphonia dendritica</i> (C. Ag.) J. Ag.
<i>Corallina virgata</i> Zan.	<i>Polysiphonia rigens</i> J. Ag.
<i>Cordylecladia conferta</i> J. Ag.	<i>Polysiphonia secunda</i> (C. Ag.) Mont.
<i>Cymopolia penicillata</i> Lamour.	<i>Rhabdonia decumbens</i> (Grun. in Picc.) Grun.
<i>Cystoseira abrotanifolia</i> C. Ag.	<i>Rytiphlaea pinastroides</i> (Gmel.) C. Ag.
<i>Cystoseira ericooides</i> (L.) C. Ag.	<i>Sargassum albertisii</i> Picc.
<i>Dasya arbuscula</i> (Dillw.) C. Ag.	<i>Sargassum bacciferum</i> (Turn.) C. Ag.
<i>Dasya elegans</i> (Mart.) C. Ag.	<i>Sargassum fissifolium</i> Kütz.
<i>Dasya plana</i> C. Ag.	<i>Sphacelaria cirrhosa</i> (Roth) C. Ag.
<i>Dasya trichoclados</i> (Mert. in C. Ag.) J. Ag.	<i>Sphacelaria irregularis</i> Kütz.
<i>Dasya wurdemannii</i> Bailey ex Harv.	<i>Sphacelaria scoparia</i> (L.) Lyngb.
<i>Dasycladus clavaeformis</i> (Roth) C. Ag.	<i>Spyridia armata</i> Kütz.
<i>Dictyota linearis</i> (C. Ag.) Grév.	<i>Udotea desfontainii</i> (Lamour.) Decaisne
<i>Enteromorpha micrococca</i> Kütz.	<i>Valonia ovalis</i> C. Ag.
<i>Enteromorpha ramulosa</i> (Sm.) Hook.	<i>Zonaria flava</i> (Clem.) C. Ag.
<i>Enteromorpha spinescens</i> Kütz.	<i>Zonaria lobata</i> J. Ag.
<i>Galaxaura cylindrica</i> (Fil. & Sol.) Lamour.	<i>Zonaria variegata</i> (Lamour.) C. Ag.
<i>Galaxaura fragilis</i> Lamour.	

Our study resulted in the recognition of 7 newly recorded taxa for Macaronesia (Table 1). On the other hand, 30 taxa (Table 2) have to be deleted from the catalogue of Macaronesian marine algae. For most of these taxa all published Macaronesian records are based on papers of Piccone — other records are usually secondary.

For 69 other records (Table 3) the names used by Piccone are no longer correct. The

identification of these specimens by Piccone and Grunow was correct when published, but changing ideas about taxonomy and nomenclature made it necessary to change these names.

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