

# Seaweeds of the western coast of tropical Africa and adjacent islands: a critical assessment. IV. Rhodophyta (Florideae) 4. Genera L–O

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**SYNOPSIS.** This paper assembles and, so far as is possible without extended field and herbarium studies, examines critically the validity of records of marine and brackish-water Rhodophyta (Florideae) for the western coast of tropical Africa. The whole mainland coastline from the northern boundary of Western Sahara southwards to the southern boundary of Namibia, the oceanic islands from the Salvage Islands southwards to Ascension and St Helena, and all islands close to the African mainland coast are included in the area covered. Each species entry includes all traced records for the species, the names which have previously been applied to it for the area, and additional comments or evaluation, as necessary. Comments are also provided at generic or generic group levels in very complex cases. One new recombination is made, *Nothogenia magnifica* (Pilger) J.H. Price.

## INTRODUCTION

The area dealt with in this part of the work is identical with that covered in parts published previously (Lawson & Price, 1969; Price, John & Lawson, 1978, 1986, 1988, 1992; John, Price, Maggs & Lawson, 1979). Country names employed and their earlier equivalents, and the names of island groups included, are either listed in the legend or both listed and shown on the map in Fig. 1. Genera with the initial letter L–O and constituent species are listed in alphabetical order.

Each main entry consists of:

- (i) **The major bold heading**, representing the currently-accepted name and authorities.
- (ii) **Subsidiary italicized headings at intervals within the entry**. These are in square brackets and essentially subdivide the overall entry. They represent the different ways in which the species has been referred to throughout in past publication patterns for the area. Incorrect citations from past literature have been maintained in these subsidiary heads so that there shall be no doubt as to which record we attribute to which

species or lower taxon level; only when clarification was required for comprehension have changes been made in subhead citation, in which case explanation is given in intermediary or terminal notes.

(iii) **The distributional data**, with countries and island groups arranged in a single alphabetical order. More generalized but still relevant statements of distribution follow the specific country list. Complete distribution patterns require a scan of records established under all names by which a species is known for this or adjacent areas. Hence, generalized distribution statements are included verbatim since it is not always clear for precisely which countries within the area they establish records.

References are presented in two ways:

- (a) as a numbered list (p. 80) to allow inclusion of manuscript and expedition sources, and
- (b) as a list of full references in alphabetical order. Numbers within parentheses after the geographical names refer to corresponding numbers in the references. References relevant only in previous parts of this series are omitted here and numbers are therefore not fully standardized between the present and past parts.

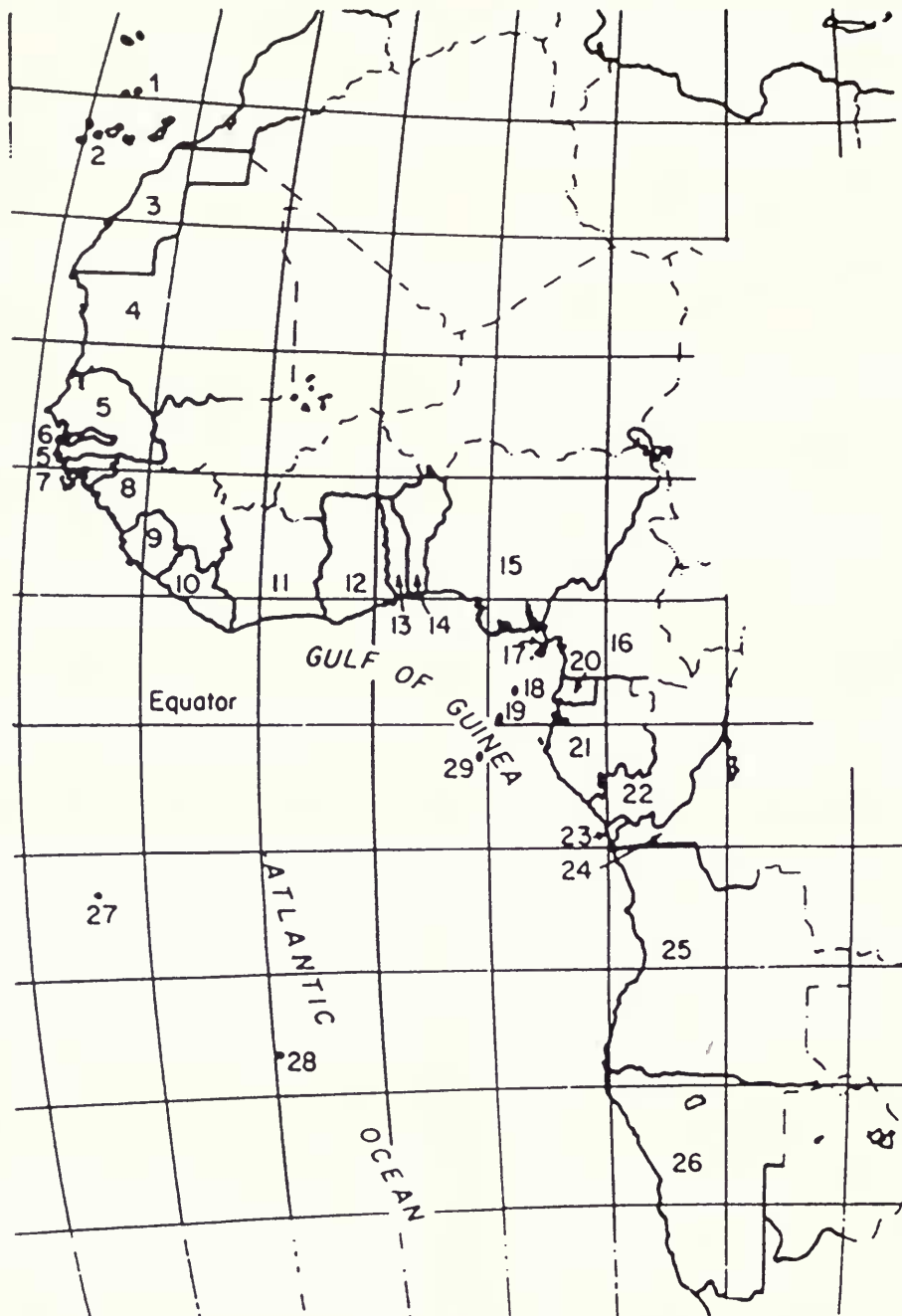


Fig. 1 The coastline of tropical West Africa and the offshore islands

1, Salvage Islands; 2, Canary Islands; 3, Western Sahara [=former Spanish Sahara, Spanish West Africa](includes the often quoted Rio de Oro, the southern region of the country, but excludes Ifni); 4, Mauritanie; 5, Sénégal; 6, Gambia; 7, Guinea-Bissau [=Portuguese Guinea]; 8, Guinée; 9, Sierra Leone; 10, Liberia; 11, Côte d'Ivoire; 12, Ghana; 13, Togo; 14, Benin [=Dahomey]; 15, Nigeria; 16, Cameroun; 17,\* Bioko [=Macias Nguema Biyogo, Fernando Póo]; 18, Príncipe; 19, São Tomé; 20,\* Equatorial Guinea [=Spanish Guinea]; 21, Gabon; 22,\*\* Republic of the Congo; 23, Cabinda; 24, Zaire [=Congo Republic]; 25, Angola; 26, Namibia [=South West Africa]; 27, Ascension Island; 28, Saint Helena; 29, Annobón [=Pagalu]. The Cape Verde Islands, which lie immediately to the west of Dakar (Sénégal), have been omitted from this map but are included in the species list that follows.

\* Nos 17 (Bioko) and 20 (Spanish Guinea, = Rio Muni) on the original map (part I) are now jointly administered as Equatorial Guinea. Bioko is entered separately, where appropriate, in the species list.

\*\* Loango, a name much used by earlier collectors such as Welwitsch, was formerly a coastal region of West Africa. Its application appears to have included much of the coastline of the Republic of the Congo (22), as well as of Cabinda (23) and Zaire (24). Because by far the longest and rockiest part of the Loango coast lies now within the Republic of the Congo we have attributed all marine algal records from Loango to the Congo.

(iv) **Additional qualifying notes** appear below whole entries or individual parts of entries to which they specifically refer. In these notes, references containing species records consist of authors' names, followed by the reference number in the terminal list and, where appropriate, the relevant page numbers after a colon. Other references consist of authors' names, date of publication and sometimes page numbers after a colon.

Species nomenclature has been revised as far as possible and the complete author citation is given for each currently-accepted combination. The subsidiary italicized headings and any other discarded combinations that require reference are included as cross-referencing entries to the currently-accepted names in the overall list. Without extended field and herbarium studies, the treatments presented here are essentially preliminary. Critical updating of the overall text is kept firmly in mind for the whole series and we would appreciate notification of any detected errors and omissions from any of the parts.

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## SPECIES LIST

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### *Lasiothalia* sp.

Côte d'Ivoire (288).

Liberia (129; 350; 586).

*Note.* Very tentative identification, with reservations, by Dr E. Wollaston of specimens from Harper, Cape Palmas, Liberia; not identifiable to species. A small epiphyte possibly easily overlooked or mistaken for *Callithamnion*, which it closely resembles (129). A few filaments have also been collected at nearby Tabou in Côte d'Ivoire. Probably more widespread than suggested by records.

### *Laurencia*

For a set of treatments of certain specific groups and subgeneric relationships across *Laurencia* from the western and central Pacific through the Pacific USA coasts and over to UK, see Saito (1982). Early studies by the same author exist on the genus from Japan (Saito, 1967); Hawaii, the Philippines and adjacent areas (Saito, 1969a); Pacific North America (Saito, 1969b); and southern Australia (Saito & Womersley, 1974). Saito (1982: 306) believes that '... we should not rearrange the species of *Laurencia* until the characteristics of many other species from other areas of the world have been clarified'. Work on the taxonomy of this genus in the Canary Islands, through DNA studies, is in progress (Gil-Rodríguez and others). See also the short review by Gil-Rodríguez & Haroun (658).

### *Laurencia brachyclados* Pilger

Annobón (139;350;456;457;496;535;563;586).

Ascension (475).

*Note.* Steentoft (535) commented: '... specimen of *L. brachyclados* Pilger (Mildbraed 6719 from Annobón) in Hb Børgesen would seem to represent the basal parts of a young plant of [*L. obtusa*] var. *rigidula*, but it is so minute, and at such variance with the published description (Pilger, 1920: 6) that it would seem better to leave it alone for the time being'. Mildbraed specimen 6719 bears little resemblance to Pilger's (456) description. Steentoft (535) also suggested that *L. brachyclados* might possibly be a dwarf or immature form of *L. perforata*, based solely on its description. Examination of the isotype in Herb. Agardh (No. 36616) seemed to confirm this

assertion, but Yamada (563), examining the *L. brachyclados* holotype, stated that it was not *L. perforata*. Much earlier De Toni (139: 371) had commented: 'Meâ sententia haec species videtur forsan cum *Laurencia perforata* Mont. comparanda' (This species perhaps compares with *Laurencia perforata* Mont.). Cribb (112: 166–7) considered that *L. brachyclados* and *L. pygmaea* Weber-van Bosse '... may be the same species' whereas as Pilger (456: 6) commented [*L. brachyclados*]: 'Die neue Art gehort in die Verwandtschaft van *L. scoparia* J. Ag. [q.v.]; sie ist durch ihr sprossform ausgezeichnet'.

### *Laurencia brongniartii* J. Agardh

Canaries (658).

Ghana (299;350;376;377;586;590).

'... Probably widespread in tropical seas. . . ' (350;586).

'Tropical Africa (N. Gambia – Congo river)' (598).

[As *Fucus pinnatifidus* Linnaeus]

Ghana (271).

*Note.* The tentative attribution of Hornemann's (271) record given above for Ghana is explained under the entry for *Laurencia pinnatifida*, which *L. brongniartii* superficially resembles. See also entry for *Laurencia concinna* Montagne. It has been suggested by John & Lawson (590) that this species may sometimes be mistaken for *Laurencia pinnatifida* or *L. undulata* Yamada, so reports of these species from São Tomé (93) and Sénégal (122) respectively may require reinvestigation.

### *Laurencia caespitosa* Lamouroux

See *Laurencia hybrida* (DeCandolle) Lenormand ex Duby and *Laurencia canariensis* Montagne in Kützing.

### *Laurencia canariensis* Montagne in Kützing

Canaries (25;26;27;109;133;318;323;407).

'warm Atlantic. . . ' (410).

[As *Laurencia caespitosa* Lamouroux]

Canaries (401; 407).

*Note.* Cotton's (109) text indicated that this is a replacement name for material that, in 1841, Montagne had considered as *Laurencia caespitosa* Lamouroux. The latter is normally considered to be a synonym, if correctly used, of *L. hybrida* (q.v.). This calls into question the status of this taxon in that records need careful analysis against *L. hybrida*. Børgesen (71: 68–69) and Dangeard (119: 182) very firmly placed *L. canariensis* Montagne in Kützing in synonymy with *L. hybrida*. In 1841 Montagne (401) had commented under his *Laurencia caespitosa* entry: '... Je doute beaucoup de la légitimité spécifique de cette Algue, que la plupart des phycologues réunissent peut-être avec raison à la précédente. Nos échantillons sont assez fidèlement représentés dans la figure citée de Gmelin.' 'la précédente' in this case was *Laurencia pinnatifida* Lamouroux. J. Agardh (25: 769; 26: 769) indicated that Montagne (401: 154) had originally considered his species as conspecific with *Laurencia hybrida* but later came to believe them to be separate. This depends on the conspecificity or separateness of *Laurencia caespitosa* and *L. hybrida*. In 1876 J. Agardh (27: 662) placed this taxon in his 'Species inquirendae'.

### *Laurencia chondrioides* Børgesen

Canaries (598;663).

[As *Chondriopsis dasyphylla* Woodward]

Canaries (439).

*Note.* The placement of *Chondriopsis dasyphylla* under *Chondria dasyphylla* in Price et al. (1986) is incorrect.

### *Laurencia complanata* (Suhr) Kützing

See notes to *Laurencia concinna* Montagne.

**Laurencia concinna** Montagne

*Note.* The question of whether *Laurencia brongniartii* J. Agardh should be recorded under that name or *L. concinna* remains open although arbitrarily decided as the former. Yamada (563) considered *Laurencia concinna* Montagne as synonymous with *Laurencia brongniartii* J. Agardh. Papenfuss (1943: 91), by contrast, considered *L. concinna* to be different from *L. brongniartii* and *L. complanata* (Suhr) Kützing. Cribb (113: 114–5) followed Yamada (563) in synonymizing the two taxa; he used the name *L. brongniartii* J. Agardh (1841) which seems to antedate *L. concinna*. Earlier, Cribb (112: 162–163) had followed Papenfuss (1943: 91) in maintaining the taxa as distinct since the type specimen of *L. brongniartii* ‘. . . is hardly complanate in the dried condition. . .’. Wynne (1986a) in his tropical/subtropical western Atlantic check-list, has accepted *L. concinna* as synonymous with *L. brongniartii*.

**Laurencia coralloopsis** (Montagne) Howe

Canaries (633;658).

Cape Verde Islands (Leiden Herbarium, det. M.C. Gil-Rodríguez and R.J. Haroun).

Salvage Islands (R.J. Haroun, in litt. 1990).

[As *L. corralloopsis* Howe]

Canaries (686).

[As *Laurencia* (grex) *coralloopsis* (Montagne) Howe]

Canaries (634).

**Laurencia cruciata** Harvey

St. Helena (142;260;391;655).

*Note.* Dickie (142) regarded this species as very close to *Laurencia obtusata*, and this comment is repeated by Mellis (391) and Hemsley (260).

**Laurencia densa** (P. Dangeard) J. Feldmann

See *Chondria densa* P. Dangeard and *Laurencia microcladia* Kützing.

**Laurencia elata** (C. Agardh) Harvey

See notes to *Laurencia flexuosa* Kützing.

**Laurencia filiformis** (C. Agardh) Montagne

See note under *Laurencia scoparia* J. Agardh.

**Laurencia flexilis** Setchell

Canaries (658).

Salvage Islands (Leiden Herbarium, det. M.C. Gil-Rodríguez and R.J. Haroun).

**Laurencia flexuosa** Kützing

[As *Laurencia flexuosa* J. Agardh]

Mauritania (349;516).

*Note.* Jaasund (279: 62), under the name *Laurencia elata* (C. Agardh) Harvey, indicated that Yamada (563: 241, pl. 26, 27) included *L. flexuosa* Kützing and *L. luxurians* (Harvey) J. Agardh within *L. elata*, the distribution for which was cited as Australia, Tasmania and South Africa, Jaasund then adding East Africa (Tanzania).

**Laurencia galtsoffii** Howe

Gabon (294;350;586).

Ghana (288;350;586;590).

Liberia (129;288;350;586).

‘. . . in tropical parts of the Atlantic and Pacific Oceans. . .’ (350;586).

‘Tropical Africa (N. Gambia – Congo river)’ (598).

[As *Laurencia galtsoffii* Howe]

Gabon (294).

[As *Laurencia cf. galtsoffii* Howe]

Cape Verde Islands (652).

**Laurencia hybrida** (DeCandolle) Lenormand ex Duby

Canaries (8;16;33;38B;38D;71;118;128A;191;227;229; 230; 237;263;375;489;517;598;633;634;658).

Cape Verde Islands (38B;38D;598).

Salvage Islands (38B;38D;598).

‘. . . Atlantico, desde el sur de Inglaterra a Canarias’ (517).

‘. . . Atlantique (de l’Angleterre aux Canaries). . .’ (33).

‘. . . English coast southwards to the Canary Islands. . .’ (71).

[As *Laurencia caespitosa* Lamouroux]

Canaries (3;38;44;221;254;305;401).

Cape Verde Islands (38;408;596).

‘. . . De l’Angleterre aux Canaries’ (38).

‘. . . D’Angleterre aux Canaries’ (89).

[As *Laurencia caespitosa* Lamouroux var. *subsimplex* Montagne]

Cape Verde Islands (38;408;597).

[As *Laurencia hybrida* DeCandolle forma]

Canaries (387).

*Note.* Børgesen (71: 68–69) very firmly placed Canaries *Laurencia caespitosa* and *L. canariensis* in synonymy with *L. hybrida*. See also the entry for *Laurencia canariensis* Montagne in Kützing.

**Laurencia intermedia** Yamada

Cape Verde Islands (652;683).

Côte d’Ivoire (350;586).

Ghana (295;350;586;590;695).

Liberia (129;295;350;586).

‘. . . does not extend from the Gulf of Guinea into Senegal’ (487).

‘. . . in tropical parts of the Atlantic and Pacific Oceans’ (350;586).

‘. . . probably widespread in many warm temperate and tropical seas’ (590).

‘. . . Tropical Africa (N. Gambia – Congo river)’ (598).

[As *Laurencia papillosa* (Forsskål) Greville]

Ghana (153;338;537).

‘warm Atlantic’ (78).

*Note.* For clinal morphological variation between *L. papillosa* <—> *L. intermedia* <—> *L. paniculata*, see the notes to *L. paniculata*. *Laurencia tropica* Yamada, *L. flexilis* Setchell and (so far as treatment of some areas of the Indian Ocean are concerned) *L. intermedia* Yamada are very similar. Yamada (563: 234), quoted also in Jaasund (279: 61), commented that more specimens becoming available from different localities could well result in his *L. tropica* being reduced to synonymy with *L. flexilis* Setchell. Tanzanian plants clearly identifiable with Børgesen’s Indian Ocean material that he described as *L. flexilis*, correspond to the detailed description provided by Saito (1967: 39–45) for *L. intermedia* Yamada. In the end, Jaasund (279: 62) remained uncertain about the conspecificity of Tanzanian (and Indian Ocean) *L. flexilis* and *L. intermedia*, whilst using the latter

name and generally being inclined to believe that only one taxon was involved.

### **Laurencia implicata** J. Agardh

Canaries (Leiden Herbarium, collected during trip of Helgoland Research Vessel 'Heincke').

[As *L. intricata* Lamouroux]

Cape Verde Islands (652).

São Tomé (350;535;586).

Sénégal (51;59).

?Sierra Leone (30;350;586).

' . . . in warm temperate and tropical parts of the Atlantic and Pacific Oceans. . . ' (350;586).

' . . . Subtropical Africa [Senegal (N. of Gambia); Mauritania; Former W. Sahara]. . . ' (598).

' . . . Tropical Africa (N. Gambia – Congo river)' (598).

*Note.* See notes to *Laurencia majuscula* and *L. obtusa*. *Laurencia implicata* (as *L. intricata*) has been sometimes considered to be a variety of *L. obtusa* (e.g. by Yamada, 563). Lawson & John (350;586) suggest that Aleem's report of this species from Sierra Leone, growing on wave exposed shores as 'tufty cushions' with *Centroceras* and *Gelidium*, may have been a misidentification for *L. tenera*. Often referred to as *L. intricata*, but the correct name is *L. implicata* according to Silva et al. (1987).

### **Laurencia intricata** Lamouroux

See *L. implicata* J. Agardh.

### **Laurencia lata** Howe & Taylor

Sénégal (59;399).

'Subtropical Africa [Senegal <—> of Gambia]; Mauritania; Former W. Sahara]' (598).

*Note.* Bodard & Mollion (59) referred certain of their specimens with dorsiventral symmetry to this species.

### **Laurencia luxurians** (Harvey) J. Agardh

See the notes to *Laurencia flexuosa* Kützing.

### **Laurencia majuscula** (Harvey) Lucas

Canaries (633;647;658;686).

Cameroun (350;586).

Cape Verde Islands (652;683).

Gabon (294;350;586).

Gambia (296;350;586).

Ghana (178;299;300;350;376;377;586;590;654;695).

' . . . Probably pantropical. . . ' (350;586).

' . . . Tropical Africa (N. Gambia – Congo river)' (598).

Mauritanie (Leiden Herbarium, det. M.C. Gil-Rodríguez and R.J. Haroun).

Salvage Islands (Leiden Herbarium, det. M.C. Gil-Rodríguez and R.J. Haroun).

*Note.* This plant was once (257) considered to be a variety of *Laurencia obtusa*, since the two are almost identical anatomically. Morphologically it resembles *L. implicata* but is readily separated by its palisade-like cortical cells.

### **Laurencia microcladia** Kützing

Canaries (686).

Cape Verde Islands (686).

Mauritanie (Leiden Herbarium, det. M.C. Gil-Rodríguez and R.J. Haroun).

Sénégal (54;59;529).

'Atlantique tropicale' (529).

'Subtropical Africa [Senegal (N. of Gambia); Mauritania; Former W. Sahara] (598).

'warmer parts of Atlantic Ocean' (97).

[As *L. obtusa* (Hudson) Lamouroux]

Canaries (439 pro parte).

*Note.* See the entry for *Chondria densa* P. Dangeard, where additional information is presented. Bodard (54), when referring to *L. microcladia*, placed in brackets '(= *L. densa* J. Feldmann, = *Chondria densa* Dangeard)' implying that these entities are conspecific. No further information is given to justify the implication. Prud'homme van Reine et al. (663) have re-investigated Piccone's material (439) and considered that some plants referred to him as *L. obtusa* should be more correctly attributed to *L. microcladia*.

### **Laurencia minuta** sine auctorum

Canaries (647).

*Note.* Cited without authority in a comparative table.

### **Laurencia natalensis** Kylin

See notes on *Laurencia obtusa* (Hudson) Lamouroux.

### **Laurencia nidifica** J. Agardh

Cape Verde Islands (652).

Côte d'Ivoire (288;350;586).

Ghana (288;350;586;590).

Liberia (129;295;350;586).

St. Helena (655).

' . . . in pluribus calidioribus oceanis formae steriles consimiles adsunt, quae an invicem specie differant parum constat. . . ' (27).

' . . . probably widespread in warm temperate and tropical seas. . . ' (350;586).

' . . . Tropical Africa (N. Gambia – Congo river). . . ' (598).

*Note.* This taxon has always presented difficulties of determination due, in part, to sparse material. Doubts recorded in many of the above references relate to that.

### **Laurencia obtusa** (Hudson) Lamouroux

Annobón (456;457;535).

Cameroun (337;350;535;537;586).

Canaries

(8;16;38B;38C;38D;71;128A;191;216;226;227;237;252;379;392;401;439;489;490;499;517;535;546;547;555;556;557A;584;598;633;634;647;658;662;668;684).

Cape Verde Islands

(38B;38C;38D;252;408;499;535;555;556;598).

Gambia (296;350;586).

Ghana (BM Herbarium, Foote 1949).

Mauritanie (38B;38C;38D;252;349;535;555;556).

Principe (93;350;535;586).

Salvage Islands

(38B;38C;38D;215;216;231;375;555;556;598).

São Tomé (93;251;265;350;535;586).

Sénégal (38B;38C;38D;122;529;535;542;555;556).

Sierra Leone (30;350;586).

'African and American coasts; Canary Islands. . . ' (177).

' . . . an den atlantischen Küsten von Grossbritannien bis zu den Canarischen Inseln. . . ' (501).

' . . . Atlantic coasts from Britain to the Canary Islands. . . ' (269).

‘. . . Atlantique (de l’Angleterre aux Canaries). . .’ (33).  
 ‘. . . Atlantique tropical et tempéré’ (542).  
 ‘. . . In mari atlantico et ejus sinibus ab ins. britannicis usque ad Brasiliam et Cap. Bon. Spei. . .’ (318).  
 ‘. . . in oceano atlantico . . . an ubique eadem?’ (27).  
 ‘Nordwestafrika’ (499).  
 ‘Pantropical’ (529).  
 ‘. . . toutes les mers chaudes. . .’ (190).  
 ‘. . . Subtropical Africa [Senegal (N. of Gambia); Mauritania; Former W. Sahara]. . .’ (598).  
 ‘. . . Tropical Africa (N. Gambia – Congo river). . .’ (598).  
 ‘warmer parts of Atlantic Ocean’ (375).  
 ‘Warmer parts of the Atlantic Ocean. . .’ (62;71).  
 ‘Westafrika’ (499).  
 ‘. . . widespread from boreal-antiboreal to tropical seas’ (350;586).  
 [As *Laurencia obtusa* Lamouroux]  
 Canaries (38;44;89;439;547).  
 Cape Verde Islands (38;145;528).  
 ‘. . . Atlantic [Ocean] . . . north and south . . . temperate and tropical latitudes. . .’ (254).  
 ‘. . . De la Grande Brétagne aux Canaries. . .’ (38;89).  
 [As *Laurencia obtusa* Hudson]  
 Cape Verde Islands (150).  
 São Tomé (263;264).  
 ‘Atlantic and Pacific, temperate and subtropical’ (143).  
 ‘Warmer parts of the Atlantic’ (144).  
 [As *Laurencia obtusa* (Hudson) Lamouroux var. *gracilis* Harvey]  
 Canaries (242).  
 [As *Laurencia obtusa* Lamouroux var. *gracilis* Kützing]  
 Canaries (439).  
 [As *Laurencia obtusa* (Hudson) Lamouroux var. *natalensis* (Kylin)]  
 São Tomé (535).  
 [As *Laurencia obtusa* (Hudson) Lamouroux var. *rigidula* Grunow]  
 Annobón (535).  
 São Tomé (535).  
 [As *Laurencia obtusa* (Hudson) Lamouroux var. *gelatinosa* Børgesen]  
 Canaries (71).  
 [As *Laurencia hybrida* (De Candolle) Lenormand ex Duby]  
 Canaries (439 pro parte).  
 Note. Prud’homme van Reine et al. (663) have re-investigated Piccone’s material (439) and consider that some plants referred to him as *L. hybrida* should more correctly be attributed to *L. obtusa*. [As *Laurencia papillosa* Forsskål and var. *gracilis* Kützing]  
 Canaries (439).  
 Note. See note for *Laurencia papillosa*. [As *Laurencia* grex. [presumably ‘prox.’] *obtusa*]  
 Canaries (232B).  
 Note. For comment on the status of varieties sometimes recognized in *L. obtusa* and on the features distinguishing *L. obtusa*/*L. implicata* (the latter considered a variety of the former by Yamada, 563), see Lawson & John, 350: 340). See also the note under *Laurencia majuscula*. According to Steentoft (535), the São Tomé plants are close to two varieties – var. *natalensis* (Kylin) Børgesen which is more delicate, smaller, and more irregularly branched than the type, and var. *rigidula* Grunow, also smaller, more rigid, with more dense erect branches than the type. These minor differences are not a good basis for varietal recognition where morphological plasticity is high. Piccone (439: 45) indicated that he had material of this very polymorphic species that was very similar to varieties recognized under the names of *gracilis* and

*gelatinosa*. See notes under *Laurencia papillosa*, *L. brachyclados* and *L. viridis* for probable records of *L. obtusa*.

### ***Laurencia paniculata* sine auctorum**

See under *L. patentiramea* (Montagne) Kützing.

### ***Laurencia papillosa* (C. Agardh) Greville**

[As *L. papillosa* (Forsskål) Greville]  
 Ascension Island (474;475).  
 Annobón (456;457).  
 Cameroun (337;350;454;484;500;586).  
 Canaries (128A;227;584;658).  
 Cape Verde Islands (38;150;191;598;683;686).  
 Mauritanie (624).  
 ‘. . . in oceano Atlantico ad littora calidiora Africae. . .’ (133).  
 ‘. . . in oceano atlantico calidiori ad littora Africae. . .’ (26).  
 ‘. . . toutes les mers tropicales’ (190).  
 ‘. . . Tropical Africa (N. Gambia – Congo river). . .’ (598).  
 ‘Warmer parts of the Atlantic Ocean. . .’ (62).  
 [As *Laurencia papillosa* J. Agardh var. *thyrsoides*]  
 Cape Verde Islands (38).  
 [As *Laurencia papillosa* Forsskål var. *thyrsoides*]  
 Cape Verde Islands (150).  
 [As *Laurencia papillosa* (Forsskål) J. Agardh]  
 ‘. . . in calidior atlantico. . .’ (27).  
 [As *Laurencia papillosa* Greville]  
 ‘Warm Atlantic’ (410).

Note. Yamada (563), who actually described *Laurencia intermedia*, regarded *L. papillosa* and *L. paniculata* as probably representing ‘. . . the extreme forms of one very variable species in which *L. intermedia* may be included. . .’. Piccone (439: 44–45) indicated that he had only one very small specimen from the Canaries. Børgesen reported (71: 68) that Forti had allowed him to see the small fragment, stating ‘. . . It was so small that I did not feel inclined to make an anatomical examination of it, but according to its appearance and colour, more reddish than *L. papillosa*, it can most probably be referred to *Laurencia obtusa*’. The Mauritanian record (624) is given with a query. See also under *L. obtusa*.

### ***Laurencia patentiramea* (Montagne) Kützing**

[As *L. paniculata* (C. Agardh) Kützing]  
 Canaries (38C;38D;598).  
 Cape Verde Islands (38C;38D;44;598).  
 Sénégal (37;450;451).  
 [As *Laurencia paniculata* (C. Agardh) J. Agardh]  
 Canaries (658).  
 Sénégal (529).  
 [As *Laurencia paniculata* J. Agardh]  
 Mauritanie (624).

Note. Audiffred (38C) indicated his record as new to the Canary Islands. Lawson & John (350, 586) repeated Yamada’s (563) statement of opinion that *L. patentiramea* (as *L. papillosa*) and ‘*L. paniculata* J. Agardh’ may represent ‘. . . the extreme forms of one very variable species in which *L. intermedia* may be included’. Askenasy (37: 47) indicated in a footnote that the specimens of *Laurencia* were very fragmentary and that Bornet, who had determined them, had given most with doubt. Given as *Laurencia paniculata*? (Agardh) Kützing by Piccone (450, 451), the Piccone (451) record was based on the Naumann (*Gazelle*) collection determined by Askenasy. See also the ‘*Laurencia sp. A*’ from Sénégal recorded by Sourie (529) and also note under *Laurencia papillosa*. For the correct name of this taxon, see Silva et al. (1987: 67, 68).

**Laurencia perforata** Montagne

See under *Laurencia tenerrima* (Clemente) Cremades & Pérez-Cirera.

**Laurencia pinnatifida** (Hudson) Lamouroux

Annobón (456).

Canaries (13;38D;226;227;229;230;232B;237;252;253;375;379;401;489;517;584;598;633;658).

Cape Verde Islands (Leiden Herbarium, det. M.C. Gil-Rodríguez and R.J. Haroun).

?Ghana (350;586).

Mauritanie (38D;252;253;344;349;567).

Salvage Islands (38B;38D;231;375;598).

São Tomé (93;251;295;350;586;590).

Sénégal (38D;530?).

Western Sahara (38D;349).

‘. . . Atlántico Oriental (Inglaterra – Mauritania). . .’ (253).

‘. . . Atlantique (de Norvege à la Mauritanie). . .’ (33).

‘. . . Norwegen bis Mauritanien’ (567).

‘. . . widespread in boreal-antiboreal seas and less common in tropical seas. . .’ (350;586).

‘Subtropical Africa [Senegal (N. of Gambia); Mauritania; Former W. Sahara]’ (598).

‘Tropical Africa (N. Gambia – Congo River)’ (598).

[As *Laurencia pinnatifida* Lamouroux]

Canaries (44;214;268).

São Tomé (261;263).

‘. . . Atlantique depuis les côtes anglaises jusqu’en Mauritanie. . .’ (222).

‘. . . west coast of Africa. . .’ (268).

[As *Laurencia pinnatifida* (Gmelin) Lamouroux]

Annobón (457;535).

Canaries (16;42;71;191;230;236;387;392;499;535;546;556).

Mauritanie (122;529;535;556).

Salvage Islands (38B;556;556A).

São Tomé (93;535).

Sénégal (529;535;556).

Western Sahara (556).

‘Afrikanischen Küste von Marokko und den atlantischen Inseln bis zum Kap’ (239).

‘. . . Faeroes southwards to the Canary Islands. . .’ (71).

‘. . . most eastern Atlantic coasts south to Sénégal’ (535).

‘Nordwestafrika’ (499).

‘Westafrika’ (499).

[As *Laurencia pinnatifida* (Turner) Lamouroux]

‘. . . De la Grande-Bretagne aux Canaries. . .’ (89).

[As *Fucus pinnatifidus* Linnaeus]

Ghana (271).

*Note.* São Tomé plants were regarded with some doubt by Lawson & John (350, 586) since dredged from 11 m; elsewhere this species is intertidal or shallow subtidal. Records are not confirmable since neither the Newton (1881) plant (see 535) nor the Carpine (93) plant (Huvé, *pers. comm.* to DMJ) are traceable. The plant superficially resembles *L. brongniartii* and might be readily mistaken for it. Sourie (529) expressed doubt, noting Dangeard’s opinion that Dakar plants approached more closely *L. undulata* (q.v.). The nomenclatural equivalence of *Fucus pinnatifidus* and *Laurencia pinnatifida* may be in error, although *L. pinnatifida* is found elsewhere in the check-list area. If drift material was involved in the original P.E. Isert collections, the flattened species *L. brongniartii*, frequent in deep waters off the Ghana coast, may have been the plant in question. The original Isert specimens, if not destroyed in the 1807 fire at Copenhagen Herbarium (C), require examination for correct attribution. This need is emphasized by the failure to re-record specimens during

the intensive work of recent decades. The record for Sénégal (530) is given with a query.

**Laurencia platycephala** Kützing

Canaries (634?;658).

**Laurencia poiteui** (Lamouroux) Howe

[As *L. papillosa* (Forsskål) Greville]

Canaries (439).

[As *L. pinnatifida* (Hudson) Lamouroux]

Canaries (439).

[As *L. poitei* (Lamouroux) Howe]

São Tomé (350;535;586).

Sénégal (59).

‘. . . probably widespread in warm temperate and tropical seas. . .’ (350;586).

‘Subtropical Africa [Senegal (N. of Gambia); Mauritania; Former W. Sahara]’ (598).

‘Tropical Africa (N. Gambia – Congo River)’ (598).

[As *Laurencia tuberculosa* Agardh]

São Tomé (251;265).

[As *Gracilaria poitei* Lamouroux]

São Tomé (251;263; 264).

[As *Gracilaria poitei* (Lamouroux) Agardh.]

São Tomé (265).

*Note.* Prud’homme van Reine et al. (663) have re-investigated Piccone’s material (439) and consider that plants referred to as *L. pinnatifida* and *L. papillosa* are correctly attributed to *L. poiteui*.

[As *L. paniculata* (C. Agardh) Kützing]

Canaries (38C;38D;598).

Cape Verde Islands (38C;38D;44;598).

Sénégal (37;450;451).

[As *Laurencia paniculata* (C. Agardh) J. Agardh]

Sénégal (529).

[As *Laurencia paniculata* J. Agardh]

Mauritanie (624).

*Note.* Audiffred (38C) indicated his record as new to the Canary Islands. Lawson & John (350, 586) repeated Yamada’s (563) statement of opinion that: ‘*L. patentiramea* (as *L. papillosa*) and ‘*L. paniculata* J. Agardh’ may represent ‘. . . the extreme forms of one very variable species in which *L. intermedia* may be included. Askenasy (37: 47) indicated in a footnote that the specimens of *Laurencia* were very fragmentary and that Bornet, who had determined them, had given most with doubt. Given as *Laurencia paniculata*? (Agardh) Kützing by Piccone (450,451); the Piccone (451) record was based on the Naumann (*Gazelle*) collection determined by Askenasy. See also the ‘*Laurencia sp. A*’ from Sénégal recorded by Sourie (529) and also note under *Laurencia papillosa*. For the correct name of this taxon, see Silva et al. (1987: 68).

**Laurencia poitei** (Lamouroux) Howe

See *L. poiteui* (Lamouroux) Howe.

**Laurencia pygmaea** Weber-van Bosse

See the notes to *Laurencia brachyclados* Pilger.

**Laurencia scoparia** J. Agardh

Sénégal (47;52;54;59).

‘Subtropical Africa [Senegal (N. of Gambia); Mauritania; Former W. Sahara]’ (598).

*Note.* Amor&st the varied statements of name and authorities throughout Bodard & Mollion (59), that employed in table IIID (pp.

219–220) is: '*L. scoparia* (Lamour.) Howe'. *Laurencia scoparia* sensu J. Agardh is very similar in external morphology to *L. flagellifera* J. Agardh (26: 747); the latter differs in having elongate and palisade-like epidermal layer cells and lenticular thickenings in the medulla cell walls. According to Wynne (1986a), the correct name is *L. filiformis* (C. Agardh) Montagne.

### ***Laurencia senegalensis* Bodard**

Sénégal (399).

*Note.* This is probably simply a name of convenience, carelessly allowed to pass into the publication. It seems neither to have been described anywhere in print by Bodard, nor used elsewhere by Bodard, Mollion, or anyone else.

### ***Laurencia tenera* Tseng**

Canaries (647; 658).

Cape Verde Islands (Leiden Herbarium, det. M.C. Gil-Rodríguez and R.J. Haroun).

Côte d'Ivoire (287;295;350;586).

Gambia (296;350;586).

Ghana (288;297;350;491;586;590).

Liberia (129;287;288;350;586).

Mauritanie (Leiden Herbarium, det. M.C. Gil-Rodríguez and R.J. Haroun).

Sierra Leone (295;350;586).

St. Helena (655).

Togo (288;293;350;586;590).

'... probably pantropical. . .' (350;586;590).

'... Tropical Africa (N. Gambia – Congo River)' (598).

### ***Laurencia tenerrima* (Clemente) Cremades & Pérez-Cirera**

[As *Laurencia perforata* Montagne]

Canaries (27;38;44;89;97;128A;133;141A;323;351;390;401;407;439;563;598;662).

Cape Verde Islands (38;598).

Gabon (350; 586).

Gambia (296;350;586).

Mauritanie (624).

Salvage Islands (38B;598).

São Tomé (93;251;265;350;586).

'... in maribus caldioribus in arena et inter minores Algas repens. . .' (27).

'... Tropical Africa (N. Gambia – Congo river). . .' (598).

'... widespread in warm temperate and tropical seas' (350;586).

[As *Laurencia perforata* (Bory) Montagne]

Annobón (456).

Canaries (2;5;8;13;16;38B;38C;71;89;112;191;226;227;229;253;318;323;375;379;490;583;658;686).

Cape Verde Islands (38B;38C;100;123;183;191).

Gabon (250).

[As *Laurencia cf. perforata* (Bory) Montagne]

Cape Verde Islands (652).

Salvage Islands (38B;38C;375).

São Tomé (251;265).

'... extendida por los mares templados y tropicales. . .' (253).

[As *Laurencia perforata* (Bory) Montagne in Barker Webb & Berthelot]

Annobón (535).

Gabon (535).

Gambia (535).

São Tomé (535).

Canaries (535;633;634).

[As *Laurencia perforata* Montagne]

Canaries (25;26).

[As *Laurencia cf. perforata* (Bory) Montagne]

Cape Verde Islands (652).

*Note.* See comments concerning this species in notes under *L. brachyclados* Pilger.

### ***Laurencia tuberculosa* J. Agardh**

São Tomé (251;265).

*Note.* See *L. poiteau* and remarks of Steentoft (535). The identity of specimens clearly requires confirmation.

### ***Laurencia undulata* Yamada**

Sénégal (55;122?;529;590).

'Subtropical Africa [Senegal (N. of Gambia); Mauritania; Former W. Sahara]' (598).

*Note.* Despite recording his material as *L. pinnatifida*, Sourie (529: 116) indicated Dangeard's (122) opinion that the Dakar plants approached *L. undulata* Yamada. There is also the possibility of confusion with *Laurencia brongniartii* J. Agardh (q.v.).

### ***Laurencia viridis* Gil-Rodríguez & Haroun**

Canaries (647).

Cape Verde Islands (647).

Salvage Islands (647).

*Note.* A common alga in Macaronesia, before its description usually misidentified as *L. obtusa*.

### ***Laurencia* spp.**

Cameroun (337;344;537).

Canaries (5;8;13;71;226;229;232B;237;281;301;351;379;490;633; 658).

Cape Verde Islands (100;183;351;411).

Côte d'Ivoire (287).

Ghana (42A;297;299;300;335;336;338;344;376;377;487;491;537;567).

Guinea-Bissau (529).

Guinée (529).

Liberia (287).

Mauritanie (349;537).

Namibia (164).

St. Helena (533).

Salvage Islands (38B).

Sénégal (59;123;344;399;411;529;530;531;537;542).

West Africa (290;344;479).

*Note.* Several of these references represent generalized statements secondarily based on more specific or similarly generalized data published elsewhere. Some of the records cover more than one undetermined species within *Laurencia*; examples are numbers 100 and 183 (Cape Verde Islands – spp. I and II); 490, 633, 529 and 530 (Guinée and Sénégal – 2 species, one identified as '*L. sp. A*'). Sourie (529: 119) also stated that one of his species resembles '*L. paniculata* (C. Ag.) J. Ag.'. Amongst the records are some regarded by publishing author(s) as new species (albeit often with doubt, e.g. 164: 437); sterile material sometimes prevented further critical work (38B), occasionally subsequently resolved and reflected in specific entries.



**Lejolisia mediterranea** Bornet

Canaries (665).

**Leptofaucha brasiliensis** Joly

Canaries (664).

**Leptofaucha rhodymenioides** Taylor

Cape Verde Islands (Prud'homme van Reine, collected on CANCAP VII expedition).

**Leptophytum** Adey (1966), nomen inquirendum

The status and disposition of the genus *Leptophytum* Adey (669: 323) is unresolved. The generic type collection [i.e. the type of *L. laeve* (Stroemfelt) Adey] is missing and thus application of the name *Leptophytum* lacks the nomenclatorial foundation essential for stability (Woelkerling, 1988: 2–3, 217–218). In addition, Woelkerling & Irvine (1986a: 76–77) questioned whether *Leptophytum* should be recognized as a distinct genus, noting the difficulties outlined by Adey (669: 28) in ascribing species to *Leptophytum* vs *Phymatolithon*. Nevertheless, Chamberlain (1990: 198) felt that 'As an interim statement, therefore, I consider that *Leptophytum* should be accepted as a distinct genus, and that it and *L. laeve* should be interpreted according to Adey's (1966) concepts until further data are available'. The present account follows Woelkerling (1988), where *Leptophytum* is not recognized as a distinct genus but rather is treated as a nomen inquirendum and thus a genus requiring further evaluation. Two species ascribed to *Leptophytum* have been recorded from the region under consideration.

**Leptophytum bisporum** (Foslie) W. AdeySee *Phymatolithon bisporum* (Foslie) Afonso-Carrillo.

*Note.* This species was originally described as *Lithothamnion bisporum* Foslie (1906b: 18) based on material from Puerto Ortava, Tenerife, Canary Islands. Subsequently, Adey (669: 30) transferred the species to *Leptophytum* and then Afonso-Carrillo (11: 134) placed it in *Phymatolithon*. Data on the holotype are provided by Woelkerling (678: 39).

**Leptophytum bornetii** (Foslie) W. AdeySee *Lithothamnion bornetii* Foslie.**Leptosiphonia schousboei** (Thuret in Bornet & Thuret) Kylin

Canaries (684).

**Leptosiphonia** sp.

Sénégal (59).

*Note.* Occurs in the Bodard & Mollion (59) text only in the terminal table IIID (Dredging along the coast of the '... Sud de la petite côte ... Sénégal').

**Liagora**

A complex genus on which much work remains to be done. Abbott's recent (656,688) studies of type material relevant to J. Agardh's (1896) and Lamouroux's (1812) works on the genus indicated much duplication of names among subgeneric

taxa and misappreciation of 'species' limits, apart from mis-determinations and omission of many previously published taxa. She was still moved to comment that, of taxa known by 1896, 'many remain little-known to this day'. All of which makes usage of names in the list area require some reservation and confirmation.

**Liagora albicans** Lamouroux[As *Liagora decussata* Montagne]

Ascension (475).

Canaries (38;68;139;390;408;439;598).

Cape Verde Islands (25;38;131;191;318;407;408;410;423;528;551;564;597;598;688).

*Note.* Kützing's (318: 538) statement 'Ad insulae St. Vincentii oras rejecta' presumably refers to the Cape Verde Islands. J. Agardh's (25: 429) description was quoted direct from Kützing (318) '... ad insularum St. Vincentii'. The Latin description was also given in full in Webb (551) where he referred to 'Montag. MS'. Both that and Montagne's (1849: 64) description were published in the same year, with Montagne published in January 1849 and Webb in November–December 1849. The most recent review of the genus (656: 308; 688: 119) concluded that *L. decussata* is a later synonym of *L. albicans* Lamouroux.

**Liagora canariensis** Børgesen

Canaries (2;3;8;13;16;38B;38D;68;191;226;227;235;236;237;303;351;375;379;489;598;634).

Salvage Islands (38B;38D;598).

[As *Liagora fragilis* Zanardini var.]

Canaries (439 pro parte).

*Note.* Piccone (439) gave this (p. 55) in his summary list of species recorded by Liebetrueth and Bolle. *L. fragilis* was apparently a Liebetrueth record. One of us (PVR) has examined the specimens on which this record is based and found them to be referable to two species, *L. canariensis* and *L. distenta*.

*General note.* Acuña Gonzales (2) stated: '... en nuestro archipiélago [Islas Canarias] también existen algunas [especies] que son endémicas, como ... *Liagora canariensis*. ...'. With substantiable records from elsewhere, this statement is clearly in error. Levring (375) has also recorded the species from Cabo Girão, Funchal and Deserte Grande, both Madeira group, and observed (375: 54): '... no doubt closely related to *L. valida* and it may be difficult to tell them apart. ...'. This comment is probably based on Feldmann's (191: 414) own comment that *L. canariensis* is near to *L. valida*, a pantropical species present on both sides of the Atlantic. According to Abbott (656: 309, 312 et seq.) *L. valida* Harvey is itself a synonym of *L. fragilis* Zanardini.

**Liagora ceranoides** Lamouroux

Ascension (474).

Canaries (38B; 38D; 68; 72; 128A; 191; 226; 227; 303; 375; 556; 564; 584; 598; 651).

Cape Verde Islands (688).

Salvage Islands (38B;38D;231;375;556;556A;598).

'Warm Atlantic' (410).

[As *Liagora pulverulenta* Agardh]

Canaries (547).

*Note.* Lamouroux's (331: 239) original record (repeated in Lamouroux, 332) is given as '... Sur les côtes de l'île St. Thomas. Ded. Weber.'. This is presumably the West Indian island, not that in the Gulf of Guinea. See also the discussion by Abbott (688).

**Liagora complanata** C. AgardhSee *Liagora distenta* (Mertens in Roth) Lamouroux.

**Liagora corymbosa** Børgeesen

See *Liagora farinosa* Lamouroux.

**Liagora decussata** Montagne

See *Liagora albicans* Lamouroux.

**Liagora distenta** (Mertens in Roth) Lamouroux

Canaries (13;38;38B;38D;68;191;226;227;229; 303;375;439; 489;490;517;556;584;598;634;648;688).

Salvage Islands (38B;38D;215;231;375;556;598).

‘. . . Atlántico de Cádiz a Canarias. . .’ (517).

‘. . . Atlantique (de Cadix aux Canaries)’ (188).

‘. . . wärmeren atlantischen Ocean. . .’ (502).

[As *Liagora complanata* Agardh]

Salvage Islands (381;439;452).

[As *Liagora distenta* (Mertens in Roth) C. Agardh]

Canaries (392).

Cape Verde Islands (683).

[As *Liagora distenta* J. Agardh var. *complanata* J. Agardh]

‘Warm Atlantic’ (410).

[As *Liagora fragilis* Zanardini var.]

Canaries (439 pro parte).

See note under *L. canariensis* Børgeesen.

[As *Liagora ramellosa* Sonder ex Kützing]

Canaries (319).

[As *Liagora ramellosa* Sonder in Kützing]

Canaries (‘De Cadiz aux Canaries. . .’) (89).

*Note.* Reported by Weisscher (556) from the Salvage Islands solely on the basis of the Gil-Rodríguez et al. (231) record; not found by CANCAP Expeditions. Bornet himself (89: 105) indicated ‘*Le Liagora ramellosa* ne me paraît pas spécifiquement distinct du *L. distenta*’. See comment under *L. distenta* concerning the possible identity of the Salvage Island record. For discussion of type material, see Abbott (688).

**Liagora elongata** Zanardini

See *Liagora farinosa* Lamouroux.

**Liagora farinosa** Lamouroux

Canaries (1;16;18;68;80;191;227;229;230;372;416;564).

Cape Verde Islands (652;683;688).

?Príncipe (350;586).

?São Tomé (350;586).

‘Seems to occur in all warmer seas’ (68).

‘. . . widespread in warm temperate and tropical seas’ (350;586).

[As *Liagora corymbosa* Børgeesen]

Salvage Islands (231).

[As *Liagora elongata* Zanardini]

Canaries (67;246;390;439;547).

[As *Liagora megagyna* Børgeesen]

?Príncipe (535).

?São Tomé (535).

*Note.* Børgeesen (68: 59–62) examined Lamouroux’s specimens from the Red Sea and confirmed the common identity of *L. farinosa*, *L. elongata*, *L. cheyneana* and *L. corymbosa* as a rather variable but characteristic plant. Abbott (656: 308 *et seq.*) has confirmed Børgeesen’s conclusion. Steentoft (535) listed *L. megagyna* records from São Tomé and Príncipe. The latter record was based on exsiccata specimens collected by F. Newton, who never visited Príncipe (Steentoft, pers. comm.) so possibly there was a mistake on the label.

After re-examining Newton’s collection, Lawson & John (350) suggest the identity of the plants to be *L. farinosa* rather than *L. megagyna*; see also the latter entry. The most recent critical treatment of morphology and nomenclature in the species here maintained as *L. farinosa* Lamouroux is that begun by Abbott in 1984 (1) and carried further in 1990 (656: 308; 688: 122). In 1984 she commented that *L. farinosa* ‘. . . has a number of features about it that make recognition of the species easy. . .’. She went on to detail these, adding afterwards ‘Nevertheless, the taxon has been given at least 11 specific names . . . and as *L. farinosa* was designated as the type specimen of *Ganonema* Fan & Wang (1974). It was segregated from *Liagora* principally on the relationship of the carpogonial branch to its supporting branch and its location’. Most species of *Liagora*, including the type species *L. viscida*, show carpogonial branches that are accessory to an established vegetative branching pattern. Fan & Wang (1974) established that in *L. farinosa*, the carpogonial branches were borne only on secondary filaments, or tertiary filaments of a cortical cluster. Abbott (1) noted that the location of the carpogonial branches correlated strongly with the season or age of the plant, varying in position/location/bearing branchlet type; hence, since this is the feature by which the genus *Ganonema* is recognized, it is too unstable a character for generic distinction. The latter genus (*Ganonema farinosa* (Lamouroux) Fan & Wang and *Ganonema pinnetiramosa* (Yamada) Fan & Wang) was therefore reduced by Abbott (1) to synonymy with *Liagora farinosa* Lamouroux. See also Abbott (688).

**Liagora fragilis** Zanardini

[As *L. valida* Harvey]

Canaries (38C;598).

Cape Verde Islands (38C;100;183;191;423;598;652).

‘. . . warmer parts of the Atlantic and Pacific (Abbott, 1945). . .’ (416).

*Note.* See also under *L. distenta* (Mertens in Roth) Lamouroux and *L. canariensis* Børgeesen.

**Liagora gymnarthron** Børgeesen

Canaries (38B;68;88;191;565;598).

[As *L. gymnorthron* Børgeesen]

Canaries (227).<sup>4</sup>

[As *Liagora* cf. *gymnarthron* Børgeesen]

Salvage Islands (38B).

*Note.* Feldmann (191: 414) indicated that *L. gymnarthron* appears to approach *L. decussata* Montagne (Antilles). Audiffred & Weisscher’s Salvage Island record (38B) is expressed with doubt since their plant differed from Børgeesen’s description in having regularly dichotomous branches dispersed as well as alternate/decussate on the main axes. According to Abbott (*pers. comm.* to Prud’homme van Reine) this is probably *L. distenta*. See also the entry for *L. albicans* Lamouroux.

**Liagora megagyna** Børgeesen

Príncipe (535).

São Tomé (535).

*Note.* Steentoft (535: 121) indicated that only a single plant in poor condition was available to her. This was the Newton specimen from Príncipe; it is therefore not clear why she gave only São Tomé as the African distribution, but see *L. farinosa* entry. Steentoft (535) indicated that her determination must be regarded as uncertain. *Liagora farinosa* (q.v.) is suggested by Lawson & John (350; 586) as the most likely identity for the specimen.

**Liagora perforata**

An erroneous statement in Audiffred & Weisscher (38B: 19) regarding a ‘host’ of *Champia parvula* (C. Agardh) Harvey

on the island of Selvagem Grande. Presumably it correctly relates to *Laurencia perforata* Montagne, which is listed in the body of the text by the same authors.

### **Liagora pulverulenta** C. Agardh

See *Liagora ceranoides* Lamouroux.

*Note.* Yamada (564: 20–22) considered there to be two groups in the taxon *L. ceranoides*, rather easily distinguishable from each other on general habit. Since these had hitherto been called *pulverulenta* J. Agardh and *leprosa* J. Agardh he made new combinations at formal level: *L. ceranoides*  $\alpha$  *pulverulenta* (Agardh) Yamada and *L. ceranoides*  $\beta$  *leprosa* (J. Agardh) Yamada. Abbott (656: 308) has confirmed the common identity of *L. ceranoides* Lamouroux and *L. pulverulenta* Agardh, suggested by Børgesen (68: 58).

### **Liagora ramellosa** Sonder ex/in Kützing

See *Liagora distenta* (Mertens) Agardh.

### **Liagora tetrasporifera** Børgesen

Canaries (2;13;16;38B;38C;38D;57;68;88;188;191;214A;226;227;229;327;351;490;556;564;598).

Salvage Islands (38B;38C;38D;556;598).

[As *L. viscida* (Forsskål) C. Agardh]

Canaries (439; 547).

*Note.* Under the entry for *L. viscida* Piccone (439: 34) commented that he had only few specimens, differing somewhat from the typical form. One of us (PVR) has checked the Piccone specimens under this name and found them to be attributable to *L. tetrasporifera*. See also the entries for *Liagora viscida* (Forsskål) C. Agardh. There is some reason to believe that confusion has existed for this area in attribution of *viscida* as epithet to specimens likely to represent *tetrasporifera*. In the absence of definitive means of revision, we have not attempted to resolve the situation but have maintained the authors' naming patterns.

### **Liagora valida** Harvey

See *Liagora fragilis* Zanardini.

### **Liagora viscida** (Forsskål) C. Agardh

Canaries (38D;216;227;499;584;598).

St. Helena (259;401;655).

'Macaronesia' (656).

'... ad oras Europae et Africae; ad ins. St. Thomae. . .' (318).

'... In den wärmeren Teilen des Atlantischen Ozeans' (499).

'... in oceano Atlantico caldiore. . . ; ad insulam Sancti Thomae. . .' (131).

'... littus occidentale (Press); ad insulam St. Thomae' (25).

'Nordwestafrika' (499).

'... wärmeren atlantischen Ocean. . .' (502).

[As *Liagora viscida* Agardh *S. laxa* Kützing]

?São Tomé (318).

[As *Liagora viscida* C. Agardh]

St. Helena (260).

'Warmer Atlantic' (410).

[As *Liagora viscida* Forsskål]

Canaries (142).

St. Helena (142;391).

*Note.* Available evidence tends to suggest that references above to 'St. Thomae' refer to the West Indian island and not to the African island of that name. Confusion has been caused by the form of citation in Kützing (318: 538), quoted in detail here. Data are

included for completeness. Problems of determination, referred to in the note to *Liagora tetrasporifera* Børgesen (q.v.), have been worsened by the characteristic referred to by Feldmann (188: 271) '... cette algue est assez polymorphe. . . '.

### **Liagora** spp.

Canaries (5;38C;89;117;118;229;247;301;302;304;490;567).

Cape Verde Islands (552).

*Note.* Weber-van Bosse (552) identified material as *Liagora*, possibly a new species, and Bornet (89) indicated he detected six species amongst Schousboe's material. Audiffren (38C: 179) made the interesting point 'Even Isabella Abbott did not recognise this species!'

### **Lictoria taxiformis** (Delile) J. Agardh

See *Asparagopsis taxiformis* (Delile) Trevisan.

### **Litholepis**

Based on studies of relevant type collections, Woelkerling (1986) concluded that *Litholepis* Foslie (203: 5) was a heterotypic synonym of *Titanoderma* Nägeli (1858: 532). Subsequently, Campbell & Woelkerling (1990) subsumed *Titanoderma* into *Lithophyllum* Philippi (1837: 387), and Woelkerling & Campbell (1992: 81) concluded that the type species of *Litholepis*, *L. caspica* (Foslie) Foslie, was a heterotypic synonym of *Lithophyllum pustulatum* (Lamouroux) Foslie. These conclusions are followed in this paper. Two species ascribed to *Litholepis* have been recorded from the region under consideration.

### **Litholepis mediterranea** Foslie

Cape Verde Islands (366;368;598).

*Note.* The status and disposition of this species are uncertain, and records from the Cape Verde Islands require confirmation once a detailed study of the holotype (see 678: 147) has been undertaken. The holotype was collected at Banyuls sur Mer, France. Feldmann (188: 317) referred the species to *Fosliella* (now considered a heterotypic synonym of *Hydrolithon*; Penrose & Chamberlain, 1993) while Adey (669: 15) referred the species with some doubt to *Lithoporella*. Both *Hydrolithon* and *Lithoporella* belong to the subfamily Mastophoroideae (Woelkerling, 1988: 115) whereas the type of *Litholepis* belongs to the subfamily Lithophylloideae (Woelkerling, 1988: 92).

### **Litholepis sauvageaui** Foslie

See *Lithoporella sauvageaui* (Foslie) Adey.

### **Lithophyllum** Philippi

The concept of *Lithophyllum* adopted in this paper follows Woelkerling & Campbell (1992: 17). According to this concept, the following characters collectively delimit *Lithophyllum* from other genera of Corallinaceae: 1) thallus nongeniculate; 2) crustose portions of thallus with a dorsiventral internal organization; 3) haustoria absent; 4) cells of contiguous vegetative filaments commonly joined by secondary pit-connections; 5) fusions between vegetative cells absent or very rare; 6) tetrasporangial/bisporangial conceptacles uniporate; and 7) tetrasporangia/bisporangia lacking apical plugs. The earlier taxonomic history of *Lithophyllum* is summarized by Woelkerling (1983b), who also provided accounts of the original collections of the four species that

Philippi (1837) included in the genus *Hyperantherella* Heydrich (1900: 316) and *Crodelia* Heydrich (1911: 12) are homotypic synonyms of *Lithophyllum* (see Woelkerling, 1988: 99–100). Heterotypic synonyms include *Dermatolithon* Foslie (682: 11) (a homotypic synonym of *Titanoderma*; see below and also Woelkerling et al., 1985 and Campbell & Woelkerling, 1990), *Litholepis* Foslie (203: 5) (see Woelkerling, 1986: 260; Woelkerling & Campbell, 1992: 81), *Perispermion* Heydrich (1900: 316) (see Woelkerling, 1991), *Pseudolithophyllum* Lemoine (1913a: 45) (see Woelkerling, 1988: 103), *Stichospora* Heydrich (1900: 316) (see Woelkerling, 1983a: 184; Woelkerling, 1988: 102), and *Titanoderma* Nägeli (1858: 532) (see Campbell & Woelkerling, 1990). Chamberlain (1991: 13, 23–24) and Chamberlain et al. (1991: 164–165) proposed that *Titanoderma* be maintained as a genus distinct from *Lithophyllum*, but Woelkerling & Campbell (1992: 17–18) concluded that characters suggested by Chamberlain (1991) and Chamberlain et al. (1991) to be diagnostic of *Titanoderma* (a predominance of primigenous palisade cells and the occurrence of at least some bistratose margin) were too variable in southern Australian collections to be used reliably in generic delimitation.

#### **Lithophyllum absimile** Foslie & Howe in Foslie

See under *Spongites wildpretii* Afonso-Carrillo.

#### **Lithophyllum accretum** (Foslie & Howe) Lemoine

See *Neogoniolithon accretum* (Foslie & Howe) Setchell & Mason.

#### **Lithophyllum accretum** (Foslie & Howe) Lemoine f. **canariensis** Foslie

See notes under *Neogoniolithon accretum* (Foslie & Howe) Setchell & Mason.

#### **Lithophyllum accretum** (Foslie & Howe) Lemoine var. **canariense** (Foslie) Lemoine

See notes under *Neogoniolithon accretum* (Foslie & Howe) Setchell & Mason.

#### **Lithophyllum aequinoctiale** Foslie

See *Porolithon aequinoctiale* (Foslie) Foslie.

#### **Lithophyllum africanum** Foslie

See *Porolithon africanum* (Foslie) Foslie.

#### **Lithophyllum amplexifrons** (Harvey) Heydrich

See *Pneophyllum amplexifrons* (Harvey) Chamberlain & Norris.

#### **Lithophyllum aninae** Foslie

Cape Verde Islands (6;100;101;136;139;207;210;212;366;597;598;678).

*Note.* Foslie (207: 28) based *Lithophyllum aninae* on a single collection from São Vicente, Cape Verde Islands. Adey (669: 4) referred the holotype to *Lithophyllum* without comment. The holotype (678: 27), however, has not been studied in detail in a modern context, and thus the status and disposition of the species are

uncertain, as is the identification of specimens from the West African region.

#### **Lithophyllum applicatum** Lemoine in Børgesen

See *Neogoniolithon hirtum* (Lemoine in Børgesen) Afonso-Carrillo.

#### **Lithophyllum bisporum** Foslie

See *Phymatolithon bisporum* (Foslie) Afonso-Carrillo.

#### **Lithophyllum byssoides** (Lamarck) Foslie.

Mauritanie (356;359;360).

[As *Goniolithon byssoides* (Lamarck) Foslie]

Mauritanie (354).

*Note.* This species was originally described as *Nullipora byssoides* Lamarck (1801: 374) and was based on material depicted by Seba (1758: pl. 116, fig. 7). Subsequently, the species has been placed in *Millepora* (Lamarck, 1816: 203), *Lithothamnion* (Philippi, 1837: 388), *Spongites* (Kützing, 1869: 35), *Goniolithon* (Foslie, 1898a: 5), *Lithophyllum* (682: 20), and *Titanoderma* (Chamberlain & Woelkerling in Woelkerling, 1988: 260). Woelkerling (1983a: 177–180, figs 12–16) outlined the nomenclatural history of the species, neotypified it with a Philippi collection and provided an account of that material. Later, Woelkerling (1988: 216, 217, 260) concluded that the species belonged to *Titanoderma* sensu Woelkerling et al. 1985 (see also Woelkerling, 1988). Following Campbell & Woelkerling (1990) and Woelkerling & Campbell (1992), *Titanoderma* is regarded here to be a heterotypic synonym of *Lithophyllum*, and thus *Nullipora byssoides* is dealt with as a *Lithophyllum*. Specimens on which the records from Mauritanie are based now need to be re-examined to determine whether they are conspecific with the neotype of *L. byssoides*.

#### **Lithophyllum calcareum** (Pallas) Areschoug

See *Phymatolithon calcareum* (Pallas) Adey & McKibbin.

#### **Lithophyllum canariensis** Foslie

See *Mesophyllum canariensis* (Foslie) Lemoine.

#### **Lithophyllum capense** Rosanoff

Cape Verde Islands (38;598).

‘. . . Afrique méridionale. . .’ (38).

[As *Lithothamnium capense* (Rosanoff) Foslie]

Canaries (354).

*Note.* Rosanoff (1866: 86) based this species on material from southern Africa that Hohenacker had distributed as *Alg. mar. sicc.* no. 236. Type material of this species has not been studied in detail in a modern context, and thus the status and disposition of the species are uncertain as is the identification of specimens from the West African region.

#### **Lithophyllum caribaeum** Foslie

See *Neogoniolithon caribaeum* (Foslie) Adey.

#### **Lithophyllum corallinae** (P. & H. Crouan) Heydrich

Mauritanie (349).

[As *Dermatolithon corallinae* (P. & H. Crouan) Foslie]

Salvage Islands (38B;231;375).

[As *Melobesia corallinae* Solms-Laubach]

Mauritanie (59;252).

Sénégal (252).

[As *Melobesia corallinae* Crouan]

Canaries (439)

*Note.* Detailed accounts of this species, including information on the lectotype, are provided by Chamberlain (1991: 66–69, figs 208–224, as *Titanoderma*) and Woelkerling & Campbell (1992: 41–56, figs 22–32). All specimens on which published records for the West African region are based need to be checked to determine whether they are conspecific with the lectotype. *Lithophyllum corallinae* also was referred to by Price et al. (1986: 86) under *Dermatolithon* in a previous part of this critical assessment series.

**Lithophyllum cristatum** Meneghini f. **crassa** (Lloyd)

Hauck

See *Tenarea tortuosa* (Espoer) Lemoine.

**Lithophyllum crouanii** Foslie

Canaries (598).

[As *Lithophyllum crouanii*]

Canaries (235).

*Note.* The lectotype material (678: 68) of *Lithophyllum crouanii* was collected at Berwick-on-Tweed, England and has been examined in detail by Chamberlain et al. (1988), who also provided an account of the species in the British Isles. Records of this species from the Canary Islands require confirmation, especially in view of the misidentifications uncovered by Chamberlain et al. (1988).

**Lithophyllum cystoseirae** (Hauck) Heydrich.

Annobón (455).

[As *Dermatolithon cystoseirae* (Hauck) Huvé]

Canaries (227;582)

Mauritanie (262;349;367;368).

[As *Dermatolithon cystoseirae* (Hauck) Foslie]

Mauritanie (367).

[As *Dermatolithon cystoseirae* (Hauck) Foslie f. *saxicola* Huvé]

Canaries (368).

Mauritanie (368).

[As *Dermatolithon cystoseirae* (Hauck) Foslie var. *saxicola* Huvé]

Canaries (368).

Mauritanie (368).

‘. . . Atlantique (de l’Angleterre à la Mauritanie). . .’ (33)

[As *Melobesia cystoseirae* Hauck]

Annobón (139)

[As *Dermatolithon papillosum* (Zanardini) Foslie var. *cystoseirae* (Hauck) Lemoine]

Annobón (350)

‘. . . Gulf of Guinea region. . .’ (350;367)

*Note.* This species was originally described as *Melobesia cystoseirae* (Hauck, 1883: 266, pl. 3, figs 1, 2, 6) and was based on specimens from the Adriatic Sea. Studies of type material by Huvé (272) and Athanasiadis (1989) have confirmed that this species belongs to *Lithophyllum* as delimited by Campbell & Woelkerling (1990) and Woelkerling & Campbell (1992), but a thorough study of reproductive anatomy needs to be undertaken before the relationships of it to others in the genus can be properly determined. Once such a study is completed, all specimens on which published records for the West African region are based need to be re-examined to determine whether they are conspecific with the type. *Lithophyllum cystoseirae* was also referred to by Price et al. (1986: 86) under *Dermatolithon* in a previous part of this series.

**Lithophyllum daedaleum** Foslie & Howe

Canaries (666).

*Note.* Foslie & Howe (1906: 133) based this species on material from Puerto Rico. The holotype (678: 70) has not been studied in detail in a modern context, and thus the status and disposition of this species are uncertain, as is the identification of the material from the Canary Islands.

**Lithophyllum decussatum** (Ellis & Solander) Philippi f. **planiscula** Foslie

Canaries (211).

*Note.* Foslie (211: 22) based *Lithophyllum decussatum* f. *planiscula* on material from Morocco (see 678: 173) that previously had been referred to *Lithophyllum expansum*. Foslie (211: 23) also suggested that ‘En lignende form foreligger ogsaa fra de Kanariske øer’ but Foslie did not definitely refer the Canary Islands material to f. *planiscula*. No such specimen is filed in the Foslie herbarium under *Lithophyllum decussatum* (6: 44), and until the relevant specimen is located and examined in a modern context, this record must be regarded as questionable.

**Lithophyllum duckeri** Woelkerling

Ascension (541).

[As *Lithothamnion crassum* Philippi]

Ascension (541).

Canaries (547;598).

St Helena (142;260;391).

*Note.* *Lithophyllum duckeri* is a nom. nov. for *Lithothamnion crassum* Philippi. An account of the lectotype and the nomenclatural history of *Lithophyllum duckeri* are provided by Woelkerling (1983a: 180–184, figs 17–22), who showed that the type of *Lithothamnion crassum* belonged to *Lithophyllum*. Upon transfer into *Lithophyllum*, the new specific epithet *duckeri* was required because Rosanoff (1866: 93) had used the combination *Lithophyllum crassum* for another species. Woelkerling (1983a) noted that the relationships of *L. duckeri* to other species of *Lithophyllum* was uncertain. The lectotype was collected from the west coast of Sicily. Subsequent studies of southern Australian species of *Lithophyllum* (Woelkerling & Campbell, 1992) have shown that characters relating to tetrasporangial conceptacle roof anatomy are important in species delimitation, and because these were not considered by Woelkerling (1983a), further studies of the type of *L. duckeri* are required before its status and relationships can be fully determined. Once such studies are completed, all specimens on which records from Ascension, the Canaries, and St. Helena are based must be checked to determine whether they are conspecific with the lectotype of *L. duckeri*.

**Lithophyllum esperi** (Lemoine in Børgesen) South & Tittley

[As *Pseudolithophyllum esperi* Lemoine]

Canaries (70;191;227;362;363;499;582;598).

Cape Verde Islands (366;598).

‘. . . Golfe de Guinée. . .’ (366;586).

‘Tropical Africa (N.Gambia–Congo river)’ (598).

*Note.* Lemoine (363: 63) based this species on four collections from Puerto Orotava, Tenerife, Canary Islands but did not designate a type. South & Tittley (1986: 43) transferred the species into *Lithophyllum*, but the original collections of Lemoine, from which a lectotype must be chosen, have not been studied in detail in a modern context, and thus the status and disposition of this species are uncertain, as is the identification of other specimens from the West African region.

**Lithophyllum expansum** Philippi

See *Mesophyllum lichenoides* (Ellis) Lemoine.

**Lithophyllum geometricum** Lemoine

Canaries (191;362;363;687)

[As *Dermatolithon geometricum* (Lemoine) Dawson]

Canaries (227;366;367;368;369;582;674).

Cape Verde Islands (366;367;368;369;582).

‘. . . Atlantique african. . .’ (369).

[As *Lithophyllum* sp. (*geometricum*?)]

Canaries (230).

[As *Lithophyllum* sp. (*geometricum*?) Lemoine]

Canaries (230).

*Note.* Lemoine (363: 47) based this species on two collections from Puerto Orotava, Tenerife, Canary Islands but did not designate a type. The species subsequently has been transferred to *Goniolithon* Setchell & Mason (1943: 89), *Dermatolithon* (674: 273) and *Titanoderma* (Price et al., 1986: 86). The type material apparently has not been re-examined in detail in a modern context and a lectotype has not been designated; thus the status and disposition of the species are uncertain, as is the identification of other specimens from the West African region. *Lithophyllum geometricum* also was referred to by Price et al. (1986: 86) under *Dermatolithon* in a previous part of this series.

**Lithophyllum gracile** Foslie

Cape Verde Islands (6;136;139;;207;210;212;366;597;598).

‘. . . Africa occidentale’ (136).

*Note.* A detailed study of the holotype collection (678: 108), which comes from São Vicente, Cape Verde Islands, has not been undertaken in a modern context, and thus the status and disposition of the species are uncertain, as is the identification of specimens from the West African region. Adey (669: 5) referred the holotype to *Lithophyllum* without comment.

**Lithophyllum hapalidioides** (P. & H. Crouan) Foslie

See *Lithophyllum pustulatum* (Lamouroux) Foslie.

**Lithophyllum hauckii** (Rothpletz) Lemoine

See *Neogoniolithon mammosum* (Foslie) Setchell & Mason

**Lithophyllum hirtum** Lemoine in Børgesen

See *Neogoniolithon hirtum* (Lemoine in Børgesen) Afonso-Carrillo.

**Lithophyllum illitus** Lemoine in Børgesen

See *Neogoniolithon illitus* (Lemoine in Børgesen) Afonso-Carrillo.

**Lithophyllum incrustans** Philippi

Canaries (3;6;70;109;134;227;252;354;356;359;493;582;584;598;633).

Cape Verde Islands (100;366;375;598).

Mauritanie (6;248;252;349;356;359;631).

Western Sahara (252;349;631).

‘. . . Atlantique: depuis les côtes anglaises jusqu’en Mauritanie. . .’ (222).

‘. . . Atlantique (des Feroes à la Mauritanie, Iles du Cap Vert). . .’ (33).

‘. . . Atlantico norte (hasta Marruecos y Mauritania)’ (517).

‘. . . Atlantique nord (jusqu’au Maroc et à la Mauritanie)’ (188).

‘. . . côtes . . . africaine de l’Atlantique. . .’ (357).

‘. . . si commune sur les côtes atlantique à marée basse. . .’ (359).

‘subtropical Africa (N. of Gambia); Mauritania; former W. Sahara’ (598).

[As *Lithophyllum incrustans*[sic!] Philippi]

Canaries (253).

Cape Verde Islands (253).

‘. . . Atlántico Oriental (Inglaterra – Cabo Verde). . .’ (253).

[As *Lithothamnion incrustans* (Philippi) Foslie]

Canaries (547).

[As *Lithothamnion ponderosum* Foslie]

São Tomé (197;265).

*Note.* Records of this species from the West African region require confirmation. An account of the holotype is provided by Woelkerling (1983b: 313–317, figs 15–22), but unfortunately, details of tetrasporangial conceptacle roof anatomy, now known (Woelkerling & Campbell, 1992) to be important in species delimitation within *Lithophyllum*, were not included and further study of the type is required. The holotype was collected along the west coast of Sicily.

**Lithophyllum irregulare** (Foslie) Huvé ex Steentoft

Canaries (535).

São Tomé (535).

[As *Lithophyllum irregularis* Foslie]

Canaries (227).

[As *Lithothamnium irregulare* Foslie]

São Tomé (206;350;586).

‘. . . in warm temperate and tropical parts of the eastern Atlantic Ocean’ (350;586).

[As *Lithothamnion irregulare* Foslie]

Canaries (582).

‘Gulf of Guinea’ (6;135;139;206;212;582).

‘. . . vestkysten af Afrika’ (209).

[As *Pseudolithophyllum irregulare* (Foslie) Adey]

Canaries (598).

‘Tropical Africa (N. Gambia-Congo river)’ (598).

[As *Tenera irregularis* (Foslie) Lemoine]

São Tomé (70).

*Note.* This species was originally described as *Lithothamnion irregulare* (206: 6), based on material from São Tomé. The species subsequently was transferred to *Tenarea* (363: 56), then to *Lithophyllum* (see below), and then with some doubt to *Pseudolithophyllum* (669: 13). The combination *Lithophyllum irregulare* was first effected by H. Huvé (1957: 138), but because Huvé did not cite the basionym (*Lithothamnion irregulare*, 206: 6), her combination is invalid (Article 33.2 in the *International code of botanical nomenclature*; see Greuter, 1988). Steentoft (535: 128) subsequently validated the combination which is correctly cited as either *Lithophyllum irregulare* (Foslie) H. Huvé ex Steentoft or *Lithophyllum irregulare* (Foslie) Steentoft. The holotype collection (678: 130) was examined by Steentoft (535: 128), but there is no detailed account of the holotype in a modern context, and thus the status and disposition of this species is uncertain. Retention here of the species in *Lithophyllum* is purely arbitrary as it is unknown whether the type possesses secondary pit-connections (characteristic of *Lithophyllum*) or cell fusions (implied by placement in *Pseudolithophyllum* sensu Adey, 1970). Further data on the name *Pseudolithophyllum* are provided by Woelkerling (1988: 103). All specimens on which published records for the West African region are based need to be checked to determine whether they are conspecific with the holotype.

**Lithophyllum kaiseri** (Heydrich) Heydrich

Annobón (586).

[As *Lithophyllum Kaiseri* Heydrich]

Annobón (367;368;455).

[As *Lithophyllum kotschyianum* Unger]

Annobón (139;397;455;457).

*Note.* This species originally was described as *Lithothamnion kaiseri* (Heydrich, 1897a: 64) and is based on material from El Tor, the Red Sea. Subsequently, Heydrich (1897b: 412) transferred the species to *Lithophyllum*. Heydrich did not designate a type, and Heydrich's main herbarium has apparently been destroyed (Stafleu & Cowan, 1979: 187; Hiepko, 1987: 230). However, syntype material occurs in TRH (678: 132). Because a lectotype has not been designated and studied in detail in a modern context, the status and disposition of the species are uncertain, as are the records from the West African region. According to Lemoine (368: 6), plants from Annobón identified by Pilger (455: 419) as *Lithophyllum kotschyianum* Unger are really *Lithophyllum kaiseri*. Once *L. kaiseri* has been lectotypified and studied in detail, Pilger's plants need to be re-examined to determine whether they are conspecific with the lectotype of *L. kaiseri*.

**Lithophyllum kotschyianum** Unger

See *Lithophyllum kaiseri* (Heydrich) Heydrich.

**Lithophyllum leptothalloideum** Pilger

Annobón (455;457).

[As *Pseudolithophyllum leptothalloideum* (Pilger) De Toni]

Annobón (139;350;586).

*Note.* A detailed study of the type material (whereabouts uncertain; see Stafleu & Cowan, 1983: 265), collected at Annobón, has not been undertaken in a modern context, and thus the status and disposition of this species are uncertain.

**Lithophyllum lobatum** Lemoine in Børgesen

Canaries (70;227;362;365;366;685;687).

Cape Verde Islands (366).

Mauritanie (349;366).

Sénégal (529).

'Lusitano-Africano-Méditerranéen' (529).

[As *Pseudolithophyllum lobatum* (Lemoine) Verlaque & Boudouresque]

Canaries (582;598).

Cape Verde Islands (598).

'N.W. Africa and Atlantic Islands' [translation] (582).

'Subtropical Africa [Senegal (N. of Gambia); Mauritania; Former W. Sahara]' (598).

[As *Lithophyllum expansum* Philippi]

Canaries (211;493).

*Note.* Lemoine (363) states that: 'les échantillons déterminés sous le nom [*Lithophyllum expansum*] par M. Foslie, et cités par M. Sauvageau [493: 185] dans la localité de Puerto Orotava sont en réalité *L. lobatum*'.

[As *Mesophyllum lobatum* Lemoine]

Canaries (191).

*Note.* Lemoine (362: 40) based this species on four collections from Puerto Orotava, Tenerife, Canary Islands, but did not specify a type. As far as known, a lectotype has not been designated and there has been no detailed study of the protologue collections in a modern context. Thus the status and disposition of the species are uncertain, as is the identification of specimens from the West African region. According to Lemoine (362), the cited entries for *Lithophyllum expansum* involve misidentified specimens. Feldmann (192: 414) used the binomial *Mesophyllum lobatum* Lemoine instead of *Lithophyl-*

*lum lobatum* Lemoine in Børgesen. It is not clear whether this is an error or whether Feldmann had intended to transfer *lobatum* to *Mesophyllum*; the binomial probably should be cited as *Mesophyllum lobatum* (Lemoine) Lemoine ex J. Feldmann.

**Lithophyllum marlothii** Heydrich

São Tomé (6;265).

[As *Lithophyllum Marlothii* Heydrich, forma]

São Tomé (251).

*Note.* Heydrich (1897b: 61) originally described this species as *Lithothamnion marlothii* but soon (Heydrich, 1897a: 410) transferred it to *Lithophyllum*. Heydrich based the species on collections from several localities in South Africa but did not designate a type. Heydrich's main herbarium apparently has been destroyed (Stafleu & Cowan, 1979: 187; Hiepko, 1987: 230), but syntype material of *L. marlothii* occurs in TRH (678: 145). Because a lectotype has not been designated and studied in detail in a modern context, the status and disposition of the species are uncertain, as are the records from the West African region.

**Lithophyllum mildbraedii** Pilger

Annobón (455;457;500).

Bioko (500).

Cameroun (500).

[As *Pseudolithophyllum mildbraedii* (Pilger) De Toni]

Annobón (139).

Bioko (350).

Cameroun (350).

'Tropical Africa (N.Gambia-Congo river)' (598).

'... only known from the eastern parts of the tropical Atlantic' (350; 386).

*Note.* A detailed study of the type material (whereabouts uncertain; see Stafleu & Cowan, 1983: 265), collected at Annobón, has not been undertaken in a modern context, and thus the status and disposition of this species are uncertain as are records from the West African region.

**Lithophyllum oligocarpum** Foslie

See *Porolithon onkodes* (Heydrich) Foslie.

**Lithophyllum orbiculatum** (Foslie) Foslie

Salvage Islands (38B;231;375).

'Norway to Morocco: W. Mediteranean' (649).

[As *Pseudolithophyllum orbiculatum* (Foslie) Lemoine]

Salvage Islands (598).

*Note.* A detailed study of the lectotype (678: 164), which comes from Kristiansund, Norway, has been undertaken by Chamberlain et al. (1991) who also noted confusions resulting from specimens being misidentified as *Lithophyllum orbiculatum*. Chamberlain et al. (1991: 161–162) did not confirm the occurrence of this species in the West African region, and all specimens on which published records from the area are based need to be checked to determine whether they are conspecific with the lectotype.

**Lithophyllum orotavicum** Foslie

See *Neogoniolithon orotavicum* (Foslie) Lemoine.

**Lithophyllum papillosum** (Zanardini ex Hauck) Foslie

Canaries (188;191;359;362;363;365).

[As *Dermatolithon papillosum* (Zanardini) Foslie]

Mauritanie (248).

[As *Goniolithon papillosum* (Zanardini) Foslie]

Canaries (18;582).

[As *Titanoderma papillosum* (Zanardini) Price, John & Lawson]

Annobón (586).

‘. . . Gulf of Guinea region. . .’ (586).

*Note.* This species was originally described as *Lithothamnion papillosum* Zanardini ex Hauck (1883: 272, pl. 2, fig. 4) and has been lectotypified (272: 224) with a collection from Susak Island in the Adriatic Sea. The lectotype has been examined by Huvé (272) and by Woelkerling (1988: 217–218). Further studies of the lectotype are required, however, to elucidate the reproductive anatomy of the species, to determine its status and disposition, and to determine the status and disposition of *Goniolithon* Foslie (1898a: 5), which is typified by *G. papillosum* (see Woelkerling, 1988: 217–218). Once these matters have been resolved, all specimens from the West African region ascribed to this species need to be checked to determine whether they are conspecific with the lectotype (see also 582: 25). *Lithophyllum papillosum* also was referred to by Price et al. (1986: 86) under *Dermatolithon* in a previous part of this series.

### **Lithophyllum polycephalum** Foslie

Canaries (6;212;493).

Cape Verde Islands (6;201;210;212;597).

[As *Lithophyllum* (*Dermatolithon*) *polycephalum* (Foslie) Foslie]

Canaries (191;362;363).

Cape Verde Islands (363;674).

[As *Dermatolithon polycephalum* (Foslie) Foslie]

Canaries (227;366).

Cape Verde Islands (139;366).

[As *Goniolithon polycephalum* (Foslie) Afonso-Carrillo]

Canaries (11;582).

Cape Verde Islands (582).

*Note.* Foslie (201) based this species on a collection from São Vicente, Cape Verde Islands. Although the holotype (678: 174) has been examined by Afonso-Carrillo (11: 139) and by Woelkerling & Campbell (1992: 22), a detailed study in a modern context has not been undertaken, and thus the status and disposition of this species are uncertain, as is the identification of specimens from the West African region. *Lithophyllum polycephalum* was also referred to by Price et al. (1986: 86) under *Dermatolithon* in a previous part of this critical assessment series.

### **Lithophyllum polyclonum** Foslie

[As *Dermatolithon polyclonum* (Foslie) Foslie]

Mauritanie (349).

*Note.* Foslie (201: 18) based this species on a collection from the West Indies. The holotype (678: 175) has not been studied in detail in a modern context, and thus the status and disposition of this species are uncertain, as is the identification of the material from Mauritania. *Lithophyllum polyclonum* also was referred to by Price et al. (1986: 86) under *Dermatolithon* in a previous part of this series.

### **Lithophyllum ponderosum** Foslie

See *Lithothamnion ponderosum* Foslie.

### **Lithophyllum proboscideum** (Foslie) Heydrich

See *Porolithon africanum* (Foslie) Foslie, and 678: 176.

### **Lithophyllum pustulatum** (Lamouroux) Foslie

Canaries (363)

[As *Lithophyllum* (*Dermatolithon*) *pustulatum* (Lamouroux) Foslie]

Canaries (109;354;356;359).

Mauritanie (359).

‘Cape Blanc, Sénégal’ (356).

[As *Dermatolithon pustulatum* (Lamouroux) Foslie]

Canaries (227;235;390;499;584).

Cape Verde Islands (366;499) .

‘Nordwestafrika’ (499).

[As *Melobesia* (*Dermatolithon*) *pustulatum*]

Canaries (6).

[As *Melobesia pustulatum* Lamouroux]

Canaries (441;444;547).

Cape Verde Islands (26;38;145;408).

‘Du Nord de la Grande-Bretagne aux Canaries’ (38;89).

[As *Lithophyllum pustulatum* Lamouroux f. *australis* Foslie]

Canaries (202;678).

[As *Dermatolithon hapalidioides* (P. & H. Crouan) Foslie]

Canaries (227;361;375;582).

Salvage Islands (38B;375).

[As *Dermatolithon hapalidioides* (P. & H. Crouan) Foslie f.

*confinis* (P. & H. Crouan) Foslie]

‘. . . Atlantique (. . . Canaries. . .)’ (33).

[As *Lithophyllum hapalidioides* (P. & H. Crouan) Foslie]

Canaries (188;191;356;362;363).

[As *Lithophyllum hapalidioides* (P. & H. Crouan) Foslie var.

*confinis* (P. & H. Crouan) Lemoine]

Canaries (363).

[As *Dermatolithon nepalidioides* (P. & H. Crouan) Foslie]

Salvage Islands (231).

*Note.* This species was originally described as *Melobesia pustulata* (331: 315). Woelkerling et al. (1985) lectotypified the species with a Lamouroux collection from France and provided a detailed account of the material. Additional data on the lectotype are provided by Chamberlain (1991, as *Titanoderma*) and Woelkerling & Campbell (1992). These workers examined the types of *Melobesia confinis* P. & H. Crouan and *M. hapalidioides* P. & H. Crouan and concluded that they are heterotypic synonyms of *Melobesia pustulata* Lamouroux. Chamberlain (1991, as *Titanoderma*) recognized four distinct varieties from the British Isles, whereas Woelkerling & Campbell (1992: 90–94) found so many intermediate specimens in southern Australia that it seemed to them neither desirable nor advantageous to recognize distinct varieties. Specimens on which all published records of *Lithophyllum pustulatum* from the West African region are based need to be checked to determine whether they are conspecific with the lectotype (also see 576: 25). Foslie (202: 117) based *Lithophyllum pustulatum* f. *australis* on specimens from a number of localities including the Canary Islands. Woelkerling (678: 35) designated the Canary Islands specimen as lectotype and provided additional comments. The lectotype, however, has not been studied in detail in a modern context, and thus the status and disposition of this taxon are uncertain. *Lithophyllum pustulatum* was also referred to by Price et al. (1986: 86) under *Dermatolithon*. Entries in this earlier part of the series for *Dermatolithon confinis*, *D. hapalidioides* and *D. nepalidioides* also pertain to *Lithophyllum pustulatum*.

### **Lithophyllum racemus** (Lamarck) Foslie

St. Helena (541).

*Note.* This species was originally described as *Millepora racemus* (Lamarck, 1816: 203) and is based on material from ‘les mers de la Guiane?’ collected by Turgot. Turgot’s material (whereabouts uncertain) has not been studied in detail in a modern context, and thus the status and disposition of this species is uncertain, as is the identification of the material from St. Helena. Additional notes on the name *Lithophyllum racemus* appear below in the entry for *Mesophyllum brachycladum*.



**Lithophyllum retusum** (Foslie) Foslie

Cape Verde Islands (683).

Ghana (6;211;350;535;586).

São Tomé (6;134;197;198;211;212;350;535;586).

'... in tropical parts of the Atlantic ocean. . .' (350;586).

[As *L. retusum* Foslie, forma]

São Tomé (251;265).

*Note.* Foslie (197: 15) first described this species as *Lithothamnion retusum*, but later (681: 9) transferred it to *Goniolithon* Foslie and then (682: 18) to *Lithophyllum* (see also 669: 5). The species is based on a single collection from São Tomé (Henriques no. 24, collected by Møller; see 197: 15). The holotype (678: 189), however, has not been examined in detail in a modern context and thus the status and disposition of the species are uncertain, as are records from the West African region. According to Steentoft (535), the Hariot (251: 164) and Henriques (265: 166) records of *Lithophyllum reusum* Foslie forma do not represent the same taxon. Several collections referred to by Steentoft (535) are represented in TRH (6: 43).

**Lithophyllum simile** Foslie

São Tomé (6;211;212;350;535;586).

'... in tropical parts of the eastern Atlantic Ocean' (350;586).

'Tropical Africa (N. Gambia – Congo river)' (598).

*Note.* Foslie (211: 30) based *Lithophyllum simile* on a single collection from São Tomé. A detailed study of the holotype (678: 201), however, has not been undertaken in a modern context, and thus the status and disposition of the species are uncertain, as is the identification of specimens from the West African region. Adey (669: 6) referred the holotype to *Lithophyllum* without comment.

**Lithophyllum solutum** (Foslie) Lemoine

See *Lithothamnion solutum* (Foslie) Lemoine.

**Lithophyllum subtenellum** (Foslie) Foslie

São Tomé (6;190;251;265;350;586).

'... widespread in warm temperate and tropical parts of the eastern Atlantic Ocean' (350;586).

[As *Lithothamnium subtenellum* Foslie]

Mauritanie (359).

São Tomé (356;535).

'Tropical Africa (N. Gambia – Congo river)' (598).

[As *Lithothamnium subtenellum* (Foslie) Lemoine]

São Tomé (188).

*Note.* A detailed study of the lectotype collection (678: 215; see also 669: 6), which comes from Guéthary, France, has not been undertaken in a modern context, and thus the status and disposition of the species are uncertain, as is the identification of specimens from the West African region.

**Lithophyllum tortuosum** (Esper) Huvé

See *Tenarea tortuosa* (Esper) Lemoine.

**Lithophyllum vickersiae** Lemoine in Børgesen

Canaries (70;227;362;366;375;499;556;687).

Cape Verde Islands (366;556).

Sénégal (366).

'... Atlantique (. . .Sénégal. . .Canaries)' (33).

[As *Lithophyllum incrustans*]

Canaries (70;493;547).

[As *Lithophyllum* cf. *vickersiae* Lemoine]

Salvage Islands (38B;556).

*Note.* Determination based on external features only.

[As *Lithothamnium vickersiae* Lemoine]

Canaries (100;191).

[As *Pseudolithophyllum vickersiae* (Lemoine in Børgesen) Afonso-Carrillo]

Canaries (11;18;582).

Cape Verde Islands (598).

'southern limit in the Gulf of Guinea' [translation from the Spanish] (582).

'Subtropical Africa [Senegal (N. of Gambia); Mauritania; Former W. Sahara]' (598).

*Note.* Based on studies of the original Canary Islands collections of Lemoine (362: 42), Afonso-Carrillo (11: 139) decided that this species belonged to *Pseudolithophyllum* sensu Lemoine (1913). Subsequently, however, Woelkerling (1988: 103) concluded that *Pseudolithophyllum* sensu Lemoine (1913) is a heterotypic synonym of *Lithophyllum*, and thus *L. vickersae* is retained here in *Lithophyllum*. Afonso-Carrillo (11) did not designate a lectotype from amongst the seven collections cited in the protologue (362: 42), and he did not present a detailed account of the type material. Thus the status and disposition of the species are uncertain, as is the identification of specimens from the West African region. According to Lemoine (362: 42), some plants of *L. vickersae* had earlier been associated with *L. incrustans* (see listings above).

**Lithophyllum zostericum**

See *Pneophyllum amplexifrons*.

**Lithophyllum** spp.

Cameroun (454).

Canaries (212;229;230;301;302;304).

Cape Verde Islands (652;683).

Namibia (348).

[As *Lythophyllum* sp.]

Canaries (229;230).

[As *Dermatolithon* sp.]

Canaries (253;314;582).

*Note.* Price et al. (1986: 86) also record *Dermatolithon* sp. in a previous part of this critical assessment series but provide no references.

**Lithoporella** Foslie

The concept of *Lithoporella* adopted in this paper follows Woelkerling (1988: 124–128). Historical data on the genus are summarized by Turner & Woelkerling (1982a, b), who also give an account of the lectotype species, *L. melobesoides* (Foslie) Foslie. A revised key to the genera of Mastophoroideae, including *Lithoporella*, is provided by Penrose & Chamberlain (1993: 303). According to Turner & Woelkerling (1982b: 233) and Woelkerling (1988: 128), uncertainties surrounds the delimitation and circumscription of most species in the genus.

**Lithoporella atlantica** (Foslie) Foslie

See note to *Lithoporella melobesoides* (Foslie) Foslie.

**Lithoporella conjuncta** (Foslie) Foslie

Cape Verde Islands (139;366;597).

Mauritania (139;211;349;366;597).

Sénégal (597)

[As *Lithoporella (Eulithoporella) conjuncta* Foslie]

'Atlantique africain' (371).

[As *Mastophora (Lithoporella) conjuncta* Foslie]

Cape Verde Islands (6;136;207).

Mauritania (6;136;207;210;212).

*Note.* This species was originally described as *Mastophora conjuncta* Foslie (207: 30) and is based on collections from Cap Blanc, West Africa and São Vicente, Cape Verde Islands. Subsequently, Foslie (211: 59) transferred the species to *Lithoporella*, and Adey (669: 15) lectotypified it with the Cap Blanc collection. A detailed study of the lectotype (678: 61) has not been undertaken in a modern context, and thus the status and disposition of the species are uncertain, as is the identification of specimens from the West African region.

**Lithoporella melobesioides** (Foslie) Foslie

Cape Verde Islands (366;598).

Mauritania (366).

'Pantropical' (366).

'Subtropical Africa [Senegal (N. of Gambia); Mauritania; Former W. Sahara]. . .' (598).

*Note.* The lectotype collection (678: 148), from South Nilandu, Maldive Islands, has been studied in detail by Turner & Woelkerling (1982a, b), who also provided an account of the species in southern Australia. All records of this species from the West African region require confirmation. Errors associated with the typification of *L. melobesioides* are indicated by Woelkerling (678: 148).

**Lithoporella sauvageui** (Foslie) Adey

Canaries (18;582;598).

Cape Verde Islands (582;598).

[As *Fosliella (Litholepis) sauvageui* (Foslie)]

Canaries (191).

[As *Litholepis sauvageui* Foslie]

Canaries (6;139;203;204;227;366;368;493;678;687).

Cape Verde Islands (366;368).

[As *Melobesia (Litholepis) sauvageui* Foslie]

Canaries (70;359;362).

Cape Verde Islands (100;633).

[As *Melobesia sauvageui* Foslie]

Canaries (235).

*Note.* This species was originally described as *Litholepis sauvageui* Foslie (203: 6) and is based on a single collection (678: 195) from Puerto Orotava, Tenerife, Canary Islands. Subsequently, the species was transferred to *Melobesia* (363: 66) and then to *Lithoporella* (669: 15). There has been no detailed study of the holotype in a modern context, and thus the status and disposition of the species are uncertain, as is the identification of specimens from the West African region.

**Lithothamnion** Heydrich, 1897a: 412, nom. cons.; non *Lithothamnium* Philippi, 1837: 387.

The concept of *Lithothamnion* adopted in this paper follows Woelkerling (1988: 169). The taxonomic history of *Lithothamnion* Heydrich and of *Lithothamnium* Philippi are summarized by Woelkerling (1983a), who proposed (Woelkerling, 1985b) the conservation of *Lithothamnion* Heydrich with *L. muelleri* Lenormand ex Rosanoff as type species. This proposal has been approved and incorporated into the *Inter-*

*national code of botanical nomenclature* (Greuter, 1988: 116). Further data on the nomenclature and infrageneric classification are summarized by Woelkerling (1988: 173–175) who also noted that no world monograph of the genus has been published and that species concepts are poorly known. In the literature, the spellings *Lithothamnion* and *Lithothamnium* are both widespread. As the correct orthography is now *Lithothamnion*, all entries are made under that spelling.

**Lithothamnion amplexifrons** (Harvey) Lemoine

See *Lithophyllum amplexifrons* (Harvey) Foslie.

**Lithothamnion angolense** Romanes

Angola (139;370;677).

*Note.* *Lithothamnion angolense* is based on fossil material from four localities (677: 584). A detailed study of the type material (whereabouts uncertain) has not been undertaken in a modern context, and thus the status and disposition of this species are uncertain.

**Lithothamnion antarcticum** (Hooker f. & Harvey) Heydrich

See note to *Mesophyllum ectocarpum* (Foslie) Adey.

**Lithothamnion bisporum** Foslie

See *Phymatolithon bisporum* (Foslie) Afonso-Carrillo and notes under *Lithothamnion hispanum* Foslie ex Gonzalez Henriques.

**Lithothamnion bornetii** Foslie

Canaries (227; 598).

*Note.* This species originally was described as *Lithothamnion bornetii* Foslie (1898b: 9). Subsequently, Adey (669: 30) transferred the species to *Leptophyllum* (see comments on *Leptophyllum* under the entry for that genus), but then Adey & Adey (1973: 347, as *Lithothamnion*) indicated that the species was either a *Leptophyllum* or a *Phymatolithon* and that it occurred in France, Spain, and the British Isles. Parke & Dixon (1976: 534) then placed the species in *Phymatolithon* while South & Tittley (1986: 44) made the combination *Phymatolithon bornetii* (Foslie) Foslie. Foslie never placed this species in *Phymatolithon*, and the binomial *Phymatolithon bornetii* coined by both Parke & Dixon (1976) and South & Tittley (1986) is invalid because a full reference to the basionym was not made in accordance Article 33.2 of the *International code of botanical nomenclature* (see Greuter, 1988). Chamberlain (1990, as *Leptophyllum*) provided an account of British Isles material and of an isotype from France in PC. Chamberlain (1990) also reported that some specimens from France identified as '*bornetii*' by Lemoine were misidentified plants of *Phymatolithon purpureum* (P. & H. Crouan) Woelkerling & L. Irvine, and she was unable to confirm the French and Spanish records of Adey & Adey (1973). Information on the holotype is provided by Chamberlain (1990) and Woelkerling (678: 41). Records of this species from the Canary Islands require confirmation, and the generic placement of the species requires further evaluation once the status of *Leptophyllum* as a genus is clarified.

**Lithothamnion brachycladum** Foslie

See *Mesophyllum brachycladum* (Foslie) Adey.

**Lithothamnion brassica-floridum** (Harvey) Areschoug

See *Neogoniolithon brassica-florida* (Harvey) Setchell & Mason.

**Lithothamnion calcareum** (Pallus) Areschoug

See *Phymatolithon calcareum* (Pallus) Adey & McKibbin.

**Lithothamnion californicum** Foslie

See note on *Phymatolithon tenuissimum* (Foslie) Adey.

**Lithothamnion canariense** Foslie

See *Mesophyllum canariense* (Foslie) Lemoine.

**Lithothamnion capense** (Rosanoff) Foslie

See *Lithophyllum capense* Rosanoff.

**Lithothamnion corallioides** P. & H. Crouan

Canaries (15;18;582;648).

Cape Verde Islands (582).

*Note.* P. & H. Crouan (1867: 151, pl. 20, gen. 133, figs 8–10) based *Lithothamnion corallioides* on material from Brest, France. The type material has not been studied in detail in a modern context and thus the status and disposition of this species are uncertain, as is the identification of specimens from the West African region.

**Lithothamnion corticiformis** (Kützing) Foslie

See *Melobesia membranacea* Kützing.

**Lithothamnion crassum** Philippi

See *Lithophyllum duckeri* Woelkerling.

**Lithothamnion crispatum** Hauck

Mauritanie (356).

[As *Lithothamnium Philippii* Foslie = *L. crispatum* Hauck]

Mauritanie (354).

*Note.* Hauck (1878: 289) based *Lithothamnion crispatum* on specimens from Rovigno in the Adriatic Sea. Subsequently, Hauck (1883: 270) transferred the species to *Lithophyllum*. Foslie (1898a) then transferred the species to *Archaeolithothamnion*, but later (Foslie, 1904: 13) reclassified it as *Lithothamnion philippii* f. *crispata* (Hauck) Foslie. There has been no detailed study of the type material in a modern context, and thus the status and disposition of the species is uncertain, as noted by Athanasiadis (668: 41). Once such a study is undertaken, the specimens from Mauritanie need to be checked to determine whether they are conspecific with the type.

**Lithothamnion ectocarpon** Foslie

See *Mesophyllum ectocarpon* (Foslie) Adey.

**Lithothamnion erubescens** Foslie

See *Mesophyllum erubescens* (Foslie) Lemoine.

**Lithothamnion floridanum** Foslie

See *Mesophyllum floridanum* (Foslie) Adey.

**Lithothamnion fruticosum** (Kützing) Foslie

See *Spongites fruticosum* Kützing.

**Lithothamnion hispanum** Foslie ex Gonzalez Henriques

Canaries (598).

[As *Lithothamnion hispanum* Foslie]

Canaries (235).

*Note.* Gonzalez Henriques (235) listed this entity from the Canary Islands and attributed the specific epithet to Foslie. As far as can be determined, however, neither Foslie (see 678) nor other earlier authors have described a species with the specific epithet *hispanum*, and thus the epithet appears to be newly coined by Gonzalez Henriques (235). The account of Gonzalez Henriques (235) lacks a description, and consequently, *Lithothamnion hispanum* must be considered a *nomen nudum*. It is possible that Gonzalez Henriques (235) was referring to *Lithothamnion bisporum* (treated in this series under *Phymatolithon*), a species based on type material from the Canary Islands (678: 39), but this cannot be confirmed.

**Lithothamnion incrustans** Philippi

See *Lithophyllum incrustans* Philippi.

**Lithothamnion indicum** Foslie

Mauritanie (6).

*Note.* A detailed study of the lectotype collection (678: 125), which comes from Corner Inlet, Victoria, Australia, is presently being undertaken in conjunction with monographic studies of non-geniculate corallines in southern Australia. Until that study is completed, the status and disposition of the species will remain uncertain. Once the study of the lectotype is complete, the specimen on which the record from Mauritanie is based needs to be checked to determine whether it is conspecific with the lectotype.

**Lithothamnion irregulare** Foslie

See *Lithophyllum irregulare* (Foslie) Huvé ex Steentoft.

**Lithothamnion lenormandii** (Areschoug) Foslie

See *Phymatolithon lenormandii* (Areschoug) Adey.

**Lithothamnion lichenoides** Heydrich

See *Mesophyllum lichenoides* (Ellis) Lemoine.

**Lithothamnion mamillare** (Harvey) Areschoug

See *Neogoniolithon mamillare* (Harvey) Setchell & Mason.

**Lithothamnion mamillosum** Hauck

See *Neogoniolithon mamillosum* (Hauck) Setchell & Mason.

**Lithothamnion membranaceum** (Esper) Foslie

See *Melobesia membranacea* (Esper) Lamouroux.

**Lithothamnion onkodes** Heydrich

See *Spongites onkodes* (Heydrich) Penrose & Woelkerling and the entry for *Porolithon*.

**Lithothamnion orbiculatum** Foslie

See *Lithophyllum orbiculatum* (Foslie) Foslie.

**Lithothamnion philippi** Foslie

Canaries (6;204;227;356;363;493;594;598).

Mauritanie (6;354;359).

Sénégal (248).

'Subtropical Africa [Senegal (N. of Gambia); Mauritanie; Former W. Sahara]' (598).

[As *Mesophyllum philippi*] (Foslie) Adey]

Canaries (18).

*Note.* The complex nomenclatural history of this species is explained by Woelkerling (678: 171), who designated a new lectotype from the Gulf of Naples, Italy. The lectotype, however, has not been studied in detail in a modern context, and thus the status and disposition of this species are uncertain, as is the identification of specimens from the West African region. Afonso-Carrillo et al. (576: 25, as *Mesophyllum*) commented that previous references to the taxon from the Canaries are doubtful and require confirmation.

**Lithothamnion polymorphum** auctorum

See entries for *Phymatolithon purpureum* (P. & H. Crouan) Woelkerling & L. Irvine and *Phymatolithon calcareum* (Pallas) Adey & McKibbin.

**Lithothamnion ponderosum** Foslie

São Tomé (197;265).

*Note.* Foslie (197: 15) based this species on a specified collection from São Tomé. Subsequently Foslie (211: 42) considered *Lithothamnion ponderosum* to be conspecific with *Lithophyllum africanum* Foslie (199: 3) but incorrectly adopted the 1900 epithet *africanum* rather than the 1897 epithet *ponderosum*. Steentoft (535: 128, under *Lithophyllum africanum* f. *intermedia*), provides some additional comments on the São Tomé material, but the holotype (678: 175) has not been studied in detail in a modern context and thus the status and disposition of the species are uncertain.

**Lithothamnion racemus** (Lamarck) Areschoug

See notes under *Mesophyllum brachycladum* (Foslie) Adey.

**Lithothamnion solutum** (Foslie) Foslie

Cape Verde Islands (6;210).

Mauritanie (6;252;356).

[As *Lithophyllum solutum* (Foslie) Lemoine]

Mauritanie (248;359;360;556).

Salvage Islands (38B;556).

[As *Mesophyllum solutum* (Foslie) Lemoine]

Cape Verde Islands (366;598).

Mauritanie (349;366).

Salvage Islands (598).

'Subtropical Africa [Senegal (N. of Gambia); Mauritanie; Former W. Sahara]' (598).

*Note.* A detailed study of the lectotype collection (678: 203, as *Lithothamnion fruticosum* f. *soluta* Foslie) has not been undertaken in a modern context and thus the status and disposition of this taxon are uncertain, as is the identification of specimens from the West African region. This taxon was originally described as *Lithothamnion fruticosum* f. *soluta* Foslie (1904: 7). Subsequently it was raised to species status [as *Lithothamnion solutum* (Foslie) Foslie (204: 14)], then transferred to *Lithophyllum solutum* (Foslie) Lemoine (356: 13), and later transferred to *Mesophyllum solutum* (Foslie) Lemoine (366: 238; see also 349: 115). The binomial *Mesophyllum solutum* is

invalid because the combination was proposed without a full, direct reference to its basionym (Article 33.2 of the *International Code of Botanical Nomenclature*; see Greuter, 1988).

**Lithothamnion sonderi** Hauck

Canaries (177;191;227;362;365;375;582;584;598;631;649).

'... côtes atlantique d'Europe (de la Norvège aux Canaries)' (188).

*Note.* A detailed study of the type collection, which comes from Helgoland, Germany has been undertaken by Chamberlain (631), who also provides data on the species in the British Isles. Specimens on which published records for the West African region are based need to be checked to determine whether they are conspecific with the type.

**Lithothamnion subtenellum** Foslie

See *Lithophyllum subtenellum* (Foslie) Foslie.

**Lithothamnion tenuissimum** Foslie

See *Phymatolithon tenuissimum* (Foslie) Adey.

**Lithothamnion vickersiae** Lemoine

See *Lithophyllum vickersiae* Lemoine in Børgesen.

**Lithothamnion** spp.

Angola (312).

Cape Verde Islands (114;145;366).

Ghana (335;350;487;586).

Namibia (348;437;438).

Western Sahara (349;476).

**Lithothamnium**

In the literature, the spellings *Lithothamnion* and *Lithothamnium* both are widespread. As the correct orthography is now *Lithothamnion*, all entries are made under that spelling.

**Lomentaria articulata** (Hudson) Lyngbye

Canaries (2; 3; 8; 16; 38D; 70; 71; 191; 214; 226; 227; 229; 235; 375; 379; 392; 489; 490; 499; 517; 584; 598; 633).

Cameroun (239;350;454;500;586;591).

Salvage Islands (38B;38D;231;598).

Western Sahara (349).

'... Atlantique (de la Norvège au Rio de Oro). . .' (33).

'... Atlantique: depuis les côtes anglaises jusqu'au Rio de Oro. . .' (222).

'A Boreal-Atlantic alga' (2).

'... Atlantique Nord (des Féroé aux Canaries). . .' (189).

'... Atlantischer Ozean von den Faroer an südwärts bis Westindien und Westafrika. . .' (499).

'... Atlántico norte (de Faeroes a Canarias)' (517).

'... Faeröes southwards to Morocco and the Canary islands. . .' (70).

'... Nordwestafrika' (499).

'... Norway (Nordland) to Cameroun; Canary Isles. . .' (273).

'... Tropical Africa (N. Gambia – Congo river)' (598).

'... West Küste Afrikas' (239).

'... widespread from boreal-antiboreal to tropical seas' (350;586).

[As *Chylocladia articulata* Greville]

Canaries (439).

‘. . . den atlantischen – Cap Inseln. . .’ (239).

[As *Lomentaria articulata* Lyngbye]

Canaries (44;547).

[As *Lomentaria articulata* (Lightfoot) Lyngbye]

Canaries (401).

*Note.* Yarish et al. (591: 217–218) have commented upon the significance of the ill-supported Cameroun statements.

### ***Lomentaria baileyana* (Harvey) Farlow**

Canaries (598;667).

Mauritanie (Cap Blanc) (516; 565A).

‘Subtropical Africa [Senegal (N. of Gambia); Mauritania; Former W. Sahara]’ (598).

[As *Lomentaria baileyana* (Harvey) Farlow]

Mauritanie (349).

*Note.* In view of Bodard & Mollion’s (59) records from Sénégal, it is possible that these records (or even the whole taxon) should be transferred to (or referred to by the name of) *Lomentaria uncinata* Meneghini. See notes under *Lomentaria uncinata*. Cribb (113: 71–72) indicated the dichotomy of opinion that exists for the relationship of *L. baileyana* and *L. uncinata*, some authors considering them conspecific, others distinct.

### ***Lomentaria exigua* De Notaris**

See *Chylocladia reflexa* Lenormand.

### ***Lomentaria fastigiata* Kützing**

São Tomé (132;323).

*Note.* Doubt expressed by De Toni (132) related to the possibility that this was the western Atlantic island, not that in the Gulf of Guinea. Included for completeness, since the situation is unclear.

### ***Lomentaria firma* (J. Agardh) Berthold**

Sénégal (59;399).

‘Subtropical Africa [Senegal (N. of Gambia); Mauritania; Former W. Sahara]’ (598).

[As *Lomentaria firma* (J. Agardh) Kylin]

Sénégal (531).

*Note.* See *Lomentaria* sp.1. Bodard & Mollion (59: 200) commented as follows: ‘. . . Les deux *Lomentaria* sont plus originaux et leur détermination a été délicate. Pour le premier nous avons trouvé dans l’herbier Thuret un *Chondria* provenant de l’île de Gorée (Herbier Le Prieur) sans détermination mais groupé avec le *Lomentaria firma* Berthold (*Chylocladia firma* J. Ag.). Cette espèce présente de nombreux synonymes, elle correspond au *L. firma* Kütz. *Tab. Phyc.* XV, t. 78 et vraisemblablement au *Chondrothamnion irregulare* Kütz. *Tab. Phyc.* XV, t. 82, décrit de la Méditerranée, elle se retrouve au Maroc dans l’herbier Schousboe, des échantillons Zanardini sont également de la même espèce et proches des nôtres, c’est donc une espèce africano-méditerranéenne . . . les deux *Lomentaria* sont irréguliers au Sénégal’.

### ***Lomentaria impudica* Montagne**

See *Catenella impudica* (Montagne) J. Agardh.

### ***Lomentaria kaliformis* sine auctorum**

See *Chylocladia verticillata* (Lightfoot) Batters.

### ***Lomentaria linearis* (Zanardini) Zanardini**

Canary Islands (Prud’homme van Reine, unpublished; collected during trip of Helgoland research vessel ‘Heincke’ to the Canaries).

### ***Lomentaria ovalis* (Hudson) J. Agardh**

See *Gastroclonium ovatum* (Hudson) Papenfuss.

### ***Lomentaria parvula* C. Agardh**

See *Champia parvula* (C. Agardh) Harvey.

### ***Lomentaria patens* Kützing**

Namibia (128).

*Note.* By straightforward nomenclatural synonymy, this record of a single plant would probably have represented *Chylocladia verticillata* (Lightfoot) Bliding (q.v.). However, from this named location, the presence of that species as currently conceived is not credible. In regard to a similar report by the same authors from South Africa, Seagrief (570) has commented ‘? synonym of *Chylocladia capensis* Harvey. . .’ and the same comments could even more realistically be made here for Namibia.

### ***Lomentaria pygmaea* auctorum**

See *Gastroclonium reflexum* (Chauvin) Kützing.

### ***Lomentaria reflexa* Chauvin**

See *Gastroclonium reflexum* (Chauvin) Kützing.

### ***Lomentaria subdichotoma* Ercegovic**

Canaries (648).

### ***Lomentaria uncinata* Meneghini in Zanardini**

Sénégal (59).

‘. . . côtes occidentales d’Afrique et aux Canaries. . .’ (184).

*Note.* See *Lomentaria* sp. 2. Bodard & Mollion (59: 200) commented as follows: ‘. . . Les deux *Lomentaria* sont plus originaux et leur détermination a été délicate. . . La seconde est *Lomentaria uncinata* Menegh. (1840) dont le synonyme principal est *L. baileyana* . . . Farlow dont les variétés S et – sont identiques à l’espèce *L. uncinata*. Cette espèce peut-être considérée comme une tropicale atlantique. Ces deux *Lomentaria* sont irréguliers au Sénégal’. See also notes under *L. baileyana*. Boudouresque et al. (1984: 45) incorrectly cited the authorities for this taxon as (Meneghini ex Kützing) Farlow.

### ***Lomentaria uvaria* (Wulfen) Duby**

See *Botryocladia botryoides* (Wulfen) J. Feldmann.

### ***Lomentaria* sp.**

Sénégal (529).

*Note.* Sourie (529: 108) recorded it in his list as ‘*Lomentaria* n. sp. Feldm.’ and in his notes (p. 116) as ‘encore non décrit par J. Feldmann’.

### ***Lomentaria* sp.1.**

Sénégal (55).

*Note.* See notes under *Lomentaria firma* (J. Agardh) Berthold.

**Lomentaria** sp.2.

Sénégal (55).

*Note.* See *Lomentaria uncinata* Meneghini.**Lophocladia trichocladus** (C. Agardh) Schmitz

Annobón (139;292;456;457).

Canaries (128A;139;292;633;634;648;662).

Ghana (290;292;299;300;350;376;377;491;586).

Príncipe (139;350;586).

Sierra Leone (30;350;586).

‘. . . widespread in warm temperate and tropical seas.’  
(292?;350;586).[As *Lophocladia trichocladus* (Mertens in C. Agardh)  
Schmitz]

Canaries (71;227;303;598;648).

Cape Verde Islands (598).

Príncipe (93).

São Tomé (93).

‘Tropical Africa (N. Gambia – Congo river)’ (598).

[As *Lophocladia trichocladus* (Mertens) Schmitz]

Canaries (13;38D;191;226;375).

[As *Dasya trichocladus* J. Agardh]

Canaries (439;547).

**Lophosiphonia adhaerens** Pilger

Annobón (139;295;350;456;457;586).

?Sierra Leone (295).

St. Helena (655).

*Note.* See *Lophosiphonia* spp. for possible Sierra Leone records.**Lophosiphonia cristata** Falkenberg

Ascension Island (474).

Canaries (38B;634;657).

Salvage Islands (38B;598;657).

[As *Lophosiphonia* cf. *cristata* Falkenberg]

Canaries (38C).

*Note.* Audiffred (38C: 179–180) indicated that his specimens did not have the usual hooked apices of branchlets associated with *L. cristata*, nor did the rhizoids remain in open connection with the pericentrals. He debated the wide variation in reported numbers of pericentral cells in *Lophosiphonia* (4–18 according both to species and author); his own specimens had 9 pericentrals. The difficulties in distinguishing between sterile *Lophosiphonia* and *Polysiphonia* were indicated.**Lophosiphonia obscura** (C. Agardh) Falkenberg in Engler & PrantlSee under *Lophosiphonia reptabunda* (Suhr) Kylin.**Lophosiphonia reptabunda** (Suhr in Kützing) Kylin

Angola (352).

Ascension (475).

Bioko (346;350;586).

Cameroun (350;586).

Canaries (38B;38C;38D;54;110;556;598;662;684).

Cape Verde Island (598).

Côte d’Ivoire (350;586).

Gabon (350;586).

Ghana (288;350;586).

Salvage Island (38B;38C;38D;556;598).

Sierra Leone (350;586).

St. Helena (655).

‘Atlantique (de l’Angleterre aux Canaries. . .)’ (33).

‘. . . in warm temperate and tropical parts of the Atlantic. . .’  
(350;586).

‘. . . on many rocky shores of West Africa. . .’ (347A).

‘Tropical Africa (N. Gambia – Congo river)’ (598).

‘. . . warmer parts of the Atlantic Ocean. . .’ (71).

[As *Lophosiphonia reptabunda* (Kützing) Kylin]

Angola (298).

Gabon (295).

Sierra Leone (295).

[As *Lophosiphonia reptabunda* Kylin]

Canaries (489;517).

[As *Lophosiphonia reptabunda* (Suhr in Kützing) Cribb]

Canaries (110).

[As *Lophosiphonia obscura* J. Agardh]

‘. . . cotes occidentale d’Afrique et aux Canaries. . .’ (184).

[As *Lophosiphonia obscura* (C. Agardh) Falkenberg]

Cameroun (337;537).

Canaries (108;227;375;482;584).

Cape Verde Islands (38).

Ghana (153;338;487).

‘. . . in den warmeren Teilen des Atlantischen Ozeans. . .’  
(501).

‘. . . warmer parts of the Atlantic Ocean’ (62).

[As *Lophosiphonia obscura* Falkenberg]

Canaries (190).

[As *Lophosiphonia obscura* auct., Howe]

Canaries (71;191;310).

‘. . . in warmer parts of the Atlantic Ocean. . .’ (71).

[As *Lophosiphonia* sp.]

Ascension Island (474).

Sierra Leone (339).

[As *Polysiphonia obscura* J. Agardh]

Cape Verde Islands (38;145).

‘. . . au sud de l’Angleterre aux Canaries. . .’ (38;89).

[As *Polysiphonia reptabunda* Suhr]

‘Ad oras africanas’ (321).

‘. . . In mari atlantico subtropico ad Alga parasitica. . .’  
(318).*Note.* Erroneously recombined by Jaasund (280: 411) as *Lophosiphonia reptabunda* (Suhr) *nov. comb.* who seemed to be unaware of the fact that both Cribb and Kylin had carried out such recombination independently in 1956. Of these it appears that Kylin (281) antedated Cribb (110) who discussed (p. 140–141) its nomenclature. Kapraun et al. (310: 890–891) discussed the validity of records by Børgesen (71) from the Canaries, considering that the material concerned could not represent *Lophosiphonia obscura* and is probably a species of *Polysiphonia*. It would appear that *Lophosiphonia obscura* as such occurs north of the area considered here.**Lophosiphonia scopulorum** (Harvey) Womersley

Canaries (633;634;648).

Salvage Islands (38B; 556).

*Note.* See also *Polysiphonia scopulorum* Harvey.**Lophosiphonia villum** (J. Agardh) Setchell & GardnerSee *Polysiphonia scopulorum* Harvey var. *villum* (J. Agardh)  
Hollenberg.

**Lophosiphonia** spp.

Ascension (474) (probably in the main referable to *L. reptabunda*).

Cameroun (460).

Cape Verde Island (652).

Ghana (299;376;377).

Sénégal (529).

Sierra Leone (295;339;350;468;586).

*Note.* The *Lophosiphonia* material referred to in 339 and 460 may well be *L. reptabunda* but the specimens cannot now be traced. The species referred to in 350 and 586 closely resembles the little-known *L. adhaerens* Pilger (456).

**Lophura episcopalis** (Montagne) Kützing

See *Halopitys incurvus* (Hudson) Batters.

**Lythophyllum calcareum** (Pallas) Areschoug

See *Phymatolithon calcareum* (Pallas) Adey & McKibbin.

**Lythophyllum** sp. (*geometricum*?) Lemoine

See *Lithophyllum geometricum* Lemoine and *Dermatolithon geometricum* (Lemoine in Børgesen) Price, John & Lawson.

**Lythophyllum** sp.

See *Lithophyllum* sp.

**Mastocarpus stellatus** (Stackhouse in Withering) Guiry in Guiry, West, Kim & Masuda.

Canaries (598;633;634;657).

‘. . . from northern Russia south to Portugal and from Morocco south possibly to Rio de Oro, Mauritania. . .’ (245;657).

[As *Gigartina stellata* (Stackhouse in Withering) Batters]

Canaries (13;227).

Mauritanie (349).

Western Sahara (349).

‘. . . Atlantique (de l’Arctique au Rio de Oro)’ (33).

‘. . . Atlantique: depuis la Scandinavie jusqu’au Rio de Oro. . .’ (222).

‘Circumboréale, . . . de l’Arctique aux Côtes Atlantique d’Europe et d’Afrique jusqu’à la Mauritanie. . .’ (173)

*Note.* The distributional statement in 657 is reproduced directly from Guiry et al. (245). Afonso-Carrillo et al. (657: 289) present the first report from the Canaries of what is probably the *Petrocelis cruenta* phase (the sporophyte) of *M. stellatus*; unfortunately, the material was sterile.

**Mastophora** Decaisne

The concept of *Mastophora* adopted in this paper follows Woelkerling (1988: 129–133) who provides nomenclatural and systematic data on the genus. Historical data on the genus are summarized by Turner & Woelkerling (1982a, b), who also give an account of the lectotype species, *M. licheniformis* Decaisne [a heterotypic synonym of *M. rosea* (C. Agardh) Setchell]. A revised key to the genera of Mastophoroideae, including *Mastophora*, is provided by Penrose & Chamberlain (1993: 303). According to Turner & Woelkerling (1982b: 233) and Woelkerling (1988: 133),

uncertainties surrounds the delimitation and circumscription of most species in the genus.

**Mastophora conjuncta** Foslie

See *Lithoporella conjuncta* (Foslie) Foslie.

**Mastophora melobesioides** Foslie

See *Lithoporella melobesioides* (Foslie) Foslie.

**Melobesieae**

Certain records have been omitted on the grounds of imponderability. An example is the organism(s) referred to by Viero y Clavijo (548) under the name *Bellaria Lapidea Canariensis*. Martin Aguado (386), in analysing the treatments of algae by Viero y Clavijo (548), concluded that melobesioids were being referred to in this entry, otherwise headed ‘Confites’, but that it was not possible to be more precise than ‘subfamilia Melobesieae’.

**Melobesia** Lamouroux

The concept of *Melobesia* adopted in this paper follows Woelkerling (1988: 186–191), who also provides information on the nomenclatural and taxonomic history of the genus. Many species that at some stage were ascribed to *Melobesia* are now placed in other genera.

**Melobesia amplexifrons** Harvey

See *Pneophyllum amplexifrons*.

**Melobesia brassica-florida** Harvey

See note to *Neogoniolithon brassica-florida* (Harvey) Setchell & Mason.

**Melobesia callithamnioides sensu** Falkenberg

See references for *Melobesia callithamnioides* under *Fosliella farinosa* (Lamouroux) Howe.

*Note.* Chamberlain (1983: 351–352) provided a detailed historical account of *Melobesia callithamnioides sensu* Falkenberg and concluded that *Melobesia callithamnioides sensu* Falkenberg was conspecific with *Fosliella farinosa* (Lamouroux) Howe [= *Hydrolithon farinosum* (Lamouroux) Penrose & Chamberlain]; see Penrose & Chamberlain, 1993], where she treated it as a distinct variety under the name *Fosliella farinosa* f. *callithamnioides* (Foslie) Chamberlain. Chamberlain (1983: 352), however, was unable to confirm this placement by comparative examination of type material and indeed did not designate a lectotype. Until a lectotype is designated and studied in detail in a modern context, the status and disposition of *Fosliella farinosa* f. *callithamnioides* (Foslie) Chamberlain will remain uncertain, as will records of this taxon from the West African region.

**Melobesia confervicola** (Kützing) Foslie

See *Pneophyllum confervicolum* (Kützing) Chamberlain.

**Melobesia confinis** P. & H. Crouan

See *Lithophyllum pustulatum* (Lamouroux) Foslie.

**Melobesia corallinae** P. & H. Crouan

See *Lithophyllum corallinae* (P. & H. Crouan) Heydrich.

**Melobesia corticiformis** Kützing

See *Melobesia membranacea* (Esper) Lamouroux.

**Melobesia cystoseirae** Hauck

See *Lithophyllum cystoseirae* (Hauck) Heydrich.

**Melobesia farinacea** Lamouroux

See *Fosliella farinosa* (Lamouroux) Howe.

*Note.* Based on a comparative study of relevant type and other collections, Penrose & Chamberlain (1993) have concluded that the genus *Fosliella*, which is typified by *F. farinosa*, is a heterotypic synonym of *Hydrolithon*, and they have transferred Lamouroux's species to that genus, as *Hydrolithon farinosum* (Lamouroux) Penrose & Chamberlain.

**Melobesia farinosa** Lamouroux

See *Fosliella farinosa* (Lamouroux) Howe and note under *Melobesia farinacea* Lamouroux.

**Melobesia lejolisi** Rosanoff

See *Pneophyllum lejolisi* (Rosanoff) Y. Chamberlain.

**Melobesia mamillaris** Harvey

See *Neogoniolithon mamillare* (Hauck) Setchell & Mason.

**Melobesia membranacea** (Esper) Lamouroux

Canaries (191;227;232B;439;441;582;584;598;633;634).

Cape Verde Islands (408;598).

Mauritanie (252;349;439;441).

Salvage Islands (598).

‘. . . régions tempérées et chaudes de l’Atlantique. . .’ (188).

‘Subtropical Africa [Senegal(N. of Gambia); Mauritania; Former W. Sahara]’ (598).

[As *Melobesia membranacea* (Esper) Foslie]

Cape Verde Islands (408).

[As *Melobesia membranacea* Lamouroux]

Cape Verde Islands (38).

Congo (249;250).

[As *Melobesia corticiformis* Kützing]

Canaries (547).

Cape Verde Islands (41;42).

[As *Epilithon membranaceum* (Esper) Heydrich]

Angola (541).

Canaries (70;314;354;356;359;362;363;517;624).

Cape Verde Islands (366).

Congo (356).

Mauritanie (356;359).

Salvage Islands (38B;231;375).

Sénégal (356).

‘. . . optima verio in mari atlantico ab oris Norvegiae usque ad promontorium Cap b. spei. . .’ (25).

‘. . . régions tempérées et chaudes de l’Atlantique. . .’ (355).

[As *Lithothamnion membranaceum* (Esper) Foslie]

Cape Verde Islands (252).

Mauritanie (252).

Sénégal (252).

‘. . . in oceano Atlantico ab oris Norvegiae usque ad promontorium Capitis Bonae Spei Africae australis. . .’ (134).

‘Nordwestafrika’ (499).

*Note.* This species originally was described as *Corallina membranacea* Esper (1806: Corallina Tab. XII). Esper (1806) did not indicate the locality from which his material came, but subsequently (1830: 363, as *Melobesia*) stated that the species occurred on the western shores of France and probably in other regions. Lamouroux (1812: 186) transferred the species to his new genus *Melobesia*, and as noted by Mason (1953: 319), Chamberlain (1985: 673) and Woelkerling (1988: 189), *M. membranacea* (Esper) Lamouroux must be considered the type species of *Melobesia*. The species also has been placed in *Epilithon* (Heydrich, 1897a: 408) and in *Lithothamnion* (681: 7). Chamberlain (1985) neotypified the species with a Lamouroux specimen (CN); accounts of the neotype are provided by Chamberlain (1985) and Wilks & Woelkerling (1991), the latter in conjunction with a monographic account of southern Australian species of *Melobesia*. Specimens on which published records for the West African region are based now need to be checked to determine whether they are conspecific with the neotype. Chamberlain (1983: 300, 306) concluded from studies of the type of *Melobesia corticiformis* Kützing that it was a heterotypic synonym of *Melobesia membranacea*. References to *Melobesia corticiformis* above are based on comments of Lemoine (363: 29) who indicated that these specimens were misidentified plants of *M. membranacea* (as *Epilithon*).

**Melobesia minutula** Foslie

See *Pneophyllum confervicolum* (Kützing) Y. Chamberlain.

**Melobesia pustulata** Lamouroux

See *Lithophyllum pustulatum* (Lamouroux) Foslie.

**Melobesia sauvageauii** Foslie

See *Lithoporella sauvageauii* (Foslie) Adey.

**Melobesia solmsiana** Falkenberg

See references for *Melobesia solmsiana* under *Fosliella farinosa* (Lamouroux) Howe.

*Note.* Chamberlain (1983: 351–352) concluded that *Melobesia solmsiana* Falkenberg was conspecific with *Fosliella farinosa* (Lamouroux) Howe [= *Hydrolithon farinosum* (Lamouroux) Penrose & Chamberlain; see Penrose & Chamberlain, 1993] and treated it as a distinct form under the name *Fosliella farinosa* f. *callithamnioides* (Foslie) Chamberlain. Chamberlain (1983: 352), however, was unable confirm this placement by comparative examination of type material and indeed did not designate a lectotype. Until a lectotype is chosen and studied in detail in a modern context, the status and disposition of *Melobesia solmsiana* Falkenberg and *Fosliella farinosa* f. *callithamnioides* (Foslie) Chamberlain will remain uncertain, as will records of this taxon from the West African region.

**Melobesia solmsii** Bornet ex Lemoine

Canaries (356).

*Note.* *Melobesia solmsii* is an herbarium name of Bornet that was first published by Lemoine (354: LXIV), who suggested that Bornet's plants were the same as plants identified by Falkenberg as *Melobesia callithamnioides*. Subsequently, Lemoine (356: 26) recorded *Melobesia solmsii* from various regions, including the Canary Islands. The Canary Islands record was listed in Price et al. (1986: 92) under their entry for *Fosliella farinosa*. The nomenclatural history of *Melobesia callithamnioides* sensu Falkenberg (1879) has been summarized by Chamberlain (1983: 352), who noted that Falkenberg (179: 109) subsequently described his material as a new species, *Melobesia*



*solmsiana*. Given these facts, *Melobesia solmsii* Bornet ex Lemoine must be interpreted as a homotypic synonym of *Melobesia solmsiana* Falkenberg. Chamberlain (1983: 351–352) concluded that *Melobesia solmsiana* Falkenberg was conspecific with *Fosliella farinosa* (Lamouroux) Howe [= *Hydrolithon farinosum* (Lamouroux) Penrose & Chamberlain]; see Penrose & Chamberlain, 1993] and treated it as a distinct variety under the name *Fosliella farinosa* f. *callithamnioides* (Foslie) Chamberlain. Chamberlain (1983: 352), however, was unable to confirm this placement by comparative examination of type material and indeed did not designate a lectotype. Until a lectotype is chosen and studied in detail in a modern context, the status and disposition of *Melobesia solmsiana* Falkenberg (including *M. solmsii* Bornet ex Lemoine) and *Fosliella farinosa* f. *callithamnioides* (Foslie) Chamberlain will remain uncertain, as will records of this taxon from the West African region.

### **Melobesia stictaeformis** Areschoug

Salvage Islands (439).

*Note.* Areschoug (1852: 517) based this species on a collection from the Mediterranean. A detailed study of the type (presumably in LD), however, has not been undertaken in a modern context, and thus the status and disposition of this species are uncertain, as is the record from the Salvage Islands.

### **Meredithia microphylla** (J. Agardh) J. Agardh

Canaries (227;598;661).

Cape Verde Islands (598).

[As *Callymenia microphylla* J. Agardh]

Canaries (70;177).

[As *Callymenia (Meredithia) microphylla* J. Agardh]

Canaries (493).

[As *Callymenia reniformis* (Turner) J. Agardh]

Canaries (547).

[As *Kallymenia microphylla* J. Agardh]

Canaries (191;273;392;584).

Cape Verde Islands (37).

*Note.* For background data on this species, see Guiry & Maggs (661). See note under *Kallymenia microphylla* J. Agardh in Price et al. (1992).

### **Meristiella echinocarpa** (Areschoug) Cheney & Gabrielson

[As *Meristotheca? decumbens* Grunow in Piccone]

Cape Verde Islands (439).

[As *Rhabdonia decumbens* (Grunow) Grunow in Askenasy]

Cape Verde Islands (37)

[As *Mychodea schrammii* P. & H. Crouan]

Cape Verde Islands (38;450;451).

*Note.* Prud'homme van Reine et al. (663) have re-investigated the Macaronesian algae studied by Piccone (see 439,450,451) and Grunow (see 37,38) and concluded that Askenasy had in error identified both *Meristiella echinocarpa* (from the Cape Verde Islands) and *Meristotheca? decumbens* (from Madeira, the Canaries and also from the Cape Verde Islands) as *Mychodea schrammii*. The specimens collected by Naumann (450, 451) have not been studied in detail by Prud'homme van Reine et al. (663).

### **Meristiella schrammii** (P. & H. Crouan) Cheney & Gabrielson

See *Meristiella echinocarpa* (Areschoug) Cheney & Gabrielson.

### **Meristotheca coacta** Okamura

Ghana (299).

*Note.* See under *Halichrysis depressa* (J. Agardh) Schousboe in Bornet for the validity of this record based on sterile plants.

### **Meristotheca? decumbens** Grunow in Piccone

Canaries (439)

Cape Verde Islands (439;450;451).

*Note.* See note under *Meristiella echinocarpa* (Areschoug) Cheney & Gabrielson.

### **Meristotheca duchassaingii** J. Agardh

See *Halymenia duchassaingii* (J. Agardh) Kylin.

### **Meristotheca senegalense** J. Feldmann [mscr.]

Sénégal (529;531).

[As *Meristotheca senegalensis* J. Feldmann]

Senegal (59;398).

'Subtropical Africa [Senegal (N. of Gambia); Mauritania; Former W. Sahara]' (598).

[As *Sarcodia ceylanica* Harvey]

Sénégal (122).

*Note.* According to Mollion (398) this is a manuscript name. Prior to this, Sourie (529: 116) had noted '... espèce nommée, mais encore non décrite par J. Feldmann'.

### **Meristotheca** sp.

Gabon (294).

Sénégal (529).

*Note.* For comments on validity of Gabon record, see note to *Halichrysis depressa* (J. Agardh) Schousboe in Bornet.

### **Mesophyllum**

The concept of *Mesophyllum* adopted in this paper follows Woelkerling & Harvey (1993), who provide an updated description of the genus taking into account new data on spermatangial conceptacles (Woelkerling & Harvey, 1992). Additional nomenclatural and systematic data on *Mesophyllum* are provided by Woelkerling & Irvine (1986b) and Woelkerling (1988: 191–196)

### **Mesophyllum applicatum** Lemoine

See *Neogoniolithon hirtum* (Lemoine in Børgesen) Afonso-Carrillo.

### **Mesophyllum brachycladum** (Foslie) Adey

Canaries (598).

Príncipe (350;535;586).

St. Helena (535).

'... in warm temperate and tropical parts of the eastern Atlantic Ocean. . .' (350;586).

'Tropical Africa (N. Gambia – Congo river)' (598).

[As *Lithothamnion brachycladum* Foslie]

Angola (541;634).

Canaries (6;134;198;354;356;634)

Príncipe (134;363).

St. Helena (6;134;198;212;634;655).

'... West Coast of Africa. . .' (208).

'... probably nearly all along the west coast of Africa' (198).

[As *Lithothamnion racemus* (Lamouroux) Foslie]  
Canaries (547).

St. Helena (142;391).

*Note.* This species originally was described as *Lithothamnion brachycladium* (198: 3) and is based on material from St. Helena. Subsequently, Adey (669: 22) transferred the species to *Mesophyllum*, expressing some doubt about this placement. The holotype (678: 42–43) has not been examined in detail in a modern context, and thus the status and disposition of the species are uncertain, as is the identification of specimens from the West African region. In the protologue, Foslie (198: 3) suggested that the holotype of *Lithothamnion brachycladium* is probably the same specimen that Dickie (142: 179) referred to *Lithothamnion racemus*, and thus the same specimen on which the record of Mellis (391: 382) is based. Although the Dickie and Mellis records are included under *brachycladium*, Foslie's suggestion requires confirmation. Lemoine (354: LIV) noted that a Canary Islands specimen in the Thuret herbarium under the name *Lithothamnion branchycladium* had been determined by Foslie as *Lithophyllum racemus*.

### **Mesophyllum canariense** (Foslie) Lemoine in Børgesen

Canaries (191;362;363;375;489;493;535;582;598).

São Tomé (350;535;586).

'Gulf of Guinea' (582).

'Tropical Africa (N. Gambia – Congo river)' (598).

'... widespread in warm temperate and tropical seas. . .'  
(350;586).

[As *Lithophyllum marlothii* Heydrich]

São Tomé (6;251;265).

[As *Lithophyllum Marlothii* Heydrich forma Foslie]

São Tomé (251).

[As *Lithothamnion canariense* Foslie]

Canaries (6;139;205;212;493;660).

[As *Lithothamnion canaricae* Foslie]

Canaries (387).

[As *Mesophyllum canariense* (Foslie) Lemoine]

Canaries (191;227;361;687).

[As *Mesophyllum canariensis* (Foslie) Lemoine]

Canaries (229).

[As *Mesophyllum canariense* (Foslie) Lemoine var. *fasciata*  
Lemoine]

Canaries (363).

[As *Mesophyllum canariense* (Foslie) Lemoine var. *difformis*  
Lemoine]

Canaries (363).

[As *Lithophyllum canariensis* ?]

Canaries (237).

*Note.* This species originally was described as *Lithothamnion canariense* (205: 17) and is based on material from Puerto Orotava, Tenerife, Canary Islands. Lemoine (363: 31) subsequently transferred the species into *Mesophyllum*. The holotype (678: 46) has recently been studied in a modern context by Reyes & Afonso-Carrillo (687), who state that it certainly belongs to the genus *Mesophyllum* as delineated by Woelkerling & Irvine (1986b). The identification of specimens from much of the West African region remains uncertain. Both *Mesophyllum canariense* var. *difformis* Lemoine (363: 33) and *Mesophyllum canariense* var. *fasciata* Lemoine (363: 31) are based on single collections from the Canary Islands, but the holotypes have not been examined in detail in a modern context, and thus the status and disposition of these varieties are also uncertain. According to Steentoft (535: 130), specimens from São Tomé referred to *Lithophyllum marlothii* by Hariot (251: 164) and Henriques (265: 166) are considered by Lemoine to belong to *Mesophyllum canariense*. Similarly, Adey & Lebednik (6: 19) indicate that one specimen listed under *Lithophyllum marlothii* really belongs to *Mesophyllum canariense*. These specimens need to be

re-examined to determine whether they are conspecific with the holotype of *Mesophyllum canariense*. Gonzalez (237: Table II) lists a *Lithophyllum canariensis* from the Canary Islands without further taxonomic or nomenclatural comments. It is presumed here that Gonzalez is referring to *Mesophyllum canariense*. As far as can be determined, the binomial *Lithophyllum canariensis* has never been validly published.

### **Mesophyllum ectocarpon** (Foslie) Adey

Canaries (17;598;634).

Cape Verde Islands (366;597;598).

Mauritanie (349;597).

Sénégal (366).

'Makaronesische Inseln, Nordwest und West-Afrika' (597).

'Subtropical Africa [Senegal (N. of Gambia); Mauritania; former W. Sahara]' (598).

[As *Lithothamnion ectocarpon* Foslie]

Canaries (136;191;227;362;363;366).

Cape Verde Islands (6;136;139;207;210;362;363;366).

Mauritanie (6;139;207;210;212;362;363;366).

'Vestkysten af Afrika: Kap Blanco . . . og St. Vincent' (207).  
Sénégal (6).

*Note.* This species was originally described as *Lithothamnion ectocarpon* Foslie (207: 11) based on specimens from the Cape Verde Islands and Cap Blanc, Africa. Adey (in 6: 83) lectotypified the species with the Cap Blanc collection and subsequently (669: 23) transferred it to *Mesophyllum* with some question. The lectotype (678: 82) has not been studied in detail in a modern context, and thus the status and disposition of the species are uncertain, as is the identification of specimens from the West African region.

### **Mesophyllum erubescens** (Foslie) Lemoine

Canaries (366).

Cape Verde Islands (100;101;366;598).

'Pantropical' (366).

*Note.* This species was originally described as *Lithothamnion erubescens* (198: 9) and is based on material from Brazil. Lemoine (361: 252) transferred the species into *Mesophyllum* without comment. The holotype (678: 85) has not been studied in detail in a modern context and thus the status and disposition of the species are uncertain, as is the identification of specimens from the West African region. Afonso-Carrillo et al. (582) commented that despite previous references to the taxon from the Canary Islands, its presence there is doubtful and requires confirmation.

### **Mesophyllum floridanum** (Foslie) Adey

São Tomé (350;586).

[As *Lithothamnion floridanum* Foslie]

São Tomé (6;139;204;535).

*Note.* This species was originally described as *Lithothamnion floridanum* (204: 11) and was based on material from Florida. In the protologue, Foslie (204: 12) also mentions two sterile specimens from São Tomé which resemble *Lithothamnion floridanum* but cannot be definitely identified to species. The holotype (678: 96) has not been studied in detail in a modern context and thus the status and disposition of the species are uncertain, as is the identification of specimens from São Tomé.

### **Mesophyllum lichenoides** (Ellis) Lemoine

Canaries (188;191;227;232B;361;363;517;546;582;584;598;  
633;666).

Mauritanie (649).

'... Atlántico (de Gran Bretaña a Marruecos y Canarias)'  
(517).

' . . . Atlantique (de l'Angleterre à la Mauritanie, Canaries)' (33).

' . . . Atlantique jusqu'au Rio de Oro. . . ' (222).

[As *Lithophyllum lichenoides* (Linnaeus) Lemoine] Mauritanie (349).

Western Sahara (349).

[As *Lithophyllum lichenoides* Philippi]

Canaries (70;527).

[As *Lithophyllum expansum* Philippi]

Canaries (356;448;584).

Salvage Islands (89).

'Cap Blanc' (356).

[As *Lithophyllum expansum* Philippi f. *involvens* Vinassa]

Mauritanie (211).

[As *Lithophyllum expansum* Philippi f. *strictaeformis* (Areschoug) Foslie]

Salvage Islands (215).

[As *Lithophyllum expansum* Philippi f. *exigua* Foslie]

'Cap Blanc' (252).

[As *Pseudolithophyllum expansum* (Philippi) Lemoine]

Canaries (18;70;177;221;227;598).

Mauritanie (70;177;188;221;248;349;359;365).

Salvage Islands (38B;598)

'Subtropical Africa [Senegal (N. of Gambia); Mauritanie; Former W. Sahara]' (598).

' . . . existe aussi sur les côtes atlantique d'Espagne et sur les côtes d'Afrique jusqu'an Sénégal . . . ' (365).

*Note.* This species originally was described as *Corallium lichenoides* (Ellis, 1768: 407) and was probably based on material from Cornwall, England. The subsequent taxonomic and nomenclatural history of *Mesophyllum lichenoides* is outlined by Woelkerling & Irvine (1986b), who neotypified the species with plants from West Looe, Cornwall, England and provided a detailed account of the neotype material and the species. Additional data on *M. lichenoides* are provided by Woelkerling & Harvey (1992, 1993) in conjunction with studies of southern Australian species of *Mesophyllum*. Specimens on which published records for the West African region are based now need to be checked to determine whether they are conspecific with the neotype. The lectotype of *Lithophyllum expansum* Philippi has been examined in detail by Woelkerling (1983b: 307–313) who concluded that the lectotype belonged to *Mesophyllum* as delimited by Johansen (1976, 1981) and Cabioch (1972) and that circumstantial evidence suggested that the lectotype was conspecific with *Mesophyllum lichenoides*. Woelkerling (1983b: 312) also noted that Philippi's epithet *expansum* has been widely misapplied to plants referable to *Lithophyllum*. Thus all specimens from the West African region identified as *Lithophyllum expansum* or *Pseudolithophyllum expansum* need to be re-examined to determine whether they belong to the Lithophylloideae or the Melobesioideae and then to determine their true generic and specific identity. It is likely that many of these plants belong to *Lithophyllum* rather than *Mesophyllum*. This also applies to specimens identified as *Lithophyllum expansum* Philippi f. *exigua* Foslie (197: 3), *Lithophyllum expansum* Philippi f. *involvens* Vinassa (1892: 59), and *Lithophyllum expansum* Philippi f. *strictaeformis* (Areschoug) Foslie (199: 18) [Basionym: *Melobesia strictaeformis* Areschoug, 1852: 517]. The types of these formae also need to be re-examined in a modern context to determine their status and disposition. Data on the types of *Lithophyllum expansum* Philippi f. *exigua* Foslie and *Melobesia strictaeformis* Areschoug are provided by Woelkerling (678: 88, 207); the whereabouts of the type of *Lithophyllum expansum* Philippi f. *involvens* Vinassa is uncertain. See note under entry for *Lithophyllum lobatum* concerning Sauvageau's (493) and Foslie's (211) record of '*Lithophyllum expansum*' from the Canaries.

### **Mesophyllum lobatum** Lemoine

See *Lithophyllum lobatum* Lemoine in Børgesen.

### **Mesophyllum philippii** (Foslie) Lemoine

See *Lithothamnion philippii* Foslie.

### **Mesophyllum solutum** (Foslie) Lemoine, nomen invalidum

See *Lithothamnion solutum* (Foslie) Foslie.

### **Mesophyllum** sp.

Canaries (229;237).

Cape Verde Islands (366).

*Note.* Lemoine (366: 236) indicated: ' . . . deux espèces indéterminées, un *Lithothamnion* et un *Mesophyllum* ce dernier appartient peut-être à une espèce non décrite des Canaries'.

### **Mesothamnion caribaeum** Børgesen

See *Pleonosporium caribaeum* (Børgesen) R. Norris.

### **Microcladia capensis** (Kützing) Papenfuss

See the note to *Ceramium capense* Kützing.

### **Microcladia glandulosa** (Solander ex Turner) Greville

Gambia (296).

Sénégal (133).

Senegambia (296).

' . . . ad litus Senegambiae. . . ' (318).

[As *Microcladia glandulosa* Greville]

Sénégal (283).

[As *Microcladia tenuis* Kützing]

'Gabon, Guinea' (149).

'Embouchure de la rivière de Gabon, Guinée' (321).

### **Microcladia tenuis** Kützing

See *Microcladia glandulosa* (Solander ex Turner) Greville.

### **Micropeuce mucronata** (Harvey) Kylin

Ghana (350;376;377;586).

' . . . probably widespread in many warm temperate and tropical seas' (350;586).

'Subtropical Africa [Senegal (N. of Gambia); Mauritania; Former W. Sahara]' (598).

'Tropical Africa (N. Gambia – Congo river)' (598).

### **Monospora furcellata** auctorum

See *Griffithsia arachnoides* C. Agardh.

### **Monospora pedicillata** Solier in Castagne

See *Monosporus pedicillatus* (J. E. Smith) Solier in Castagne.

**Monosporus pedicellatus** (J.E. Smith) Solier in Castagne

Canaries (71;633;668;684).

[As *Monospora pedicellata* Solier]

Canaries (547).

[As *Corynospora pedicellata* (J.E. Smith) J. Agardh]

Canaries (13;38D;227;375;547;556;584).

Salvage Islands (38B;38D;556).

[As *Neomonospora pedicellata* (Smith) G. Feldmann & Meslin]

Canaries (191).

‘. . . Atlantique (de l’Angleterre aux Canaries). . .’ (33).

‘. . . Atlantique nord: de la Grande-Bretagne jusqu’aux Canaries. . .’ (222).

‘. . . Atlantique nord, de l’Angleterre aux Canaries. . .’ (190).

‘. . . Atlantique nord, de Grande Bretagne aux Canaries. . .’ (196).

[As *Neomonospora furcellata* (J. Agardh) G. Feldmann & Meslin]

Canaries (191).

**Murrayella pericladus** (C. Agardh) Schmitz

Angola (298;347A;352;458;466).

Bioko (346;350;586).

Cameroun (337;350;460;463;535;537;586).

Congo (535).

Gabon (458;471).

Gambia (296;350;586).

Ghana (153;336;337;338;342;344;350;458;460;463;464;466;473;535;586).

Guinée (350;460;535;586).

São Tomé (350;458;466;470;473;535;586).

Sierra Leone (30;295;336;339;344;350;374;378;458;460;464;466;468;470;473;535;586).

‘. . . present in many parts of West Africa. . .’ (347A).

‘Tropical Africa (N. Gambia – Congo river)’ (598).

‘West Africa’ (290).

‘. . . widespread in warm temperate and tropical seas. . .’ (350;586).

*Note.* Post’s (458) Angola record is based on her redetermination of Welwitsch no. 60 (BM), from Cabo Lombo, Loanda, under the manuscript name of *Ceramium arachnoideum* Welwitsch (q.v.). The record (460) from Cameroun does *not* relate to Post’s comments (458: 79) in redetermining ‘*Bostrychia pericladus*’ as *Bostrychia moritziana* (Sonder ex Kützing) J. Agardh (q.v.), rather than *Murrayella pericladus*. Records from Gabon are said (458; 471: 150) to be from ‘süßwasser’ but are included for completeness.

**Murrayella** sp.

Sierra Leone (460).

**Mychodea schrammii** P. & H. Crouan

See *Meristiella echinocarpa* (Areschoug) Cheney & Gabrielson.

**Myriogramme costata** P. Dangeard

Sénégal (89;122;221).

‘Subtropical Africa [Senegal (N. of Gambia); Mauritania; Former W. Sahara]’ (598).

*Note.* See *Nitophyllum dentatum* for doubt concerning the separation of the genus *Myriogramme* from *Nitophyllum*.

**Myriogramme dentata** (Schousboe) nomen nudum

Sénégal (529).

‘Subtropical Africa [Senegal (N. of Gambia); Mauritania; Former W. Sahara]’ (598).

*Note.* Combination has not been validly proposed. The relationship between this taxon and *Nitophyllum dentatum* Bornet (q.v.) requires further investigation.

**Myriogramme minuta** Kylin

Canaries (633;634;648).

**Myriogramme** sp.

Sénégal (55;56).

**Naccaria corymbosa** J. Agardh

Salvage Islands (38B;598).

*Note.* See Searles & Leister (1980) concerning former known geographical distribution only in North America.

**Naccaria** sp.

Canaries (227).

**Nemalion amoenum** (Pilger) Børgesen

Cameroun (80;281;350;433;586).

‘Tropical Africa (Gambia – Congo river)’ (598).

[As *Dermonema amoenum* Pilger]

Cameroun (139;433;454).

*Note.* See discussion in Børgesen (80: 26–27) for placing *Dermonema* in the genus *Nemalion* which he does with some doubt, stating (p. 27) ‘final decision as to its real place can of course not be taken before its female organs are found, nevertheless I think that at present its right place is in the genus *Nemalion*’.

**Nemalion helminthoides** (Velley in Withering) Batters

Canaries (18;226;227;232B;253;583;584;598;633;634).

Western Sahara (349;476;659).

‘. . . Atlantico norte de Inglaterra y Norvega a Marruecos. . .’ (517).

‘. . . Atlántico (Norvega – Canaries). . .’ (253).

‘Subtropical Africa [Senegal (N. of Gambia); Mauritania; Former W. Sahara]’ (598).

[As *Nemalion multifidum* (Weber & Mohr) J. Agardh]

Canaries (254;305).

[As *Nemalion heminthoides*]

Canaries (237).

[As *Nemalion lubricum* Duby]

‘. . . Atlantischer Ozean: Nordwest-africanische Küste. . .’ (499).

**Nemalion lubricum** Duby

See *Nemalion helminthoides* (Velley) Batters.

**Nemalion multifidum** (Weber & Mohr) J. Agardh

‘. . . in oceano atlantico a littore Norvegiae usque ad Canarias (Webb). . .’ (25).

*Note.* Feldmann (188) considers the possibility that this species is a mere growth form of *N. helminthoides* (Velley) Batters.

**Nemalion** sp.

Canaries (70).

**Nemastoma canariensis** (Kützing) J. Agardh

Canaries (13;38C;70;89;134;191;227;232B;315;540;598;662).

[As *Gymnophloea canariensis* Kützing]

Canaries (24;318).

[As *Halymenia capensis* Montagne]

Canaries (401).

[As *Nemastoma canariensis* J. Agardh]

Canaries (547).

[As *Nemastoma canariensis* (Kützing) Montagne]

Canaries (139;390;407).

[As *Nemastoma canariense* (Kützing) Montagne]

Canaries (633;634).

*Note.* The comments under *Nemastoma confusum* probably also apply equally to this species.

**Nemastoma confusum** Kraft & D. John

Cape Verde Islands (652;683).

Ghana (299;315;350;376;586).

‘Tropical Africa (N. Gambia – Congo river)’ (598).

‘. . . tropical West Africa’ (350;586).

*Note.* Athanasiadis (630) has reassessed the genus *Nemastoma* based on a study of the type species (*N. dichotomum*) and proposed a new generic circumscription. Many species traditionally placed in *Nemastoma* cannot now be accommodated. Athanasiadis comments thus (p. 31) ‘Others, like *Nemastoma confusum* Kraft et John (1976), which should apparently be excluded, necessitate a better knowledge of the related genera in order to be transferred to the taxon where they actually belong’.

**Nemastoma multifida** J. Agardh

See *Platoma cyclocolpum* (Montagne) Schmitz.

**Nemastoma** sp.

Cape Verde Islands (652).

**Neogoniolithon**

The concept of *Neogoniolithon* adopted in this paper follows Penrose (1992), who studied the type species, *N. fosliei*, and used the following combination of features to delimit *Neogoniolithon* from other genera of the subfamily Mastophoroideae: 1) thallus non-endophytic and lacking haustoria; 2) thallus lacking a vertical layer of filaments composed of palisade cells; 3) spermatangia simple and borne on the floor and roof of male conceptacle chambers; and 4) gonimoblast filaments arising dorsally from fusion cells. Tetrasporangial conceptacle ontogeny in *Neogoniolithon* (Penrose, 1992: 342) is similar to that in *Spongites* (Penrose, 1991). A revised key to the genera of Mastophoroideae, including *Neogoniolithon*, is provided by Penrose & Chamberlain (1993: 303). Additional nomenclatural and systematic data on *Neogoniolithon* are provided by Woelkerling (1988: 139–145).

**Neogoniolithon absimile** (Foslie & Howe) Cabioch

See *Spongites wildpretii* Afonso-Carrillo.

**Neogoniolithon accretum** (Foslie & Howe) Setchell & Mason

Canaries (227;582).

[As *Neogoniolithon accretum* Foslie & Howe f. *canariense* (Foslie) De Toni]

Canaries (139;205;212;382;493).

[As *Lithophyllum accretum* (Foslie & Howe) Lemoine]

Canaries (71;362;363;493).

[As *Lithophyllum accretum* (Foslie & Howe) Lemoine]

Canaries (71;362;363;493).

[As *Lithophyllum accretum* (Foslie & Howe) Lemoine f. *canariensis* Foslie]

Canaries (205).

[As *Lithophyllum accretum* (Foslie & Howe) Lemoine var. *canariense* (Foslie) Lemoine]

Canaries (191;363).

*Note.* This species originally was described as *Goniolithon accretum* (Foslie & Howe, 1906: 131) and is based on material from Sands Key, Florida. Subsequently, the species was transferred to *Lithophyllum* (357: 159) and then to *Neogoniolithon* (Setchell & Mason, 1943: 90). The holotype (678: 16) has not been studied in detail in a modern context, and thus the status and disposition of this species are uncertain, as is the identification of specimens from the West African region. Foslie (205: 19) also described *Lithophyllum accretum* f. *canariensis* Foslie based on material from Puerto Orotava, Tenerife, Canary Islands. This form apparently has not been transferred into *Neogoniolithon*.

**Neogoniolithon brassica-florida** (Harvey) Setchell & Mason

[As *Lithothamnion brassica-florida* (Harvey) Areschoug] St. Helena (142;260;391).

[As *Lithothamnion brassica-florida* Harvey var.]

St. Helena (391).

*Note.* This species originally was described as *Melobesia brassica-florida* Harvey (1849: 110) and is based on material from Algoa Bay, South Africa. Subsequently, the species was transferred to *Lithothamnion* (Areschoug, 1852: 523), then to *Goniolithon* (681: 9) and then to *Neogoniolithon* (Setchell & Mason, 1943: 91). The lectotype (678: 43) has been studied in detail by Woelkerling et al. (1993), who confirmed that this species belonged to *Neogoniolithon* as circumscribed by Penrose (1992). Woelkerling, Penrose & Chamberlain (1993) also concluded that *N. fosliei* (Heydrich) Setchell & Mason, the type species of *Neogoniolithon*, was a heterotypic synonym of *N. brassica-florida*. The specimens from St. Helena now need to be re-examined to determine whether they are conspecific with the lectotype of *N. brassica-florida*.

**Neogoniolithon caribaeum** (Foslie) Adey

Canaries (227;582;598).

Cape Verde Islands (598).

[As *Lithophyllum caribaeum* Foslie]

Canaries (71;191;362;363;366).

Cape Verde Islands (366).

[As *Lithophyllum* (?) *cariboeum* Foslie]

Cape Verde Islands (100).

*Note.* This species was originally described as *Lithophyllum decipiens* Foslie (204: 18) based on material from the US Virgin Islands. Subsequently, Foslie (206: 22) raised it to species status as *Lithophyllum caribaeum*, and Adey (669: 8) transferred it to *Neogo-*

*niolithon*. There has been no detailed study of the lectotype collection (678: 48) in a modern context, and thus the status and disposition of this species are uncertain, as is the identification of specimens from the West African region.

***Neogoniolithon hirtum* (Lemoine in Børgeesen)  
Afonso-Carrillo**

Canaries (11;582;598;633;634).

[As *Lithophyllum applicatum* Lemoine]

Canaries (227;362;363).

[As *Mesophyllum applicatum* Lemoine]

Canaries (191;687).

[As *Lithophyllum hirtum* Lemoine in Børgeesen]

Canaries (227;362;363;687).

[As *Tenarea adhaerens* Lemoine in Børgeesen]

Canaries (191;227;362;363).

*Note.* Based on studies of the original Canary Islands collections of Lemoine, Afonso-Carrillo (11: 131) concluded that *Lithophyllum hirtum* Lemoine in Børgeesen (363: 37) belonged to *Neogoniolithon* (sensu Cabioch, 1972) and that *Lithophyllum applicatum* Lemoine in Børgeesen (363: 38) and *Tenarea adhaerens* Lemoine in Børgeesen (363: 59) were heterotypic synonyms. These conclusions need to be re-evaluated in light of the revised concept of *Neogoniolithon* presented by Penrose (1992). Afonso-Carrillo (11) did not present detailed accounts of the type collections, and it is not clear whether the species involved possess the features now considered diagnostic of *Neogoniolithon*. Lemoine (363: 37, 38) based *Lithophyllum hirtum* on two collections and *L. applicatum* on five collections, but neither she nor Afonso-Carrillo (11) specified types. Until lectotypes are chosen and examined in detail in a modern context, the status and disposition of these species will remain uncertain, as will the identification of specimens from the West African region. Feldmann (191: 413) used the binomial *Mesophyllum applicatum* Lemoine instead of *Lithophyllum applicatum* Lemoine. It is not clear whether this is an error or whether Feldmann had intended to transfer *applicatum* to *Mesophyllum*; the binomial probably should be cited as *Mesophyllum applicatum* (Lemoine) Lemoine ex J. Feldmann.

***Neogoniolithon illitus* (Lemoine in Børgeesen)  
Afonso-Carrillo**

Canaries (11;582;598).

Cape Verde Islands (582;598).

[As *Lithophyllum illitus* Lemoine in Børgeesen]

Canaries (191;227;362;363;666;687).

Cape Verde Islands (100;366;645).

*Note.* Based on studies of the original Canary Islands collections of Lemoine, Afonso-Carrillo (11: 131) concluded that *Lithophyllum illitus* Lemoine in Børgeesen (363: 37) belonged to *Neogoniolithon*. This conclusion needs to be re-evaluated in light of the revised concept of *Neogoniolithon* presented by Penrose (1992). Afonso-Carrillo (11) did not present detailed accounts of Lemoine's original collections, and it is not clear whether the species possesses the features now considered diagnostic of *Neogoniolithon*. Lemoine (363: 54) based this species on 14 collections obtained from several localities, but neither she nor Afonso-Carrillo (11) specified a type. Until a lectotype is chosen and examined in detail, the status and disposition of this species will remain uncertain, as will records from the West African region. The record in Feldmann (183: 1071) is given with a query.

***Neogoniolithon mamillare* (Harvey) Setchell & Mason**

Annobón (366).

Bioko (350;586).

Cameroun (350;586).

Cape Verde Islands (366;598).

St. Helena (655).

'Pantropical' (350;366;586).

'Tropical Africa (N. Gambia – Congo river)' (598).

[As *Goniolithon mamillare* (Harvey) Foslie]

Annobón (397;455;457;500).

Bioko (500).

Cameroun (500).

'... ad littora Africae ad Caput Verde. . .' (134).

[As *Goniolithon mamillaris*]

Cape Verde Islands (BM Herbarium, Coralline Catalogue).

[As *Lithothamnion brassica-florida* Harvey]

St. Helena (142;259;391).

[As *Lithothamnion mamillare* Harvey]

Cape Verde Islands (145).

[As *Lithothamnion mamillare* (Harvey) Areschoug]

Cape Verde Islands (38).

[As *Melobesia mamillaris* Harvey]

Cape Verde Islands (254;366).

[As *Porolithon mamillare* (Harvey) Foslie]

Annobón (139).

Cape Verde Islands (139;357).

Sénégal (357).

*Note.* This species was originally described as *Melobesia mamillaris* Harvey (1849: 109). Subsequently, the species has been transferred to *Lithothamnion* (Areschoug, 1852: 521), *Goniolithon* (681: 9), *Porolithon* (357: 177), and *Neogoniolithon* (Setchell & Mason, 1943: 91). Harvey based the species on material from Brazil, Tierra del Fuego, South Africa and the Cape Verde Islands, but did not specify a type. Printz (212: pl. 47, legend to fig. 15), however, lectotypified the species with a Brazilian specimen. According to Woelkerling (678: 144) and Porter (1987: 200), this specimen appears to be missing both from TRH and TCD, but TRH contains two syntype fragments collected at Bahia by C. Darwin. Until the lectotype can be located (or a new neotype designated) and studied in detail in a modern context, the status and disposition of this species are uncertain, as is the identification of specimens from the West African region.

***Neogoniolithon mamillosum* (Hauck) Setchell & Mason**

Cape Verde Islands (366;597;598).

Mauritanie (349;366).

Sénégal (597).

'Subtropical Africa [Senegal (N. of Gambia); Mauritania; Former W.Sahara]' (598).

[As *Goniolithon mamillare* (Harvey) Foslie]

Annobón (397;454;455;500).

Bioko (500).

Cameroun (500).

[As *Goniolithon mamillosum* (Hauck) Foslie f. *microcarpa* Foslie]

Cape Verde Islands (139;210;597).

Mauritanie (139;597).

*Note.* *Goniolithon mamillosum* f. *microcarpa* Foslie (207: 24) has been lectotypified (678: 149) with a collection from São Vicente, Cape Verde Islands, but this collection has not been studied in a modern context and thus the status and disposition of f. *microcarpa* are uncertain.

[As *Goniolithon mamillosum* (Hauck) Foslie]

Ascension (6).

Cape Verde Islands (6).

Mauritanie (6).

St. Helena (6).

Sénégal (6).

[As *Lithophyllum hauckii* (Rothpletz) Lemoine]  
Mauritanie (188;349;359)

*Note.* There has been no detailed study of the type of *Neogoniolithon mamillosum*, and thus the status and disposition of the species are uncertain, as is the identification of specimens from the West African region. The basionym of *Neogoniolithon mamillosum* (Hauck) Setchell & Mason, *Lithothamnion mamillosum* Hauck (1883: 272) is a later homonym of *Lithothamnion mamillosum* Gémel, and this led Rothpletz (1891: 304) and then Foslie (1895: 580) to independently coin the new name *Lithothamnion hauckii* Rothpletz for Hauck's taxon (see 678: 115). In accordance with Articles 55.1 and 64.1 of the *International code for botanical nomenclature* (see Greuter, 1988), Hauck's epithet *mamillosum* is correct when used in the combination *Neogoniolithon mamillosum* (Hauck) Setchell & Mason, but because of homonymy must become *hauckii* when the species is placed in *Lithothamnion*. The type of both *Neogoniolithon mamillosum* and *Lithothamnion hauckii* is the same. In the protologue, Hauck (1883) depicted several specimens and indicated that the material came from the Adriatic without indicating specific localities. A lectotype for the species needs to be selected from amongst extant syntypes, several of which are in TRH (678: 144–145).

### **Neogoniolithon orotavicum** (Foslie) Lemoine

Canaries (368;583;598;633;634).

Cape Verde Islands (366;368;598).

‘. . . Golfe de Guinée’ (368).

‘Subtropical Africa [Senegal (N. of Gambia); Mauritania; Former W. Sahara]’ (598).

[As *Neogoniolithon orotavicum* Foslie]

Canaries (227;366).

Cape Verde Islands (366).

Sénégal (366).

[As *Neogoniolithon orotavicum* (Foslie) Lemoine ex Afonso-Carrillo]

Canaries (11;253).

Sénégal (253).

‘. . . Atlantico Oriental (Archipelagos macaronésicas y costas del Senegal). . .’ (253).

[As *Neogoniolithon orotavicum* (Foslie) Afonso-Carrillo]

Canaries (17;582).

[As *Lithophyllum orotavicum* Foslie]

Canaries (2;70;191;362).

*Note.* This species originally was described as *Goniolithon orotavicum* Foslie (205: 20) and is based on a single collection (see 678: 165) from Puerto Orotava, Tenerife, Canary Islands. Subsequently, Lemoine (363: 49) transferred the species to *Lithophyllum*, and then (366: 236, 238) to *Neogoniolithon*. Lemoine's 1964 (366) combination *Neogoniolithon orotavicum* does not conform to Article 33.2 of the *International Code of Botanical Nomenclature* with respect to basionym citation and thus is invalid. Subsequently, however, Lemoine (368: 12) properly validated the binomial, an action apparently unknown to Afonso-Carrillo (11: 133–134). Although the holotype has been examined by Adey (669: 9) and Afonso-Carrillo (11: 133–134), neither provided a detailed morphological/anatomical account of the material. Thus the status and disposition of this species in relation to Penrose's (1992) circumscription of *Neogoniolithon* are uncertain, as is the identification of specimens from the West African region.

### **Neogoniolithon** spp.

Canaries (10).

Cape Verde Islands (366).

São Tomé (93;350;535).

**Neomonospora furcellata** (J. Agardh) G. Feldmann & Meslin

See *Griffithsia arachnoides* C. Agardh.

**Neomonospora pedicellata** (Smith) G. Feldmann & Meslin

See *Monosporus pedicellatus* (Smith) Solier & Castagne.

**Neomonospora** sp.

Sénégal (59).

**Neuroglossum binderianum** Kützing

Namibia (348).

**Nitophyllum dentatum** Bornet

Sénégal (89;132).

*Note.* Bornet (89: 293–294) quoted the description direct from Schousboe, but the latter's name was *Areolaria dentata* Schousboe, ‘Tanger. Rarissime reperi inter Algas ad Dar Hamra circa Tingin lectas mense augusto . . . petris calcareis vel Lithophytis innatum’. Dangeard (118), in an addendum concerning *Myriogramme costata* and *Nitophyllum dentatum*, comments on the close similarity of these two taxa. His *Myriogramme* had numerous teeth, close together and a polystromatic frond centrally. In Bornet's description of *N. dentata*, the teeth are only few and sparse, and the frond distromatic centrally. See note under *Myriogramme dentata* Schousboe.

**Nitophyllum fissum** (Greville) J. Agardh

See *Hymenema venosa* (Linnaeus) Kylin.

**Nitophyllum laceratum** (Gmelin) Greville

‘. . . in oceano Atlantico ab oris Angliae usque ad Senegalliam. . .’ (25;132).

*Note.* It is likely that this taxon is attributable to *Cryptopleura ramosa* (Hudson) Kylin ex Newton.

**Nitophyllum punctatum** (Stackhouse) Greville

Canaries (13;226;227;584;598;633;634;662;684).

Mauritanie (624).

‘Nordwestafrika’ (499).

[As *Nitophyllum punctatum* (Stackhouse) Greville var. *ocellata* J. Agardh ]

‘. . . Atlantic Ocean (. . . African. . .coasts, Canary Islands)’ (177).

**Nitophyllum uncinatum** (Turner) J. Agardh

See *Acrosorium uncinatum* (J. Agardh) Kylin (now *A. venulosum* (Zanardini) Kylin).

**Nitophyllum venosum** Harvey

See *Hymenema venosa* (Linnaeus) Kylin.

**Nitophyllum** sp.

Angola (41;352).

Sénégal (59;122;529).

[As *Nitophyllum* sp. A]

Guinea-Bissau (529).

Sénégal (529).

*Note.* Dangeard (122) and Sourie (529) suggest that this species was 'voisin de *N. punctatum* (Stackh.) Greville'.

### **Nothogenia erinacea** (Turner) Parkinson

Namibia (32A;36B).

[As *Chaetangium erinaceum* (Turner) Papenfuss]

Namibia (348;438).

[As *Chaetangium ornatum* (Linnaeus) Kützing]

Namibia (128;160;348;453;500).

*Note.* According to Seagrief (570) *Chaetangium dichotomum* Kützing (1869), *Chaetangium hystrix* (C. Agardh) Kützing (1869) and *Chaetangium ornatum* (L.) Kützing are all synonyms of *C. erinaceum*.

### **Nothogenia magnifica** (Pilger) J.H. Price comb. nov.

Basionym: *Chaetangium magnificum* Pilger in *Hedwigia* 48: 181–182, fig. C 1–3 (1908).

[As *Chaetangium magnificum* Pilger]

Namibia (139;348;429;453;500).

[As *Chaetangium magnificum* (Linnaeus) Kützing]

Namibia (160).

[As *Chaetangium ornatum* (Linnaeus) Kützing]

Namibia (429).

*Note.* The recombination is made here as there seems good reason to doubt the conspecificity of *Chaetangium magnificum* with that previously known often as *Chaetangium ornatum* (Linnaeus) Kützing [now *Nothogenia erinacea* (Turner) Parkinson, q.v.]. Papenfuss (429: 11) considered Pilger's (453) '*Chaetangium magnificum*' a synonym under '*Chaetangium ornatum*'.

### **Nothogenia ovalis** (Suhr) Parkinson

Namibia (32A).

[As *Chaetangium ovale* (Suhr) Papenfuss]

Namibia (348;437).

'... Luderitz [S.W.A.] to Storms River mouth [S.A.]... more common on the west coast... (523).

### **Olivia ustulata** (Montagne) Montagne

See *Caulacanthus ustulatus* (Turner) Kützing.

### **Ophidocladus simpliciusculus** (P. & H. Crouan) Falkenberg

Canaries (71;191;227;488;598).

Mauritanie (349).

Namibia (36B).

Western Sahara (349).

'... Atlantique (de la Bretagne aux Canaries)... (33).

'Subtropical Africa [Senegal (N. of Gambia); Mauritania; Former W. Sahara]' (598).

[As *Polysiphonia* (?) *simpliciuscula* Crouan frat.]

Canaries (547).

### **Orcasia pulla** Simons

See *Streblocladia comptoclada* (Montagne) Falkenberg.

### **Osmundaria volubilis** (Linnaeus) R.E. Norris

[As *Vidalia volubilis* (Linnaeus) J. Agardh]

Canaries (439).

*Note.* This striking and unmistakable species has only been found during the research trip of the Italian vessel 'Corsaro' (439). During that trip many collections were also made in the Mediterranean, an area where *Osmundaria volubilis* is common. It cannot be discounted that a labelling error might have occurred, so accounting for the record.

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