

A Checklist of the Mosses of Vanuatu

By

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Abstract A checklist of the mosses of Vanuatu is given based on published reports. Totals of 33 families, 84 genera and 236 species and infraspecific taxa are recorded. The chromosome number, $n=11$, for *Acanthorrhynchium papillatum* is reported for the first time by the re-examination of the reported specimens.

Vanuatu, previously known as New Hebrides, is situated in the southwest region of the Pacific Ocean. Its neighbors are New Caledonia, ca. 400 km to the southwest, Fiji, ca. 800 km to the east, and the Solomon Islands, ca. 800 km to the northwest. The irregular Y-shaped archipelago in a northwest/southeast orientation consists of about 80 islands, and stretches 900 km between 13°S and 22°S latitude, and between 166°E and 175°E longitude (Fig. 1). The highest peak of 1879 m is Mt. Tabwemasana on Espiritu Santo which is the largest island in the archipelago. Geologically the islands of Vanuatu originated from volcanic activity and coral formation, and date from the Tertiary (Vitt, 1991). The total land mass is approximately 12,930 square kilometers (Whyte, 1990). From November to April the weather is warm and humid.

The mosses of Vanuatu have been reported by Mitten (1868), Brotherus & Watts (1915), Thériot (1938), Dixon (1948), and Tixier (1972, 1973, 1974). The present state of knowledge of the moss flora of Vanuatu is far from complete. There is no checklist of mosses of Vanuatu except that of Schultze-Motel (1973) who compiled a catalog of mosses of Melanesia. In January 1992 I had the opportunity to do field research at several localities on Efate and Espiritu Santo, and collected more than 500 bryophyte specimens. Based on this collection, recent reports were published by Matsui & Iwatsuki (1993), Inoue & Higuchi (1994), and Iwatsuki & Suzuki (1995).

Checklist

The present list includes 33 families, 84 genera, and 236 species and infraspecific taxa (Table 1). The nomenclature used follows Index Muscorum (Wijk et al., 1959–1969) except for that found in more recent publications. The

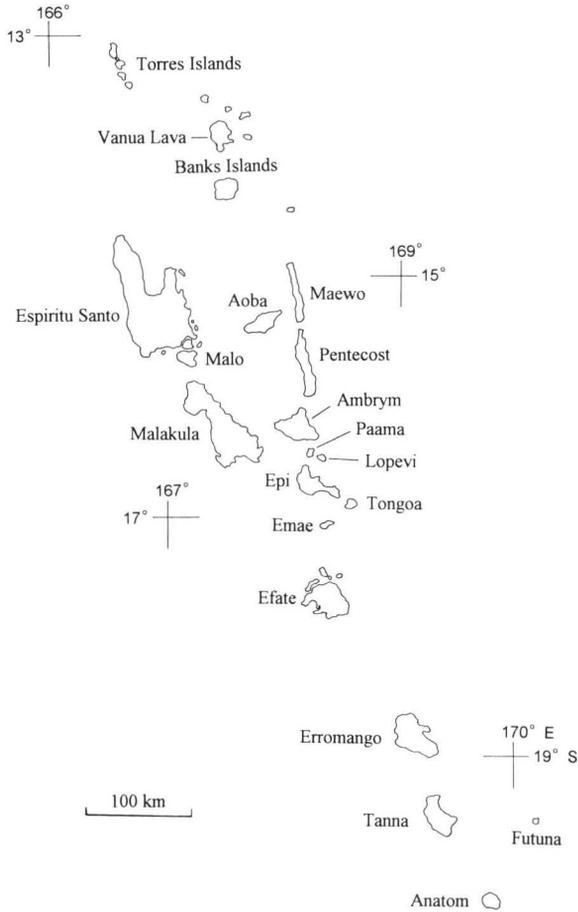


Fig. 1. Outline map of Vanuatu.

arrangement of the families follows Crosby & Magill (1978). Genera and species are arranged alphabetically in families.

Fissidentaceae

Fissidens angustifolius Sull. — Iwatsuki & Suzuki (1995; Efate, Espiritu Santo).

Fissidens consociatus Thér. — Iwatsuki & Suzuki (1995; Espiritu Santo).

Fissidens dealbatus Hook. f. & Wilson — Iwatsuki & Suzuki (1995; Efate).

Fissidens flabellulus Thwaites & Mitt. — Iwatsuki & Suzuki (1995; Efate).

Fissidens hollianus Dozy & Molk. — Iwatsuki & Suzuki (1995; Efate, Espiritu Santo).

Fissidens subscabrisetus Broth. & Watts — Brotherus & Watts (1915, sp.

Table 1. A summary of the taxa of mosses reported from Vanuatu.

| Family | Genera | Species and infraspecific taxa |
|------------------|--------|--------------------------------|
| Fissidentaceae | 1 | 17 |
| Ditrichaceae | 1 | 1 |
| Dicranaceae | 4 | 12 |
| Dicnemonaceae | 1 | 1 |
| Leucobryaceae | 2 | 13 |
| Calymperaceae | 6 | 23 |
| Pottiaceae | 3 | 6 |
| Splachnaceae | 1 | 1 |
| Bryaceae | 2 | 2 |
| Mniaceae | 1 | 1 |
| Calomniaceae | 1 | 1 |
| Rhizogoniaceae | 2 | 4 |
| Hypnodendraceae | 1 | 7 |
| Bartramiaceae | 2 | 4 |
| Spiridentaceae | 1 | 4 |
| Orthotrichaceae | 1 | 8 |
| Racopilaceae | 2 | 6 |
| Cyrtopodaceae | 1 | 1 |
| Myuriaceae | 1 | 1 |
| Pterobryaceae | 7 | 12 |
| Meteoriaceae | 5 | 11 |
| Phyllogoniaceae | 1 | 1 |
| Daltoniaceae | 1 | 2 |
| Neckeraceae | 4 | 7 |
| Lembophyllaceae | 1 | 4 |
| Hookeriaceae | 3 | 13 |
| Hypopterygiaceae | 2 | 4 |
| Thuidiaceae | 3 | 8 |
| Brachytheciaceae | 3 | 6 |
| Entodontaceae | 2 | 4 |
| Sematophyllaceae | 10 | 22 |
| Hypnaceae | 7 | 28 |
| Polytrichaceae | 1 | 1 |
| Total | 84 | 236 |

nov.; Paama). cf. Iwatsuki & Suzuki (1995).

Fissidens hyalinus Hook. & Wilson — Iwatsuki & Suzuki (1995; Espiritu Santo).

Fissidens lagenarius Mitt. — Iwatsuki & Suzuki (1995; Efate, Espiritu Santo).

Fissidens lautokensis Dixon — Iwatsuki & Suzuki (1995; Espiritu Santo).

Fissidens laxis Sull. & Lesq. — Iwatsuki & Suzuki (1995; Efate, Espiritu Santo).

Fissidens linearis Brid. var. **obscurirete** (Broth. & Paris) I. G. Stone — Iwatsuki & Suzuki (1995; Efate).

Fissidens maceratus Mitt. — Iwatsuki & Suzuki (1995; Efate, Espiritu Santo).

Fissidens oblongifolius Hook. f. & Wilson — Iwatsuki & Suzuki (1995; Efate).

- Fissidens subbryoides** Hampe ex Gangulee — Iwatsuki & Suzuki (1995; Efate).
Fissidens sylvaticus Griff. — Tixier (1974; Espiritu Santo).
Fissidens zippelianus Dozy & Molk. var. **zippelianus** — Thériot (1938; Tanna),
 Iwatsuki & Suzuki (1995; Espiritu Santo).
Fissidens zippelianus Dozy & Molk. var. **robinsonii** (Broth.) Z. Iwats. & Suzuki
 — Iwatsuki & Suzuki (1995; Espiritu Santo).
Fissidens zollingeri Mont. — Iwatsuki & Suzuki (1995; Efate, Espiritu Santo).

Ditrichaceae

- Ceratodon purpureus** (Hedw.) Brid. — Tixier (1973; Tanna).

Dicranaceae

- Campylopus caudatus** (Müll. Hal.) Mont. — Tixier (1974; Espiritu Santo).
Campylopus comosus (Schwägr.) Bosch & Sande Lac. var. **auberti** Thér. —
 Thériot (1938, var. nov.; Tanna).
Campylopus introflexus (Hedw.) Brid. — Brotherus & Watts (1915; Anatom).
Campylopus umbellatus (Arnold) Paris
Pilopogon blumii (Dozy & Molk.) Broth. — Brotherus & Watts (1915;
 Anatom).
Campylopus blumii (Dozy & Molk.) Bosch & Sande Lac. — Thériot (1938;
 Aoba).
Campylopus richardii Brid. — Tixier (1974; Espiritu Santo).
Campylopus verrucosus Besch. — Tixier (1974; Espiritu Santo).
Campylopus sp. — Brotherus & Watts (1915; Anatom).
Dicranodontium sp. — Brotherus & Watts (1915; Futuna).
Dicranoloma blumii (Nees) Paris — Tixier (1974; Espiritu Santo).
Dicranoloma brachysteleum (Müll. Hal.) Paris — Müller (1897, sp. nov.;
 Anatom), Brotherus & Watts (1915; New Hebrides).
Dicranoloma braunii (Müll. Hal.) Paris — Brotherus & Watts (1915; Anatom).
Leucoloma molle (Müll. Hal.) Mitt. — Tixier (1972; Anatom).
Leucoloma subtenuifolium Broth. & Watts — Brotherus & Watts (1915, sp. nov.;
 Anatom), Tixier (1973; Anatom).

Dicnemonaceae

- Dicnemon aneitensis** (Broth. & Watts) B. H. Allen — Allen (1989; Anatom).
Synodontia aneitensis Broth. & Watts — Brotherus & Watts (1915, sp. nov.;
 Anatom).

Leucobryaceae

- Leucobryum aduncum** Dozy & Molk. — Dixon (1948; Anatom).
Leucobryum aneitense Broth. & Watts — Brotherus & Watts (1915, sp. nov.; Anatom), Dixon (1948; Anatom).
Leucobryum bowringii Mitt. — Tixier (1973; Anatom), Tixier (1974; Espiritu Santo).
Leucobryum candidum (P. Beauv.) Wilson — Brotherus & Watts (1915; Anatom, Epi, Futuna), Thériot (1938; Erromango), Tixier (1974; Efate).
Leucobryum chlorophyllum Müll. Hal.
Leucobryum stenophyllum Besch. — Brotherus & Watts (1915; Anatom). cf. Yamaguchi & Iwatsuki (1987).
Leucobryum conocladon Besch. — Brotherus & Watts (1915; Anatom), Dixon (1948; Anatom).
Leucobryum fragile Müll. Hal., nom. nud. — Müller (1901; New Hebrides).
Leucobryum gunnii Broth. & Watts — Brotherus & Watts (1915, sp. nov.; Anatom, Futuna).
Leucobryum neo-caledonicum Besch. — Brotherus & Watts (1915; Futuna), Dixon (1948; Anatom), Yamaguchi & Iwatsuki (1987; New Hebrides).
Leucobryum sanctum (Brid.) Hampe — Mitten (1873; Anatom), Fleischer (1904; New Hebrides), Brotherus & Watts (1915; Espiritu Santo).
Octoblepharum sanctum (Brid.) Mitt. ex Paris — Mitten (1882; Anatom).
Leucophanes albescens Müll. Hal. — Thériot (1938; Futuna).
Leucophanes candidum (Schwägr.) Lindb. — Thériot (1938; Futuna).
Leucophanes glauculum Müll. Hal. ex M. Fleisch. — Brotherus & Watts (1915; Espiritu Santo).
Leucophanes octoblepharioides Brid. — Brotherus & Watts (1915; Epi, Paama, Espiritu Santo).

Calympereaceae

- Arthrocnemum schimperi** (Dozy & Molk.) Dozy & Molk. — Brotherus (1909; Espiritu Santo, Tongoa), Brotherus & Watts (1915; Espiritu Santo), Tixier (1973, Anatom), Tixier (1974, Erromango).
Calymperes aongstroemii Besch. — Brotherus & Watts (1915; Espiritu Santo).
Calymperes chamaeleonteum Müll. Hal. — Tixier (1973; Anatom).
Calymperes serratum A. Braun ex Müll. Hal. — Brotherus & Watts (1915; Anatom, Espiritu Santo).
Calymperes lorifolium Mitt. — Brotherus & Watts (1915; Anatom).
Calymperes tahitense (Sull.) Mitt. — Mitten (1873; Anatom), Mitten (1882; Anatom).

- Exodietyon dentatum** (Mitt.) Cardot — Brotherus & Watts (1915; Futuna, Espiritu Santo), Thériot (1938; Erromango, Futuna, Pentecost).
- Exodietyon subscabrum** (Broth.) Cardot — Brotherus & Watts (1915; Espiritu Santo).
- Mitthyridium constrictum** (Sull.) H. Rob. — Nowak (1980; Espiritu Santo, Tongoa).
Syrrhopodon constrictus (Sull.) Mitt. — Brotherus & Watts (1915; Espiritu Santo).
- Mitthyridium cuspidatum** (M. Fleisch.) H. Rob.
Thyridium cuspidatum M. Fleisch. — Tixier (1974; Erromango, Espiritu Santo).
- Mitthyridium fasciculatum** (Hook. & Grev.) H. Rob.
Syrrhopodon fasciculatus Hook. & Grev. — Brotherus & Watts (1915; Anatom, Epi, Espiritu Santo).
Thyridium fasciculatum (Hook. & Grev.) Mitt. — Tixier (1973; Anatom).
- Mitthyridium obtusifolium** (Lindb.) H. Rob.
Thyridium obtusifolium (Lindb.) M. Fleisch. — Thériot (1938; Erromango).
- Mitthyridium samoanum** (W. Schultze-Motel) H. Rob. — Nowak (1980; Anatom, Erromango, Espiritu Santo, Futuna).
- Octoblepharum albidum** Hedw. — Brotherus & Watts (1915; Espiritu Santo).
- Syrrhopodon albo-vaginat** Schwägr. — Brotherus & Watts (1915; Anatom).
- Syrrhopodon japonicus** (Besch.) Broth.
Syrrhopodon aneitensis Broth. & Watts — Brotherus & Watts (1915, sp. nov.; Anatom). cf. Reese et al. (1986).
Syrrhopodon tenuinervis Broth. & Watts — Brotherus & Watts (1915, sp. nov.; Futuna). cf. Reese et al. (1986).
- Syrrhopodon diversiretis** Broth. & Watts — Brotherus & Watts (1915, sp. nov.; Anatom).
- Syrrhopodon flammeonervis** Müll. Hal. subsp. *lilliei* (Broth.) Tixier
Syrrhopodon lilliei Broth. — Brotherus & Watts (1915, sp. nov.; Anatom).
- Syrrhopodon kindelii** Broth. & Paris — Dixon (1948; Erromango, Espiritu Santo, Tongoa).
- Syrrhopodon laevigatus** Mitt.
Syrrhopodon graeffeanus Müll. Hal. — Thériot (1938; Vanua Lava). cf. Schultze-Motel (1973).
- Syrrhopodon mammillosus** Müll. Hal. — Thériot (1938; Tanna).
- Syrrhopodon muelleri** (Dozy & Molk.) Sande Lac. — Brotherus & Watts (1915; Anatom, Espiritu Santo), Thériot (1938; Futuna).
- Syrrhopodon perarmatus** Broth. — Brotherus & Watts (1915, sp. nov.; Anatom, Futuna, Espiritu Santo).
- Syrrhopodon tristichus** Nees ex Schwägr. — Brotherus & Watts (1915; Espiritu

Santo), Tixier (1972; Anatom), Tixier (1973; Tanna), Tixier (1974; Tanna).

Pottiaceae

Barbula indica (Hook.) Spreng. — Thériot (1938; Tanna).

Hydrogonium aneitense (Broth. & Watts) W. Schultze-Motel

Barbula aneitensis Broth. & Watts — Brotherus & Watts (1915, sp. nov.; Anatom).

Hydrogonium arcuatum (Griff.) Wijk & Margad.

Hydrogonium comosum (Dozy & Molk.) Hilp. — Tixier (1973; Espiritu Santo).

Hydrogonium consanguineum (Thwaites & Mitt.) Hilp. — Tixier (1974; Espiritu Santo).

Hydrogonium inflexum (Duby) P. C. Chen — Tixier (1973; Espiritu Santo).

Hyophila microphylla Broth. & Watts — Brotherus & Watts (1915, sp. nov.; Anatom).

Splachnaceae

Tayloria braithwaitiana Tixier — Tixier (1974, sp. nov. — Espiritu Santo).

Bryaceae

Brachymenium indicum (Dozy & Molk.) Bosch & Sande Lac. — Brotherus & Watts (1915; Anatom).

Epipterygium vanuatuicum H. A. Mill. — Miller (1988, sp. nov.; Ambrym).

Mniaceae

Plagiomnium succulentum (Mitt.) T. J. Kop. (?)

Mnium 'esculentum' Mitt. — Tixier (1974; Espiritu Santo).

Tixier (1974) reported *Mnium 'esculentum'* Mitt. (p. 35) from Espiritu Santo. However, this name is not listed on "Index Muscorum (Wijk et al., 1964, 1969)", "Index of Mosses 1963–1989 (Crosby et al., 1992)" and "Indices to the Species of Mosses and Lichens Described by William Mitten (Thiers, 1992)." Judging from the note of the range, "Népal, Assam, Indes, Ceylan, Malaisie, Japon, Indochine, Sumatra, Java, Bornéo, Nouvelle-Guinée," it may be the orthographic error of *Mnium succulentum* Mitt.

Calomniaceae

Calomnion melanesicum H. A. Mill. — Miller (1987; Ambrym, Aoba, Efate, Espiritu Santo, Pentecost, Tanna).

Rhizogoniaceae

Pyrrhobryum medium (Besch.) Manuel

Rhizogonium medium Besch. — Brotherus & Watts (1915; Anatom).

Pyrrhobryum spiniforme (Hedw.) Mitt. — Inoue & Higuchi (1994; Espiritu Santo).

Rhizogonium spiniforme (Hedw.) Bruch — Brotherus & Watts (1915; Anatom, Espiritu Santo, Futuna), Tixier (1973; Espiritu Santo).

Rhizogonium setosum (Mitt.) Mitt. — Mitten (1882; Anatom), Brotherus & Watts (1915; Anatom, Epi, Futuna), Thériot (1938; Erromango, Futuna), Tixier (1973; Anatom, Tanna), Tixier (1974; Anatom, Erromango, Espiritu Santo).

Rhizogonium setosum (Mitt.) Mitt. f. **crispulum** Thér. — Thériot (1938, f. nov.; Erromango, Tanna, Vanua Lava).

Hypnodendraceae

Hypnodendron dendroides (Brid.) Touw — Touw (1971; Anatom, Espiritu Santo, Vanua Lava).

Mniodendron densirameum Broth. — Thériot (1938; Vanua Lava). cf. Touw (1971).

Mniodendron hellwigii Broth. ex Broth. — Brotherus & Watts (1915; Anatom), Dixon (1948; Anatom). cf. Touw (1971).

Hypnodendron flagelliferum Broth. & Watts — Brotherus & Watts (1915, sp. nov.; Anatom), Touw (1971; Anatom), Tixier (1972; Anatom).

Hypnodendron fusco-mucronatum (Müll. Hal.) A. Jaeger subsp. **chalmersii** (Mitt.) Touw — Touw (1971; Espiritu Santo).

Hypnodendron milnei Mitt. subsp. **milnei** — Mitten (1873, sp. nov.; Anatom), Mitten (1882; Anatom), Touw (1971; Anatom).

Mniodendron milnei (Mitt.) Mitt. — Brotherus & Watts (1915; Anatom).

Hypnodendron spininervium (Hook.) A. Jaeger — Brotherus & Watts (1915; Anatom, Futuna, Espiritu Santo), Thériot (1938; Tanna).

Hypnodendron subspininervium (Müll. Hal.) A. Jaeger subsp. **subspininervium** — Brotherus & Watts (1915; Anatom), Thériot (1938; Futuna), Touw (1971; Anatom, Futuna, Tongoa).

Braithwaitea arborescens Miit. — Mitten (1882; Anatom).

- Hypnodendron vitiense** Mitt. subsp. **vitiense** — Touw (1971; Anatom, Espiritu Santo, Futuna, Tanna, Tongoa), Tixier (1973; Espiritu Santo), Tixier (1974; Espiritu Santo).
Hypnodendron arcuatum (Hedw.) Lindb. ex Mitt. — Tixier (1972; Anatom).

Bartramiaceae

- Breutelia arundinifolia** (Duby) M. Fleisch. — Tixier (1974; Espiritu Santo).
Philonotis hastata (Duby) Wijk & Margad.
Philonotis laxissima Mitt. nom. illeg. — Brotherus & Watts (1915; Anatom).
Philonotis obtusifolia (Mitt.) Paris — Brotherus & Watts (1915; Espiritu Santo).
Philonotis turneriana (Schwägr.) Mitt. — Tixier (1974; Espiritu Santo).

Spiridentaceae

- Spiridens aristifolius** Mitt. — Thériot (1938; Futuna).
Spiridens aristifolius Mitt. var. **pallidus** Thér. — Thériot (1938, var. nov.; Futuna).
Spiridens flagellosus Schimp. — Mitten (1873; Anatom), Mitten (1882; Anatom), Brotherus & Watts (1915; Anatom, Futuna, Espiritu Santo), Thériot (1938; Pentecost), Tixier (1972; Anatom), Tixier (1973; Anatom, Espiritu Santo), Tixier (1974; Efate).
Spiridens reinwardtii Nees — Brotherus & Watts (1915; Anatom, Espiritu Santo).

Orthotrichaceae

- Macromitrium orthostichum** Nees ex Schwägr. — Brotherus & Watts (1915; Futuna).
Macromitrium orthostichum Nees ex Schwägr. subsp. **micropoma** M. Fleisch. — Tixier (1974; Anatom).
Macromitrium pulchrum Besch. — Dixon (1948; Anatom).
Macromitrium reinwardtii Schwägr. — Brotherus & Watts (1915; Anatom), Tixier (1973; Anatom).
Macromitrium salakanum Müll. Hal. — Tixier (1972; Anatom), Tixier (1973; New Hebrides), Tixier (1974; Anatom, Erromango).
Macromitrium semi-pellucidum Dozy & Molk. — Tixier (1974; Efate).
Macromitrium subtile Schwägr. — Brotherus & Watts (1915; Futuna, Espiritu Santo).
Macromitrium sulcatum (Hook.) Brid. — Tixier (1973; Anatom).

Racopilaceae

- Powellia involutifolia** Mitt. — Inoue & Higuchi (1994; Espiritu Santo).
Racopilum cuspidigerum (Schwägr.) Ångstr. — Brotherus & Watts (1915; Espiritu Santo).
Racopilum gracillimum Müll.Hal. — Müller (1896, sp. nov.; Erromango).
Racopilum pacificum Besch. — Brotherus & Watts (1915; Futuna), Fleischer (1923; New Hebrides).
Racopilum pacificum Besch. var. **gracilescens** Besch. — Thériot (1938; Tanna).
Racopilum spectabile Reinw. & Hornsch. — Brotherus & Watts (1915; Anatom, Futuna, Espiritu Santo), Thériot (1938; Aoba), Tixier (1974; Erromango), Inoue & Higuchi (1994; Espiritu Santo).

Cyrtopodaceae

- Bescherellia elegantissima** Duby — Brotherus & Watts (1915; Anatom), Bartram (1953; Anatom).

Myuriaceae

- Myurium rufescens** (Reinw. & Hornsch.) M. Fleisch. subsp. **purpuratum** (Mitt.) Maschke
Oedycladium purpuratum Mitt. — Mitten (1882; Anatom).
Myurium purpuratum (Mitt.) Dixon & Thér. — Brotherus & Watts (1915; Anatom).

Pterobryaceae

- Calyptothecium urvilleanum** (Müll. Hal.) Broth. — Brotherus & Watts (1915; Espiritu Santo), Tixier (1974; Espiritu Santo).
Euptychium dumosum (Besch.) Broth. — Bartram (1953; New Hebrides).
Euptychium setigerum (Sull.) Broth. subsp. **setigerum** — During (1977; Anatom, Efate, Futuna).
Euptychium assimile Broth. & Watts — Brotherus & Watts (1915, sp. nov.; Futuna), Tixier (1972; Anatom). cf. During (1977).
Euptychium gunnii Broth. & Watts — Brotherus & Watts (1915, sp. nov.; Anatom), Tixier (1973; Anatom), Tixier (1974; Erromango). cf. During (1977).
Euptychium setigerum (Sull.) Broth. subsp. **austro-caledonicum** (Besch.) During
Euptychium austro-caledonicum (Besch.) Broth. — Tixier (1974; Anatom).
Garovaglia elegans (Dozy & Molk.) Hampe ex Bosch & Sande Lac. — During

(1977; Anatom, Espiritu Santo, Futuna).

Endotrichella elegans (Dozy & Molk.) M. Fleisch. — Dixon (1948; Anatom).

Endotrichella campbelliana Hampe — Hampe (1874, sp. nov.; Anatom), Mitten (1882; Anatom), Brotherus & Watts (1915; Anatom). cf. During (1977).

Endotrichella samoana (Mitt.) Müll. Hal. — Thériot (1938; Futuna). cf. During (1977).

Pterobryella rigida (Mitt.) Touw — Touw (1971; Anatom).

Hypnodendron rigidum Mitt. — Mitten (1873, sp. nov.; Anatom), Mitten (1882; Anatom), Brotherus & Watts (1915; Anatom).

Pterobryella vagapensis Müll. Hal. — Brotherus & Watts (1915; Anatom), Tixier (1972; Anatom). cf. Schultze-Motel (1973).

Symphysodon gunnii Broth. & Watts — Brotherus & Watts (1915, sp. nov.; Anatom, Epi, Futuna), Tixier (1974; Erromango).

Symphysodon neckeroides Dozy & Molk.

Symphysodon micholitzii Broth. — Brotherus & Watts (1915; Espiritu Santo).

Symphysodon vitianus (Sull.) Broth. — Brotherus & Watts (1915; Anatom, Epi, Espiritu Santo), Tixier (1973; Anatom).

Symphysodontella cylindracea (Mont.) M. Fleisch. — Brotherus & Watts (1915; Anatom).

Symphysodontella cylindracea (Mont.) M. Fleisch. var. *attenuata* Thér. — Thériot (1910, var. nov.; Anatom).

Trachyloma tahitense Besch. — Tixier (1974; Espiritu Santo).

Meteoriaceae

Aerobryopsis longissima (Dozy & Molk.) M. Fleisch. — Brotherus & Watts (1915; Anatom, Epi, Espiritu Santo), Tixier (1972; Anatom), Tixier (1973; Tanna).

Aerobryopsis striatula (Mitt.) Broth. — Mitten (1873, sp. nov.; Anatom), Brotherus & Watts (1915; Anatom, Epi, Futuna).

Aerobryopsis vitiana (Sull.) M. Fleisch. — Brotherus & Watts (1915; Espiritu Santo).

Barbella futunensis Thér. — Thériot (1938, sp. nov.; Futuna).

Floribundaria floribunda (Dozy & Molk.) M. Fleisch. — Brotherus & Watts (1915; Espiritu Santo), Thériot (1938; Futuna), Tixier (1973; Anatom, Banks, Efate, Espiritu Santo), Tixier (1974; Espiritu Santo).

Floribundaria floribunda (Dozy & Molk.) M. Fleisch. var. *brevifolia* (Ren. & Cardot) M. Fleisch. — Thériot (1938; Efate, Pentecost).

- Floribundaria floribunda** (Dozy & Molk.) M. Fleisch. var. **latifolia** Cardot — Thériot (1938; Futuna, Pentecost).
- Floribundaria pseudo-floribunda** M. Fleisch. — Brotherus & Watts (1915; Anatom, Futuna, Paama, Espiritu Santo).
- Meteorium miquelianum** (Müll. Hal.) M. Fleisch. — Brotherus & Watts (1915; Anatom, Epi, Futuna), Thériot (1938; Futuna), Tixier (1973; Tanna).
- Papillaria helictophylla** (Mont.) Broth. — Brotherus & Watts (1915; Futuna), Thériot (1938; Futuna).
- Papillaria pellucida** Broth. & Watts — Brotherus & Watts (1915, sp. nov.; Anatom, Futuna).

Phyllogoniaceae

- Orthorrhynchium cylindricum** (Lindb.) Broth. — Brotherus & Watts (1915; Espiritu Santo), Thériot (1938; Futuna, Pentecost).

Daltoniaceae

- Cyathophorella spinosa** (Müll. Hal.) M. Fleisch. — Brotherus & Watts (1915; Espiritu Santo).
- Cyathophorella tahitensis** (Besch.) M. Fleisch. — Brotherus & Watts (1915; Anatom), Tixier (1974; Espiritu Santo).

Neckeraceae

- Himantocladium flagelliferum** (Broth.) Broth. — Thériot (1938; Pentecost).
- Himantocladium loriforme** (Bosch & Sande Lac.) M. Fleisch. — Brotherus & Watts (1915; Epi), Tixier (1974; Espiritu Santo).
- Himantocladium plumula** (Nees) M. Fleisch. — Tixier (1974; Espiritu Santo).
- Homaliodendron flabellatum** (Sm.) M. Fleisch. — Tixier (1973; New Hebrides).
Homaliodendron dendroides (Hook.) M. Fleisch. — Brotherus & Watts (1915; Anatom, Futuna).
- Homaliodendron microdendron** (Mont.) M. Fleisch. — Tixier (1973; Espiritu Santo).
- Neckeropsis lepinea** (Mont.) M. Fleisch. — Brotherus & Watts (1915; Anatom, Epi, Futuna), Thériot (1938; Pentecost), Touw (1962; Anatom, Futuna, Tanna), Tixier (1973; Anatom).
- Thamnobryum aneitense** (Mitt.) W. Schultze-Motel
Porotrichum aneitense Mitt. — Mitten (1873; Anatom).
Thamnium aneitense (Mitt.) Mitt. — Mitten (1882; Anatom), Brotherus & Watts (1915; Anatom).

Lembophyllaceae

- Camptochaete arbuscula** (Sm.) Reichardt var. **deflexa** (Wilson) Dixon
Camptochaete deflexa (Wilson) A. Jaeger — Tixier (1972; Anatom).
- Camptochaete leichhardtii** (A. Jaeger) Broth. — Brotherus & Watts (1915; Anatom).
Thamnum leichhardtii (A. Jaeger) Kindb. — Kindberg (1902; New Hebrides).
- Camptochaete porotrichoides** (Besch.) Broth. — Brotherus & Watts (1915; Anatom), Bartram (1953; Anatom), Tixier (1973; Anatom).
- Camptochaete prolongata** Broth. & Watts — Brotherus & Watts (1915, sp. nov.; Anatom).

Hookeriaceae

- Callicostella campbelliana** (Hampe) A. Jaeger — Brotherus & Watts (1915; New Hebrides).
Hookeria campbelliana Hampe- Hampe (1874, sp. nov.; Anatom).
- Callicostella frateri** Broth. & Watts — Brotherus & Watts (1915, sp. nov.; Paama).
- Callicostella oblongifolia** (Sull.) A. Jaeger — Brotherus & Watts (1915; Espiritu Santo).
- Callicostella papillata** (Mont.) Mitt. — Matsui & Iwatsuki (1993; Efate, Espiritu Santo).
- Chaetomitrium aneitense** Broth. & Watts — Brotherus & Watts (1915, sp. nov.; Anatom).
- Chaetomitrium aneitense** Broth. & Watts f. **brachyphylla** Dixon — Dixon (1948, f. nov.; Anatom).
- Chaetomitrium hebridense** Dixon — Dixon (1948, sp. nov.; Efate).
- Chaetomitrium tahitense** (Sull.) Mitt. var. **deplanchei** (Besch.) Wijk & Margad.
Chaetomitrium geheebii Broth. — Brotherus & Watts (1915; Espiritu Santo).
- Chaetomitrium torquescens** Bosch. & Sande Lac. — Tixier (1973; New Hebrides).
- Distichophyllum capillatum** Mitt. — Mitten (1882, sp. nov. — Anatom).
- Distichophyllum graeffeanum** (Müll. Hal.) Broth. — Matsui & Iwatsuki (1993; Espiritu Santo).
- Distichophyllum mittenii** Bosch & Sande Lac. — Brotherus & Watts (1915; Anatom), Matsui & Iwatsuki (1993; Espiritu Santo).
- Distichophyllum vitianum** (Sull.) Mitt. — Brotherus & Watts (1915; Futuna).

Hypopterygiaceae

- Hypopterygium bowiei** Broth. & Watts — Brotherus & Watts (1915, sp. nov.; Espiritu Santo).
- Hypopterygium micholitzii** Paris — Brotherus & Watts (1915; Espiritu Santo).
- Hypopterygium tenellum** Müll. Hal.
Hypopterygium neo-caledonicum Besch. — Brotherus & Watts (1915; Anatom, Futuna), Tixier (1972; Anatom). cf. Schultze-Motel (1973).
- Lopidium struthiopteris** (Brid.) M. Fleisch.
Hypopterygium javanicum (Hampe) A. Jaeger — Brotherus & Watts (1915; Anatom).

Thuidiaceae

- Herpetineuron toccocae** (Sull. & Lesq.) Cardot — Brotherus & Watts (1915; Epi), Thériot (1938; Ambrym).
- Pelekium velatum** Mitt. — Brotherus & Watts (1915; Epi, Espiritu Santo), Tixier (1973; Espiritu Santo).
- Thuidium campbellianum** (Hampe) A. Jaeger — Mitten (1882; New Hebrides), Brotherus & Watts (1915; New Hebrides).
Cryo-hypnum campbellianum Hampe — Hampe (1874, sp. nov.; Erromango).
- Thuidium cymbifolium** (Dozy & Molk.) Dozy & Molk. — Brotherus & Watts (1915; Anatom, Espiritu Santo), Tixier (1974; Espiritu Santo, Efate).
Thuidium ramentosum (Mitt.) Mitt. — Brotherus & Watts (1915; Anatom, Epi).
- Thuidium glaucinoides** Broth. — Brotherus & Watts (1915; Espiritu Santo), Fleischer (1923; New Hebrides), Thériot (1938; Futuna), Tixier (1974; Espiritu Santo).
- Thuidium glacinum** (Mitt.) Bosch & Sande Lac. — Brotherus & Watts (1915; Anatom, Epi, Espiritu Santo), Thériot (1938; Tanna), Tixier (1973; Anatom, Espiritu Santo).
- Thuidium meyenianum** (Hampe) Dozy & Molk. — Hürlimann (1965; New Hebrides), Tixier (1973; Espiritu Santo), Tixier (1974; Mallicolo).
- Thuidium plumulosum** (Dozy & Molk.) Dozy & Molk. — Brotherus & Watts (1915; Espiritu Santo), Thériot (1938; Aniwa, Pentecost, Tanna).

Brachytheciaceae

- Eurhynchium savatieri** Besch.
Oxyrrhynchium savatieri (Besch.) Broth. — Thériot (1938; Tanna).

- Rhynchostegiella menadense** (Sande Lac.) E. B. Bartram
Rhynchostegium menadense (Sande Lac.) A. Jaeger — Brotherus & Watts (1915; Epi).
- Rhynchostegiella vitiensis** Dixon — Thériot (1938; Efate, Tanna).
- Rhynchostegium javanicum** (Bél.) Besch. — Brotherus & Watts (1915; Espiritu Santo).
- Rhynchostegium oblongifolium** Broth. & Watts — Brotherus & Watts (1915, sp. nov.; Futuna, Espiritu Santo).
- Rhynchostegium trachypelma** (Müll. Hal.) A. Jaeger
Rhynchostegium javanicum (Bél.) Besch. var. *majus* Besch. — Tixier (1974; Espiritu Santo, Mallicolo).

Entodontaceae

- Entodon aneitensis** Mitt. — Mitten (1882, sp. nov.; Anatom).
- Entodon pallidus** Mitt. — Mitten (1873, sp. nov.; Anatom), Brotherus & Watts (1915; Epi, Futuna).
- Entodon plicatifomis** Dixon — Dixon (1948, sp. nov.; Efate).
- Plagiotheciopsis oblonga** (Broth.) Broth. — Brotherus & Watts (1915; New Hebrides).

Sematophyllaceae

- Acanthorrhynchium papillatum** (Harv.) M. Fleisch. — Thériot (1938; Erromango).
- Taxithelium papillatum* (Harv.) Broth. — Brotherus & Watts (1915; Anatom).
- Inoue & Higuchi (1994) reported the chromosome number of *Trichosteleum gunnii* based on the plants (*Higuchi 21141, 21145*) from Espiritu Santo Island. However these are the misidentification of *Acanthorrhynchium papillatum*. The chromosome number, $n=11$, for *A. papillatum* is reported for the first time.
- Acanthorrhynchium substigosum** (Müll. Hal.) M. Fleisch. — Thériot (1938; Futuna, Pentecost).
- Taxithelium substigosum* (Müll. Hal.) Broth. — Brotherus & Watts (1915; Espiritu Santo).
- Acroporium hamulatum** (M. Fleisch.) M. Fleisch. — Tixier (1974; Espiritu Santo).
- Acroporium hermaphroditum** (Müll. Hal.) M. Fleisch. — Thériot (1938; Aoba).
- Acroporium oxyporum** (Sande Lac.) M. Fleisch. — Dixon (1948; Anatom, Efate).
- Sematophyllum serricalyx* Broth. & Watts — Brotherus & Watts (1915, sp.

nov.; Anatom, Epi, Futuna, Espiritu Santo).

Acroporium sigmatodontium (Müll. Hal.) M. Fleisch. — Thériot (1938; Futuna).

Sematophyllum sigmatodontium (Müll. Hal.) A. Jaeger — Brotherus & Watts (1915; Espiritu Santo).

Acroporium turgidum (Mitt.) Mitt. — Tixier (1973; Tanna), Tixier (1974; Erromango, Espiritu Santo).

Sematophyllum turgidum (Mitt.) Mitt. — Brotherus & Watts (1915; Anatom).

Aptychella glabrifolia (Broth. & Watts) Broth.

Sematophyllum glabrifolium Broth. & Watts — Brotherus & Watts (1915, sp. nov.; Anatom).

Clastobryum hebridense Broth. — Brotherus & Watts (1915, sp. nov.; Anatom).

Rhaphidostichum bunodicarpum (Müll. Hal.) M. Fleisch.

Sematophyllum bunodicarpum (Müll. Hal.) Broth. — Brotherus & Watts (1915; Anatom, Epi).

Sematophyllum microcladiellum M. Fleisch. — Tixier (1974; Erromango).

Taxithelium annandii Broth. & Watts — Brotherus & Watts (1915, sp. nov.; Espiritu Santo).

Trichosteleum gunnii Broth. & Watts — Brotherus & Watts (1915, sp. nov.; Anatom).

Trichosteleum hamatum (Dozy & Molk.) A. Jaeger var. **semi-mammillosum** (Müll. Hal.) Paris — Brotherus & Watts (1915; Anatom), Tixier (1973; Anatom, Tanna).

Trichosteleum hebridarum W. Schultze-Motel

Trichosteleum subtile Broth. & Watts, hom. illeg. — Brotherus & Watts (1915, sp. nov.; Paama).

Trichosteleum neocaledonicum Thér. — Dixon (1948; Erromango).

Trichosteleum pickeringii (Sull.) A. Jaeger — Brotherus & Watts (1915; Anatom, Espiritu Santo), Inoue & Higuchi (1994; Espiritu Santo).

Trichosteleum subrhinophyllum (Müll. Hal.) A. Jaeger — Thériot (1938; Vanua Lava).

Trismegistia complanatula (Müll. Hal.) Müll. Hal. — Brotherus & Watts (1915; Anatom, Espiritu Santo), Tixier (1972; Anatom), Tixier (1973; Anatom).

Trismegistia pedunculata (Mitt.) Broth. — Brotherus & Watts (1915; Anatom).
Acanthocladium pedunculatum Mitt. — Mitten (1882, sp. nov.; Anatom).

Trismegistia ridida (Mitt.) Broth.

Sematophyllum rigidum (Mitt.) Mitt. — Mitten (1873; Anatom).

Wijika tanytricha (Mont.) H. A. Crum

Acanthocladium tanytrichum (Mont.) Broth. — Tixier (1972; Anatom).

Hypnaceae

- Ectropothecium aneitense** Broth. & Watts — Brotherus & Watts (1915, sp. nov.; Anatom).
- Ectropothecium aubertii** Thér. — Thériot (1938, sp. nov.; Vanua Lava), Tixier (1973; Tanna), Tixier (1974; Erromango).
- Ectropothecium bowiei** Broth. & Watts — Brotherus & Watts (1915, sp. nov.; Espiritu Santo).
- Ectropothecium buitenzorgii** (Bél.) Mitt.
Ectropothecium brachyphyllum Broth. & Watts — Brotherus & Watts (1915, sp. nov.; Anatom). cf. Schultze-Motel (1973).
- Ectropothecium gunnii** Broth. & Watts — Brotherus & Watts (1915, sp. nov.; Anatom), Thériot (1938; Vanua Lava), Dixon (1948; Anatom).
- Ectropothecium ichnotocladum** (Müll. Hal.) A. Jaeger — Tixier (1974; Espiritu Santo).
- Ectropothecium laticuspis** Broth. — Thériot (1938; Vanua Lava).
- Ectropothecium malacoblastum** (Müll. Hal.) A. Jaeger — Thériot (1938; Futuna).
- Ectropothecium micholitzii** Broth. — Brotherus & Watts (1915; Epi, Futuna), Thériot (1938; Pentecost).
- Ectropothecium pacificum** Mitt. — Mitten (1868, sp. nov.; Erromango), Müller (1874; Erromango), Brotherus & Watts (1915; Anatom), Inoue & Higuchi (1994; Espiritu Santo).
- Ectropothecium percomplanatum** Broth. — Brotherus & Watts (1915; Epi, Espiritu Santo).
- Ectropothecium sodale** (Sull.) Mitt. — Brotherus & Watts (1915; Espiritu Santo), Inoue & Higuchi (1994; Espiritu Santo).
- Ectropothecium tannaense** Thér. — Thériot (1938, sp. nov.; Tanna), Tixier (1974; Espiritu Santo).
- Ectropothecium tannaense** Thér. f. *inundata* Thér. — Thériot (1938, f. nov.; Tanna).
- Ectropothecium zollingeri** (Müll. Hal.) A. Jaeger
Glossadelphus obscurum (Broth. & Paris) Broth. — Tixier (1974; Espiritu Santo). cf. Higuchi & Iwatsuki (1994).
- Isopterygium albescens** (Hook.) A. Jaeger — Tixier (1974; Efate), Inoue & Higuchi (1994; Espiritu Santo).
- Isopterygium gunnii** Broth. & Watts — Brotherus & Watts (1915, sp. nov.; Futuna).
- Isopterygium minutirameum** (Müll. Hal.) A. Jaeger
Isopterygium austro-pusillum (Müll. Hal.) A. Jaeger — Thériot (1938; Tanna).

- Isopterygium sarasinii** Thér. — Thériot (1938; Futuna).
- Mittenothamnium nano-operculatum** (Thér.) W. Schultze-Motel
Microthamnium nano-operculatum Thér. — Thériot (1938, sp. nov.; Pentecost).
- Pseudotaxiphyllum pohliaecarpum** (Sull. & Lesq.) Z. Iwats.
Isopterygium pohliaecarpum (Sull. & Lesq.) A. Jaeger — Tixier (1973; Espiritu Santo).
- Taxiphyllum taxirameum** (Mitt.) M. Fleisch. — Inoue & Higuchi (1994; Espiritu Santo).
Isopterygium taxirameum (Mitt.) A. Jaeger — Brotherus & Watts (1915; Epi, Futuna, Espiritu Santo).
- Taxiphyllum taxirameum** (Mitt.) M. Fleisch. f. *gracilis* Thér. — Thériot (1938; Tanna).
- Trachythecium hebridense** (Dixon) W. Schultze-Motel
Ectropothecium hebridense Dixon — Dixon (1948, sp. nov.; Anatom, Efate, Erromango).
- Vesicularia aperta** (Sull.) Thér. — Thériot (1938; Futuna), Tixier (1974; Mallicolo).
- Vesicularia inflectens** (Brid.) Müll. Hal. — Brotherus & Watts (1915; Epi), Thériot (1938; Futuna), Inoue & Higuchi (1994; Espiritu Santo).
Vesicularia subinflectens Müll. Hal. — Tixier (1974; Espiritu Santo).
- Vesicularia perviridis** (Ångstr.) Müll. Hal. — Dixon (1948; Efate).
- Vesicularia pinnatula** Müll. Hal. ex Broth. — Inoue & Higuchi (1994; Espiritu Santo).

Polytrichaceae

- Pogonatum neesii** (Müll. Hal.) Dozy — Hyvönen (1989; Vanuatu).
Pogonatum circinatum Besch. — Brotherus & Watts (1915; Anatom), Tixier (1973; Espiritu Santo), Tixier (1974; Espiritu Santo). cf. Hyvönen (1989).
Polytrichum collieanum Müll. Hal. — Müller (1897, sp. nov.; Anatom). cf. Hyvönen (1989).

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Appendix

Synonyms

- Acanthocladium pedunculatum* = Trismegistia pedunculata
Acanthocladium tanytrichum = Wijika tanytricha
Barbula aneitensis = Hydrogonium aneitense
Braithwaitea arborescens = Hypnodendron subspiniervium
Calymperes lorifolium = Calymperes serratum
Camptochaete deflexa = Camptochaete arbuscula var. deflexa

- Campylopus blumii* = *Campylopus umbellatus*
Campylopus richardii = *Campylopus umbellatus*
Chaetomitrium geheebii = *Chaetomitrium tahitense*
Crypto-hypnum campbellianum = *Thuidium campbellianum*
Ectropothecium brachyphyllum = *Ectropothecium buitenzorgii*
Ectropothecium hebridense = *Trachythecium hebridense*
Endotrichella campbelliana = *Garovaglia elegans*
Endotrichella elegans = *Garovaglia elegans*
Endotrichella samoana = *Garovaglia elegans*
Euptychium assimile = *Euptychium setigerum* subsp. *setigerum*
Euptychium austro-caledonicum = *Euptychium setigerum* subsp. *austro-caledonicum*
Euptychium gunnii = *Euptychium setigerum* subsp. *setigerum*
Fissidens subscabrisetus = *Fissidens hollianus*
Glossadelphus obscurum = *Ectropothecium zollingeri*
Homaliiodendron dendroides = *Homaliiodendron flabellatum*
Hookeria campbelliana = *Callicostella campbelliana*
Hydrogonium comosum = *Hydrogonium arcuatum*
Hypnodendron rigidum = *Pterobryella rigida*
Hypnodendron arcuatum = *Hypnodendron vitiense* subsp. *vitiense*
Hypopterygium javanicum = *Lopidium struthiopteris*
Hypopterygium neo-caledonicum = *Hypopterygium tenellum*
Isopterygium austro-pusillum = *Isopterygium minutirameum*
Isopterygium pohliaecarpum = *Pseudotaxiphyllum pohliaecarpum*
Isopterygium taxirameum = *Taxiphyllum taxirameum*
Leucobryum stenophyllum = *Leucobryum chlorophyllosum*
Microthamnium nano-operculatum = *Mittenothamnium nano-operculatum*
Mniodendron densirameum = *Hypnodendron dendroides*
Mniodendron hellwigii = *Hypnodendron dendroides*
Mniodendron milnei = *Hypnodendron milnei* subsp. *milnei*
Mnium succulentum = *Plagiomnium succulentum*
Myurium purpuratum = *Myurium rufescens* subsp. *purpuratum*
Octoblepharum sanctum = *Leucobryum sanctum*
Oedicladium purpuratum = *Myurium rufescens* subsp. *purpuratum*
Oxyrrhynchium savatieri = *Eurhynchium savatieri*
Philonotis laxissima = *Philonotis hastata*
Pilopogon blumii = *Campylopus umbellatus*
Pogonatum circinatum = *Pogonatum neesii*
Polytrichum collieanum = *Pogonatum neesii*
Porotrichum aneitense = *Thamnobryum aneitense*
Pterobryella vagapensis = *Pterobryella rigida*

- Rhizogonium medium* = *Pyrrhobryum medium*
Rhizogonium spiniforme = *Pyrrhobryum spiniforme*
Rhynchostegium javanicum var. *majus* = *Rhynchostegium trachypelma*
Rhynchostegium menadense = *Rhynchostegiella menadense*
Sematophyllum bunodiocarpum = *Rhaphidostichum bunodicarpum*
Sematophyllum glabrifolium = *Aptychella glabrifolia*
Sematophyllum rigidum = *Trismegistia ridida*
Sematophyllum serricalyx = *Acroporium oxyporum*
Sematophyllum sigmatodontium = *Acroporium sigmatodontium*
Sematophyllum turgidum = *Acroporium turgidum*
Symphysodon micholitzii = *Symphysodon neckeroides*
Synodontia aneitensis = *Dicnemon aneitensis*
Syrrhopodon aneitensis = *Syrrhopodon japonicus*
Syrrhopodon constrictus = *Mitthyridium constrictum*
Syrrhopodon fasciculatus = *Mitthyridium fasciculatum*
Syrrhopodon graeffeanus = *Syrrhopodon laevigatus*
Syrrhopodon lilliei = *Syrrhopodon flammeonervis* subsp. *lilliei*
Syrrhopodon tenuinervis = *Syrrhopodon japonicus*
Taxithelium papillatum = *Acanthorrhynchium papillatum*
Taxithelium substigmosum = *Acanthorrhynchium substigmosum*
Thamnium aneitense = *Thamnobryum aneitense*
Thamnium leichhardtii = *Camptochaete leichhardtii*
Thuidium ramentosum = *Thuidium cymbifolium*
Thyridium cuspidatum = *Mitthyridium cuspidatum*
Thyridium fasciculatum = *Mitthyridium fasciculatum*
Thyridium obtusifolium = *Mitthyridium obtusifolium*
Trichosteleum subtile = *Trichosteleum hebridarum*
Vesicularia subinflectens = *Vesicularia inflectens*