

SOME ADDITIONS TO THE BRYOLOGICAL FLORA OF TASMANIA.

BY W. A. WEYMOUTH.

PART III.

Read December 1st, 1902.

The first and second parts of this series appeared in the Papers and Proceedings of the Royal Society of Tasmania for the years 1893 and 1894-5 respectively. They dealt only with mosses. The present paper includes both mosses and hepatics.

For the skilled determination of the mosses I am still indebted to the courtesy of Professor V. F. Brotherus; of Helsingfors, Finland, whose fourth and fifth parts of "Some New Species of Australian Mosses" furnish the description of new species that follow.

The hepatics have been very kindly determined by Herr F. Stephani, of Leipzig, through the courteous intervention of Dr. E. Levier, of Florence, who has rendered me great service in the preparation, submission, and return of my specimens.

Under the first of the following headings are given the original descriptions of five new mosses, and the names only of four others, bringing the total of new species added to Mr. R. A. Bastow's list of 1386 up to 37. The second heading covers eleven mosses already known elsewhere, but now first recorded for Tasmania.

The third part consists of new hepatics, numbering 17, the descriptions of which are, I am assured, in course of publication by Mr. Stephani in his elaborate work, "Species Hepaticarum," but are not now available to me.

The fourth part gives those hepatics which, while not new to science, are now newly recorded for Tasmania. These number no fewer than 92 species to be added to Bastow's enumeration in the Proceedings of this Society for 1887. It is interesting to note that of these one, *Acrobolbus piliferus*, is among Archer's Hepatics, but does not appear to have been noted locally; and a second, *Mastigobryum accretum*, doubtfully recorded as found by Gunn over 70 years ago, is now confirmed by Mr. Stephani on recent specimens.

NEW MOSSES.

29. *Anomodon tasmanicus*, Broth., n. sp.

Dioicus; gracilis, caespitosus, caespitibus laxis, ochraceis; *caulis* secundarius flexuosus, hic illic ferrugineo-tomentosus, dense foliosus, superne subfasciculatim ramosus, ramis erecto-patentibus, haud complanatis, vix' ultra 1 cm altis, dense foliosis, simplicibus vel furcatis, obtusis; *folia* sicca laxa

imbricata, flexuosula, sicca erecto-patentia, stricta, e basi vix auriculata ovato-lanceolata, hyalino-mucronata, c. 1, 3 mm longa et c. 0, 4 mm lata, marginibus basi revolutis, integerimis, nervo lutescente, pellucido, ubique dorso papilloso, superne flexuosulo, infra apicem evanido, cellulis rotundatis, c. 0, 010 mm, valde papilloso, obscuris. Caetera ignota.

Patria. Tasmania, Hobart, Knocklofty, Novr. 1888, alt. 1,000ft. W. A. Weymouth, n. 1571.

Species e minoribus, cum nulla alia commutanda.—*Brotherus's Australian Mosses*, V. p. 137.

30. *Bartramidula Weymouthi*, Broth., n. sp.

Hab.—Port Cygnet, on roadside bank, Lymington, Sept., 1889. W.A.W.

31. *Bryum (Eubryum) argillicola*, Broth., n. sp.

Dioicum; caespitosum, caespitibus laxis, pallide viridibus, haud nitidis; *caulis* brevissimus, basi longe radiculosus, dense foliosus, innovationibus usque ad 5 mm altis, erectis, strictis, ubique dense foliosis, gemmis microphyllinis copiosis axilliferis; *folia* erecto-patentia, carinato-concava, ovata, nervo excedente aristata, marginibus revolutis, integris, angustissime indistincte limbata, nervo crasso, rufescente, in aristam crassam, strictam, acutam, integram longe excedente, cellulis oblongo rhombeis, basilaribus rectangularibus, *innovationum* marginibus superne minute denticulatis, nervo arista denticulata, cellulis apicalibus angustioribus; *seta* vix 1 5 cm alta, sicca flexuosula, tenuissima, rubra; *theca* nutans, crassa, ovalis, pallida, demum atrofusca, collo crasso, sporangio brevior, sicca deoperculata sub ore haud constricta; *annulus* triplex, facilliter revolubilis, c. 0, 10 mm latus; *peristomium* duplex; *exostomii* dentes lanceolato-subulati, c. 0, 4 mm longi et c. 0, 075 mm lati, lamellis c. 20, lutei apice hyalini, scabridi; *endostomium* liberum, sordide flavidulum, minute papillosum; *processus* carinati, anguste perforati, hyalini; *cilia* bina, bene evoluta, appendiculata, papillosa, hyalina; *spori* 0, 015 mm, lutescenti-virides, laevissimi; *operculum* conicum, acute apiculatum.

Patria. Tasmania, Port Cygnet, Lymington, ad terram argillosam, Sept., 1889. W. A. Weymouth, n. 1846.

Species *Br. brachytheciellae* C. Müll., cujus specimina sterilia tantum possidemus, valde affinis, sed innovationibus gemmiferis, foliis superne serrulatis dignoscenda.—*Brotherus's Australian Mosses*, V. p. 118.

32. *Bryum (Eubryum) microsporum*, Broth. n. sp.

Dioicum; caespitosum, caespitibus humilibus, densis, pallide lutescenti-viridibus, haud nitidis; *caulis* brevissimus, basi fusco-radiculosus, dense foliosus, innovationibus vix ultra

5 mm altis, erectis, strictis, dense foliosis, ob folia accrescentia clavatis; *folia* sicca adpressa, humida suberecta, carinato-concava, oblongo-ovata, longe aristata, marginibus inferne revolutis, integris, limbata, limbo concolore, e seriebus cellularum angustarum 3—4 formato, nervo lutescente, basi rufescente, in aristam elongatam, flexuosulam, integram excedente, cellulis teneris, laxe oblongo-hexagonis, basilaribus rectangularibus, *innovationum* superne minutissime denticulata; *brac'ae perichaetii* multo minores, longe aristatae, marginibus erectis, integris; *seta* 3—5 cm alta, stricta, tenuis, fuscescenti-rubra, nitidiuscula; *theca* pendula, sporangio oblongo, collo sicco ruguloso, dimidiam partem sporangii aequante, pallide fuscidula; *annulus* c. 0, 15 mm latus, per partes secedens; *peristomium* duplex; *exostomii* dentes lanceolato-subulati, c. 0, 55 mm alti et c. 0, 1 mm lati, lamellis c. 25, pallidi, apice hyalini, scabridi; *endostomium* liberum, flavidulum, minutissime papillosum; *processus* carinati, late perforati; *cilia* bina, elongata, longe appendiculata, papillosa, hyalina; *spori* 0, 010—0, 012 mm, lutescenti-virides, laevissimi; *operculum* convexo-conicum, apiculatum.

Patria. Tasmania, Peppermint Bay, Mason's Creek, Nov. 1889. W. A. Weymouth n. 1848.

Species *Br. altiseto* C. Müll. habitu similis, sed inflorescentia dioica, foliis longius et tenuius aristatis nec non theca angustiore optime diversa. — *Brotherus's Australian Mosses*, V. p. 116.

33. *Bryum (Eubryum) ovicarpum*, Broth., n. sp.

Dioicum; pusillum, gregarium; *caulis* brevissimus, basi radiculosus, dense foliosus, subgemmaformis, innovationibus brevissimis, inferne nudis, apice dense foliosis: *folia* imbricata, ovata vel ovato-ovalia, nervo excedente longe aristata, marginibus erectis, integris, elimbata, nervo crasso, rufescente in aristam elongatam, strictam, acutam, integram, hyalinam excedente, cellulis laxe rhombeis, basilaribus subrectangularibus; *seta* 1 cm alta, tenuissima, rubra; *theca* nutans, minuta, cum collo crasso, ruguloso, pallidiore ovato-ovalis, atropurpurea; *annulus* per partes secedens, c. 0, 075 mm latus; *peristomium* duplex; *exostomii* dentes lanceolato-subulati, c. 0, 4 mm alti et c. 0, 06 mm lati, lamellis c. 15, pallidi, basi rufescentes, apice hyalini, scabridi; *endostomium* liberum, flavidulum, minutissime papillosum; *processus* carinati, angustissime perforati; *cilia* bina bene evoluta, brevissime appendiculata, hyalina, papillosa; *spori* 0, 010 mm, ochracei, laevissimi; *operculum* alte conicum.

Patria. Tasmania, Hobart, ad terram, Dec., 1891. W. A. Weymouth, n. 1834.

Species *Br. pacythecae* C. Müll. affinis, sed theca minuta, ovato-ovali prima fronte dignoscenda. — *Brotherus's Australian Mosses*, V. p. 117.

34. *Eriopus tasmanicus*, Broth., n. sp.

Dioicus; gracilis, viridis, superne lutescenti-fuscescens, haud nitidis; *caulis* 2—3 cm altus, adscendens, superne arcuatus, complanatus, cum foliis 2, 6—3 mm latus, inferne dense, superne parcius radiculosus, radiculis elongatis, fuscis, dense foliosus, subsimplex; *folia* sicca imbricata, humida planiuscula, *lateralia* erecto-patentia, obovata, apiculo acuto terminata, marginibus erectis, superne minutissime serrulatis, late limbata, limbo e seriebus 4—5 cellularum angustarum formato, nervis binis, brevissimis, altero saepe obsoleto, cellulis in medio folii ovali-hexagonis, 0, 050—0, 060 mm longis et c. 0, 025 mm latis, superne sensim minoribus, basilaribus oblongo-hexagonis, *dorsalia* et *ventralia* adpressa, minora. Caetera ignota,

Patria. Tasmania, Hobart Waterworks, Gentle Annie, March, 1894. W. A. Weymouth.

Species *E. cristato* (Hedw.) Jaeg. affinis, sed statura multo minore folisque minutius serrulatis, latius limbatis facillime dignoscenda.—*Brotherus's Australian Mosses*, V. p. 125.

35. *Fissidens leptocladus*, C. Müll.-Broth., n. sp.

Hab.—Guy Fawkes Rivulet, near Hobart, on rocks, Sept., 1890, and Jan., 1897. W.A.W., Nos. 385, 2, 157.

36. *Philonotis rigens*, Broth., n. sp.

Hab.—The Bridge Gully, near Glen Rae, Wattle Hill, Jan. 1891, W.A.W., No. 556.

37. *Weissia* (*Hymenostomum*) *Weymouthi*, C. Müll., n. sp.

Hab.—On wet bank, Cradoc, Huon, Sept., 1889, W.A.W., No. 163.

NEW VARIETIES.

3. *Acanthocladium extenuatum*, Brid., var. *rivuletorum*, Broth., n. var.

Hab.—West Coast, on the ground, banks of creeks, Macquarie Harbour, Nov., 1896. T. B. Moore (Herb. W.A.W., No. 2,069).

4. *Sphagnum Australe*, Mitt., var. *grandiosum*. Warnst., n. var.

Hab.—Huon, on old tramway, Arve Road, Franklin, W.A.W., No. 2,063.

MOSSES NEW TO TASMANIA.

41. *Barbula unguiculata*, Hedw.

Hab.—New Town, on the ground in paddock Foster-street, March, 1893. W.A.W., No. 1,497.

42. *Bryum cupulatum*, C. Müll., f. *seta brevior*.

Hab.—Launceston streets, Aug., 1886. A. J. Taylor.
(Herb. Bastow and W.A.W.)

43. *Bryum (Eubryum) laevigatum*, Broth.

Dioicum; gracile, caespitosum, caespitibus densis, inferne ferrugineis, superne laete viridibus, nitidiusculis; *caulis* fertilis humilis, longe radiculosus, apice foliosus, innovationibus singulis vel binis, 1 cm altis, dense foliosis obtusis; *folia caulina* erecto-patentia, elongate oblonga, obtusiuscula, marginibus erectis, integerrimis, limbata, limbo e seriebus tribus cellularum composito, nervo crasso, rufescente, cum apice evanido, cellulis ovali-vel oblongo-hexagonis, basilaribus subrectangularibus, *innovationum* sicca imbricata, humida erecto-patentia, subcymbiformi-concava, oblonga, marginibus erectis, superne minutissime serrulatis, limbata, limbo triseriato, nervo cum apice evanido vel in apiculum erectum excedente, cellulis ovali-vel oblongo-hexagonis, basilaribus subrectangularibus; *bracteae perichaetii* internae foliis multo minores, lanceolatae, archegonia numerosa includentes; *seta* vix 1,5 cm alta, flexuosa, tenuis, purpurea; *theca* horizontalis vel nutans, pyriformis, collo sporangium aequante, sicca laevis, deoperculata sub ore haud constricta, demum rubra; *annulus* 0,10 mm latus, per partes secedens; *peristomium* duplex; *exostomii* dentes c. 0,35 mm longi et c. 0,09 mm lati, lutei, apice hyalini, lamellis c. 20; *endostomium* liberum, sordide hyalinum, minute sed densissime papillosum; *processus* dentium longitudinis, carinati, anguste perforati; *cilia* rudimentaria; *spori* 0,015—0,017 mm, lutescentes, laevissimi; *operculum* convexo-conicum, apiculatum. Species *Br. laevigato* Hook. fil. Wils. affinis, sed statura multo minore et peristomio ciliis rudimentariis raptim dignoscenda.—*Broth. Australian Mosses*, IV., p. 88.

Hab.—New Town Falls, on rock, August, 1889. W.A.W., No. 1,845. Locality unrecorded. W.A.W., No. 1,849.

(Also New Zealand.)

44. *Campylopus Kirkii*, Mitt.

Dr. Brotherus says:—"That moss from Tasmania which my friend A. Geheeb, under the name of *Dicnemon Moorei*, Broth. Geh., mentions in *Revue Bryologique*, 1897, p. 67, I have by a further examination found to be *Campylopus Kirkii*, Mitt., earlier found in New Zealand."—*Australian Mosses*, IV., p. 74.

Hab.—West Coast, on the ground, Jones's Track, Macquarie Harbour. T. B. Moore (Herb. W.A.W., 2,015 b).

45. *Campylopus subappressifolius*, Broth. Geh.

Hab.—West Coast, Mount Darwin, damp places, alt. 3,400ft., March. 1893, T. B. Moore (Herb. W.A.W., No. 1,556); and on gravelly button-grass hills, Jones's Track, South Sprent River, T. B. Moore (Herb. W.A.W., No. 2,015).

46. *Hedwigia albicans* (Web.) Lindb.

Hab.—Hobart Rivulet, on dry rock, January, 1898, W.A.W., No. 2,167.

47. *Sphagnum centrale*, C. Jensen = *S. intermedium*, Russow.

Hab.—Brown's River, 1885, F. Abbott (Herbs. Bastow and W.A.W.). In a bog, Brown's River, 1894, C. D. Hazell (Herb. W.A.W., No. 1,915). Form *brachy-dasyclada*, R. A. Bastow, No. 531 (Herb. W.A.W.)

Var. *flavo-glaucescens*, Russ.

Hab.—Blue Tier Range, Sept., 1897, W. P. Kirwan (Herb. W.A.W., No. 2,123). Weldborough, Murphy's Creek, Aug., 1897 (f. *brachyclada*, Warnst.) P. H. Weymouth (Herb. W.A.W., No. 2,122).

Var. *fusco-pallescent*, f. *brachy-dasyclada*, Warnst.

Hab.—Weldborough, in a bog, Aug., 1897, W.A.W., No. 2,121.

Var. *flavo-pallescent*, f. *brachy-dasyclada*, Warnst.

Hab.—Blue Tier Range, Sept., 1897. W. P. Kirwan (Herb. W.A.W., No. 2,124).

48. *Sphagnum cuspidatum* (Ehrh.)Var. *submersum* (Schimp.), f. *serrulata* (Schlieph).

Hab.—West Coast, floating in water of sandy ditch, West Strahan, Oct., 1893, W.A.W., No. 2,063.

49. *Tortula panduræfolia*, Hpe. C.M.

Hab.—Mount Rumney, Nov., 1885. R. A. Bastow (Herb. W.A.W.) On stone, behind Knocklofty, near Hobart, Jan., 1888, W.A.W., No. 1577.

50. *Ulota fulva*, Brid.

Hab.—West Coast, on wood, Comet-Dundas road, Oct., 1893, W.A.W., No. 1,654.

51. *Zygodon obtusifolius*, Hook.

Hab.—West Coast, on trees, Sophia Point, Macquarie Harbour, T. B. Moore, No. 26 (Herb. W.A.W., No. 1,999).

NEW HEPATICS.

1. *Aneura dentata*, Steph., n. sp., 1899. Species Hepaticarum I.

Hab.—Lottah, on wet bank, August, 1897, W.A.W. (a few admixed fragments); and St. Crispin's, Mt. Wellington, on rocks, Jan., 1899, W.A.W., Nos. 570, 572-574.

2. *Aneura gracilis*, Steph., n. sp., 1899. Species Hepat. I.

Hab.—Guy Fawkes Rivulet, near Hobart, Jan., 1897, W.A.W.; Deep Creek and Bower Creek, Mt. Wellington, alt. 1,600ft., Dec., 1897; Hobart Rivulet, Jan., 1898; St. Crispin's, on tree fern and on face of wet rocks, alt. 2,200ft., and Watchorn's Hill, on bank of watercourse near State-school, Jan., 1899, W.A.W., Nos. 252a, 296/7, 309, 328, 363, 369, 434, 566, 568.

3. *Aneura longiflora*, Steph., n. sp., 1899. Species Hepat. I.

Hab.—Blue Tier near Lottah, Aug., 1897, and Bower Creek, Mount Wellington, alt. 2,000ft., Dec., 1897, W.A.W., Nos. 208, 210, 360.

4. *Aneura tasmanica*, Steph., n. sp., 1899. Species Hepat. I.

Hab.—Guy Fawkes Rivulet, on wood, Sept., 1892, and Jan., 1898; Deep Creek, on stony bank, alt. 1,600ft., Dec., 1897; and Bower Creek, on wet rock, Dec., 1898, W.A.W., Nos. 228, 252, 307, 428. Locality unrecorded, R. C. Gunn (Herb. Mitten and Hobart Museum).

Of Gunn's specimen, which was marked *Sarcomitrium crassum* by Mr. Mitten, Herr Stephani writes:—" *Aneura* " *crassa* (Schwgr.) Nees is not to be found in any European " collection. It is reported to be collected 'in the Australian " Islands.' Such a vague expression does not permit us to " consider Gunn's plant as a reliable original. See my " *Species Hepat. I.*, p. 274."

5. *Cephalozia verrucosa*, Steph., n. sp., 1899. Species Hepat. I.

Hab.—On the Cataract Hill, Launceston, July, 1899, W.A.W., No. 694.

6. *Cephaloziella Levieri*, Steph., n. sp., 1899.

Hab.—Deep Creek, on stony bank (a few scraps with *Lepidozia glauca*, Steph.), alt. 1,600ft., Dec., 1897, W.A.W., No. 316 in part.

7. *Cheilolejeunea Weymouthi*, Steph., n. sp., 1899.

Hab.—Hobart Rivulet, on wet rock on margin, Nov., 1898, W.A.W., No. 403.

8. *Fimbriaria tasmanica*, Steph., n. sp., 1899.

Hab.—Beltana, on the Recreation Ground, June, 1899, and Launceston, on Trevallyn Hills, July, 1899, W.A.W., Nos. 672, 711, 714, 716.

9. *Fossombronia dentata*, Steph., n. sp., 1897.

Hab.—Launceston, on earth, Trevallyn, Sept., 1892, W.A.W., No. 13.

10. *Isotachis pusilla*, Steph., n. sp., 1899.

Hab.—Longley, on roadside bank, Huon-road, May, 1899, W.A.W., No. 649.

11. *Lejeunea (Eulejeunea) cuspidistipula*, Steph., n. sp., 1899.

Hab.—Mount Wellington, on live tree trunk (on *Zygodon* sp.), 25th Dec., 1897, alt. 2,500ft., W.A.W., No. 412.

12. *Lepidozia sexfida*, Steph., n. sp., 1899.

Hab.—Huon-road, on roadside bank, Longley, May, 1899, W.A.W., No. 650/1. North and South Upper Huon, on roadside banks, May, 1899, W.A.W., Nos. 652, 654/5, 660, 663.

13. *Lophocolea Weymouthi*, Steph., n. sp., 1899.

Hab.—Mount Wellington, Bower Creek, on trunk of tree fern, and on rocks, Dec., 1898, and St. Crispin's, on decayed wood, alt. 2,200ft., Jan., 1899, W.A.W., Nos. 420, 421, 565.

14. *Plagiochila squarrosa*, Steph., n. sp., 1900.

Hab.—On rock, Newman's Creek, Tasman Peninsula, Feb. 1899, W.A.W., No. 819.

15. *Radula Weymouthi*, Steph., n. sp., 1899.

Hab.—On decaying sassafras branch, Wellard Rivulet, Tasman Peninsula, Feb., 1899, W.A.W., No. 628.

16. *Riccia tasmanica*, Steph., n. sp., 1899.

Hab.—Beltana, River Derwent, on the ground, June, 1899, W.A.W., No. 674 *ex parte*.

17. *Tylimanthus homomallus*, Steph., n. sp., 1897.

Hab.—Blue Tier, Dec., 1895, E. McGregor (few specimens picked out—Herb. W.A.W.)

HEPATICES NEW TO TASMANIA.

1. *Acrobolbus piliferus* (Mitt. sub *Gymnanthe*), Schiffn.

Hab.—No locality or date recorded, W. Archer.

In Archer's Herbarium, Hobart Museum, there is a specimen named by Mitten *Gymnanthe pilifera*, but it does not appear to have been previously recorded for Tasmania.

2. *Acrobolbus unguiculatus* (Hook. f. Tayl.), Mitt.

Hab.—South Upper Huon, on bank of roadside ditch, May, 1899, W.A.W., 659, 662 b.

3. *Anastrophyllum schismoides* (Mont.), Steph.

Hab.—Blue Tier, Dec., 1895, E. McGregor. Herb. W.A.W., No. 195.

4. *Aneura Colensoi*, Steph. Species Hepat. I.

Hab.—Hobart Rivulet, on damp earth at margin of stream, Jan., 1898, W.A.W., Nos. 362, 366.

5. *Aneura erecta*, Steph. Species Hepat. I.

Hab.—Mount Wellington, on wood, Deep Creek, Dec., 1887, Bower Creek, Jan., 1888, on rock St. Crispin's, Jan., 1899, W.A.W., Nos. 406 in part, 569.

6. *Aneura minima*, Carr. Pears.

Hab.—Mount Wellington, on a tree St. Crispin's, Dec., 1895; on wet bank, Falls Track, Nov., 1896, W.A.W., Nos. 108, 179, 181, 207.

7. *Aneura nitida*, Colenso.

Hab.—Mount Wellington, on decayed wood St. Crispin's, Dec., 1895, W.A.W., No. 105.

8. *Aneura perpusilla*, Colenso.

Hab.—Tasman Peninsula, on decayed wood, Wellard Rivulet, Feb., 1899, W.A.W., No. 804.

9. *Aneura polymorpha*, Colenso.

Hab.—Hobart, on earth, Salvator Rosa Glen, W.A.W., No. 129 (b). Mount Faulkner, on bank of creek near Skye Farm, Dec., 1892, Mrs. Pettifer (Herb. W.A.W., No. 188).

10. *Aneura prehensilis* (Hook. f. Tayl.), Mitt.

Hab.—Mount Wellington, on log, Bower Creek, Dec., 1898, W.A.W., No. 431.

11. *Aneura stolonifera*, Steph. Species Hepat. I.

Hab.—Tasman Peninsula, 1893, Rev. John Bufton (Herb. W.A.W., 399). Mount Wellington, on wet bank Falls Track, Nov., 1896, W.A.W., No. 415.

12. *Anthoceros carnosus* (Hook. f. Tayl.), Steph. Species Hepat. I.

Hab.—Mount Wellington, on wet rocks Deep Creek, Dec., 1887, on rocks near the Springs, Dec., 1890 and 1894, W.A.W., Nos. 54, 54 (b) 55.

13. *Anthoceros crassus*, Steph.

Hab.—Western Rivulet, W. Archer. (Herb. Archer in Hobart Museum.)

14. *Cephalozia exiliflora* (Tayl.), Steph.

Hab.—Mount Wellington, on wood Deep Creek, alt. 1,600ft., Dec., 1887, and Geeveston, on burnt log, Nov., 1892, W.A.W.

15. *Chandonanthus squarrosus* (Hook.), Mitt.

Hab.—Mount Wellington, on the Springs Track, alt. 2,000ft., Nov., 1890, W.A.W., No. 73.

16. *Cheilolejeunea muscicola*, Steph. Species Hepat.

Hab.—Hobart Rivulet, on rocks in running water, Jan., 1898, W.A.W., No. 373.

17. *Chiloscyphus affinis*, Gottsche.

Hab.—River Mersey, on shady earth bank near Latrobe Waterworks, March, 1893, W.A.W., and Mount Wellington, on wet rock in Bower Creek, Dec., 1898, W.A.W., No. 426.

(Also Australian Alps, F. v. M.)

18. *Chiloscyphus asperrimus*, Steph. Species Hepat.

Hab.—West Coast, Moore's Track to Frenchman's Cap, T. B. Moore. (A few fragments picked out.)

19. *Chiloscyphus commutatus*, Steph. Species Hepat.

Hab.—Tasman Peninsula, on shady rocks, and on wet decayed wood, Newman's Creek, W.A.W., Nos. 604, 612.

20. *Chiloscyphus cuneistipulus*, Steph. Species Hepat.

Hab.—Mount Wellington, Deep Creek, Dec., 1887, alt. 1,600ft., W.A.W., No. 97 (a few specimens).

21. *Chiloscyphus ligulatus*, Colenso.

Hab.—Franklin, Price's Rivulet, Feb., 1892, W.A.W., No. 50. Mount Wellington, on wet rocks Guy Fawkes Falls, Sept., 1892, and St. Crispin's, alt. 2,200ft., Dec., 1895, and on face of dripping rocks Hobart Rivulet, Aug., 1896, W.A.W., 49, 115, 117.

22. *Chiloscyphus Moorei*, Steph. Species Hepat.

Hab.—West Coast, on Jones's Track, and on hard button-grass plains, Macquarie Harbour, Nov., 1896, T. B. Moore. (Herb. W.A.W., Nos. 150, 168.)

23. *Chiloscyphus Mülleri*, Gottsche.

Hab.—D'Entrecasteaux Channel, on wet bank of roadside drain, Middleton, Aug., 1894, W.A.W., 178.

(Also Australian Alps, F. v. M.)

24. *Chiloscyphus odoratus*, Mitt.

Hab.—Mount Wellington, on wood Deep Creek, alt. 1,600ft., Dec., 1887, W.A.W., No. 53.

25. *Chiloscyphus physanthus* (Tayl.), Mitt.

Hab.—Mount Wellington, Deep Creek, Dec., 1887 (fragments with other hepatics), W.A.W., and Guy Fawkes Rivulet, May, 1890, W.A.W., No. 184.

26. *Chiloscyphus trispinosus*, Mitt.

Hab.—Tasman Peninsula, on wood. Newman's Creek. March, 1891, W.A.W. (picked out from *Tricholea tomentella*),

27. *Fossombronina perpusilla* (Col.), Steph.

Hab.—Launceston, on earth, Trevallyn Hill, Sept., 1892, W.A.W., Nos. 389, 395.

28. *Frullania cinnamomea*, Carr. et Pears.

Hab.—Tasman Peninsula, on fallen sassafras, Newman's Creek, Feb., 1899, and Launceston, on rock, Cataract Hill, July, 1899, W.A.W., Nos. 776, 705.

29. *Frullania cranialis*, Tayl.

Hab.—Mount Wellington, on trunk of *Prostanthera*, Deep Creek Track alt. 1,600ft., Jan., 1899, W.A.W., Nos. 580, 582.

30. *Frullania pentapleura*, Tayl.

Hab.—Kempton, on rock on the Sugar Loaf, May, 1892, and Mount Wellington, on a tree, St. Crispin's, alt. 2,200ft., Jan., 1899, W.A.W., Nos. 217, 581.

31. *Frullania pycnantha*, Tayl.

Hab.—Launceston, on rock, Cataract Hill, July, 1899, W.A.W., Nos. 706, 707.

32. *Frullania spinifera*, Tayl.

Hab.—Guy Fawkes Rivulet, near Hobart, on trunk of tree, Jan., 1899, and Tasman Peninsula, on English oak, Carnarvon, Feb., 1899, W.A.W., Nos. 473, 476, 477, 775.

33. *Hymenophyton leptopodium* (Tayl.) Dum.

Hab.—Mount Wellington, Deep Creek, Dec., 1887, on wood, Guy Fawkes Rivulet, Jan., 1897, on rock and roots, Hobart Rivulet, Jan., 1899, on wet rocks St. Crispin's, Jan., 1899, W.A.W., Nos. 124, 457, 458, 460, 563 (in part).

34. *Hymenophyton podophylla*, Nees et Mont.

Hab.—Mountains towards Lake Pedder, Schuster, 1875, with f. flowers.—*Frag. Phyt. Aus. XI.*, p. 67 (supplement).

35. *Isotachis grandis*, Carr. et Pears.

Hab.—Mount Wellington, on top, amongst *Sphagna*, Feb., 1888, alt. 4,166ft., W.A.W., No. 57. West Coast, Sophia Point, Macquarie Harbour, T. B. Moore (Herb. W.A.W., No. 131).

36. *Isotachis inflexa*, Gottsche.

Hab.—Huon-road, on roadside bank near the Halfway Bridge at Longiey, Feb., 1892, W.A.W., No. 401.

(Also Blue Mountains, N.S.W., 1871, W. Woolls.)

37. *Lejeunea (Eulejeunea) Drummondii* (Tayl.).

Hab.—River Mersey, on trunk of tree near Latrobe Waterworks, March, 1893, W.A.W., No. 125. Guy Fawkes Rivulet, near Hobart, on *Prostanthera*, Jan., 1899, W.A.W., Nos. 469, 482. Tasman Peninsula, on rocks Newman's Creek, and on wood Wellard Rivulet, Feb., 1899, W.A.W., Nos. 613, 629.

38. *Lepicolea attenuata* (Mitt.) Spruce.

Hab.—Mount Wellington, Wellington Falls, March, 1886, R. A. Bastow (Herb. W.A.W., 66*d*). On rocks, Sept., 1891, and near the Organ Pipes, Dec., 1894, W.A.W., Nos. 186, 198. West Coast, Comet-Dundas Road, Grubb's Tramway, Zeehan, and West Straban, Oct., 1893, W.A.W., Nos. 66, 66*b* & *c*. Blue Tier, Dec., 1895, E. McGregor, and Sept., 1897, W. P. Kirwan (Herb. W.A.W., No. 214.) West Coast, Macquarie Harbour, Nov., 1896, T. B. Moore (Herb. W.A.W., No. 167.)

39. *Lepidozia asymmetrica*, Steph.

Hab.—Mount Wellington, Deep Creek, Hobart Rivulet, and Bower Creek, Dec., 1897, Jan. and Dec., 1898, W.A.W., Nos. 281, 345, 364, 406*b*. North Upper Huon, on roadside bank, May, 1899, W.A.W., No. 653.

40. *Lepidozia chaetophylla*, Spruce.

Hab.—Tasman Peninsula, on tree fern, Wellard Rivulet, Feb., 1899, W.A.W., 808.

41. *Lepidozia chordulifera*, Tayl.

Hab.—West Coast, Jones's Track, T. B. Moore. (Herb. W.A.W., No. 135.)

42. *Lepidozia concinna*, Colenso.

Hab.—Mount Wellington, St. Crispin's, Jan., 1899, W.A.W., No. 591b, alt. 2,200ft.

43. *Lepidozia glauca*, Steph.

Hab.—Mount Wellington, Deep Creek, alt. 1,600ft., Dec., 1897, W.A.W., No. 316.

44. *Lepidozia magellanica*, Steph.

Hab.—Tasmania, locality not recorded, W.A.W.

45. *Lepidozia parvitexta*, Steph.

Hab.—Mount Wellington, Bower Creek, alt. 1,500ft., and St. Crispin's, alt. 2,200ft., Jan., 1888, Nov., 1890, Dec., 1895, W.A.W., Nos. 3, 67, 106. West Coast, Macquarie Harbour, July, 1893, and Nov., 1896, T. B. Moore (Herb. W.A.W., Nos. 132, 166). Blue Tier, Dec., 1895, E. McGregor.

46. *Lepidozia Saddlensis*, Massalonga.

Hab.—West Coast, Mount Darwin (amongst *Symphogyna obovata*, 1893, T. B. Moore. (Herb. W.A.W., No. 381.)

47. *Lepidozia setiformis*, De Notaris.

Hab.—Sandfly Road, near Ludbey's, Dec., 1888, W.A.W., No. 410 (a few fragments).

48. *Lophocolea allodonta*, Mitt.

Hab.—Port Esperance, on wood, main road, W.A.W., No. 46. Mount Wellington, East Slope and Bower Creek, Dec., 1897, W.A.W., Nos. 261, 350, 356. Tasman Peninsula, on tree, Wellard Rivulet, Feb., 1899, W.A.W., No. 816 in part.

49. *Lophocolea alternifolia*, Mitt.

Hab.—Mount Wellington, on fallen branches of trees, Bower Creek, Dec., 1897, W.A.W., No. 343.

50. *Lophocolea australis*, Gottsche.

Hab.—West Coast, Porteus's Gully, Queen River Road, Feby., 1891, W.A.W., No. 94 (few fragments) Mt. Wellington: on wet rock in Bower Creek, Dec., 1898; on stony bank, Deep Creek Track, near Trolly hut, Jan., 1899; on rock Watchorn's Hill, Jan., 1899. W.A.W., Nos. 418, 496, 511.

51. *Lophocolea bispinosa* (Hook. f. Tayl.) Mitt.

Hab.—Hobart Rivulet, Dec., 1897, and Jan., 1898. Mt. Wellington, on the Springs Track, and on rocks Deep Creek, Dec., 1897; on rock in Bower Creek, Dec., 1898; and on rock St. Crispin's, Jan., 1899. New Town Rivulet, June, 1899. W.A.W., Nos. 241, 274, 302/3, 372, 427, 515/6, 519, 521, 719.

52. *Lophocolea Bridelii*, Gottsche.

Hab.—Blue Tier, Sept., 1897, W. P. Kirwan (Herb. W.A.W.). Mt. Wellington, on rock Deep Creek, Dec., 1897; on rock and native laurel St. Crispin's; on Deep Creek track, and at Watchorn's Creek, Jan., 1899. W.A.W., Nos. 304, 493, 514, 517, 575.

53. *Lophocolea Campbelliana*, Steph. Species Hepat.

Hab.—Hobart Rivulet, Dec., 1892. W.A.W. (amongst *Dicranum*).

54. *Lophocolea corticola*, Steph. Species Hepat.

Hab.—Mt. Wellington, on rock St. Crispin's, Jan., 1899, W.A.W., No. 558. Tasman Peninsula, on wet decayed wood Newman's Creek, and on decayed wood Wellard Rivulet, Feb., 1899, W.A.W., Nos. 606, 608.

55. *Lophocolea erectifolia*, Steph. Species Hepat.

Hab.—Mount Wellington, St. Crispin's, Dec., 1895, W.A.W., No. 111.

56. *Lophocolea Lauterbachii*, Steph.

Hab.—Tasman Peninsula, on a tree Wellard Rivulet, Feb., 1899, W.A.W., Nos. 564 in part, 802.

57. *Lophocolea Moorei*, Steph. Species Hepat.

Hab.—West Coast, on track to Frenchman's Cap, 1893 (amongst *Radula plicata*), T. B. Moore (Herb. W.A.W., No. 138). Huon-road, on wood Millhouse's Falls, March, 1893, W.A.W., No. 92. Mount Wellington, on wood St. Crispin's, Dec., 1895, and Jan., 1899, and on stony bank Deep Creek, Dec., 1897, W.A.W., Nos. 280/1, 502/3.

58. *Lophocolea multipenna*, Tayl.

Hab.—West Coast, King River, T. B. Moore (Herb. W.A.W., No. 163); on wood near Leslie Junction, Dundas, Oct., 1893 (amongst *Plagiochila ramosissima*), W.A.W., No. 767. Mount Wellington, on rocks in running water, St. Crispin's, Jan., 1899, W.A.W., No. 513.

59. *Lophocolea planiuscula*, Tayl.

Hab.—Franklin, Huon, on old tramway Price's Rivulet, Feb., 1892, W.A.W., No. 119. Mount Wellington, Falls Track, Nov., 1896, W.A.W., No. 202.

60. *Lophocolea rotundistipula*, Steph. Species Hepat.

Hab.—Mount Wellington, on boulders in running water, St. Crispin's, alt. 2,200ft., W.A.W., No. 107.

61. *Lophocolea rupicola*, Steph.

Hab.—Mount Bischoff, on stone River Waratah, April, 1892, W.A.W., No. 187.

62. *Lophocolea submarginata*, Tayl.

Hab.—Mount Wellington, Bower Creek, Dec., 1897 (mixed with *Hymenophyton phyllanthus*), W.A.W.

63. *Lophocolea subporosa*, Tayl.

Hab.—Mount Wellington, on decayed wood, Bower Creek, Dec., 1897 (a few admixed fragments), W.A.W.

64. *Lunularia cruciata* (L.) Dum. = *L. Vulgaris*, Micheli.

Hab.—On the ground, Mona Vale, near Ross, August, 1899, W.A.W., 862.

65. *Marchantia cephaloscypha*, Steph. Species Hepat.

Hab.—Mount Wellington, north slope, Jan., 1888, W.A.W., No. 130. Hastings, on Hay's tramway, April, 1888, W.A.W., No. 130b. Latrobe, on the ground, Hazeldean, March, 1893, and Tasman Peninsula, on the ground near Brown Mountain, Jan., 1899, W.A.W., Nos. 128, 756. Gould's Country, Jan., 1897, Mrs. W. A. Weymouth (Herb. W.A.W., No. 206). Derwent Valley, Back River Creek, Dec., 1898, Miss Jean Downie (Herb. W.A.W., No. 446).

66. *Marchantia fusca*, Steph., Bull. Herb. Boiss., 1899.

Hab.—Mount Wellington, on wet bank Deep Creek, alt. 1,600ft., Dec., 1897, and on wet bank in bed of Bower Creek, alt. 2,000ft., Dec., 1898, W.A.W., Nos. 306, 447/8.

67. *Marsupidium setulosum*, Mitt.

Hab.—Mount Faulkner, on dry rocks near Skye Farm, Dec., 1892, W.A.W. Blue Tier, Dec., 1895, E. McGregor (Herb. W.A.W., No. 453).

68. *Mastigobryum accretum*, Lehm. Ldnbg.

Hab.—West Coast, on wood Grubb's Tramway, Zeehan, Oct., 1893, W.A.W., No. 229. Also near Leslie Junction, Dundas, Oct., 1893, W.A.W., No. 767 in part (a scrap). Dr. Levier says of this plant:—"Highly interesting. . . Mr. Stephani writes that *Mastigobryum accretum*, an Australian "species not found in Tasmania since 1830, and quoted with "doubt, is now perfectly sure."

69. *Mastigobryum elegans*, Colenso.

Hab.—Mt. Wellington, St. Crispin's, Jan., 1888, W.A.W., No. 4. Blue Tier, Dec., 1895, E. McGregor.

70. *Mastigobryum Mittenii*, Steph. Species Hepat.

Hab.—Port Esperance, Aug., 1887, D. Purvis (Herb. W.A.W., 226.) Lymington (Port Cygnet), Sept., 1887, Rev. F. C. B. Fairey (Herb. W.A.W., 223). Mount Wellington, Springs Track, Dec., 1890; Deep Creek, Dec., 1893 and 1897, on a log St. Crispin's, Jan., 1899, W.A.W., Nos. 224/5, 227, 319, 532. Blue Tier, Dec., 1895, E. McGregor (Herb. W.A.W.). West Coast, Moore's Track to Frenchman's Cap, T. B. Moore (Herb. W.A.W., 136); North-East Dundas, Oct., 1893, Miss C. Page. Weldborough, 1897, Gilbert Murphy (Herb. W.A.W., 487). Tasman Peninsula, Rev. John Bufton (Herb. W.A.W., 400); on decayed wood and on sassafras Wellard Rivulet, W.A.W., Nos. 642/3.

71. *Mastigobryum mooreanum*, Steph. Species Hepat.

Hab.—West Coast, Jones's Track, North Sprent River, T. B. Moore (Herb. W.A.W., 147).

72. *Metzgeria atrichoneura*, Spruce.

Hab.—Tasman Peninsula, amongst *Tylimanthus tenellus*, Wellard Rivulet, Feby., 1899, W.A.W., 761 in part.

73. *Metzgeria nitida*, Mitt.=*M. Australis*, Steph.

Hab.—Mount Wellington, Deep Creek, Dec., 1887; St. Crispin's, Dec., 1895; Bower Creek, Dec., 1897, and elsewhere, W.A.W., Nos. 27, 29, 32, 110, 242, 267, 462, etc. West Coast, Frenchman's Cap, and Jones's Track to Huon, T. B. Moore (Herb. W.A.W., Nos. 142, 146). Tasman Peninsula, on wood, Wellard Rivulet, Feby., 1899, W.A.W., Nos. 769, 784, 801.

74. *Metzgeria saccata*, Mitten.

Hab.—Mount Wellington, on *Orthotrichum tasmanicum*, growing on a falling branch, alt. 2,500ft., Dec., 1897, W.A.W., No. 407. Tasman Peninsula, on *sassafras*, Wellard Rivulet, Feb., 1899, W.A.W., No. 782 in part.

75. *Odontoschisma* sp. (incomplete).

Hab.—Launceston, on wood Trevallyn Gully, off First Basin, Jan. 1888, W.A.W., No. 42. West Coast, Jones's Track, T. B. Moore (Herb. W.A.W., No. 154).

76. *Plagiochila apiculata*, Steph.

Hab.—Mount Wellington, on a bank St. Crispin's Track, on rocks St. Crispin's, and on rock Deep Creek Track, Jan., 1899, W.A.W., Nos. 542, 549, 551/2, 555.

77. *Plagiochila fuscella*, Tayl. (?—incomplete).

Hab.—Emu Bay, Jan., 1892, J. H. Royce (Herb. W.A.W., No. 68).

78. *Plagiochila incurvicolla* (Hk. f. Tayl.)

Hab.—Mount Wellington, Fork Creek, Oct., 1888, W.A.W. Hobart Rivulet, Dec., 1897, W.A.W., No. 245.

79. *Plagiochila intertexta* (Hk. f. Tayl.)

Hab.—Mount Wellington, east slope, alt. 2,500ft., Dec., 1897, W.A.W., No. 270.

80. *Plagiochila Kingiana*, Gottsche.

Hab.—Hobart Rivulet, on damp earth at margin of stream, Jan., 1898, W.A.W., No. 365.

81. *Plagiochila pleurota* (Hk. f. Tayl.)

Hab.—Mount Wellington, on *sassafras* Bower Creek, Dec., 1897, W.A.W., No. 339.

82. *Plagiochila ramosissima*, Lindenberg.

Hab.—West Coast, on wood near Leslie Junction, Dundas, Oct., 1893, W.A.W., No. 767.

83. *Plagiochila Taylora*, Steph.

Hab.—Mount Wellington, on rock in bed of Bower Creek, Dec., 1898; on rocks in running water, Millhouse's Creek; on rocks St. Crispin's, and on rock Deep Creek, Jan., 1899, W.A.W., Nos. 439, 545, 548, 550, 553/4.

84. *Plagiochila Traversii*, Gottsche.

Hab.—Hobart Rivulet, Dec., 1897, W.A.W., No. 247.

85. *Radula Mitteni*, Steph. Species Hepat.

Hab.—Guy Fawkes Rivulet, Nov., 1891; Jan., 1898; on

rock Jan., 1899. Huon Road, Millhouse's Falls, March, 1893; Mt. Wellington, Bower Creek, Dec., 1898, W.A.W., Nos. 21, 90/1, 251, 425, 443. Tasman Peninsula, on shady rock Newman's Creek, on decayed wood and on musk Wellard Rivulet, Feby., 1899, W.A.W., Nos. 623, 625, 627, 630.

86. *Radula plicata*, Mitt.

Hab.—Mount Wellington, Bower Creek, Jan., 1888; New Town Falls, Aug., 1889, W.A.W., Nos. 1, 88. Port Cygnet, Homedale Gully, Sept., 1889, W.A.W., No. 9. Tasman Peninsula, Wellard's Track, Mch., 1891, W.A.W., No. 185. West Coast, Strahan West, Oct., 1893, W.A.W., No. 172. Blue Tier, Dec., 1895, E. McGregor (amongst *Lophocolea Moorei*).

87. *Saccogyna australis*, Mitt.

Hab.—Huon Road, Longley, at base of wet rocks near Bridge, Nov., 1892 (amongst *Sphagnum australe*), W.A.W. West Coast, Moore's Track to Frenchman's Cap (fragments amongst *Chiloscyphus asperrimus*), T.B. Moore (Herb. W.A.W.).

88. *Schistochila* (?) *Spegazziniana*, Massalonga.

Hab.—Macquarie Harbour, Birch Inlet, Nov., 1896. T. B. Moore, No. 185 (Herb. W.A.W., 169). Sterile.

89. *Symphyogyna interrupta*, Carr. Pears.

Hab.—Mount Wellington, Bower Creek, Jan., 1888, W.A.W., No. 23.

90. *Tylimanthus brecknockiensis* (Massalonga, Hep. Fueg., 1895, cum icone, sub-Adelantho), Steph.

Hab.—Mount Wellington, Deep Creek, alt. 1,600ft., Dec., 1887 (amongst Hymenophyton), and Dec., 1897; on rock East Slope, Dec., 1897; on wet rock and on wood St. Crispin's, alt. 2,200ft., Jan., 1899, W.A.W., Nos. 278, 283, 259, 563, 594. Huon-road, Millhouse's Creek, March, 1893, W.A.W., No. 122. Blue Tier, Dec., 1895, E. McGregor (Herb. W.A.W., 193). West Coast, Gordon River, T. B. Moore (Herb. W.A.W., 165).

91. *Tylimanthus crystallinus* (Massalonga, Hepat. Fueg., sub-*Gymnanthe*, 1885, p. 238, tab. 22), Steph.

Hab.—Blue Tier, Dec., 1895, E. McGregor (Herb. W.A.W., 194). West Coast, Mount Darwin, T. B. Moore (Herb. W.A.W., 152).

92. *Tylimanthus perpusillus*, Colenso.

Hab.—Mount Wellington, on rock and wood St. Crispin's, alt. 2,200ft., Jan., 1899, W.A.W., Nos. 533/4.