

SOME ADDITIONS TO THE MOSS FLORA OF TASMANIA.

BY W. A. WEYMOUTH.

This paper will deal (1) with Tasmanian mosses new to science; (2) with known species now first recorded for Tasmania; and (3) with a few already recorded for this colony, but either rare or not previously described.

The determinations are by European scientists. One of these, Dr. O. Burchard, of Hamburg, has reported 65 new species, a list of which was received from him by the Secretary of this Society in January, 1892. None of these determinations having, up to date, been supported by descriptions for publication, I have hitherto refrained from calling your attention to them. Only a few that have been revised and confirmed by another authority are included in this paper.

Professor V. F. Brotherus, of Helsingfors, who has for some years been engaged upon the mosses of Australia, and more recently upon those of Tasmania also, has just published in Part II. of "Some New Species of Australian Mosses described by V. F. Brotherus" original descriptions of six new species from this colony. My versions of these descriptions are given below. Following them are other new species, for which descriptions will be forthcoming later on.

One of our most interesting mosses is *Pleurophascum grandiglobum*, Lindberg, which up to the present has been recorded only as collected by Mr. R. M. Johnston, near the Picton River. I can now add that it has been obtained by Mr. Wm. V. Fitzgerald in the neighbourhood of the Little Henty; by Mr. T. B. Moore on the highlands of Mount Tyndal; and by the Rev. John Bufton, F.L.S., at Port Davey. Mr. Johnston's specimens passed to Professor Lindberg very many years ago through the hands of Baron von Müeller, who also furnished Messrs. Moore and Bufton with the name.

I would call the attention of the Fellows present to the mounted examples on the table; and would especially mention that Mr. L. Rodway, to whom I am indebted for ever ready help with microscope and pencil, has kindly undertaken to illustrate some species by drawings of their several parts.

MOSSSES NEW TO SCIENCE.

1. *Ulota Weymouthi*, Burchard, n. sp.

Hab.—On wood, Falls Track, Mount Wellington, W. A. Weymouth, No. 615.

2. *Ulota cochleata*, Vent., n. sp.

Monoicous. In small, dense cushions, depressed, yellow-green. Stem creeping; branches erect, 1 cm. high. Leaves curled when dry, erecto-patent when wet, very dense, 2-10 mm. long, from a red, very concave, discoid-ovate base quickly contracted, linear-narrow-acuminate, acute, margin scarcely recurved below. Areolation above by cells 3-4 micromill. wide, rectangular, with thick, smooth walls; below, towards the base, marginal cells transparent, square; in the middle follow very narrow, fusoid cells, with very thick walls tinged with red. Nerve thin, extending to the apex. Perichaetial bracts larger, 3.5 mm., from a dilated reddish-brown base long lineal-lanceolate, with a flat margin. Male gemmulæ lateral, reddish-brown; antheridia numerous, 34 micromill. long, shortly stalked, linear. Vaginula bare, ovate, with short ochrea. Seta 3.5 mm. long. Capsule with short neck, oval, 1.5 mm. long. Operculum conic, with a short beak. Peristome of 8 reddish-brown teeth, reflexed when dry, 30 micromill. long, in double pairs, long acuminate, single thread-like legs, attenuate, perforate from anastomosing joints, densely and very minutely papillose. Cilia 8, thread-like, shorter, transparent. Stomata emersed, arranged in middle of capsule. Striæ 8, consisting of 3-4 series of wide cells tinged with yellow, running the whole length of the sporangium; the rest of the epicarpic cells quadrangular, very small, with walls by no means incrassate. Annulus very narrow, persistent. Calyptra yellow, bell-shaped-conic, brunescent at apex, densely pilose, strigose, divided at the base. Spores minutely papillose, 30-35 micromill. in diameter.

Hab. Mount Wellington, on trees, 1891, W. A. Weymouth, No. 898.

3. *Ulota anceps*, Vent., n. sp.

Monoicous. In small, dense cushions, green. Leaves scarcely curved when dry, erecto-patent, 1.5 mm. long, from a yellowish ovate and concave base gradually narrow, linear-lanceolate, acute, margin recurved below; nerve thin, vanishing in the apex. Upper cells 7 micromill. wide, round-ovate, walls not very incrassate, papillæ short, thick, prominent; lower cells longer, narrower, quadrangular; the marginal series, however, shorter, quadrate; all yellowish except the lowest, which are reddish. Perichaetial bracts up to 2.25 mm., from a rather long red base gradually linear-acuminate. Male gemmulæ lateral, reddish; antheridia 31 micromill. long. Vaginula with simple yellow hairs, oval, ochreate. Seta 3.5 mm. long. Capsule with short neck, up to 2.5 mm. long, ovate-elongate, furrowed for the whole length when dry. Striæ 8, furnished with a double series of cells. Stomata emersed, arranged in lower part of sporangium.

Annulus simple, persistent. Teeth 8, closely reflexed when dry, in double pairs, 24 micromill. long, obtuse, apex not free, not lacunose but sparingly perforate, joints dense, short, and very minutely papillose. Cilia 8, of equal length, thread-like, smooth. Calyptra yellow, strigose, densely pilose, the hairs being thick, rather rough, and of 4—5 series of cells. Spores minutely papillose, 30—35 micromill. in diameter.

Hab. Mount Wellington, on trees, 1891, W. A. Weymouth, No. 900.

4. *Ulota viridis*, Vent., n. sp.

Monoicous. Tufts depressed, green; stem creeping; branches scarcely 1 cm. high, erect. Leaves scarcely curved when dry, from an ovate concave base gradually linear-acuminate, acute, 1.5 mm. long. Areolation above by gently projecting cells, without papillæ; below at margin with 7—9 series of transparent and quadrate cells, forming a border; the middle part consisting of narrow, fusoid cells, with very broad walls tinged with red. Perichæatial bracts from a rather long base red, larger, 2 mm. long. Vaginula sparingly pilose, ovate. Seta 1.5—1.75 mm. long. Capsule pyriform, with tapering neck of equal length, 2 mm. long; when dry furrowed to the middle and beyond. Striæ short, scarcely a third of the sporangium long, consisting of 2—3 series of cells. Stomata emersed, dispersed in the neck. Teeth 8, reflexed when dry, in double pairs, apex entire and obtuse, minutely papillose, jointed. Cilia 8, of equal length, threadlike, smooth. Spores minutely papillose-aculeate, 23—25 micromill. in diameter. Calyptra conic-bell-shaped, scarcely covering half the capsule, divided at the base, pilose with yellow hairs consisting of two, rarely three, series of cells.

Hab.—Mount Wellington, on trees, Oct., 1890, W. A. Weymouth, No. 901.

This plant is very near to *U. Ludwigii*.

5. *Orthotrichum lateciliatum*, Vent., n. sp.

Monoicous. In tumescent tufts; stems erect, 2 cm. high. Leaves curved and laxly crisp when dry, erecto-patent when wet, from an ovate base long lanceolate, keeled, 3.33 mm. long, apex more or less acuminate, margin recurved up to apex, nerve lost in apex. Areolation above by round hexagonal cells, walls not incrassate, papillæ prominent, simple or two-pronged; below elongated, narrow cells, with walls not incrassate, complete the base. Inner perichæatial bracts rather small, with flat margin. Inflorescence lateral; male gemmulæ small, antheridia few, ovate-oblong, stalked, without paraphyses. Vaginula cylindric, sparingly pilose, with a distinct ochrea adhering to the seta. Seta 3.20 mm. long, twisted when dry. Capsule with short

neck, quickly becoming ovate-cylindric, 1.75 mm. long. Striæ extending to the middle of the capsule, composed of 4-5 series of rather wide cells, when dry prominent, furrowing the capsule to the middle. Stomata emersed, in lower part of sporangium. Annulus bi-triseriate, persistent. Peristome of 8 external teeth, red, laxly recurved when dry, in double pairs, entire, obtuse at apex, legs connected, jointed, joints very short, very densely papillose. Cilia 8 shorter, obtuse, papillose, reaching to half or more of the teeth, and having 3-4 joints. Spores 24—26 micromill. in diameter.

Hab.—Mount Wellington, on trees, W. A. Weymouth, No. 895, New Town Rivulet; and No. 897, St. Crispin's.

Akin to *O. Tasmanicum*, Hk. f. Wils., but more than sufficiently distinguished by its much greater size and distinct striæ, and other marks.

6. *Mniobryum Tasmanicum*, Broth., n. sp.

Dioicous; cæspitose. In tall, soft, pale, glaucous-green, somewhat loose tufts, not shining. Stems up to 8 cm. high, erect, flexuous, red, the lower part with fuscous radicles; branching by slender, laxly leaved innovations up to 3 cm. long. Leaves of the stem patent, of the innovations patulous; all nearly equal, shortly decurrent, linear-lanceolate, somewhat flat, acuminate, acute, about 3 mm. long and 0.47-0.53 mm. wide, margin erect everywhere, from middle to apex acutely serrulate, not bordered; nerve thin, about 0.05 mm. wide at the base, vanishing below the apex; cells elongate, narrow, in middle of leaf 0.175-0.225 mm. long and 0.015 mm. wide, all nearly equal, thin-coated, very smooth. The rest unknown.

Hab.—On the wet banks of streams, Mount Wellington, W. A. Weymouth, No. 1,151 Falls Track; No. 1,153 St. Crispin's; and No. 1,154 New Town Falls.

Near *Mn. albicanti* (Wahlenb.), Limpr., but differing specially in the narrower and narrowly acuminate leaves, acutely serrulate from middle to apex, and likewise in the much longer and narrower cells, pointed at the ends.

7. *Cyathophorum densirete*, Broth., n. sp.

Dioicous; slender, green or pale-yellow-green, shining. Stem creeping, covered with dense reddish-fuscous tomentum; stipites sparse, erect, slender, flexuous, apex more or less attenuate, simple, black, densely leafy. Leaves scarcely altered when dry, patulous when wet, irregular in outline, base ventricose at the upper side, ovate, acute, margin erect, coarsely and acutely serrate from middle to apex; nerve very short, rather broad, forked; cells rhomboid, firm and resisting, the upper 0.045—0.06 mm. long and 0.015—0.020 mm. wide, margin narrow, forming an indistinct border. Amphigastria much

smaller, symmetrical, round, with straight, very acute point, nerve obsolete. Perichaetial bracts from a sheathing base suddenly narrow, acute, apex sparingly but coarsely serrate. The rest as in *C. pteridioides*, Beauv.

Hab.—South Road Forest, Circular Head, on trunks of trees, April, 1892, W. A. Weymouth, No. 862. [New Town Falls, June, 1893, L. Rodway.]

Differs from *C. pteridioides* in its much smaller size, much denser areolation, and very short nerve.

8. *Isopterygium acuminatum*, Boswell, n. sp.

Hab.—On face of rocks, Bridge Gully, Glen Rae, Sorell, and on tree, Zeehan Railway, West Coast, 1891, W. A. Weymouth, Nos. 555 and 630. Mount Arthur, January 1887, D. Sullivan, ex herb. Melbourne, 30.

It is interesting to note that whilst this specimen was founded by Mr. Boswell on my No. 555, Mr. D. Sullivan's specimen, which I received recently from Professor Brotherus, takes priority in date.—W.A.W.

9. *Stereodon flagellirameus*, Burch. Broth., n. sp.

Hab.—On wood, Lymington, Port Cygnet, 1889, and Hobart Rivulet, 1893, W. A. Weymouth, Nos. 191 and 1288.

10. *Thamnium tenerascens*, Burch., n. sp.

Hab.—On wet rocks, Guy Fawkes Rivulet, 1890, and on wood and rock, South Road Forest, Circular Head, 1892, W. A. Weymouth, Nos. 278, 844-5, and 1,038.

11. *Sphagnum serrulatum*, Warnstorf, n. sp.

Hab.—In ditch, Zeehan Railway, West Coast, Feb. 1891, W. A. Weymouth, No. 622.

12. *Sphagnum macrocephalum*, Warnst., n. sp.

Hab.—On the ground, Lake Bellinger Track, Zeehan Railway, West Coast, Feb. 1891, W. A. Weymouth, Nos. 623-4.

13. *Sphagnum pseudo-rufescens*, Warnst., n. sp.

Hab.—In bog, top of Mount Wellington, 1888, W. A. Weymouth, Nos. 972-7.

MOSSES NEW TO TASMANIA.*

1. *Anisothecium crispum* (Schreb.), Lindb. Op. c. 26 (1878).

Syn.—*Dicranella Schreberi*, Schimp. Coroll. 13 (1855).

Dioicous; gregarious and tufted, $\frac{1}{2}$ —lin. high; yellowish-green. Leaves squarrose, from a dilated semivaginant base, narrowly lanceolate, carinate, irregularly denticulate towards

*[That is, not recorded in Fl. Tasm., in Mitten's list of 1859 (Linn. Jnl. iv.), in Mitten's Australian Mosses, 1882, or in Bastow's Mosses of Tasmania 1886.]

apex, not glossy; areolation firm, narrow, elongated; perichaetial bracts more shortly sheathing. Capsule on a purple seta, cernuous, ovate-oblong with scarce any neck, not striate, exannulate; lid conic, obliquely rostrate, large, purple; peristome purple. Male plant small, simple.—*Dr. Braithwaite's British Moss-Flora*, Vol. I., pp. 113-4, T. xvi. E.

On rocks, New Town Falls, 1889, and St. Crispin's, Mount Wellington, 1890, W. A. Weymouth, Nos. 123 and 519.

2. *Blindia robusta*, Hampe in Linnæa 1860, 627.

On top of Mount Wellington, 1890, W. A. Weymouth, Nos. 481 and 491.

(Also Australian Alps, Victoria, F. v. M., and N. S. Wales and New Zealand.)

3. *Dicranum polysetum*, Hampe.

At Buckland, 1887, W. Turvey (W. A. W. No. 454). Guy Fawkes Rivulet, Russell Falls, and Mount Wellington, W. A. Weymouth, Nos. 455, 456, and 464.

4. *Apalodium lineare* (Tayl.), Mitt.

On damp bank, Beaconsfield, 1892, W. A. Weymouth, No. 1133.

5. *Campylopus pudicus*, Hornsch.

Densely tufted, but only loosely cohering, with a dark-coloured tomentum, ascending, rather rigid, flexuose, rather naked below, subcomose above, interruptedly innovate with filiform, solitary, sub-cuspidate shoots springing out below the perigonium. Stem leaves lanceolate, canaliculate, narrow, produced into a more or less reflexed denticulate hyaline hair-point, above with connivent convolute margins, sparingly rough on the back, almost without cells at the wings; nerve broad, elamellate, base elongate, pellucid, thin, areolation above minutely elliptical. External perichaetial leaves similar to the cauline; internal more or less acuminate, rather broad, slightly denticulate, nerve thin; the innermost broadly convolute, short, coloured, areolation lax, nerve obsolete. Male flower formed of several narrow gemmæ.—*C. Müll. Syn Musc. I.*, p. 407.

Peppermint Bay, 1889, and Guy Fawkes Rivulet, 1890, W. A. Weymouth, Nos. 865 and 296.

(Also found in New South Wales and Queensland.)

6. *Campylopus Tasmanicus*, Schimp.

Peppermint Bay, 1889, McRobie's Gully, and Guy Fawkes Rivulet, 1896, W. A. Weymouth, Nos. 248, 274, and 907.

(Also the Grampians, Victoria, D. Sullivan.)

[Since this paper was read Dr. Brotherus writes:—" *Campylopus tasmanicus*, Schimp., has not yet been described. The

large material I received from you has made me doubt whether this species differs at all from *C. introflexus*. . . In any case it is identical with *C. introflexus*, Fl. Tasm.”]

7. *Grimmia mutica*, Hampe in Linnæa 1860, 631.

On wet rocks, Mount Faulkner, 1892, and on the Black Rock, Millhouse's Falls, Huon Road, 1893, W. A. Weymouth, Nos. 1,180 and 1,436.

(Also in Victoria, F. v. M., and N.S. Wales, Woolls.)

In Mitten's Australian Catalogue this=*G. apocarpa* var. *foliis muticis*, Fl. Tasm. II., 180.

8. *Tortula muralis* (L.), Hedw. Fund. II. 92 (1782).

Autoicous; densely pulvinate or cæspitant, yellowish or glaucous-green and canescent, sparingly branched. Leaves when dry appressed and twisting, when moist patent, lower oblongo-lanceolate, upper elongate, ligulate, with the apex obtuse, unequally prolonged or subcordate, minutely papillose, the margin yellowish, strongly revolute; nerve yellow, excurrent in a diaphanous hair; upper cells small, chlorophyllose, indistinct, basal rectangular, hyaline. Capsule on a purple or yellow seta, oblongo-subcylindric, pachydermous, regular, dark brown, annulus narrow, subpersistent; calyptra large, pale brown, lid obliquely conico-rostellate; peristome purple, closely convolute, on a very narrow basal membrane. Male inflorescence gemmaceous, on a short lateral branch, bracts ovate, obtuse, mucronate with the nerve.—Braithwaite's *British Moss-Flora*, Vol. I., p. 217.

On stone wall of Garden Crescent Reservoir, Hobart, 1890, W. A. Weymouth, No. 484.

(Also New Zealand.)

9. *Barbula subtorquata*, C. Müll. and Hampe in Linnæa 1853, 492.

On sandy bank, Pirate's Bay, East Coast, 1889, W. A. Weymouth, No. 254 (a).

(Also Mount Gambier, South Australia, F. v. M., Australian Mosses, pl. iii.)

10. *Streptopogon crispatus*, Hampe in Linnæa, 1876, p. 304 (under *Barbula*).

“Nearest to *S. mnioides*; differing in the patent-crisp leaves, the border vanishing at apex, and the immarginate perichæatial leaves. On Mount Macedon.”

On willow, Johnny's Creek, near Hamilton Road, 1893, W. A. Weymouth, No. 1258.

11. *Tetraplodon Tasmanicus*, Hampe in Linnæa 1876, p. 302.

In neighbourhood of Mount Zeehan, 1892, Wm. Fitzgerald (W.A.W. 785); Mount Darwin, 1893 (alt. 3,400ft.), T. B. Moore.

Strictly speaking this moss is not now newly recorded for Tasmania, for Hampe must have had an original specimen for determination, collected perhaps by Schuster. There is, however, no local record of it; but in Mitten's Australian Catalogue of 1882 *T. Tasmanicus* appears as identical with *Splachnum Gunnii*, H.f.W.

A comparison of our specimens with *S. Gunnii* of Gunn's collection in this Museum, made by Mr. L. Rodway and myself, shows that the present moss differs markedly from *S. Gunnii* in its entire instead of dentate leaves, the upper obovate-lanceolate with excurrent nerve, the lower ovoid-acuminate with nerve reaching to apex; in its brown seta; in its capsule, which has a subspherical not an oblate apophysis; and in its teeth, which are reflexed when dry, not erect.

[Since this was read, Hampe's description has reached me, by the courtesy of Dr. Brotherus, and it now follows:—"Densely compact, low, hardly an inch high, base attenuate, blackish, interwoven with tomentum, apex of a roselike crown, short, yellowish-green, densely leaved, simple or developing a short branch. Leaves concave, narrower at the base, obovate-acuminate, entire; nerve yellowish, cuspidate; cells lax, pellucid, the basal elongate, rectangular or parallelogrammic, towards apex of leaf gradually shorter and sub-hexagonal. Seta apical, short, thickened towards its apex into a vesiculose, membranous, ovate apophysis. Capsule small, blackish, attenuate from a broader base, conical, with small mouth; columella persistent; the teeth of the injured peristome short, rather wide, membranous, reflexed. The rest absent. Mount Towers, Lake Pedder, Tasmania. Scarcely to be compared with *T. urceolatus*; in its small, conical, small-mouthed capsule it differs in the widest way from all species."]

12. *Funaria sphaerocarpa*, C. Müll.

Very like *F. hygrometrica*. Leaves narrowly oblong-lanceolate, always complicate and crisp; nerve strong, excurrent, running the length of the leaf; cells everywhere elongate and lax, at margin narrower, reticulate; quite entire. Perigonial leaves entire. Capsule somewhat larger, *globose both when dry and when wet, without a neck*, lightly sulcate. Australasia, Green Cape, Twofold Bay.—*Bot. Zeit.* 1851, p. 546.

On loamy soil, Queen River Road, Macquarie Harbour, 1891, W. A. Weymouth, No. 644.

(Also found in Queensland.)

13. *Bryum Gambierense*, C. Müll. in Linnæa 1871, 148.

On the ground, Lymington, Port Cygnet, 1889, W. A. Weymouth, No. 242.

(Also on Mount Gambier, South Australia, and the Pyrenees, Victoria, F. v. M. and D. Sullivan.)

14. *Bryum Sullivani*, C. Müll. in Broth. Austral. Mosses II., p. 37.

On wet rocks, Circular Head, W. A. Weymouth, No. 1074. (Also found in Victoria.)

15. *Bryum caespiticioides*, C. Müll.

On loamy soil, Queen River Road, Macquarie Harbour, 1891, and Hobart Waterworks, 1892, W. A. Weymouth, Nos. 565 and 838.

16. *Hedwigia microcyathea*, C. Müll. in Bot. Zeit. 1851, 564.

"Very like *H. ciliata*, but the leaves have *angular, elliptical, rather firm cells*, scarcely or not at all crenulate at their walls, those in the middle longer, papillose, and *without chlorophyll, therefore not obscure*. Capsule *minute, hemispherical, cup-shaped, with large mouth*, and *very thick plicate neck*. Rocks below Esk River, near Launceston."

On rocks, Wattle Hill, Sorell, 1891, and the Sugar Loaf, Green Ponds, 1892, W. A. Weymouth, Nos. 714 and 870.

Mitten's Australian Catalogue ties *H. microcyathea*, C.M., with *H. ciliata*, Ehrh., but Professor Brotherus considers the former a good species.

17. *Hedwigidium Campbelliae*, C. Müll.

On rock, north slope, Mount Nelson, 1890, W. A. Weymouth, 913.

(Also Beaconsfield, Victoria, Miss Campbell.)

18. *Pterygophyllum Levieri*, Geheeb in Revue Bryologique 1881, p. 27.

"Dioicous; stem branched, complanate, pale yellowish; branches obtuse, densely leaved. Leaves complanate, sub-oblique, immarginate, from a rather narrow base oblong-spathulate, very obtuse, very minutely crenulate along the whole margin; cells prominent; nerve simple, vanishing under the apex, the basal and intermedial cells hexagonal and more or less elongate, the upper much smaller, rounded, incrassate. Perichætal leaves ovate, cuspidate, entire; cells hexagonal, elongate. Capsule deoperculate, oval, fuscous, shining like varnish, erect on a rather short, dark-coloured, shining seta. On Mount Wellington. Like *Pt. complanatum*, Hampe, but the capsule is larger and quite erect; the leaves have very minutely crenulate margins, and the perichætal leaves are entire."

On wet rocks, New Town Rivulet, 1889, and Guy Fawkes Rivulet, 1892, W. A. Weymouth, Nos. 118 and 861.

[Since this list was read, the writer finds *P. Levieri*, Geheeb, included for Tasmania in Baron F. Von Müeller's list in Sup. Frag. Phyt. Australiæ, Vol. XI., p. 113.]

19. *Rhaphidostegium callidioides*, Hampe and C. Müll. in Linnæa 1856, 213.

On wood, Mount Wellington, 1887-8, and Castra Road, Leven, 1892, W. A. Weymouth, Nos. 362, 370, 1,054, and 1,087.

(Also Sealers' Cove, F. v. M., Australian Mosses, Pl. XIV.)

20. *Rhaphidostegium calliferum*, Hampe and Geheeb.

Very much like *Hypnum callidioides*, C. Müll., but differing in the subdenticulate cauline leaves and the densely and sharply serrate perichæatial leaves. On Mount Wellington (Victoria), Beccari—*Revue Bryologique*, 1881, p. 27.

On wood, Mt. Wellington, W. A. Weymouth, No. 770.

21. *Plagiothecium lamprostachys*, Hampe in Linnæa 1859, 60.

On wood, McRobie's Gully, 1888, W. A. Weymouth, No. 400.

22. *Thuidium sparsum*, Hook and Wils. in Fl. N.Z., II. 109, t. 89, f. 5.

Dioicous. Stems very slender, matted, creeping, lin. long, 2-pinnately branched; branches short, very slender. Leaves dark green, very minute, spreading, incurved when dry, ovate or ovate-cordate, subobtuse, quite entire but rough at the edges; nerve short, pellucid, vanishing below the apex; perichæatial much larger, long acuminate, inner laciniate. Fruit-stalk $\frac{1}{2}$ in. long, smooth. Capsule inclined or cernuous, narrow, oblong.—Hooker's *Handbook N.Z. Flora*, p. 481.

Guy Fawkes Rivulet, 1890, W. A. Weymouth, No. 308.

(Also in New Zealand and Queensland.)

23. *Thuidium incompleto-pinnatum*, C. Müll.

St. Crispin's, Mount Wellington, 1888, W. A. Weymouth, No. 339.

Writing on 16th April, 1891, of this moss, Dr. Burchard says:—"It is only found until this time (before you) in New Zealand by Mr. R. Helms. Dr. Müller and I are very glad that you discovered this species in Tasmania."

24. *Fissidens Whiteleggei*, C. Müll.

On stony earth bank, Happy Valley, Mount Bischoff, 1892, W. A. Weymouth, No. 1018 (a).

Mixed with *Mittenia plumula* (Mitt.), Lindb.

(Also in New South Wales and Queensland.)

25. *Fissidens semilimbatus*, Hampe and C. Müll. in Linnæa 1853, p. 501.

"Dioicous, very dwarf, simple. Leaves in 5-6 opposite pairs, the lowest minute, the middle lanceolate, the perichæatial slightly cuspidate, concave from a broadly ovate base, apex

unequal, margined with a yellow border; the dorsal lamina narrow above the base, not margined; apical lamina lanceolate; nerve yellowish, rather thick, excurrent, not margined; cells everywhere small, hexagonal, chlorophyllose, soft. Capsule on rather long straight seta, red, not much inclined, oblong, minute; operculum rostellate, oblique; teeth of peristome narrow and purple.

“River Yarra.

“Like *F. bryoides*, but distinguished from that by the semi-limbate leaves. From *F. cuspidatus* it is also sufficiently marked off by the structure of its leaves.”

On damp sandy bank near Exeter, West Tamar, 1892, W. A. Weymouth, No. 1134.

(Also in Victoria, F.v.M., Australian Mosses, pl. XVIII).

NOT PREVIOUSLY DESCRIBED.

Breutelia commutata, Hampe in Linnæa 1876, 307. (Bastow's list, p. 36, name only.)

Dioicous; robust, vaguely branching, decumbent. Stem nearly everywhere rufous-tomentose; the fertile ascending, radiate above, yellowish, with acute cylindric and tapering branches; the male stem nearly simple, stellate at the apex. Stem leaves accumbent when dry, erect and patulous when wet, from a contracted concave base, many times folded, broadly ovate-lanceolate, nearly quite entire, the nerve extending throughout and ending in a bristly point, the whole margin revolute; the cells shortened parallelograms, the nodules very small and irregularly punctate, the base and side with a slight, rather broad, reflexed covering with squared cells, reticulate, pellucid, enlarged. Leaves of the radial branches smaller, more pellucid, very finely reticulate, markedly rough, with a terete yellowish nerve excurrent in a denticulate awl-like point. The inner perichaetial leaves small, ovate-lanceolate, nerved, with a short bristly point, deeply folded, hyaline; cells rectangular, smooth, reticulate. Seta scarcely an inch high, ruddy, apex inclined. Capsule spherical when young, afterwards drooping, oblong, slightly striate when dry; operculum shortly conic, obtuse. Peristome inflexed, very small, blood-red; the outer teeth narrowly lanceolate and acuminate, densely trabeculate; the inner of very short cilia, ovate-acuminate.

The Grampians, W. Sullivan.

Syn.—*Bartramia affinis*, Schwægr. tab. 237, bad; not Hooker, tab. 176.

In Tasmania, in mountainous parts near Lake Pedder, 1875, Schuster, a smaller form, scarcely two inches.—*Linnæa*, 1876, pp. 307-308.

In creek, Lauriston Gully, Kangaroo Point, 1889, W. A. Weymouth, No. 227.

PLATE IV.

Splachnum gunnii, H. et U.

1. Natural size.
2. Capsules.
3. Mouth and peristome (dry).
4. Peristome tooth.
5. Leaf.
6. Areolation.
7. Section.

Splachnum (Petraplodon) tasmanica, Hampe.

1. Natural size.
2. Capsule (dry).
3. Capsule (wet).
4. Peristome teeth.
5. Leaf (upper).
6. " "
7. " (lower).
8. " section.
9. " areolation.

PLATE V.

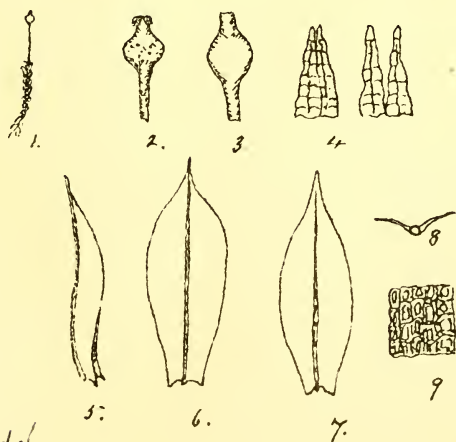
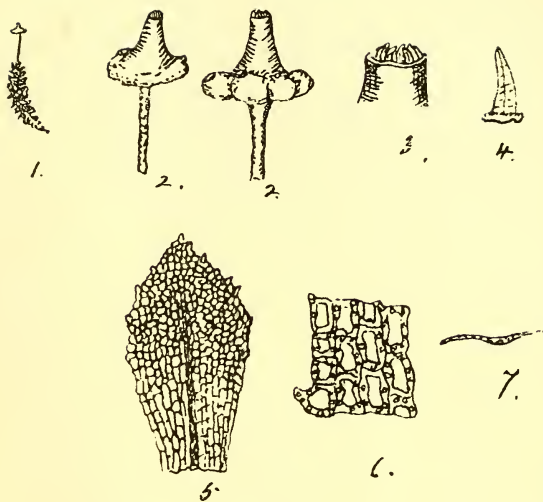
Pleurophascum grandiglobum, Lindb.

1. Natural size.
2. Capsule and calyptra.
3. Leaf.
4. " section.

Ulota weymouthi, Burch.

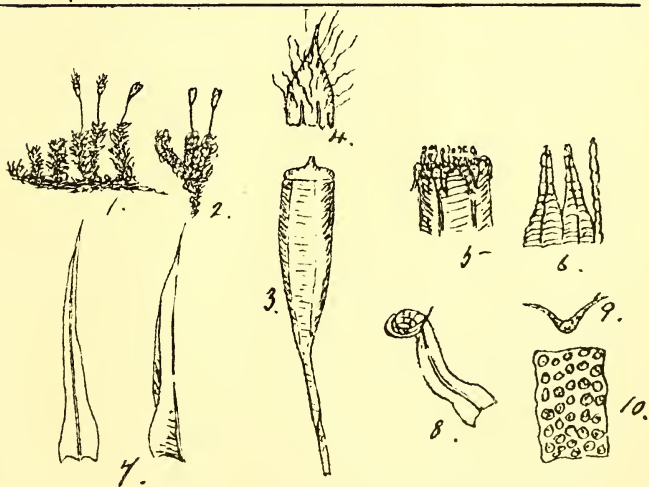
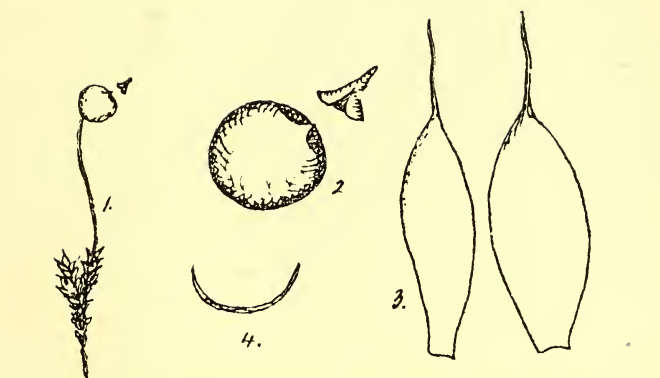
1. Natural size, fresh.
2. " " dry.
3. Capsule and operculum.
4. Calyptra.
5. Peristome.
6. " teeth.
7. Leaves, fresh.
8. Leaf, dry.
9. " section.
10. " areolation.

Pl. IV



Dr. del.

Pl. V.



Rad.