BOTANICAL NOTES.

By L. Rodway.

(Plates.)

Coprosma moorei, F. v. M.—About two or three years ago Mr. T. B. Moore discovered in the vicinity of Mount Tyndall a small plant with a conspicuous blue berry, evidently a Coprosma, or closely allied to that genus. Baron von Müeller, to whom it was sent, could not, in the absence of flowers, safely identify it, but considered it probably *C. Petriei* (Chess) of New Zealand, and a paper to that effect appears in our transactions for 1891. In December, 1892, I was fortunate enough to find the plant in quantity, and, more fortunate than my friend, Mr. Moore, I discovered it in full flower. The plant was submitted to Baron von Müeller and Mr. Petrie, of Dunedin, and its distinctness from *C. Petriei*, or from any plant hitherto described, was thoroughly apparent. With von Müeller's sanction, I have described it under the name of its original discoverer. There is one point that renders the plant of unusual interest, namely, its hermaphrodite flowers, a unique development in Coprosma, uniting that genus, as von Müeller had already suggested, with *Nertera*. From the latter, however, our plant differs in the 4-lobed calyx and the insertion of the stamens.

A small prostrate, creeping, glabrous perennial; stems branching, rooting at intervals, sometimes almost entirely subterranean. Leaves ovate to ovate-lanceolate, spreading, thick, shining, concave, acute, narrowed into a short petiole, mostly $1\frac{1}{2}$ to $2\frac{1}{2}$ lines long. Stipules interpetiolar with 2 minute subulate erect lobes at the junction. Flowers terminal, sessile, terminating short erect branchlets, hermaphrodite. Calyx broadly oblong, about 1 line long, slightly compressed below the lobes; lobes 4, broad, acute, rather less than half as long as the tube. Carolla campanulate, about 1 line long, lobes 4, broad acute, nearly as long as the tube. Stamens 4, free from the carolla, and inserted at its base. Filaments slightly exceeding the carolla. Anthers erect ovate, slightly apiculate. Style divided nearly to the base into 2 filiform papillose branches, about half again as long as the stamens, and maturing rather before they are fully developed. Ovary 2 celled. Fruit blue, broadly oval, 3 lines long, crowned by the persistent calyx-lobes. Pyrenes 2, pale brown, smooth, broadly ovate, but flattened on one side, suspended from the top of the inflated mesocarp; each one seeded. Embryo minute in a copious albumen. (Plate I.)

Near Mount Tyndall; Snake Plains, Mount Wellington; Cutting Grass Swamp, Mount Arthur, near New Norfolk.

Actinotus bellidioides (B).—This plant is no less remarkable for the peculiar suppression of one mericarp than for its extreme variability. J. D. Hooker, in *Lond. Journ.* vi., 471, described four species, *Hemiphues affinis, tridentata, bellidioides,* and *suffocata.* In the Flora Tasmaneæ he combinse them under the name *H. bellidioides,* and he there figures one variety, *var. fulva* with petals, a development that is received in doubt by most botanists. The material he had at his command was meagre, and though we are not now supplied with a perfect series, we have forms that would probably have modified his views. Bentham transferred the species to the genus *Actinotus.* In all forms hitherto described the leaves are either entire or crenate on the margin. I have now in my possession a form rather more robust than most specimens, with the leaves palmately divided nearly to the petiole into 3 or 5 lanceolate segments, otherwise it does not differ from the type of *A. bellidioides*; it was found on Mount Tyndall by T. B. Moore. The variety figured by Hooker as *var. suffocata* was, unfortunately, in advanced fruit only. My friend Wm. Fitzgerald has put me in the position to examine the plant in all stages, and its constant dwarf habit, total absence of calyx-limb, and reduction of stamens to 2 only, warrant us in considering it specifically distinct.

Actinotus suffocata.—Very similar in habit and detail to the smaller forms of *A. bellidioides,* but still smaller. Leaves oblong, glabrous entire, 1 to 2 lines long on a hairy petiole as long as itself. Peduncle half-inch long, slender, bearing a small head 1½ lines diameter, bracts about 8 or 10. Flowers about 6 to 10. Calyx-limb none. Petals none. Stamens 2, articulate opposite the styles. Fruit about half-line long. Mount Dundas, and other mountains in the vicinity. (Plate II.)

Isoëtopsis graminifolia (Turez).—This peculiar and interesting little isoëtes-like composite constitutes the sole member of the genus, and has hitherto been found in Southern and Eastern Australia only. I have lately found it rather abundantly on grassy hills about Hobart. Baron von Müeller, who kindly identified it for me, is of the opinion that it is certainly endemic.

Helichrysum obtusifolium (F. v. M., et Lond.).—A perennial everlasting, but often flowering the first year so as to appear annual. It has the appearance and details otherwise of *H. dealbatum* except that the leaves and flower-heads are smaller; in these details it approaches our southern perennial, *H. Spiceri,* which, however, has still smaller flowers. Baron von Müeller wishes me to introduce the plant in this paper. It was lately found at Clarke Island by Mrs. McLaine.

Viola Sieberiana (Spreng.).—An old established species, which has been reduced to a variety of the very variable *V. hederacea Lab.*, but apparently without sufficient justification. Though doubtless closely allied to that species in Tasmania, at least, its habit is distinct. Mr. Fitzgerald, who kindly supplied me with considerable material, tells me it is common in localities near George's Bay, where it grows in conjunction with, but always distinct from, *V. hederacea.*

Habit tufted and stoloniferous. Leaves rhomboid to ovate, crenate, $\frac{1}{2}$ to $\frac{3}{4}$in. long, on long slender petioles; stipules adnate at the base, brown, lanceolate, acute, denticulate on the margin. Scapes shorter than the leaves, elongating after flowering. Petals narrow, linear, $1\frac{1}{2}$ lines long. Seeds white or black. Other details agreeing with *V. hederacea.* (Plate II.)

Australina müelleri (Wedd.).—A much more robust plant than *A. pussila* (Gand.), with a different habit and foliage, but similar inflorescence, was reduced to a variety chiefly from their being found at distinct localities. On the southern slopes of Mount Wellington they grow together without any tendency to converge.

Saponaria tuberlosa (F. v. M.).—This rare plant has been found near George's Bay Heads by Wm. Fitzgerald; only few specimens were procurable, and he considered this, together with some rare eastern Australian sedges in the same locality, might have been transported by migrating ducks.

Eucalyptus perriniana (F. v. M.). was described at the meeting of the Association for the Advancement of Science at Melbourne, from specimens procured from immature trees not yet in flower. It is a Eucalypt that has long been known in the Hamilton and, I believe, one or two other districts, and an effort has often been made to learn its affinity; but in the absence of flowers and fruit this was not possible. The kindness of Rev. Mr. Dicker and Superintendent Hedberg has placed at my disposal various specimens in different stages; but we are still in want of some mature information desirable before forming a definite opinion. The tree, where hitherto observed, has a decidedly bushy habit, grows in a copse, and only attains 10 to 20 feet high. The trees are only now attaining maturity. The leaves, till a year or two ago, were all opposite, connate and orbicular; upon the trees attaining a height of 10 to 15 feet the leaves became alternate, petioled, and lanceolate, with exactly the form and venation of some forms of *E. viminalis.* The flowers commenced to develop in the upper opposite leaves, and continued more numerously in the axils of the alternate ones, and appear always in threes. The flowers, stamens, and fruit appear in no detail to differ from the small flowering forms of *E. viminalis*, and I should feel disposed to think that *E. perriniana* bore the

same relation to that species that *E. risdoni* does to *E. amygdalina.*

Gahnia graminifolia.—I referred to this species in a paper read before the Society last year, where it appears under the name given it by Baron von Müeller, *G. rodwayi.* For various reasons I have preferred to change its name. The plant has unusual interest to a botanist from the graminaceous nature of its leaf-sheaths, a peculiarity noticeable in most members of the genus, but here carried further, and from its panicle flowering immediately upon elongation, while the glumes are still succulent and green instead of waiting till the next spring, or at least till the glumes are indurated, a detail unique, at least amongst Tasmanian allies.

A small densely-tufted plant forming pulvinate masses, often 1 to 2 feet diameter. Stems very short, seldom exceeding 3 inches, numerous from a much-branched, intricately spreading rhizome. Leaves flat, grassy, and spreading 3 to 8 inches long, 2 lines wide, becoming very narrow towards the apex; margin entire, involute when dry; the sheathing base arising from a node, split and bearing a distinct ligule at the orifice. Panicle flowering immediately as it elongates 1 inch long; spikelets few, in distant narrow clusters, each cluster in the axil of a leaf or leaf-like bract, each spikelet pedicelled and subtended by a glume-like bract, 2 to 3 lines long, narrow, lanceolate. Flower solitary, terminal hermaphrodite. Glumes generally 5, succulent at flowering, subsequently membranous ciliate on the heels and margin, and often also on the surface, gradually smaller from without inwards, 2 outer ones lanceolate obtuse, 3 inner ones orbicular closely imbricating, the innermost one small, and closely enveloping the flower. Stamen solitary, filament long, sub-persistent. Style, long, slender, divided nearly to the base into 3 branches, nut ovoid oblong 1 to $1\frac{1}{2}$ lines long, nearly black, polished, obtusely 3 angled; inner surface of pericarp smooth, with very faint indications of transverse rugæ.

On hills from Huon-road to Mount Nelson.

Lepidosperma inops, (F. v. M.).—Introduced also in the same paper, though very distinct in habit, is probably an extreme variety of *L. lineare* (R. Br.). In very few of the Tasmanian species of this difficult genus is much reliance to be placed no habit.

Lepidosperma lineare, var. inops.—Plant densely clustered, 2 to 4 inches high, stems and leaves nearly flat, $\frac{1}{2}$ to $\frac{3}{4}$ line wide. Panicle reduced to 2 or 4 spikelets on short stems, the bracts leafy, the outer one erect, and often 2 inches long.

Hills south of Waterworks, Hobart.

Restio oligocephalus (F. v. M.).—There has always appeared a considerable amount of confusion about this interesting

Tasmanian plant, chiefly through its extreme variability not being recognised. One of its forms that I here refer to as *var. glabrum* would certainly deserve to be considered distinct were it not for the numerous intermediate forms.

Stems erect from a creeping rhizome, simple at least below the inflorescence, 6 inches to 1 foot high; bracts sheathing but loose, smooth, $\frac{1}{2}$ to $\frac{3}{4}$ inches long, with a truncated usually woolly apex. Spikelets usually few in an interrupted spike or rarely panicle, sometimes solitary. Males $\frac{1}{4}$ to $\frac{1}{2}$ inch long, narrow oblong, the glumes with a woolly tip when young. Perianth flat, about 2 lines long, the outer side segments complicate, heeled, and woolly towards the apex. Females broadly oblong to spherical, $\frac{1}{4}$ inch long; perianth $1\frac{1}{2}$ lines long, side segments complicate but not heeled; ovary about 1 line long with very short curved styles, flat. Staminodia seldom present.

Syn. R. monocephalus (R. Br.).

Common on damp heaths.

Var. intermedius.—Similar to the type, only the female as well as the male spikelets are narrow-oblong, and the styles are about as long as the ovary, often attaining 1 to 2 feet, and generally much branched.

Kingston, Longley, etc.

Var. glabrum.—Similar in general details to the type, but without the woolly tips to the bracts, glumes and perianth segments; seldom exceeding 6 inches, and fairly consistently bearing but one spikelet. Bracts sheathing at the base, but loose and spreading, striate $\frac{1}{2}$ to $\frac{3}{4}$ inch long; the apex 3-lobed, the central lobe 1 to 3 lines long, subulate, the side ones shorter and membranous. Spikelets as in the type, but both sexes narrow-oblong. Male perianth about 1 line long, flat. Female perianth about 1 line long, the outer segments slightly complicate; ovary $\frac{1}{2}$ to $\frac{1}{3}$ line long, the style, long, slender, much exceeding it. Staminodia always present.

Near Kingston, on wet heaths.

On the Affinity of Thelymitra Ixioides and Its Allies.

This group of terrestrial orchids, commonly termed native Hyacinth, consists of very numerous forms, differing but slightly from one another. As in all variable groups, this has given rise to numerous names adopted for marked variations, many of which research has rendered obsolete. In the present day the tendency is to follow Bentham and Müeller, and sort the group immediately related to *T. ixioides* into six species, namely:—*T. ixioides*, Suz.; *T. aristata*, Lind.; *T. longifolia*, Forst.; *T. carnea*, R. Br.; *T. cyanea*, Lind.; and *T. venosa*, R. Br. None of these can be considered well fixed

species, though *T. venosa* approaches that condition. The first three can at best be considered names of convenience to group the very numerous forms of one variable species. *T. carnea* is a well marked species in the type, but is intimately connected to *T. ixioides* by intervening links, and *T. cyanea* forms an intermediate species between *T. ixioides* and *T. venosa*. The flowering period of the first five species is the same, namely, October and November, and they grow usually together, except that *T. cyanea* shows a partiality for damp situations. The flowering period of *T. venosa* is December and January. In most descriptions the habit in reference to degree of robustness is relied on as an aid to identification, but an intimate acquaintance has completely destroyed that assistance. In all, except the typical form of *T. carnea*, specimens may be found from a few inches high to nearly two feet, and from an excessively slender state, with an almost filiform leaf grooved on the upper surface to a thick robust condition, with a broad, thick, fleshy leaf, concave above, and from bearing one flower to a raceme of 8 to 12. *T. carnea* has a marked habit, distinguishing it from the other members of this group, namely, that the stem is bent at each bract, and in a totally unreliable degree. *T. venosa* is usually a more robust species than *T. cyanea* and *T. aristata*, with large forms of *T. ixioides*, are more robust than the common forms of *T. longifolia*. In size and colour of perianth there is little really reliable. *T. ixioides* may be blue, pink, or rarely white, it is often spotted with dark blue, or dark pink, but not always so. *T. aristata* and *longifolia* has a pale blue to white perianth without spots or veins. *T. carnea* has a fleshy-pink perianth, but in varieties approaching *T. ixioides*, it is spotted with dark pink or blue. *T. cyanea* and *T. venosa* has a blue, pink, or white perianth, veined with darker colour; the column also is striped with dark coloured bands. In all the perianth varies from 4 to 10 lines long, the greatest variation being found in *T. ixioides* and *T. aristata*.

The only other means of distinction at our disposal, namely the shape of the column, yields but little evidence to favour the right to consider all these forms as reliable species.

The column in this group is short. The stigma is peltate and near the base, and the anther varies inversely as the development of the column-wing from small, and placed close above the stigma at the back of the rostellum to large and protruding and freely removed above the stigma. The column is surrouuded at the sides and base by a comparatively broad wing that is continued at the back, and more or less above the anther into variously formed lobes or processes. In *T. venosa* the wing is not continued behind the anther, but ends in two narrow lobes bent forwards and

PLATE I.

Coprosma moorei, F. v. M.

1. Natural size.
2. Flower, etc.
3. Leaf.
4. Flower, young.
5. " " corolla and a portion of calyx removed to show insertion of stamens.
6. Stamens.
7. Pollen.
8. Fruit in section, pyrenes *in situ.*
9. Pyrenes removed to show partial dissepiment.
10. Pyrenes.
11. " section.

PLATE II.

Actinotus suffocata.

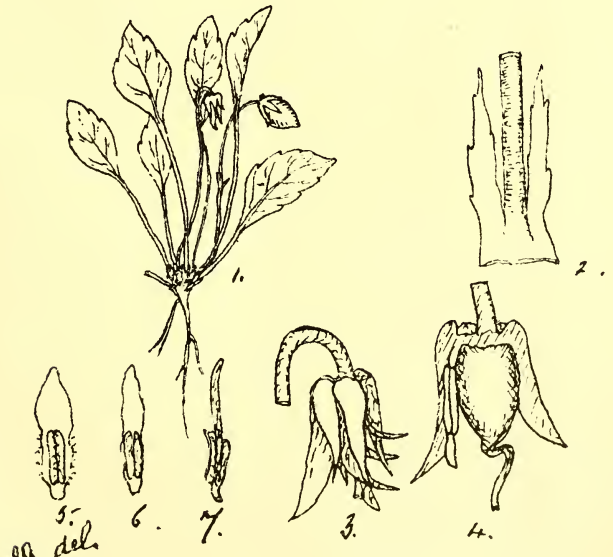
1. Natural size.
2. Umbel.
3. Leaf.
4. Flower.
5. Fruit.

Viola sieberiana, Spreng.

1. Natural size.
2. Stipules.
3. Flower.
4. Corolla and part of calyx removed.
5. Stamen, upper.
6. " lower.
7. " " side view.

Tab. 1.

Pl. 2.



Pl. III.

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spirally twisted (figs. 23 and 24). In *T. cyanea* these lobes are reduced in length, are straight and irregular in outline, and have usually a papillose development low down on their anterior margin. The wing is continued behind the anther as a papillose projection (figs. 21 and 22). In the typical forms of *T. carnea* the side lobes are reduced to papillose ovate processes, and the posterior portion of the wing is further developed into a thick papillose wall behind the anther (Fig. 20). In the intermediate forms connecting this with *T. ixioides*, the side lobes develop copious penicillate adornment, and the posterior lobe correspondingly approaches the form found in that species (figs. 17, 18, and 19). In the typical form of *T. ixioides* the side lobes are linear, projected forwards in front of the anther, and terminate in a copious penicillate brush; the posterior lobe is divided into three portions, a small erect sub-quadrate process on each side, and a very short roughly papillose centre (figs. 1, 2, and 3). Every intermediate stage between this and the form termed *T. aristata* may be freely met with (figs. 4 to 7). In *T. aristata* the three portions of the posterior lobe have further developed and coalesced, but is usually deeply notched or split in the central line. The extent of development is most variable, but the margin is thin, and often papillose, and the substance not thickened (figs. 8 to 12). In *T. longifolia* the posterior lobe has developed into a thick fleshy hood, with a plain or notched thick margin. This form passes gradually from an advanced form of *T. aristata* (figs. 13 to 16).

The examination of these forms would lead us to conclude that *T. ixioides*, *T. aristata*, and *T. longifolia* are but characteristic states of a most variable species. *T. carnea* is a fairly marked species, but the links connecting it with *T. ixioides* still exist. *T. cyanea* is near to, but distinct from, *T. ixioides;* and *T. venosa*, is a fairly well marked species, certainly further removed from *T. cyanea* than that species is from *T. ixioides.*

The following is a description of sundry details of the plants whose columns are shown in the Plate III.

The sketches are $2\frac{1}{2}$ to 3 times natural size.

Fig. 1.—18 inches high, robust. Leaf thick, broad, ribbed, 9 inches long. Raceme of 7 flowers. Perianth 7 lines long, blue and pink, spotted with dark blue.

Fig. 2.—10 inches high, slender. Leaf thick, slender, 5 inches long. Raceme of 3 flowers. Perianth 7 lines long, blue and pink, without spots or stripes.

Fig. 3.—7 inches high, slender. Leaf thick, slender, 4 inches long. Raceme of 2 flowers. Perianth 4 to 5 lines long, pink, spotted with blue.

Fig. 4.—14 inches high, fairly robust. Leaf thick, broad, ribbed, 7 inches long. Raceme of 2 flowers. Perianth 9 lines long, blue and pink, spotted with dark blue.

Fig 5.—9 inches high, slender. Leaf 5 inches thick, slender. Raceme of 2 flowers. Perianth 4 lines long, pale blue and pink, slightly veined with darker blue.

Fig. 6.—13 inches high, rather robust. Leaf 6 inches long, rather thick, broad. Raceme of 3 flowers. Perianth 5 lines long, blue, slightly veined.

Fig, 7.—9 inches high, slender. Leaf $4\frac{1}{2}$ inches long, thick, slender. Raceme of 2 flowers. Perianth 4 lines long, blue, without spots or veins. Column hood split.

Fig. 8.—Similar to 7, but rather more robust. Perianth spotted. Column hood deeply emarginate.

Fig. 9.—18 inches high, robust. Leaf 8 inches long, thick, not broad, but ribbed. Raceme of 7 flowers. Perianth 9 lines long, pale blue. Column hood truncate, papillose at end.

Fig. 10.—24 inches high, robust. Leaf 10 inches long, thick, broad, ribbed. Raceme of 13 flowers. Perianth 10 lines long, pale blue. Column hood truncate, papillose.

Fig. 11.—10 inches high, slender. Leaf 5 inches long, rather broad, thick. Raceme of 4 flowers. Perianth 5 lines long, pale blue and pink. Column hood slightly thickened with a plain emarginate apex.

Fig. 12.—6 inches high, very slender. Leaf 3 inches long, very slender. Flower solitary. Perianth 3 to 4 lines long, pale blue and pink. Column hood thick, emarginate.

Fig. 13.—8 inches high, rather robust. Leaf broad, thick, ribbed, 4 inches long. Raceme of 3 flowers. Perianth pale blue, 6 lines long. Column hood thick, emarginate.

Fig. 14.—18 inches high. Raceme of 7 flowers. Perianth 8 lines long, otherwise similar to 13.

Fig. 15.—Flower solitary. Column hood truncate, but not emarginate, otherwise similar to 13.

Fig. 16.—7 inches high, slender. Leaf 3 inches long, thick, slender. Raceme of 2 flowers. Perianth very pale blue, 8 lines long. Column hood large, fleshy, thick.

Fig. 17.—16 inches high, rather robust, flexed at bracts. Leaf 8 inches long, thick, rather broad, ribbed. Raceme of 8 flowers. Perianth 7 lines long, pink, spotted with blue.

Fig. 18.—11 inches high, rather robust, flexed at bracts. Leaf thick, rather broad, ribbed, 6 inches long. Raceme of 4 flowers. Perianth 6 lines long, pink. Column wing shortly papillose, penicillate on sides of posterior lobe as well as on lateral lobes.

Fig. 19.—9 inches high, slender, slightly flexed at bracts. Leaf slender, 4 inches long, thick. Raceme of 2 flowers. Perianth 7 lines long, pink. Column wing but slightly differing from undisputed forms of *T. ixioides*.

Fig. 20.—8 inches high, slender, flexed at bracts. Leaf thick, slender, 4 inches long. Flower solitary. Perianth 5 lines long, pink. Column wing with ovate papillose, lateral lobes, and truncate papillose, posterior lobe. Anther slightly protruding.

Fig. 21.—12 inches high, slender, robust. Leaf 5 inches long, thick, broad, ribbed. Raceme of 3 flowers. Perianth 5 to 6 lines long, blue, veined with darker blue. Column with a truncate-papillose posterior lobe and 2 subulate-lanceolate, irregular, lateral lobes. Anther raised some distance above the stigma, and protruding between the lateral lobes.

Fig. 22.—Similar in habit to 21, slightly differing in structure of column wing.

Fig. 23.—13 inches high, slender. Leaf thick, rather broad, ribbed. Raceme of 4 flowers. Perianth 7 lines long, blue, veined with darker blue. Lateral lobes of column wing lanceolate, convolute; posterior lobe obsolete or absent

Fig 24.—Posterior view of same.