Ant. LIX.—A Description of some Newly-discovered Phænogamic Plants, being a Further Contribution towards the making-known the Botany of New Zealand.


[Read before the Hawke’s Bay Philosophical Institute, 13th May and 7th October, 1889.]

The plants contained in those two papers are here placed together systematically, so as to avoid repetition of orders and genera. Those described early (in May), in the first paper, were all from the mountainous interior, East Taupo County, and collected by Mr. Hill; while those in the later paper (in October) were mainly from the lowland forest region near Dannevirke, collected by W. Colenso and by Mr. A. Hamilton, and also from near the sea on the East Coast.

Order XXII. Leguminosæ.

Genus 1.* Carmichælia, Br.

1. C. orbiculata, sp. nov.

A very small erect rigid shrub of 2in.–3in. high, whose main stems are prostrate and under soil (and ever-shifting volcanic sand), much and closely branched, forming large flat patches somewhat resembling a coarse doormat; branchlets ½in.–1in. long, erect, rigid, simple, linear, flat, 2 lines wide, coarsely but regularly striate, yellow-green, their tips very obtuse, dark-yellow with blackish (ustulate) margins, their lateral margins irregularly and distantly notched, each notch having a scarious light-brown ciliated appressed triangular bract. Flowers in small sub-corymbose panicles usually 3–5 together; peduncle rather long and (with pedicels) slightly pilose, each pedicel decurved, with 1–2 small ovate brown bracteoles, their margins pilose-ciliate. Calyx rather large, green, cup-shaped, inflated, with 5 acute blackish teeth, the sinuses large rounded. Corolla pinkish-lilac; standard orbicular, slightly emarginate, 2 lines diameter, much veined. Anthers connate nearly to tips. Stigma sharply papillose. Pod green, glabrous, slightly rugulose, orbicular sometimes broadly elliptic, 3 lines diameter; beak long, slender, very much recurved; replum stout; 1-seeded. Seed orbicular-cordate, sides unequal, dull-green spotted with purple.

Hab. Desert of Rangipo, near Mount Tongariro, County of East Taupo; 1889: Mr. H. Hill.

* The numbers attached to the orders and genera in this paper are those of them in the "Handbook, Flora of New Zealand."
Obs. A very interesting little species, in size and habit of growth allied to \textit{C. nana}, Col., from the same mountainous locality; but widely different from that species in several important characters. Its very peculiarly-shaped and unique pod distinguishes it from all its known congers.

Order XXVI. \textbf{Droseraceae}.

\textbf{Genus 1. Drosera, Linn.}

1. \textit{D. polyneura}, sp. nov.

Plant, small somewhat tufted, erect, 1in.–2\(\frac{1}{2}\)in. high; root-stock woody, thickish, vertical, 1in.–2in. long, black, with many irregular spreading wiry rootlets below; sometimes two plants arise from one stock, each bearing 1–3 flowers and 3–7 leaves. Leaves of two forms, their upper surfaces above the middle and their margins glandular; glands not crowded, flat, long and patent at margins, the single apical one more than two lines long, very short on lamina, their tips elliptic, smooth, dark-red; the outer leaves narrow oblong-ovate spreading, usually deflexed from junction with petiole, 1in.–1\(\frac{1}{2}\)in. long, 4 lines wide, many-nerved, tip very obtuse rounded, base tapering; petiole very broad, sub 3 lines, 5-nerved, conduplicate, clasping; the inner leaves longer, linear, 1\(\frac{3}{4}\) lines wide, erect. Scape erect, 1\(\frac{3}{4}\)in.–2in. long, shorter or longer than leaves, 1-flowered, with a long linear basal leaf (or bract) 3in.–1in. long, glabrous, eglandular, margins closely incurved, tip obtuse, and a minute linear bracteole near the top of scape. Calyx-lobes no tent to base, sub-oblong-obovate, 3-nerved, tips obtuse, toothed. Corolla 4 lines diameter, scarcely longer than calyx, not spreading, pale yellowish-white, very membranous; petals narrow obovate, tips slightly obtuse, margins irregular, 3-veined, veins dark, branching. Stamens 5, much shorter than corolla; filaments flat, 1-nerved; anthers orbicular, bright-yellow, perigynous between petals. Styles 4, each nearly 1 line long, thick, spreading; stigmas large, globose, fimbriate; fimbrie branched, their tips globular. Ovary narrow oblong-obovate, black, shining, 3-valved, minutely papillose, much longer than corolla.

\textit{Hab.} Swampy spots, base of Mount Tongariro, County of East Taupo; 1889: Mr. H. Hill.

Obs. I. At first sight, and without close examination, this little plant may easily be taken for its near ally \textit{D. arcturi}, Hook., which it much resembles; but it possesses many grave and different characters—in its two forms of leaves, its scape-bracts, its smaller membranous flowers with differently-shaped lobes to both calyx and corolla, and its 4 separate styles.
II. The description of *D. arcturi* in the "Flora N.Z.," and in the "Handbook, Flora N.Z.," differs pretty considerably from the typical description, with its drawings and dissections, of that Tasmanian plant: fortunately I possess them all, and from them I here append some of its peculiar specific characters, in order to show the great difference between these two species.

III. *Drosera arcturi* was first briefly described by Sir W. J. Hooker in 1834, in his "Journal of Botany," where he also observes, "The flower of this very fine species is as large as that of *D. binata.*" Three years after, in 1837, in vol. i. of his "Icones Plantarum," tab. lvi., Sir W. J. Hooker gives a drawing of this plant, with dissections; where he also repeats what he had formerly said respecting it, adding, "The *large* solitary flower will at once distinguish it from every other species." In the drawings given the calyx-lobes are narrow, sub-acute, regular, and cut to base; the corolla very much larger, with the tips of its large lobes rounded, and their scapes twice the length of its leaves, which are also only of one form ("linear-spathulate").

IV. Sir J. D. Hooker, also, in his "Flora Tasmanie," similarly describes this species, but much more fully: he says, "*Foliis linearibus . . . sepalis lineari-oblongis, obtusis, . . . petalis erectis coriaceis lineari-spathulatis obtusis, coriaceis, . . . stylos 3 indivisis." And again (in English), "A most distinct and beautiful species, 3in. to a span high; . . . leaves 2in.–6in. long. . . . 1-nerved, covered with spreading glandular hairs. Scapes longer than the leaves. Flowers nearly ½in. long. . . . Sepals linear-oblong, blunt. . . . Petals one-third longer than the calyx. Stamens 5, persistent. Ovary oblong, with 3 short styles, and globose papillose stigmata."

V. Moreover, in his describing *D. stenopetala* (another New Zealand species), he says, "This plant and the *D. uniflora* of Fuegia and the Chilian Andes form a peculiar group of this genus, differing from most others in the one-flowered scape, and from all in the styles being divided to the base" ("Flora N.Z.," vol. i., p. 19)—which is also the case in this species.

2. *D. triflora*, sp. nov.

A small stemless species. Roots 2–3, very long, vertical, rather stout, wiry, black, finely shaggy below. Leaves rosulate, spreading, 15–18, orbicular, 2 limes diameter, red (as also glands), lamina thickish, the under-surface glabrous, roughish; glands very large, spreading, flattish, covering lamina on upper surface and partly on petiole; petiole 3 lines long, flat, broad, glabrous, dark-greenish; stipules large,
sub-scarious, brownish, tips bifid and much and sharply laciniate, cells oblong, minute; with additional transverse stipules or scales on petiole at base below and in front of lateral stipules, sub-quadrate, 1 line broad, the top deeply laciniate with 7–8 long acuminate laciniae. Scapes rather stout (for plant), the main (or central) one 2 in. long, erect, bearing at top 3 flowers (rarely 2) in a sub-fascicled corymb; pedicels 1/8 in. long, with 2 minute bracteoles together at their fascicled base; other scapes axillary, simple, their stems 3 in. long, 1-flowered, with a single small bracteole below calyx. Calyx broadly campanulate, 1/3 in. long, dark-red, 5-lobed; lobes cut nearly halfway to base, rounded and sub-acute; tips thin, many and sharply toothed; teeth irregular; veined, veins many, prominent, branching. Corolla (damaged) whitish, small, extending but little beyond calyx.

*Hab.* Swampy spots, base of Mount Tongariro, County of East Taupo; 1889: *Mr. H. Hill.*

Order XXVII. HALORAGIACEAE.

Genus 1. *Haloragis,* Forst.

1. *H. bibracteolata,* sp. nov.

A small spreading ascending few-branched wiry herb; branches 5 in.–7 in. long, wiry, few-leaved. Leaves opposite in pairs, distant (lin. or more apart), petioled, broadly oblong, sub-acute, 2–3 lines long, reticulate, margins thickened, white, recurved, usually with 3 coarse and deep curved laciniate serratures on each side, which also have thickened margins, upper surface glabrous, the lower hairy, also petioles and stems; petioles short. Flowers axillary, solitary, peduncled, opposite (generally 2 pairs) at tip of branch, 3–4 lines apart. Nut small, with flower 1 line long, smooth, glossy, purple, obtusely 4-angled, turgid; 2 appressed bracts at base, glabrous, ovate-lanceolate; peduncle very short, slender. Calyx-lobes erect, deltoid-acuminate, margins thickened and recurved, with a thick central line resembling a midrib. Stigmas 4, sessile, large, spreading, echinately bushy; hairs coarse, septate-moniliform, obtuse. Anthers linear, truncate, emarginate, yellowish, pendulous. Petals 0.

*Hab.* Dry spots, sides of Mount Tongariro, County of East Taupo; 1889: *Mr. H. Hill.*

*Obs.* I. A species having pretty close affinity with *H. depressa,* Hook. f., but differing from that species in its leaves being glabrous, smaller, and petiolate, with different serratures, and not "slightly scabrid on each side;" also, in its nut being much smaller, less angled and costate, with 2 bracts, and in its very different stigmas.

II. Bentham, in his more full and more recent description
of *H. depressa* (it being also an Australian plant), says, "Leaves small, entire or slightly toothed; . . . . scabrous with minute asperities; . . . . fruit with 4 or 8 prominent nerves." And, again, "There are two forms of this species: 1. *serpyllifolia*. Leaves mostly under 3 lines long and rather narrow. *Goniocarpus serpyllifolius* and *G. vernicosus*, Hook. f., in Hook. 'Ic. Plantarum,' tt. 290 and 311. And, 2. *montana*. Leaves broader, often cordate, 3 to 5 lines long." I have the drawings, with dissections, of both those species (or forms), which differ largely from this plant here described; besides, I know *H. depressa*.

Order XXVIII. Myrtaceae.


1. *M. speciosa*, sp. nov.

"A small tree, bushy at top, about 25ft.–30ft. high; probably a climber" [Mr. Hamilton]; wholly glabrous. Branchlets sub-4-angled, bark dark reddish-brown. Leaves oblong and oblong-lanceolate, obtuse, 1in.–1 1/2in. long (attaining to 2in. on young luxuriant barren lateral shoots), decussate, distant 1/2in.–2in., spreading, petiolate, dark-green alike on both sides, plentifully dotted with large and small dots, glossy on upper surface, midrib stout, much veined, lateral nerves oblique, irregular; petioles 1–2 lines long. Flowers stout, large, in small terminal and sub-terminal corymbs (sub 11-flowered); peduncles (and pedicels) rugulose and dark-coloured, slender, 3/4in.–1in. long, with 3–4 minute transverse ridgy equidistant bracteoles, and also 1 at base of pedicel; secondary peduncles 3 lines long; pedicels very short; flowers disposed in heads of 3, and when terminal of 5. Calyx infundibuliform, smooth, thick, 8 lines long; lobes large, broad, rounded, concave, persistent; margins membranaceous and dotted. Petals 5, large, sub-orbicular, showy, 3 lines diameter, orange with a reddish (or pink) tinge, veined, thickly dotted with large dots; margins entire at tips, slightly erose at sides; claw broad, short. Stamens (and style) dark-red, 8 (rarely 9) lines long, flat, thin; anthers oblong, red; pollen (plentiful) bright-yellow (gamboje); style stout, erect, 1in. long, much longer than stamens. Fruit not seen.

*Hab.* Forest-clearing, 1 mile north of the Waikanae Railway-station (Manawatu line); April, 1889: *Mr. A. Hamilton.*

*Obs.* This species is pretty closely allied to *M. florida*, Sm., but differing in several particulars—viz., in general colours of bark, leaves, and inflorescence, which are all much darker; in its angled branchlets, in the position form and venation of its leaves, in its smaller heads of flowers with their larger and more vividly-coloured petals stamens and styles, in its longer
styles far exceeding the stamens, and in its larger and more richly-coloured anthers. In its flowering state it is a strikingly handsome plant.

Order XXXVIII. Rubiaceae.


1. C. aurantiaca, sp. nov.

An erect rather rigid thickly-branched glabrous shrub, 8ft.–10ft. high; bark brownish. Branches opposite, spreading, sub-rigid, patent; branchlets minutely and thickly puberulent. Leaves lateral in opposite pairs, and 2–4 together fascicled at tips of small branchlets, oblong and oblong-obovate, 5–7 lines long, 2½–3½ lines broad, glabrous, green, somewhat thickish, margins sub-sinuate red; tips rounded, sometimes slightly apiculate, minutely ciliolate; much reticulately veined, veins not prominent; tapering to base of petiole; petiole very short, glabrous. Stipules very small, sub-ovate, thickish, puberulent. Flowers: Male, sub-sessile, axillary, solitary in opposite axils, and sometimes 3 together. Calyx-cine lobes 4, connate; 2 of them large oblong obtuse, opposite, margins entire; and 2 small, their tips irregularly toothed, coloured, their edges minutely ciliolate. Corolla broadly campanulate, greenish dashed with purple streaks, 2 lines long, 3 lines diameter, 5-cleft cut three-fifths to base; lobes sub-oblong-ovate, sub-acute, spreading, much recurved, 1-nerved with branching veinslets at tips. Stamens 4, much exserted, pendulous; filaments puberulous; anthers one-third length of filaments, oblong, striate; tip obtuse; base sagittate. Fruit solitary, globular, size of a small pea, stalked, clear golden-yellow, very sweet. Seeds narrow-oblong, 2 lines long, white, thickish, gibbous and deeply striate on the outside, flattish and smooth on the inside.

Hab. On low flats, sides of streams, open lands south of Dannewirke, County of Waipawa; 1886–89: W. C. Forming dense impenetrable thickets; also, but more sparingly, in similar localities near Norsewood; 1884: W. C.

Obs. This plant has been known to me for some time, especially in its fruiting state, when it is a conspicuous object even at a distance, from the profusion of its bright-golden fruit. Its flowering-season must be both early in the spring and soon over, for I had visited the shrubs late in August, when there were no signs of flowers; and again afterwards early in October, when there was not one remaining of the female, and only a very few of the male flowers. At the same time the many other species of Coprosma close by had scarcely yet expanded their flowers. Through my not having met with perfect flowering specimens, I had delayed describing
the plant. Its leaves lose their colour in drying, becoming yellowish.

2. *C. lentissima*, sp. nov.

A small sub-erect slender weak glabrous shrub, 4ft.–5ft. high; bark pale-brown, on its younger branches slightly yet closely puberulent; branches few, distant, very long and straggling, often simple, the younger ones sub-tetragonal; branchlets mostly simple, very slender and very long, 12in.–18in. and upwards, often supported by other neighbouring shrubs and plants. Leaves not numerous, in distant opposite pairs, almost regularly disposed sub 1in. apart on their long branches, oblong and sub-oblong-obovate, 5–7 lines long, 3–4 lines broad, membranous; margins entire, thickened, and slightly recurved; tips rounded; veins much reticulated but nearly obsolete; dull-green above, paler below and shining; petiole short, 1 line long, slender, glabrous. Stipules small, broad, somewhat sub-quadrangular, minutely ciliolate. Flowers: *Male*, axillary and at tips of very short lateral branchlets (1–3 lines long), usually 4-fascicled (sometimes 3 or only 2), shortly-peduncled, glabrous. Calyx small, green. Corolla (unexpanded) oblong, 2 lines long, green, striate; tips slightly ciliolate. Anthers (immature) long, narrow linear, dark-purple. *Female* flowers and fruit unknown.

*Hab.* Outer edges of woods, open plains south of Dannevirke, County of Waipawa; 1889: W. C.

*Obs.* This is a very peculiar species, from its long slender simple and very pliant branches. Its leaves and *male* flowers resemble (*prima facie*) those of the preceding species (*C. aurantiaca*), but the size, form, habit, colour, and general appearance of the two plants are totally distinct. The leaves of this species, too, are much more regularly disposed, less obovate, thinner in texture, with their margins not coloured and tips not ciliolate, and of a paler green, keeping their colour in drying; the petiole longer and more slender; its calyculate lobes are also much smaller. Although I have known it for some time, and often visited its locality, where it is common (yet at the wrong seasons), I have not met with female flowers or fruit.

3. *C. orbiculata*, sp. nov.

Shrub small, erect, 5ft.–7ft. high, slender, graceful, much branched above, bark smooth, light-brown; branches short, opposite, patent; branchlets small, very slender, pubescent; hairs short, light-grey. Leaves numerous, orbicular, 3–4 lines diameter, often a little broader than long, sometimes minutely apiculate; margins slightly recurved; lamina rather abruptly contracted at petiole, membranous, light-green on
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both sides, glabrous, sub-trinerved, veins much reticulate; petiole slender, \( \frac{1}{10} \) in. long, pilose. Stipules small, connate, toothed. Flowers: Male, mostly on small branchlets, axillary and lateral, opposite, 2 together (sometimes solitary), shortly-peduncled. Calyx small, 4-lobed (2 of them larger); lobes triangular-ovate; tips slightly ciliolate. Corolla small, campanulate, \( \frac{1}{16} \) in. long, green purple-dashed the base purple, glabrous, 4-cleft, cut half-way down; lobes obtuse, 1-nerved, spreading, recurved, papillose-ciliate at tips. Stamens 4, exserted, 3 lines long; filaments 2 lines long, slender, thickened at top, papillose; anthers white, narrow-oblong, 1 line long, tip obtuse, base sagittate. Female flowers and fruit unknown.

Hab. Shaded forests south of Dannevirke, County of Wai-pawa; 1889: W. C.

Obs. This is a very neat-looking species, of a pleasing green colour (which it also in great measure retains in drying): the regularity of its many small and round leaves, on its patent almost horizontal spreading branches, serves greatly to enhance its graceful appearance. It is one of the common undershrubs of those deep forests, and the sole reason of my not detecting any female flowers was my being there too early in the season. It is very distinct from all other species of Coprosma known to me.

4. C. perpusilla, sp. nov.

Shrub small, depressed; main stem prostrate and creeping (under soil?), 4in.–6in. long, rooting at nodes from lower surface; bark pale, glabrous. Branches second, erect, about 1 in. high, opposite in pairs, simple, few-leaved; young stems glabrous, sub-succulent. Leaves very close, imbricated, thickish, elliptic, 2 lines long, obtuse, glabrous, dark-coloured; upper surfaces minutely and closely papillose; margins entire, thickened and slightly recurved; veined (seen between eye and light); veins branched, anastomosing near margins; tapering to petiole; petiole short, broad, 1-nerved; leaves smaller and narrower (1 line long) at tips and around flower. Stipules narrow, somewhat crescent-shaped, finely ciliolate. Flowers: Male, solitary, terminal; calyx small, thick, 4-lobed, cut to base; lobes deltoid-ovate, obtuse. Corolla thickish, broadly tubular, \( \frac{2}{3} \) lines long, 4–5-lobed; lobes sub-acute, one-third length of tube, 1-nerved; margins and tips papillose and sub-fimbriate. Stamens 3, 4 (sometimes 6), exserted; filaments very long, 4–5 lines, pendulous; anthers linear-oblong, \( \frac{1}{2} \) lines long, apiculate, sagittate. Female flowers not seen.

Hab. On low banks of River Wangaehu, near east base of Mount Tongaririo, County of East Taupo; 1889: Mr. H. Hill.

Obs. A species having pretty close affinity with C. repens, Hook. f., and C. pumila, Hook. f. (inhabiting also the same
mountain region), but, I think, clearly distinct from both. I received but a few small specimens of this plant, and half of them were destitute of flowers.

Order XXXIX. Composite.
Genus 1. Olearia, Moench.

1. O. ramuliflora, sp. nov.

A tall erect much-branched shrub, 8ft.–10ft. high; branchlets opposite, very long, slender, erect and drooping, often simple, angled, striate, bark reddish-brown. Leaves few, small, opposite, fascicled usually in fours, distant, sub $\frac{3}{4}$ in.–1in. apart on branchlets, or springing from knobbled nodes with 2–3 small obtuse brown hairy bracts at base, linear-spathulate, 3–4 lines long, 1 line broad, obtuse, rather thickish; margins entire, recurved; tapering into petiole 1 line long; dark-green and glabrous above (but young ones with a few scattered weak sub-strigillose hairs), whitish below with fine closely-appressed hairs which are reddish on petioles, and also on midrib when young; hairs narrow lanceolate, peltate. Heads numerous, 2–4-fascicled together with the leaves (sometimes but rarely solitary), broadly campanulate, 3 lines long, on long slender peduncles 3 lines long, curved, pubescent, biactate; bracts opposite, ovate, acuminate, spreading, pubescent. Involucral scales 12, in 2 (sub 3) rows, spreading, strigously hairy, sometimes glabrous; the outer generally 5, short, linear-ovate; the inner 7–8, linear, obtuse, 2 lines long, tips woolly and, with margins, much ciliate. Florets generally 12; of the disc 4, the ray 8, whitish, their tubes and 2 lobes of the disc-corolla slightly hairy; hairs long, straight; tube of ray-florets very short, its limb largely trident; lobes linear, 1-nerved; stigma very long, glabrous, dark-coloured; style of disc-floret flattish, veined; stigma (sometimes trident) long, spreading, each lobe 1-nerved; tips acute, dark-coloured, roughly tuberculated; tubercles linear. Pappus few, erect, shorter than floret, white, shining, slightly scabrid, not thickened at top; tips acute. Receptacle small, pitted, ridgy. Achene small, linear, $\frac{1}{3}$in. long, dark-coloured, glabrous, with a few short pale spreading hairs at top.

Hab. Sides of streamlets, open ground, south of Dannevirke, County of Waipawa; 1887–88: W. C. (Flowering in December.)

Obs. This species is pretty nearly allied to O. virgata, Hook. f.; differing, however, in several important characters—as, in its larger size, its very long pendulous and simple branchlets, its smaller leaves, more numerous fascicled heads, its more and longer involucral scales, biactate peduncles, and its greater number of ray-florets, with longer limb.
According to Bentham's arrangement, from the composition of its indumentum this plant will belong to his Section I., \textit{Dicerobriche}. It is a very handsome shrub when in flower.

2. \textit{O. erythrophappa}, sp. nov.

"Shrub 7ft.–9ft. high." Branchlets rather long, open, striate; bark pale reddish-brown, hairy; hairs closely appressed. Leaves alternate, distant, sub-orbicular, 34in. and 3in. long by 24in. wide, flat, membranaceous, glabrous above (having a few short, scattered adpressed white hairs when young), with closely-appressed light-greyish narrow fusiform peltate hairs below, of a pale-reddish hue when young, finely reticulate; midrib and principal veins below very hairy, dark red-brown; margins sinuate or sinuate-toothed, their sinuses few, large, shallow; base sub-truncate; tip slightly produced, sometimes sub-apiculate; petiolo slender, 1in.–1½in. long, striate, hairy. Leaves much smaller and narrower on flowering branches near the flowers, 1in.–1½in. long, oblong and more closely sinuate-toothed or sub-crenate. Heads reddish, in small graceful slender open corymbs, axillary and sub-terminal, 3in. long, with a long linear brown hairy bract at base of each branch of corymb; peduncle striate, densely covered with red-brown appressed hairs with a few scattered whitish ones; secondary peduncles sub 1in. long with 3–4 heads on long slender pedicels; pedicels sub ½in. long, hairy, with a small bracteole about the middle. Head small, spreading, about 4 lines diameter. Involutal scales sub 20 in three rows, the outer shortest, sub-linear-ovate, very hairy; hairs fawn-colour; the middle ones with a central hairy line; the inner longest, 2 lines long (twice the length of the others), glabrous, very thin, red-brown, much ciliate. Florets few, sub 20 in all: of the ray, limb narrow recurved, tip with 3 blunt notches, tube rather long, slender, base spreading, hairy; hairs obtuse, somewhat septate or transparent with a dark twisted centre; style long, exserted; stigmas long, spreading, glabrous, curved, tips slightly scabriform; of the disc, corolla glabrous, 6-cleft, tips obtuse, mucicrated, stem slender, hairy; stigmas scabriform. Receptacle small, pitted, edges slightly scaly. Pappus short, shorter than disc-florets, irregular in length, scabriform, tips acute; the upper portion bright-red, showy. Achene narrow, linear, terete, very hairy.

\textit{Hab.} Thickets, base of Mount Ruapehu, County of East Taupo; 1889: \textit{Mr. H. Hill}.

\textit{Obs.} This species differs considerably from all the many indigenous species described by Sir J. D. Hooker: its nearest affinities seem to be with \textit{O. populifolia}, Col. ("Trans. N.Z. Inst.," vol. xiii., p. 243), and \textit{O. suborbiculata}, Col. ("Trans.
N. Z. Inst.," vol. xviii., p. 263)—both of these species also obtained from the same interior mountain locality. From its indumentum it will fall under the same section as the preceding.

3. O. uniflora, sp. nov.

A tall shrub or small tree, "12ft.—16ft. high; branches very compact." Branchlets numerous, short, striate, light reddish-brown, pubescent; as also petioles and panicles. Leaves sub-coriaceous, dryish, broadly ovate obtuse, and sub-oblung-orbicular, 1 in.—2 in. long (but rarely attaining to 2 in.), ½ in.—1¼ in. broad, base sub-truncate, green, glabrous and shining above, with closely-appressed starry pubescence below of a light fawn-colour, with a reddish hue in the young leaves; coarsely waved; margins entire, whitish, and slightly thickened; very closely and regularly reticulate, reticulations small, sub-quadrate; the rays of the starry indumentum flat, flexuous, and acute; petioles slender, 4—7 lines long, sub-terete, channelled. Panicles axillary and sub-terminal, longer than leaves, compound, loose, erect, slender, somewhat regular in shape, neat; peduncles and sub-peduncles about 1 in. long, each with an appressed ovate-acuminate bract at its base. Heads small, narrow, rounded, 2½ lines long, usually 2 together and sub-sessile on short secondary sub-peduncles, sometimes only 1 and then pedicelled, always composed of a single tubular floret. Inflorescences green, in sub 3 rows, slightly scurfy and puberulent; the outermost sub-rhombic-ovate, acute; the inner larger, thinner, paler, oblun, tips rounded of a dark line-colour with their margins delicately fimbriate; lobes of corolla 5 (sometimes 3), white, narrow, acuminate, entire, much recurved forming a complete revolute curl, tube smooth; anthers narrow linear acute, orange with a brown line; style long; stigma large, much produced beyond anthers, curved, spreading, yellow, tips sub-spatulate finely tuberculate, their apices coloured pink. Pappus whitish with a reddish hue, irregular, shorter than floret, sebrid, thickened and flattened near the top, tips acute. Receptacle small, glabrous, dark-brown, alveolate. Achenium 1½ lines long, sub-linear-cuneate, terete very slightly compressed, striate, brownish, pubescent in the upper half.

Hab. Hills at Oharin, West Coast, Cook Strait, near Wellington; and cultivated at Wanganui, near Waipukurau, County of Waipawa: Mrs. E. Grosse. Flowering in March, and very sweet-scented.

Obs. According to Benthams's classification, this species will belong to his § II., Asterotriche.

1. *C. membranacea*, sp. nov.

Plant small, erect, 4 in.–5 in. high. Rootstock vertical, thickish, also horizontal long and slender, sending out long narrow leafy stolons. Leaves sub-rosulate, 8–10, close, spreading, orbicular-elliptic and broadly oblong, 3 in.–1 in. long, membranous, green on both sides, glabrous, minutely glandular on upper surface and margins with depressed circular glands or dots, but not puberulent, finely reticulated, margins slightly revolute and sharply serrate, teeth rather long, curved; petiole flattish, 3–4 lines long. Scape solitary, erect, slender, 3 in.–4½ in. high, thickly glandular pubescent (also involucre), with 5–8 caulline bracts, narrow linear, acute, 3 lines long, equidistant. Head hemispherical, ⅜ in. diameter. Involucral scales numerous in 4 rows, linear, the inner row longest, 3 lines long, dark-green, 1-nerved, glossy within the apical portion, and tips largely ciliate. Florets very numerous: of ray, 20 or more, limb long narrow, revolute, 4-veined, tip slightly 3-notched, tube very short and slender, glabrous; stigma long, exserted; of disk, 32, corolla infundibuliform smooth, 5–6-lobed; lobes sub-acute; stigmas slightly exserted. Receptacle deeply punctiform, with irregular and high scaly margins. Pappus shorter than tube of disc-florets, of irregular lengths, scabrid, acute, reddish. Achene linear somewhat quadrangular, striate, sub-compressed, pubescent on striae, base finely beaked.

*Hab.* Open lands at Taupo; 1889: Mr. H. Hill.

*Obs.* This species is very near *C. glandulosa*, Hook. f. (a plant collected by me in that same locality), but differs from *C. glandulosa* in having membranous and broader leaves without pubescence, and with differently-formed glands, long petioles, numerous scales to involucre, and a much larger number of florets; its achene also being angled, &c.

2. *C. perpusilla*, sp. nov.

A very small plant, sub-erect and slightly tufted; rootstock stoutish, straight, 1½ in. long, with many long wiry rootlets at the extremity. Leaves 8–14, linear-lanceolate, sub 1 in. long, 1½ lines wide, margins entire, tip obtuse, pale-green, glabrous above, very cottony closely appressed and shining below, concave, conduplicate. Scape short as long as leaves, single, erect, leafy, with a few small bracts, very woolly. Head small, 4 lines diameter, spreading. Outer involucral scales 5, broadly oblong, woolly in the centre; the inner 7 linear, glabrous, longer than outer, green and shining below, their tips obtuse, notched, with 1 circular brown spot,
margins white, hyaline; florets about 14, very slender almost setaceous, a little shorter than pappus. Receptacle narrow, ridgy. Pappus few, about 20, scabrid throughout, tips acute. Achene linear-lanceolate, dark-brown, scabrid.

Hab. Swampy spots near Rangipo, eastern base of Mount Tongariro, County of East Taupo; 1889: Mr. H. Hill.

Obs. A small and curious species, of which more perfect specimens are much desired. I have received several plants together in a little lot as collected, but only two of them bear heads of florets, one of these being also immature.


1. L. strangulata, sp. nov.

Plant small, slender, graceful, erect, slightly tufted; root-stock vertical, long. Leaves 9–13, dark-green, sub- (sometimes oblate-) orbicular, 3–5 lines diameter, base somewhat sub-truncate and abruptly tapering, margins crenate-serrate, usually only 2 serratures on each side, rarely 3 and when so confined to the one side, serratures and tip apiculate, membranous, minutely reticulate, strigose-hairy on both surfaces; hairs long, flaccid, jointed and strangulated, patent, white, shining; margins ciliate, also petioles; petioles very slender, ½–1 in. long. Scape slender, very long 3 in.–4½ in., with 1–2 minute distant linear acuminate bracts, glabrous below, pubescent above near head, where it is also thickened. Head small 2½ lines diameter, sub-hemispherical; involucral scales 16, disposed somewhat in 3 rows, the outer shortest, linear-lanceolate, glabrous, greenish, the margins above scabrid, tips lacerate and acute. Ray-florets 14–16, limb linear, very membranous, much recurved, white; tube very short, hairy; hairs patent, short: disc-florets few, about 6, tube slender, sub-cylindrical, 5-cleft, tubercular, tips obtuse; stigmas exerted, tubercular. Achene fusiform, turgid, minutely and thickly tuberculate throughout.

Hab. Among other low herbage, open grounds dry edges of cliffs banks of a stream south of Dannevirke, County of Waipawa; 1888: W. C. Swamp at Rangipo, eastern base of Mount Tongariro, County of East Taupo; 1889: Mr. H. Hill.

Obs. A species having close affinity with L. petiolata, Hook. f., and also, though not so close, with L. forsteri, D.C., and L. commersonii, Cass., but differing from them all in its thinner orbicular and reticulate leaves, with their striking silvery sepaloid hairs and fewer serratures, in its numerous involucral scales with lacerate tips, and in its tubercular florets and achenes.
Genus 11. Cassinia, Br.

1. *C. spathulata*, sp. nov.

An erect spreading shrub 7ft.–9ft. high, of irregular diffuse growth, often 3-branched from base; bark of trunk and branches roughish, grey, with longitudinal fissures and cracks. Branchlets (and leaves below) covered with closely-adpressed pale-yellow tomentum, slightly glutinous when fresh; the branchlets numerous, long, sub-erect and patent, very slender, leafy, scarred. Leaves many, rather close but not crowded, regular, sub-decussate, spreading, linear-spathulate, 1–2 lines long, ½ line wide at top, tapering, thickish, green glabrous and shining above; margins thickened, slightly recurved; petiole very slender, decurrent. Heads numerous in terminal sub-hemispherical corymbs, 10–30 (usually about 20 together), narrow, tubular, 2 lines long, light-brown. Involuturial scales several, closely appressed, slightly woolly, their margins finely ciliate, when young pale yellowish-green. Peduncles (and pedicels) pubescent, 1–4 lines long, with several small acuminate and opposite bracts, bearing 2–5 pedicellate heads; pedicels slender, 1–3 lines long, each with a small acute bract at base. Florets usually 9–10. Scales between florets linear with sharply-serrate and jagged margins, their tips produced dilated and rounded, pure-white, showy, sub-recurred, slightly laciniate. Pappus white, spreading, as long as florets, serrate with broad thickened tips. Achene linear, glabrous.

_Hab._ Dry hills near the sea, Napier, Hawke's Bay; 1860–89: W. C.

Obs. I have long known this shrub, which grows naturally here in the borders of my paddock on the hill; but until this year I had always supposed it to be one of the described New Zealand species of _Cassinia_—probably _C. leptophylla_. This summer, however (in February), I was attracted to it by its charming and showy appearance, so many hundreds of heads of pure-white flowers, formed by their large recurved scales; and on examination I found it to be a very distinct species. Its spatulate leaves yellowish below and sub-glutinous, larger heads of flowers, their coloured and woolly involucres, and their prominent white-tipped and largely-recurred floral scales, with the tops of the pappus flattened and coarsely serrate, form good differential characters.


1. (?) *G. minutula*, sp. nov.

A minute plant of distinct simple growth; rootstock thickish for plant, vertical; rootlets long, wiry. Leaves 6–10, basal, linear, spreading, ¼ in.–½ in. long, ⅛ in. wide, tips obtuse, dark-green, glabrous above and on midrib below, white and
Cottony on under-surface, their lateral margins incurved, often twisted. Scape single, \(\frac{3}{4}\) in.-1 in. long, slender, almost setaceous, finely cottony, with 1-2 narrow acuminate cauline bracts. Head 2\(\frac{1}{2}\) lines diameter. Involucral scales about 10, spreading, sub-ovate-lanceolate acuminate, the inner series narrower linear acuminate, thin, light-brown (old), scarios, glabrous. Receptacle sub-papillose. Pappus sub 20, rather long for plant, white, spreading, flexuous, 2-nerved, scabrid below, upper portion smooth, flattish, tip obtuse. Achene \(\frac{3}{4}\) in. long, terete, slightly tuberculate; tubercoles linear, patent.

Hab. In boggy ground, near eastern base of Mount Tongariro, County of East Taupo; 1889: Mr. H. Hill.

Obs. This is a remarkable little tiny plant, yet, though very minute, attracting attention at first sight from its pure-white hair-like leaves, when closely incurved, contrasting so strongly on the black soil. Its pappus, on examination, reveals the most curious structure (as described), which is also constant, and (to me) unique. Although I have received several whole plants (in a little mass), yet only one possessed a floral head, and that old and imperfect, containing only its involucral scales with one seed! It may prove to be a species of Senecio, or of some other allied genus; yet, for the sake of its peculiar pappus, also of its filiform hair-like leaves, I have ventured to describe it.

Order XLI. Campanulaceae.

(Including Goodeniaceae.)

Genus 5. Selliera, Cavanilles.

1. S. microphylla, sp. nov.

Plant very small, creeping, twiggy; main stems hypogeous, a few inches long, much branched, spreading, implexed, slender, woody, wiry, very flexuous, rooting at nodes, reddish-brown; branchlets very short, sub \(\frac{3}{4}\) in. long, yellowish, their tips only appearing above soil, procumbent, matted. Leaves few, small, much scattered, sometimes 3-4 at nodes, spreading, broadly lanceolate or sub-ovate-lanceolate, about 1 line long (some much smaller), thickish, entire, glabrous; petioles long flexuous, twice the length of leaf. Peduncle terminal solitary, 1-flowered, 1 line long; bracteoles small. Calyx-lobes rather large for plant, long, sub-acute, appressed, thickish, glabrous, shining. Corolla 2 lines long, glabrous, dull-purple, lobes 5 (sometimes 6), rather large, sub-acute, spreading, with dark veins regularly reticulated. Stamens 5; anthers elliptic, pale-yellow. Style longer than stamens, very stout, dark-brown, with dilated orbicular cup-like indusium, the margin slightly and minutely ciliate. Capsule (old)
about 1 line long, turgid, black, containing 7 seeds (in one only 4); seeds orbicular (sometimes irregularly shaped), semi-compressed, slightly convex on one side; margined, pale, shining.

_Hab._ Swampl ground at Rangipo, eastern base of Mount Tongariro, County of East Taupo; 1889: _Mr. H. Hill._

_Obs._ I. An interesting little plant, received by me in a small turfous lump of earth, cut out of the ground; its leaves and few flowers closely appressed to the soil, and forming a dense leafy mat, making it a difficult matter to extricate a fair specimen. The small capsules were old (of last year?), broken off from the plants, and more or less injured, but still containing their seeds, which were perfect.

II. This species has evidently pretty close affinity with _S. exigua_, F. Mueller (Benth., "_Flora Australiensis_," vol. iv., p. 82), another small species from Western Australia; but differs from that plant in several characters.

Order XLII. ERICEÆ.

Genus 1. _Gaultheria_, Linn.

1. _G. epiphyta_, sp. nov.

Plant a graceful open shrub 3ft. high; trunk 1½in. circumference; 9 main branches, distant, leafy, each about 2ft. long, slender, and drooping, with 8–10 branchlets radiating at top; bark light-brown, rather smooth; branchlets very hairy; hairs long, appressed, springing from muricated dots. Leaves green, alternate, pretty regularly disposed, distant, spreading, sub-membraneous or very slightly coriaceous, petiolate, narrow oblong, apiculate, 5–7 lines long, margin thickened, recurved, serrate with a long slender micro within the blunt tooth at tip of a lateral vein; veins much and closely reticulate; young leaves very membranous, flaccid, brownish. Flowers small, rather distant, single, axillary at tops of branchlets; peduncle stout, curved, 1½ lines long, with a few scattered minute narrow patent scales, and 3–4 sub-orbicular or broadly ovate bracts at base, amplexicaul and imbricate (sometimes one single one close under calyx), their apical margins uneven slightly jagged-toothed; tips apiculate. Calyx 5-lobed; lobes ovate, subacute, entire, cut nearly to base, 1-nerved, pale. Corolla white, sub-ovate, scarcely 1 line long, lobes 1-nerved, very obtuse, incurved, margins sub-granular-crenulate. Stamens short, muricated; filaments 1-nerved, broadly dilated upwards one-third length from base, margin sub-angular, narrow acuminate above two-thirds length towards anther; anthers orange-red, sub-orbicular urceolate, turgid, 2-awned; awns short, stoutish, incurved, part of and rising immediately and gradually.
from the anther. Style: long, erect, stout, \( \gamma \) in., simple; stigma muricate- (or ray-) pencilled. Capsule small, sub-ombilical depressed, enclosed by enlarged slightly fleshy dark-red calyx. Seeds of various irregular shapes, mostly 3-4-sided, shining, finely dotted, light-brown.

*Hab.* Wood, south of Dannevirke, County of Waipawa; 1887–89: W. C.

*Obs.* I. This plant is a highly peculiar one: 1. From its precise habitat—epiphytal on a tree-fern, a species of *Dicksonia*, 12ft. high, and full-fronded, its caudex closely covered with two small climbing-ferns—*Hymenophyllum flabellatum*, Lab., and *Trichomanes venosum*, Br.—in matted growth; and therein, at 4ft. from the ground, flourishes this *Gaultheria* at an angle of 45°. It is the only instance I have ever known of a *Gaultheria* so growing. A few other forest shrubs and trees, however, are not infrequently met with in such situations. 2. From its remarkably free, airy, semi-regular, and graceful form, differing much in this respect from the other known New Zealand *Gaultherias*.

II. It is pretty closely allied to *G. antipoda*, Forst. (which grows in profusion on the cliffy heights near), but differs from that and other New Zealand species and varieties in several characters—as in its sub-membranous and mucronate leaves, which are also differently shaped, and otherwise and much more veined, and most particularly in its muricatated stamens, which are also of a different form and colour, &c. For some considerable time I supposed it to be a plant of *G. antipoda* (or of one of its varieties) a little altered in growth and appearance from its strange and unique habitat; but on dissection and examination (on my obtaining perfect and complete specimens) I found it to possess very different characters. Several botanists have pretty fully described *G. antipoda*, Forst., particularly A. Richard, among other New Zealand plants (in his *Voyage de l’Astrolabe: Part Botanique*), who has also given a folio drawing of the plant with good clear dissections, which show the great difference in the form, &c., of its stamens and anthers compared with those of this species. In his copious and clear description of *G. antipoda* he also says (inter alia), "Corolla—ovata, laciniiis brevibus, revolutis, acutis; stamina—filamentis albis planis, infra medium dilatatis ovalibus basi angustatis; antheræ ovoides—apice bilaciniiata, lacinii bicuribus; semina sub-ovata" (loc. cit., p. 212). Of course, I am well aware of the many varieties (\( \alpha, \beta, \gamma, \delta, \epsilon \)) given by Sir J. D. Hooker in his "Flora Novae-Zelandiae," in the "Handbook" ditto, and in "Flora Tasmaniae," under his description of *G. antipoda*; but this plant differs from them all. Hitherto, in spite of all my diligent search in those woods, extending over three years, I have only met with
this one plant (though G. antipoda (sera) is both fine and very plentiful in dry open spots in that locality, as I have already noted), so that, should other plants not be fallen in with hereafter, the question may again arise (with others as it did with me) whether this plant is not a sportive form of G. antipoda, and the origin of a species nova.

2. G. subcorymbosa, sp. nov.

Shrub 3ft.-4ft. high, much branched, diffuse; branches (specimens) dichotomous, each 4in.-6in. long, and bearing 2-3 heads of flowers; branchlets spreading, slender, free, each with a head of flowers; bark red, roughish, with a few coarse scattered appressed hairs. Leaves numerous, alternate, patent, petiolate, sub-coriaceous, glabrous, narrow-oblong-lanceolate, 9-11 lines long, closely serrate throughout, serratures and tip obtuse, green on both sides a little paler below; veinlets clear, pale, much reticulated, causing many small oblong and variously-shaped dots; petioles sub 1 line long; glabrous. Flowers terminal in spreading corymbose panicles 1in. diameter, containing 20-25 flowers; peduncle, pedicel, calyx, corolla, and bracteoles all white; pedicels (and peduncle) finely and sparingly puberulent, 2½ lines long, curved, trilanceolate at the base; bracteoles clasping, imbricate, their margins finely serrulate. Calyx-lobes large, acute, minutely serrulate-fimbriate. Corolla 2 lines long, sub-campanulate, inflated, mouth slightly contracted; lobes small, revolute, their tips obtuse and minutely denticulate. Filaments white, sub-lanceolate acuminate, 1-nerved, thickly and coarsely muricated, the tips of points obtuse; anthers dark orange-red, base gibbous slightly emarginate and minutely muriculate; awns stout, spreading their sinus very broad, rising immediately from anther, with a small acute lobe on each side at base of awn. Style and stigma simple. Hypogynous scales broadly deltoid, concrete, their tips very obtuse, thickened, brown.

Hab. On eastern slopes of Ruahine Mountain-range, County of Waipawa: Mr. H. Hill.

Obs. A very graceful species, apparently distinct from all known ones; its anthers somewhat approach those of G. oppositifolia, Hook. f.


1. D. tenuicaulis, sp. nov.

A small much-branched shrub. Branch (specimen received) 3in. long, 2 lines diameter at base, naked; bark blackish-grey; bearing 15 small erect slender branchlets, each 1in.-1½in. long, ½-¾ line wide, minutely and regularly scarred
with annular cicatrices from old leaves; red-brown, glossy. Leaves at tops of branchlets, 12–15 on each, close, erect, recurved, slightly spreading, subulate, \( \frac{4}{5} \) in. long, \( \frac{1}{4} \) in. wide, canaliculate two-thirds of length, glabrous, shining, reddish; margins minutely serrulate; tips thickened, sub-terete, roughish, obtuse; the base largely dilated 2 lines wide, amplexicaul, closely imbricate; decreasing gradually in size upwards, the uppermost being only 4 lines long, the limb very short \( \frac{1}{4}–\frac{1}{2} \) lines, with larger bases much overlapping, and their margins ciliate. Floral bracts orbicular, largely concave, margins finely ciliolate, 4 lines long, of which 2 lines form a long subulate thick obtuse micro. Flowers terminal in small spikes of 3–7 flowers, closely compacted. Calyx, sepals small 1\( \frac{1}{2} \) lines long, narrow linear acuminate; tips acute, margins membranous and finely ciliate. Corolla sub-campanulate or broadly tubular, 3\( \frac{1}{2} \) lines long, sides straight, 5-cleft, lobes very small one-fifth length of corolla, triangular acute, margins crisped. Filaments very short, adnate above the middle. Anthers small, brown, oblong-cordate, 2-lobed; tip emarginate. Style short, stout; stigma slightly capitate, roughish, minutely jagged. Hypogynous scales sub-quadrilateral, obsolescent striate, broadest at top, apical margin sinuate.

_Hab._ Arid stony ground, high up on Mount Ruapehu, County of East Taupo; 1889: Mr. H. Hill.

_Obs._ A species having affinity with _D. recurvum_, Hook. f., and also with _D. rubrum_, Col., but differing from them in several characters.

2. _D. featonianum_, sp. nov.

"A small bushy shrub, about 4ft. high." Leaves at tips of slender branchlets, 12–25, erect, loosely spreading, sub-rigid, 1\( \frac{1}{8} \) in. long (24in. at base of panicle), 2–2\( \frac{1}{2} \) lines wide at base above vagina, suddenly and slightly contracted, linear acuminate gradually decreasing to tip, flattish, slightly concave above, glabrous, striate, membrano-coriaceous, dull-green; margins finely serrulate; tip thickened, sub-acute. Floral bracts, at the base of each branch (or branches when 2 together) of the panicle, orbicular, 3\( \frac{1}{2} \) in. long, largely concave; margins thin, minutely ciliolate (sub lente); tip mucronate, 2 lines long; within the bract, at the base of each pedicel, are very narrow curved subulate and setaceous bracteoles 1–2 lines long, their upper margins ciliolate; tips acute. Flowers terminal in a small narrow sub-compact panicle, 2in. long, \( \frac{1}{2} \) in. wide, stems striate, glabrous, with a few thinly-scattered minute white hairs, almost microscopic; branches free, 3–4 lines long, largely bracteolate, alternate in pairs, each with

3–4 flowers, and a very small broad apiculate persistent bracteole at base. Flowers small, reddish, pedicelled, spreading; pedicels very slender, 1 line long. Calyx half the length of corolla, sepals free, spreading, ovate, acute, ciliolate. Corolla 2 lines long, cylindrical or narrow campanulate, 5-lobed; lobes deltoid-ovate, obtuse, wrinkled, largely recurved, 1-nerved; margins and tips incurved. Filaments short, adnate above the middle of the tube; anthers small sub-orbicular cordate. Style rather long, longer than calyx, thickened below; stigma simple, scarcely capitate. Hypogynous scales very small, sub-oblong-rectangular, narrowed upwards, truncate, tip retuse. Capsules small, 5-cleft.

_Hab._ Whangaparaoa (Cape Runaway), a little north of the East Cape: 1889; per Mrs. E. H. Featon.

_Obs._ I. The floral leaves or bracts of this species can only be seen in the incipient state of its inflorescence, before expansion, as they all fall off very early. The preceding species, _D. tenuificaulis_, has also floral bracts very like these of this species, only they are much smaller and not so early deciduous. Writing from memory of 45–50 years, I believe I have often noticed a similar feature in the common northern species _D. urvilleanum_, A. Rich., and _D. lessonianum_, A. Rich, before flowering. And the same character has been fully noticed and described as pertaining to a large Tasmanian and Australian species—_D. milliganii_, Hook.—by both Hooker ("Icon. Plant.") and Bentham ("Flora Austral."). And it is not unlikely that it belongs to other of our New Zealand species, though hitherto not described through their floral bracts falling off so very early.

II. I have named this species in honour of Mrs. E. H. Featon, of Gisborne, New Zealand—who has wrought so long and so diligently at our New Zealand botany—the accomplished authoress of "The Art Album of New Zealand Flora" (now in course of publication), who very kindly sent me the specimen I have described. In her letter which accompanied it she says, "The flowers are white and the buds pink, the leaves are a pale-green on top and glaucous below, having a purplish tinge as it approaches a buff-coloured sheath."

(Order XLIII. MYRSINEÆ.)

_Genus 1. Myrsine_, Linn.

1. _M. brachyclada_, sp. nov.

A small somewhat rigid much-branched shrub; branches short, bark darkish red-brown, smooth; branchlets numerous, very short, scarred. Leaves sub-fascicled at tips of branchlets and at nodes, 4–5 together, spreading, obovate and oblong, 3–5 lines long, sub-membranaceous, glabrous, the upper por-
tion crenate, tips very obtuse crenulate with 2–3 notches, the lower margins towards petiole entire and slightly recurved, darkish-green and dull above, pale and reticulated below, the cuticle rather loose and wrinkled; petioles slender, slightly hairy and ciliate, 1 line long. Flowers sub-terminal, 3–4 together, axillary among leaves at tips of branchlets, 2 lines diameter, dark-brown; peduncles 1 line long, slender, drooping; bracteas at base, small, brown, tips ciliate. Calyx-lobes 4, free, spreading, oblong, acute, 1-nerved, slightly pubescent, ciliate at tips and margins. Corolla-lobes 5, cuneate, tips broad, irregularly notched or retuse, glabrous, sub 1 line long, twice the length of calyx, reticulately veined; veins dark, conspicuous, not reaching to margins. Anthers 4, large, ovate, pale, sub-cordate, tips acute. Stigma sessile, capitulate, depressed, circular, irregularly 4-lobed, sunk in centre. Fruit not seen.

_Hab._ Sides of Mount Tongariro, County of East Taupo; 1889: _Mr. H. Hill._

_Obs._ This species varies much from the other known indigenous ones, especially in the form of its leaves and of its corolla; also, in it being the only known one whose leaves are without pellucid dots and entire margins; its corolla also is much larger, the lobes differently shaped and copiously veined. I have received two good specimens, evidently gathered from different shrubs (and probably at different elevations): in the one the leaves are small, scarcely 3 lines long, and the branches clothed with filamentous lichens (_Usnea_ with apothecia); while the leaves of the other specimen are from 4 to 5 lines long: in all other respects, however, these two specimens are alike.

2. _M. neo-zealandensis_, sp. nov.

Shrub erect semi-fastigiate, 6ft. high, slender, graceful, much branched; bark dark reddish-brown, smooth, striately wrinkled when dry; branches and branchlets long, sub-erect, slender, simple. Leaves few, distant, alternate, solitary, obovate, 1in.–1½in. long, 5–6 lines broad, flat, membranous, glabrous, darkish-green above, pale below, margins entire with numerous intra-marginal pellucid red dots very close together; tip broadly rounded, sometimes (but rarely) slightly retuse; tapering to petiole; petiole slender, 1 line long; midrib prominent below; much veined, veins largely reticulate (_sub lente_). It also has a few solitary and scattered intervening very small leaves of 2–3 lines in length. Stipules linear, thickish, red; tips acute; slightly ciliate at base.

_Hab._ Edge of a wood on open plain south of Dannevirke, County of Waipawa; 1889: _W. C._

_Obs._ This is a pretty species, with a very striking appear-
ance, differing largely from all the other described New Zealand ones of this genus; as also from all others known to me; and, indeed, from all New Zealand shrubs and trees in general. Unfortunately, its flowers and fruit are still unknown; notwithstanding, I have no doubt of it being a species of *Myrsine*. I have only yet met with a single plant, although I have sought often and diligently for others.

Order XLVII. APOCYNEAE.


1. *P. ochracea*, sp. nov.

A bushy climbing shrub composed of many thickly-interwoven branches, rising to the height of 6ft.-7ft.; branches very long, slender, 1 line diameter, bark red-brown; branchlets very slender, almost wiry, short. Leaves opposite, distant, linear, 3in.-4in. long, 1 line wide, tips obtuse and sub-acute, glabrous, dark-green (drying olive-green), striate below, the lamina spreading at almost right-angles; petiole 1 line long, sub-vertical, with a small thick node at base. Flowers axillary, in small few-flowered graceful panicles, half as long as leaves (sometimes in larger open airy leafy panicles), usually 3- or 5-flowered; peduncles very slender, ¼in. long, puberulent (as also pedicels and lobes of calyx); pedicels filiform, opposite, 4 lines long, bracteolate at base; bracteoles linear, narrow, 1 line long, spreading; tips thickly ciliate. Calyx dark-green, nearly as long as tube of corolla; lobes long, narrow, obcuneate, tumid at base, margins membranous, ciliate; hypogynous scales conical glabrous obtuse. Corolla sub-campanulate, 3 lines long, ochraceous; lobes twice the length of tube, sub-oblong-spathulate, tip sub-acute, dimidiate excised on one side near the tip, slightly revolute, veined; largely overlapping in the bud. Anthers half exserted, sagittate, narrow, acute, with long divergent tails as long as anthers. Stigma capitate, semi-elliptic (glans form), constricted near base, base truncate. Pod sub-terete, acuminate, 6in. long, ¼in. wide, slightly puberulent, tip obtuse.

*Hab.* Edges of dry woods, south of Dannevirke, County of Waipawa; 1885: W. C. (Flowering in December.)

*Obs.* 1. This plant has caused me a deal of close study and examination; partly owing to the great variability in our species of this genus, and partly to Sir J. D. Hooker having reduced his original four species in the “Flora N.Z.” to two species in his later work, “Handbook of the N.Z. Flora,” with the remark, “I am convinced there are but two species of this genus in New Zealand” (*loc. cit.*, p. 187). To this, however, I cannot subscribe.
II. I have already described another species, *P. macrocarpa* ("Trans. N.Z. Inst.", vol. xiv., p. 331), and this present plant I also believe to be a valid species, or, at least, a well-marked and distinct variety. It differs considerably from the two well-known species in the "Handbook," *P. albitrora* and *P. rosea*; not merely in the remarkable and constant form and size of its leaves, but also in its much larger flowers of a different shape and colour, as well as in other characters (*vide* descript.).

III. I was much struck with the peculiar appearance and graceful beauty of the plant when I first saw it; though then (in May) it was not in flower, only in fruit; and it was through my going purposely to those farther forests in the following summer that I was rewarded by finding it in flower. It is certainly an elegant garden plant. In general, in the two other and commoner species (named above) the leaves vary materially on the same plant, even on the same branch; but such is not the case with this one.

Order LVIII. Plantagineæ.

Genus 1. Plantago, Linn.

1. *P. picta*, sp. nov.

Plant perennial, sub-rosulate, flat, appressed to ground, sub 3 in. diameter; rootstock very stout and densely hairy; hairs rather long, red-brown, shining. Leaves sub 30, spreading, narrow-oblong-spathulate, 1 in.–1½ in. long, 4 lines broad at middle, sub-coriaceous, opaque, veined, veins obsolete, margins entire with 3 distant narrow patent teeth (or sub-lobes) at middle on each side, glabrous with a few scattered weak hairs on the upper surface and forming small tufts at bases of teeth, and sub-ciliate at margins; tip subacute; petiole very broad, 2 lines wide, flat, 7-nerved, densely hairy at extreme base; hairs long, reddish-brown. Scapes 8–10 to a plant, 1½ in.–1½ in. long, extending beyond leaves, slightly hairy (more so at top); hairs flattish, adpressed, white, articulate. Spike broadly- or deltoid-elliptic, obtuse, 5 lines long, sub-truncate and 4 lines wide at base, slightly compressed, 8–9-flowered, the lowest pair free, subsessile. Bracts large, broadly ovate, dark brownish-black with broad white membranous and ciliate margins, much veined, veins branching, hairy within at base between bract and calyx. Calyx-sepals (4) much the same as bracts, only narrower. Corolla large for plant, very membranous, lobes spreading, white with a dark longitudinal centre, broadly ovate, margins entire and not involute; tip obtuse, mucronulate, and minutely toothed on each side. Anthers exserted, ochraceous, large, 1 line long, ovate-cordate, the centre deeply sulcate; their basal extrem-
ties rounded; tip produced, apiculate. Style much exserted, thickened upwards, coarsely hairy.

_Hab._ On a small islet lying near the shore between Gable-end Foreland and Tolaga Bay; 1889: Mr. H. Hill.

_Obs._ This plant differs considerably from our other known New Zealand species. Its nearest ally seems to be _P. brownii_, Rapin; but on closely comparing it with the drawings and ample dissections of that species as given by Sir J. D. Hooker in his "Flora Antarctica," vol. i., tab. 43, it is found to possess several grave differential characters—_e.g._, in its leaves being thinner and much more veined, and bearing tufts of jointed hairs on their upper surfaces, and very hairy at their bases; in the larger number of flowers in its spikes; in its bract and calyx-lobes having wide membranous white borders, with ciliated margins; in the long hairs between the bract and calyx; in the lobes of the corolla being broader, flat, and obtuse; in its anthers being of a different shape—the tip more acuminate, and their basal extremities broadly rounded, not acutely pointed.

Order LXIII. POLYGONÆ.


1. _M. muricatula_, sp. nov.

A small low prostrate wiry undershrub. Branches implexed, long, very slender, striate, roughish; bark dark-brown; branchlets few, almost filiform, alternate, striate, sub-angular, finely and thickly muricated. Leaves few, alternate, scattered, 4–5 lines distant, linear, 4–5 lines long, ½ mm. broad (sometimes smaller), thickish, no veins visible, dull darkish-green, shining, tips sub-acute, margins entire; midrib stoutish below; petioles tapering insensibly, thickish, sulcate, minutely muricatated, and so midrib below; stipules large, brown, scarious, truncate, veins conspicuous. Flowers hermaphrodite, axillary, 2 together, sub 8–10 pairs, alternate, distant 3–4 lines apart in a terminal leafy raceme, their leaves small and decreasing in size to tip, sometimes without leaves and only stipules, which are large and bladdery, the middle vein of the outer one stout, aristate. Perianth white, ½ lines diameter, 5-lobed, lobes oblong, 1-nerved, tips obtuse; peduncle 1 line long, white as perianth; style 3-branched, stigmas thick, each 3-branched. Anthers broadly elliptic, nearly sub-orbicular. Nut black, half exserted, ½ lines long, smooth, shining, broadly ovoid-lanceolate, triquetrous, angles obtuse; the perianth-lobes persistent, membranous.

_Hab._ Summit of Mount Ruapehu, and within the old crater, on dry stony spots, County of East Taupo; 1889: Mr. H. Hill.
Colenso.—On New Phanogamic Plants.

Order LXVII. Thymeææ.

Genus 1. Pimelea, Banks and Solander.

1. P. lanceolata, sp. nov.

Shrub erect, "3ft. high," much branched at top; glabrous except inflorescence. Branches regularly tubercled with scars from former leaves; bark reddish-brown, shrivelled; branchlets opposite and sub-fasciculate, numerous, spreading, sub-angular; bark light yellow-green. Leaves lanceolate, usually 2in. long, 3½ lines wide at middle (sometimes smaller), opposite, distant 3-4 lines apart, spreading, flat, light-green, mid-rib prominent below, principal veins very long almost obsolete, margins slightly recurved, tips acuminate, thickish, acute, somewhat suddenly contracted at base, petiole 2 lines long, with a minute tuft of erect hairy bracteoles in the axils; the floral leaves similar but shorter and a little broader. Flowers in small terminal corymbose heads, 8–15, peduncled; peduncles short, very hairy with coarse grey hairs. Perianth 8 lines long, white, rather thin, strigosely hairy throughout; hairs white, very thick and coarse at base; tube infundibuliform, throat wide, very narrow below, constricted near base; limb spreading, lobes broadly elliptic very obtuse rounded, each 2 lines long, margins slightly irregular, much and reticulately veined, veins red. Anthers large, oblong, slightly apiculate, adnate, 1 line long; stamens and style much exserted. Nut narrow ovoid, enclosed in membranous base of perianth.

Hab. Base of Mount Ruapehu, County of East Taupo; 1889: Mr. H. Hill.

Obs. Its nearest ally among the known species of Pimelea is P. longifolia, Banks; differing, however, from that species in several characters, especially from the more minute and exact specific description of it as given by Bentham, "Flora Australiensis," vol. vi., p. 6.

2. P. similis, sp. nov.

Shrub erect, 2ft.–3ft. high; branched at top; glabrous except inflorescence. Branches spreading; bark dark-red, wrinkled, smooth; branchlets numerous, slender, very pale straw-colour, sub-angular. Leaves broadly lanceolate, 1½ in. long, 5–6 lines broad, tips suddenly acuminate, obtuse, opposite, sub-decussate; fewer larger and more distant on branches, numerous and smaller on branchlets, flat, dull olive-green, upper surface cuticle smooth shining wrinkled, veined; midrib below stout and prominent; margins thickened sub-cartilaginous, white, recurved; petioles stoutish, short, 1 line long, somewhat broad and flat, pale-yellowish like branchlets; involucral leaves similar but broader, ovate-lanceolate abruptly
acuminate. Flowers in small terminal heads, 6–9, half hidden among the leaves, peduncled; peduncles short, sub 1 line long, curved, densely hairy or sub-silky, whitish, shining. Perianth \( \frac{3}{4} \) in. long, brownish-red with grey hairs, very hairy about limb, hairs extending far beyond tips of lobes, scattered below; limb sub-erect not spreading; lobes narrow oblong, sub-acute, 1 \( \frac{1}{4} \) lines long, margins incurved, veins simple not reticulated; tube cylindrical, very slender throughout; throat narrow. Anthers scarcely half-exserted, very small, elliptic, about \( \frac{1}{4} \) line long; style exserted as long as perianth; stigma small, capitate, papilllose. Nut ovoid, larger than in the preceding species, enclosed in membranous base of perianth.

**Hab.** Edges of thickets, base of Mount Ruapehu, County of East Taupo; 1889: Mr. H. Hall.

**Obs.** A species very closely allied to the preceding (P. lanceolata), so that it might easily be taken for it at first sight, and yet differing from it in many particulars. The principal differences are to be found in its shorter yet broader dull-green leaves, with thickened white margins; its much smaller and slenderer perianths, which are of a different colour, with their lobes narrower, acute, incurved, and not largely veined; and its very small half-included and differently-shaped anthers.

3. **P. microphylla**, sp. nov.

Plant small, shrubby, sub-prostrate, and compact; branches 3in.–4in. long, bark greyish-black, regularly scarred (also branchlets) from cicatrices of fallen old leaves; branchlets numerous, short, with greyish hairs between leaves. Leaves only at tips of branchlets for about \( \frac{1}{2} \) in., quadrifariaously disposed, regular, closely imbricate and appressed, elliptic, \( \frac{1}{10} \) in. long (sometimes smaller), margined, obtuse, concave, sessile, thickish, veins not visible, glabrous, yellowish-green; the floral leaves scarcely larger, but with a few fine ciliolate white hairs at tips. Flowers few, sub-terminal, solitary and 2 near each other, small, 1 \( \frac{1}{2} \) lines long, slightly hairy on the outside, brownish-red (when dried); tube as long as lobes; lobes oblong, veined; tips very obtuse. Anthers exserted; style as long as lobes.

**Hab.** Sides of Mount Tongariro, County of East Taupo 1889: Mr. H. Hill.

**Obs.** A very peculiar and pretty little species, apparently allied (though not closely) to P. guidia and to P. buxifolia; differing from them both in its very small and closely-imbricated quadrifarious leaves, its solitary red flowers, and the rounded tips of its perianth-lobes. I have received several small specimens, which are all alike as to leaves, &c., but containing very few flowers.
4. *P. bicolor*, sp. nov.

A small shrub, main branches 2in.–3in. long, slender, erect; branches leafy, hairy, bark dark-red; branchlets 1in.–2in. long, very slender. Leaves numerous, lanceolate, 2–2½ lines long, concave, thickish, pale-green, glabrous, margined with a broad dark-purple line, extending on both surfaces, which is also constant, sub-sessile, decurrent, sub-imbricate on main branches, distant 2 lines apart in opposite pairs on young branchlets; petioles yellowish-brown; floral leaves similar but slightly larger. Flowers very small, sub-terminal, axillary, single or forming an opposite pair. Perianth 2 lines long, with a thick tuft of greyish-white hairs at base, urceolate, membranous, veined, reddish (when dry), very hairy; hairs long, straight, coarse, white, extending beyond tips of lobes; lobes very small, shorter than tube, broadly elliptic, obtuse; style exserted; stigma large, capitate, fimbriate. Nut enclosed, oblong, turgid, 1 line long.

*Hab.* Open spots, Taupo, County of East Taupo; 1889: Mr. H. Hill.


5. *P. dichotoma*, sp. nov.

Shrub 2ft.–4ft. high, much branched; branches long, erect, very slender, regularly ringed with scars from old leaves; bark light reddish-brown, glabrous; branchlets in pairs, leafy at top, the young branchlets very hairy; hairs long, white, strigose, appressed. Leaves decussate, distant, sessile, linear, 4in. long, 1 line wide, recurved falcate, green somewhat obscure; tips and bases red; base a thickened knob; glabrous above, strigosely hairy below (as also floral leaves); hairs white, springing from coloured sub-muriculated dots, and extending beyond tips in small pencils; floral leaves (usually 4) much larger and thinner, ovate-lanceolate, ¾in. long, 3 lines wide, sub-sessile, light-green, veined. Flowers terminal (at first, afterward axillary between branchlets), in small heads usually 8–9, sessile; perianth very hairy on the outside, 3 lines long, tube narrow, reddish and swelling below; lobes 1 line long, sub-oblong-ovate, very obtuse, veined, slightly spreading, white, much ciliate; throat red; anthers included; stigma slightly exserted, globular, minutely and densely pencilled.

*Hab.* Banks of streamlets, borders of open plains, Tahreraiti, County of Waipawa; 1889: W. C.

*Obs.* An extremely neat-growing open shrub, of graceful appearance when in flower (in October). A peculiar character is that of its young branchlets, which spring in opposite pairs from within the floral leaves, and grow very rapidly; so that,
while its heads of flowers are terminal on their first expanding, they soon become axillary between two long branchlets, which, on the flowers withering and falling off, become equally forked with a broad obtuse basal angle.

6. *P. heterophylla*, sp. nov.

Shrub small, erect; branches (specimens) 3in.—4in. long, slender, 1 line diameter, much branched at top; bark dark-coloured, slightly pubescent; branchlets erect, 1in.—2in. long, very slender, scarcely ¼ line in diameter; young branchlets red, glabrous, with a few scattered short appressed hairs. Leaves glabrous, slightly concave, decussate, petiolate, of 2 sizes and forms—(1) 2 lines long, broadly lanceolate, distant 1 line apart, free and spreading on flowering branches; and (2) 1 line long, narrow lanceolate, very close, crowded and imbricated on the smaller (and barren) branchlets; all narrowly margined red; petioles red, glabrous. Floral leaves similar to No. 1. Flowers terminal and sub-terminal, 2—4 together, small, their tips only appearing among the leaves. Perianth red, veined, very hairy; hairs white; tube 1½ lines long; lobes (sometimes only 3) ½ line long, rounded. Anthers enclosed. Style much exerted; stigma large, capitate. Nut enclosed, obovate, large (for plant) 1¼ lines long, dark-green.

_Hab._ Dry open spots, high up on Mount Ruapehu, County of East Taupo; 1889: Mr. H. Hill.

_Obs._ A species pretty closely allied to *P. bicolor*, Col. (*supra*), and difficult in words clearly to describe their differences (which, indeed, I have had some labour in doing); yet, when the specimens are compared and examined together, their variance is apparent at once. I would, however, that I had received more and better specimens of both plants, and also of all specimens of *Pimelea* brought from the mountainous interior.

7. *P. polyccephala*, sp. nov.

Plant (apparently) a very small low densely-compacted shrub. Branches (specimens) small, stems thickish 1in.—2in. high, the lower portion naked; bark dark-coloured; with many very small branchlets at top, 3in.—4in. long, closely and regularly tubercled in ridges from old fallen leaves; scars glabrous; stems hairy between them; hairs coarse, of unequal lengths, dirty-white. Leaves thickish, densely imbricated, small, sub-rhombo-orbicular, 1—1½ lines diameter, base truncate, sessile, glabrous, yellowish-green; the lower ones keeled; those near the tops more orbicular, a little larger, and obsoletely veined. Involucral leaves in 3 rows, 3 in a row alternating, larger, sub-orbicular, tapering slightly to
petiole, very membranous, reddish, much-veined, veins forked and coloured a deeper red, largely hairy on the whole of the under-surface; hairs white. Flowers not seen (? too early in the season); but the floral leaves are clustered in several small heads (the size of a large pea) at the tips of branchlets, each head on a short stout stem 2–3 lines long, comprising 5–8 smaller heads on short pedicels, and each of these smaller heads contains the larger and hairy involucral leaves, more or less crumpled up: the whole most closely packed.

_Hab._ Near the summit of Mount Ruapehu, in dry stony ground, County of East Taupo; 1889: **Mr. H. Hill.**

_Obs._ Not having received any flowering specimens of this peculiar and very distinct species, I should not have cared to describe it were it not for its striking abnormal floral leaves, which, being so widely different from its own proper leaves in appearance, size, texture, venation, and colour, present the _prima facie_ aspect of a corolla; and this is still further increased through these leaves being so greatly wrinkled and congested, and also very hairy on their outside. Moreover, this peculiar character in the floral leaves is one that hitherto has scarcely been found to pertain to the New Zealand species of _Pimelea_, although it is a common feature to several of the numerous Australian species of this genus. Bentham, in his "Flora Australiensis," describes 67 species, besides several strongly-marked varieties—species with other botanists.

**Genus 2. Drapetes, Lamarck.**

1. _D. macrantha_, sp. nov.

Plant small, prostrate, scarcely semi-shrubby; branches 3in.–4in. long, slender, brown, scarred; branchlets sub-secund, erect, regular, 1in. high, 1 line wide, simple, green, leafy throughout. Leaves closely appressed imbricate, linear-linguiform, obtuse, 1 line long, sessile, glabrous, striate, gradually increasing in length upwards on branchlets, the uppermost leaves larger, more acute, their apical margins sparingly ciliate, tips bearded. Flowers terminal at tips of branchlets, 3–4 together, free above leaves, white, conspicuous. Perianth sub-narrow campanulate, 2 lines long, lamina nearly 2 lines wide, sessile, with a ring of hairs around base but separate; tube strongly 8-nerved, glabrous, shining; lobes sub-elliptic, two-fifths length of perianth, 1-nerved, puberulous, at the centre on the outside, their tips very slightly ciliate, each with two small sub-rotund yellowish scales at base. Filaments exserted, long, half the length of lobes; anthers sub-orbicular, yellow.

_Hab._ On the eastern slopes of Ruahine Mountain-range, County of Waipawa: **Mr. H. Hill.**
Transactions.—Botany.

Obs. A species very unlike in habit and general appearance those two described indigenous ones—D. dieffenbachii and D. lyelli, Hook. f.—also, those other three species (forming the genus) of Tasmania, Fuegia, and Borneo; being smaller, neater and simple-branched, with larger and more numerous flowers.

CLASS II. MONOCOTYLEDONS.

Order I. ORCHIDÆ.


1. B. tuberculatum, Col.

Bulb ovoid, dark-green, glossy, clothed with minute white shining leprous circular bullate scales. Peduncle sub 1 in. long, slender, with 3 sheathing cauline bracts, equidistant, membranaceous, pale, striate, 3-flowered. Flowers small, usually 3 (sometimes by abortion only 2), rather distant, on short pedicels, each with a sheathing bracteole at its base. Perianth triangular, very oblique, gibbous at base (as in young Dendrobium cunninghamii), whitish, very membranous; sepals of nearly equal length, their tips and upper margins of a violet tinge, slightly open, when fully expanded 2½ lines broad; dorsal sepal narrow, ovate, 1-nerved; the lateral pair much broader, triangular-ovate, dimidiate, 3-nerved, sub-acute, connate in front under joint of labellum; petals white, ovate, obtuse, 1-nerved, ½ size (or less) of sepals; labellum exserted, sometimes the lamina is erect and falls back on the column, 1 line long, sub-ovate-oblong, tip sub-acute, thickish, smooth, margin entire, bright vermilion-red with a central yellow line running to base, base truncate with 2 small longitudinal ridges at posterior part, its margins thin incurved, claw slender very long (nearly as long as lamina), yellowish, the joint excessively mobile. Column minute, lateral appendages sub-triangular, hyaline, their tips retuse, with a minute glossy gland at base in front; anther pale-yellow, tip circular, slightly erose. Capsule oblong, turgid, 3 lines long, striate; striae light-red. Leaves, &c., as already described, only some are larger 9–12 lines long and purple below; veins (in fresh state) not visible. Ovary and peduncle tuberculated as described. (“Trans. N.Z. Inst.,” vol. xvi., p. 336.)

Hab. Epiphytal on trees, forming pretty large and closely-matted masses, woods near Palmerston, County of Manawatu; April, 1889: Mr. A. Hamilton.


1. Pt. speciosa, sp. nov.

Plant stoutish, erect, 9 in.–10 in. high; stem and leaves of a reddish hue. Leaves: basal 0, but 2–4 small ovate pale
scales, distant on lower stem; cauline 4, nearly equidistant, much longer than flower, 5in.–8in. long, ½in. broad at middle, linear-lanceolate, acute very thin, sessile, clasping, much and reticulately veined, light-green. Perianth large sub 2in.; segments rather loosely spreading, richly variegated with bright-red dark-green and fawn colours, the upper portions of segments brilliant red; largely veined; veins very prominent. Dorsal sepal large, acuminate, slightly tailed; lateral sepals connate, erect, largely spreading above and behind dorsal, tails long; sinus very broad, base emarginate; lateral petals loose from dorsal sepal, their tips very acute, not tailed; tongue linear-lanceolate, 2 lines wide, veined, reddish, minutely and thickly papillose; tip obtuse, thickish and slightly knobbed; appendage long, curved, fimbriate. Column long, wings broad, auricles long wide rounded, two subulate horns arising from outer angles shorter than the column, the margin between them slightly erose; stigma large, wider than column.

_Hab._–Near Mount Tongariro, County of East Taupo; 1889: Mr. H. Hill.

2. _Pt. auriculata_, sp. nov.

Plant erect, glabrous, shining, 10in.–12in. high; stems bright-red. Leaves: basal 0; cauline 4, lanceolate very acuminate, 5in.–7in. long, ½in. wide, sheathing at base, pale-green, midrib reddish. Perianth 1½in. long, narrow, graceful, green with a reddish tint. Dorsal sepal and lateral petals narrow, sub-ovate, sharply acuminate, not tailed; lateral sepals erect, connate, sinus large, lobes narrow, long, spreading, tailed—tails nearly 1in. long; tongue dark-red, linear-oblong, sub 1in. long, 2 lines wide, middle nerve stout, flexuous, with 4 flexuous longitudinal veins on each side, the tip truncate and slightly bifid; appendage wide, shortly curved, coarsely fimbriate. Column long, slender, wings produced upwards in subulate tips nearly 1 line long, with very long and narrow auricles 2½ lines long, their tips closely and finely fringed. Ovary slender, somewhat linear, lin. long, reddish.

_Hab._ Open fern land, Fortrose, Invercargill; 1889.

3. _Pt. polyphylla_, sp. nov.

Plant light-green, very slender, erect, 7in.–9in. high. Leaves very membranous, veined, reticulations large somewhat in squares; basal 6–7, forming a sub-rosette, oblong and oblong-ovate, 1in. long, petioled; petioles tapering, membranous, ½in. long; cauline 6–7, sub-erect, narrow oblong or obovate, ½in.–4½in. long, equidistant on stem, the lower petiolate; petioles long, ½in.; the upper sessile, sheathing at base. Perianth pale-green, 1½in. long, rather narrow, very membranous,
slightly veined, segments not tailed. Dorsal sepal slightly acuminate, acute; lateral sepals connate, erect, acuminate, longer than dorsal; lateral petals nearly as long as dorsal sepal, acuminate, tips obtuse; tongue sub-linear-lanceolate, thickish, no veins visible, brownish-green, glabrous, produced, slightly recurved, tip sub-acute; appendage small, very short, slightly recurved, with a few short fimbrils. Column rather short, length of tongue; wings broadly auricled, with two stoutish subulate acuminate horns arising from centre of wings and longer than column; stigma fimбриate at base.

_Hab._ Near Mount Tongariro, County of East Taupo; 1889: Mr. H. Hill.

Genus 15. _Thelymitra_, Forst.

1. _T. fimбриata_, sp. nov.

Plant rather slender, stem 11 in. high, erect, flexuous. Leaves: basal 0; cauline 1, 3 in. from base, sheathing, linear-acuminate, sub-acute, 6 in. long, ½ in. wide at base, flat, subcoriaceous, dark-coloured (with stem and bracts) when dry. Two large cauline bracts, equidistant, nervd, their tips very acuminate much produced and flexuous. Flowers 5, distant in a loose raceme, their pedicels ½ in. long (the length of ovary); floral bract broadly ovate (almost sub-orbicular), 8–9 lines long, 5 lines wide, many-nerved, the top suddenly acuminate, acute. Perianth 1½ in. diameter, violet with darker pencillings, much veined; veins branching. Dorsal sepal broad; petals narrower than lateral sepals; lip longer and very narrow. Column truncate, with small toothed wings shorter than staminodia; staminodia largely fimбриate; fimбриæ spreading, irregular, flat, flexuous, sometimes forked at their extreme tips; anther ovate, pointed.

_Hab._ Open fern lands, interior; also in similar situations, Fortrose, Invercargill, whence specimen received in a packet: 1888.

_Obs._ A species having affinity with _T. pulchella_, Hook. f., but differing in its larger and otherwise-coloured flowers, its long narrow labellum, and remarkably fimбриate staminodia, &c.

Genus 18. _Orthoceras_, Br.

1. _O. caput-serpentis_, sp. nov.

Plant erect; root 2 large narrow-oblong tubers, 2 in. long, sub-terete; stem slender, 18 in. long, 1 line diameter above, green, rigid, wiry; 1 short broad basal bract, ¾ in. long, acuminate. Leaves 2, near base, sheathing, 9 in. long, very narrow, sub 1 line wide, sub-terete throughout, deeply channelled, margins closely involute, tip acute; 3 cauline leaves much shorter, distant, appressed. Flowers few (5), distant;
raceme short, 3in. long; pedicels 4–5 lines long, each with a green bract at base 1in. long, broadly ovate, ½in. wide near the base, much and suddenly acuminate, shorter than flower. Perianth open, gaping, sub-labiata; dorsal sepal concave, flattish, sub-orbicular, 5 lines diameter, shining, green without red-purple within towards base, obstolutely veined longitudinally, margins entire, thin, slightly incurved; lateral sepals 10 lines long, spreading, divergent at nearly right angles (not upright), thickish, narrow, wiry, 1 line wide at base, deeply channelled, margins conniving, purple-spotted, tip sub-acute; petals sub-oblong-ovate, 3 lines long, 2 lines broad at base, purplish, tips truncate, 3-toothed, sides not excised. Lip dark purple-red with a central bright-yellow longitudinal line, glabrous, 4 lines long, 3 lines broad at base, 3-lobed, lobes deeply cut, the 2 lateral erect, produced, sub-triangular-ovate dimidiate, obtuse, margins entire, thickened; the apical lobe much recurved, its tip rounded thickened and slightly concave, and a large rounded yellow callus at base its tip recurved, a minute colourless gland arising from base of labellum under the tip of the large yellow callus, no claw. Column green, acuminate, with thin yellow margins, the 2 appendages sub-linear, longer than column, curved, subulate, papillose, tips acuminate, acute. Anther broadly ovate, acuminate. Stigma large and with rostellum sub-quadrate-orbicular, much broader than anther. Ovary 8 lines long, narrow-oblong-clavate, slightly ribbed, ribs very obtuse; grass-green.

*Hub.* Open ground near River Moawhango, County of East Taupo; 1889: Mr. H. Hill.

Order X. RESTIACEAE.


1. *G. minima*, sp. nov.

A small glabrous and pale plant, main branch or root-stock horizontal, creeping under ground, stoutish, rooting and tufted from nodes, tufts pretty close; stems erect, sheathing; sheaths numerous, short, broadly ovate, striate, imbricate, appressed, tips thickened obtuse. Leaves 4–6 to each tuft, about ½in. long, ½in. broad, erect and spreading, recurved longitudinally from vagina, wiry, somewhat harsh, sub-terete; tips sub-truncate, rounded; vagina broad, clasping, shining, striate, margins entire; ligula small, scarcely angled, minutely ciliolate; light-green when young. Peduncle terminal to tuft or branchlet, as long as the leaves, stoutish, striate. Capsule lanceolate, slightly convex on both sides, sub 2 lines long, smooth, shining, crustaceous, yellowish-ochraceous (somewhat resembling a small grain of *Phalaris canariensis*), tip obtuse, notched; stigmas 2, linear, ½in. long, shaggy.
Hab. Dry open grounds, Mount Tongariro; 1889: Mr. H. Hill. Also, on high stony plains south of Dannevirke, County of Waipawa, hidden among low herbage; 1888: W. C.

Obs. I. A very small plant of densely-matted intricate flat growth, with only the upper portions of its tiny tufts and fruits appearing above soil. It seems pretty closely allied to the few (3) known and scattered species of this genus, though differing from them all: one (G. setacea) found at Port Preservation, South Island, by Lyall; one (G. ciliata) in Lord Auckland’s Islands, by Hooker; and one (G. australis) in the Falklands, by Gaudichaud—this last named species is also in Fuegia.

II. I have obtained several specimens from the matted lump of turf or sod containing them, cut out of the soil by Mr. Hill; but all the fruits were old or imperfect save two, which had retained their stigmata but no anthers.

Order XI. Cyperaceae.

Genus 12. Oreobolus, Br.

1. O. serrulata, sp. nov.

Plant very small, densely caspitose in close tufts, ⅛ in. high, erect, much and closely branched. Leaves subulate, ⅛ in. long, erect, canaliulate, striate, sub-equitant, tips obtuse, margins throughout minutely and closely serrulate; pale-green when young, reddish in age; vagina very large, 2 lines wide, membranous, white, shining, its tips rounded produced and finely serrulate, 2-nerved on each side, nerves conspicuous, red; ligula 0. Culm shorter than leaves, cylindrical, smooth, wiry. Glumes 3, the outer and uppermost largest, its apical margin finely serrulate; the 2 floral ones margins entire, their tips obtuse slightly lacerate. Stamens 2 (in two flowers examined), long, flexuous, longer than style. Style long, filiform, straight, black, smooth; stigmatic branches 3, very long and flexuous, scabrid throughout, brown, not starting from one point. Scales 6, narrow triangular, acuminate, erect, persistent, white, their margins closely and finely serrulate. Nut small, under 1 line diameter, broadly pear-shaped, white.

Hab. Swampy ground at Rangipo, near the eastern base of Mount Tongariro, County of East Taupo; 1889: Mr. H. Hill.

Obs. This is an interesting little plant, making the third species of this small and curious genus found in New Zealand, which genus only now contains 4 species. It is also the smallest of them all, and is very distinct as a species in its finely-serrulate margins. One species (and the original type of the genus), O. pusillum, Br., was first detected by its describer in Tasmania; this species was also found by Sir J. D. Hooker in the Antarctic Islets, who at first described it as a sp. nov.,
O. pectinatus; and afterwards it was found by myself at Taupo and on the open summits of the Ruahine Mountain-range. A second New Zealand species, O. strictus, Berggren, was discovered by him near the River Bealey, South Island, and fully described, with admirable drawings and dissections, in his book of "New Species of New Zealand Phænogamous Plants," 1877. Another species, O. obtusangulus, Gaud., was early discovered by him in the Falkland Islands. Small though they all are, and in many respects very much alike, yet they all possess good distinctive characters; their study has afforded me great pleasure.

ART. LX.—Notes on some New Zealand Ferns.

By A. HAMILTON.

[Read before the Hawke’s Bay Philosophical Institute, 8th June, 1889.]

Through the kindness of Messrs. Pinckney and Robinson, of the Napier High School, I have the pleasure of bringing before you this evening some interesting specimens of ferns collected by them at Kuripapanga recently. The one of most interest, and which is probably new to most of us, is the second species of New Zealand Gymnogramme.

Gymnogramme pozoi, Kunze, var. rufaefolia, Br.

Many years ago Mr. Colenso, in one of his journeys along the coast to Wellington, found this little fern growing on the cliffs near Cook Strait. For a long time this was the only recorded locality in New Zealand, although the plant was known to occur over Australia, Tasmania, and in the Pyrenees. Within the last few years, however, it has been found in the Southern Alps at an elevation of about 3,000ft., and described by Mr. Potts, in vol. x., "Trans. N.Z. Inst.," as G. alpina, Potts. He remarks, it is probably the most densely villous of all the New Zealand Filices; in its soft woolly texture and silvery-grey colours it bears close resemblance to several plants from alpine flora. Compared with G. pozoi, it lacks the membranous texture of that rare fern, the fronds are crowded, the pinnæ far less distant.

The other specimens are forms of Asplenium colensoi and A. hookerianum, but of very lax growth, and certainly worthy of description as varieties.