ART. XLVI.—Phœnogams: A Description of a few more Newly-discovered Indigenous Plants; being a Further Contribution towards the making known the Botany of New Zealand.

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Class I. DICOTYLEDONS.

Order VI. CARYOPHYLLACE.

Genus 2.* Stellaria, Linn.

1. S. pellucida, sp. nov.

A perennial, prostrate, slender, rambling, weak, flaccid, creeping herb, 12in.–18in. long, growing profusely in large beds or patches of several feet each way, rooting from nodes; stems containing one central capillary tenacious pith. Leaves dark-green, distant, opposite in pairs, suborbicular (generally broader than long), 1–2 (rarely 2½) lines diameter, apiculate, minutely punctiform with white dots, margined, margins slightly uneven with dark border (also midrib) underneath, base slightly decurrent; petioles flattish length of leaves, slender, with a few weak hairs, connate and finely fimbriate. Flowers (noticed) very few; peduncles axillary, longer than leaves, 2–sometimes 3-flowered; pedicels a little longer, sometimes unequal, with a pair of large concave scarious bracts at base, 3 lines long, and another similar pair below the middle of the longer pedicel; bracts pale, ovate-acuminate, with a dark central line. Flowers very small; petals 0; sepals 5, 1 line long, ovate-acuminate, with broad white scarious margins, 3-nerved, nerves dark-purple; styles 3, rather large, rough; capsule produced, longer than sepals, broadly ovoid, very obtuse, white, very membranous, semi-transparent, seeds visible through it; seeds large for plant, 11, oblong-ellipsoid and suborbicular, turgid with a notch, bright cinnamon-colour with darker margins, minutely muriculate (under lens).

Hab. Interior deep forests near Dannevirke, County of Waipawa; March, 1894: W. C.

Obs. This plant was only detected in two low-lying localities in those dense forests, where, however, it forms large closely-overgrowing beds. Small and humble though it is, it

* The numbers of the orders and genera given here are those of them in the "Handbook of the New Zealand Flora."
has given me much trouble—(1) in obtaining flowering specimens, for, though I brought away a large amount of it, gathered casually on first seeing it (being struck with its pleasing, neat, and healthy appearance), believing it to be new, I found on diligent examination that I had not a single flower among them all. So, though the distance was considerable (for me, in my then present weak state), and I had grave doubts as to my again finding the localities, I went again to those woods, and after no small amount of trouble and weariness I found the spots, and sat down and spent a long time in overhauling the beds for flowers, and at last found only a few—about seven or eight—specimens. (2.) On close, patient examination I find this plant comes next to *S. parviflora*, Banks and Sol., and also to *S. oligosperma*, mihi (Trans. N.Z. Inst., vol. xviii., p. 257), but yet possessing characters which those species have not, and its own peculiar characters are also constant.


1. *C. caspitosus*, sp. nov.

Plant annual, small, bushy, erect, and spreading, 2in.–3in. high, much-branched from root, dark-green, glabrous; stems and branches slender, dichotomous. Leaves few, distant, in pairs on stems 5–8 lines apart, largely connate, narrow-linear, 3–4 lines long, 3½in. wide, aristate, rather thickish, not rigid, opaque, recurved. Flowers numerous, small, terminal 2–3 together, and solitary axillary on stems, peduncles 3–8 lines long, slender, erect, filiform; perianth 1 fine long; sepals 4 (rarely 5) ovate-elliptic obtuse with broad white margins; petals 0; stamens 4, opposite sepals; styles 4–5, stigmas largely penicillate, pale; capsule a little shorter than sepals, whitish; valves 4 (sometimes 5), very broad and truncate at tips. Seeds numerous, very minute, of various shapes—broadly cuneate, subreniform-dimidiate, or semi-orbicular and gibbous, tuberculate.

**Hab.** On the hills at Napier, in dry spots; 1894: W. C. Obs. A species having affinity with *C. repens*, mihi (Trans. N.Z. Inst., vol. xix., p. 261), and with other New Zealand species, but of a different size and habit, as well as possessing differential characters. It is also pretty closely allied to *C. kerguelensis*, Hook. f., differing in the obtuse and margined segments of its perianth, &c.

**Genus Cerastium**, Linn.

1. *C. amblyodontum*, sp. nov.

Plant annual, simple, erect, slender, 7in.–8in. high, very hairy. Leaves few, scattered, patent, pale-green; at base, 4,
small obovate-spathulate, 3–4 lines long, 1 line broad; on stem, 4–5 pairs, opposite, linear-oblong, 7 lines long, 2 lines broad, sessile, margins entire slightly sinuous, ciliate; hairs jointed acute; tip subacutae; midrib wavy; veins largely reticulated; hairs on surface strigose, muricatulate, white, shining. Flowers few, 7 on each plant; in one specimen single throughout on main stem, alternate, ½ in.–1 in. distant (and 2 flowers together lowest on stem, 1 of them smaller on shorter pedicel and nodding); in another specimen none on main stem but on forked peduncles at top, 3 on each peduncle with a single flower in fork at their bases; pedicels ¾ in. long, suberect, springing from a pair of leafy bracts with membranous margins. Sepals rough, green, subovate, much acuminate, with a strong central nerve, and very broad white, shining membranous margins, with tips rounded and produced beyond sepals. Styles 5, long, penicillate, flexuous. Capsule subcylindrical, more than twice the length of calyx, whitish, smooth, shining, curved, 10-nerved longitudinally, nerves straight prominent, ending in the notches between the teeth; teeth truncate, their lateral margins regularly recurved; capsule before opening greenish, tip subacute. Seeds broadly obcordate, subTurbinate, with a notch at the narrow end, brown, tuberculate, tubercles numerous, minute, black.

_Hab._ On Tongariro Mountain, County East Taupo; 1893; _Mr. H. Hill._

_Obs._ A rather curious though humble plant; it sprang from turf (see _Sagina_, the following plant), and was for some time overlooked by me (supposing it to be one of our cosmopolite British species, very common here) until after flowering, when it showed its extra-long shining white capsules; then, on examining it, I found several grave and peculiar characters, mentioned in description, particularly its strongly-nerved capsule, truncate teeth with recurved lateral margins, and curiously veined leaves with midrib deflexed. This very peculiar character is found in all its leaves. Its petals (if any) had fallen away, also stamens, but on one unripe capsule the five styles were perfect. In all the drawings with dissections (and descriptions) I possess of many species of _Cerastium_ (Sowerby's, Hooker's, &c.) the teeth are always shown to be very acute, and the capsule cylindrical and nerveless. It may not be amiss for me to call the attention of the botanical student and scientific reader of this description to another and somewhat similar indigenous species—_C. truncatulum_—also having peculiar broad truncate teeth, which, however, are cloven, described by me in a former volume of _Trans. N.Z. Inst._ (vol. xxv., p. 327).
Genus *Sagina*, Linn.

1. *S. truncata*, sp. nov.

Plant small, perennial, tufted, grass-green, 1in.–1½in. high; branches 3in.–6in. long, slender, procumbent, creeping, rooting at nodes; leaves—of tufts, numerous, very close, sub-erect and spreading, linear aciculate, 9 lines long, scarcely ¼ line wide; of branches, much shorter, 5–7 lines long, sub-fasciculate, 5–8 together at nodes, subsecund, the outer pair connate, 5–8 lines apart on stems. Perianth 1 line long; sepals 4, oblong-ovate, obtuse, concave, equal, green; petals 4, often 0, very short, oblong obtuse, subhyaline, alternate with sepals; stamens 4, opposite sepals, slender, capillary, erect, at first longer than capsule; anthers orbicular, white. Styles 4, short; stigmas long, recurved, roughish subpenicillate, hairs (under lens) knobbled. Capsule suborbicular, longer than sepals, tip produced, sub-4-angled, opening by 4 valves, their tips very truncate; pale-green at first, whitish when ripe. Seeds numerous, pear-shaped, brown, roughish.

*Hab.* On Mount Tongariro, County of East Taupo; 1893: Mr. H. Hill.

*Obs.* I. This species certainly has close affinity with *S. procumbens*, Linn., which in some characters it resembles (*prima facie*), an Australian and British plant; differing, however, in its leaves being much more numerous, fascicled 5–8 together at nodes (in that species only in pairs), and in their being aciculate, and subsecund on branches; in its flowers being always erect, not nodding, and mostly terminal; its petals, when present, very minute, smaller and of a different shape and structure; in the form of its capsule; and in the tips of the valves being very truncate, almost emarginate. I have closely examined it (living specimens), comparing it with drawings and dissections given by Sowerby and by Hooker, and descriptions by them and by Bentham (Australian specimens), and note the differential characters.

II. This little plant has almost a history. Mr. Hill brought it (possibly unnoticed) in a turf-like lump of earth with other very small plants; these were all crushed, withered, and apparently dead through long and close keeping and rough carriage, but I set them in a flower-pot, and last summer this one flowered, but the flowers were all eaten up by snails and slugs in one night before they were fully developed; so I had to wait till December in this year (1894), and the plant has flowered plentifully. In not more than 1 in 10 perianths have I found any petals.

[This genus, and the one preceding it, *Cerastium*, are not found in the "Handbook of the New Zealand Flora," but they both belong to this order, and are closely allied to *Colobanthus*.]
Order XXXIX. Composite.

Genus 1. Olearia, Moench.

1. O. multiflora, sp. nov.

A low much-branched close-growing shrub, 2 ft.–3 ft. high and 2 ft.–3 ft. diameter; branchlets bark, dull greyish-brown. Leaves alternate, chartaceous, about $\frac{1}{4}$ in. apart, broadly elliptic, petioled, $2\frac{1}{4}$ in.–$2\frac{3}{4}$ in. long, $1\frac{1}{4}$ in.–$2$ in. broad, margin upper three-fourths sinuate-crenate, crenatures few (5–8), distant, lower portion plain, grass-green, glabrous and shining above, pale greyish-green below, with closely appressed hairs (young leaves pale, and very hairy on both sides), tip acute; base truncate and slightly dimidiate, the right side shorter; midrib and veins hairy above, hairs white, appressed, glistening; midrib below stout and with primary veins coloured brown, prominent; the veins few, distant, alternate, curvilinear and intramarginal, and not at right angles; petioles stout, firm, subterete, $\frac{1}{4}$ in. long, channelled above, bases slightly decurrent, densely hairy, with closely appressed brown hairs (and so branchlets). Inflorescence subterminal and axillary, semi-erect in thick spreading many-branched corymb, peduncles slender, subfasciculate, 3–6 together, sub 3 in. long, pale-grey, pubescent, each much and dichotomously branched at top into 3–5 subpeduncles, each bearing 2–4 heads; pedicels very slender, 2–3 lines long, each with a small linear-ovate bracteole, appressed at base. Heads very numerous, close, small, oblong, $2\frac{1}{4}$ lines long, 3 lines diameter. Involute scales few, distant, imbricate in 4 rows, ovate, hairy, the outermost shortest, the innermost longest, their tips truncate and very woolly. Florets—of ray, 8, limb white, 4-nerved, tip trident, recurved, tube hairy;—of disk, 6–7, limb pale-yellow, 5-cleft, pubescent on outside; stigmas exserted, obtuse, rough; pappus few, erect, scabrid, acute, irregular, red-pink, shorter than florets, that of ray as long as tube. Achene linear, $\frac{1}{4}$ line long, angled, pubescent; hairs minute, white, glistening. Receptacle ridgy, with rather large intervening scales.

Hab. On Ruahine mountain-range, County Waipawa; 1893–94: Mr. A. Olsen, who also has the plant flourishing in his garden.

Obs. The alliances of this species are with O. nitida, Hook. f., and O. populifolia, Col. (Trans. N.Z. Inst., vol. xvii., p. 243), and O. suborbiculata, Col. (loc., vol. xviii., p. 263), but differing from them all in several characters. Its rose-red pappus gives the flowers a peculiar and pleasing appearance. The indumentum—flat, lanceolate, membranous—is of Bentham's Division I.

1. *C. ruahinensis*, sp. nov.

Rhizome stout, with many long straggling thick rootlets. Leaves 20–25, tufted, sub-narrow-oblong-lanceolate, 2¾ in. to 3 in. long, ¾ in. broad, subacute, coriaceous, glabrous green and obsoletely ribbed above (young leaves having a fine filmy-white scurfy indumentum), thickly coated below with sub-appressed light-yellowish-white wool, margins entire and subrevolute, midrib below obsolete, slightly contracted at petiole, which is as long as or longer than leaves, ¾ in. wide, increasing towards base, thin, purple, margin glabrous and free from hairs. Flowers 5; scape stout, twice length of leaves, cottony, subappressed; bracts several, distant, 9–12 lines long, finely subulate, thin, green abscis. Cottony below, 3 lines wide at base, clasping, extending to head and there embracing involucr. Head 1¾ in. diameter, involucral scales numerous, subulate, erect, woolly at margins and tips. Ray-florets, ligula ½ in. long, linear-spathulate, white, tips obtuse entire and slightly emarginate, tube glabrous, not thickened below; disk-florets, dark-yellow, glossy, 6-cleft; styles long, exserted from tubes, stigma linear-obtuse slightly and sparsely muricate; pappus few, erect, wavy, irregular, 1–2–3 lines long, scabrid, acute. Achene linear, terete, 2 lines long, quite glabrous.

*Hab.* Ruahine mountain-range, east side, County of Waipawa: Mr. A. Olsen.

*Obs.* A species near to *C. spectabilis*, Hook. f., from same mountain-range at higher altitude, differing, however, in several characters: in leaves, smaller margins entire, wool beneath semi-appressed and of a lighter colour, midrib not prominent, petioles thin, purple, not hairy; in ray-florets, ligula linear-spathulate, tips entire, tube glabrous and not thickened below; in longer exserted styles (both ray and disk), and in slender narrow-oblong obtuse, not deltoid, stigmas, which are very sparingly muricate.

Genus 7. Bidens, Linn.

1. *B. aurantiacus*, sp. nov.

Plant herbaceous erect, glabrous (*prima facie*), tops of stems (two specimens main stems) 10 in.–12 in. long, simple with a few small axillary branchlets above; stem hard, fibrous, 2½ lines diameter, subangular, deeply striate. Leaves few, distant 4 in. apart on stem, trifoliate, 3 in.–4 in. long, opposite; central leaflet ovate-acuminate, 2 in.–2½ in. long, ½ in. broad, the two lateral ones opposite 1½ in. long and broader in proportion, deeply and closely serrate; teeth large, regular, sharp, subfalcate and minutely serrulate; veins finely reticulate.
below; petioles 1½ in. long, semi-amplexicaul, with weak flexuous flattened hairs at bases; petiolules short, slender. Heads terminal, 2–3 together, each single one on a long peduncle 1½ in. long, slender striate bare, when two together a long leafy bract at base, hemispherical, 5–6 lines diameter, a leafy linear bracteole at base ¼ in. long, base fimbriate. Involute slightly hairy at base, hairs weak white, bracts in sub 2 rows, the outer ones few, distant, shorter, linear-spathulate very obtuse, dark-green, three dark nerves, margins ciliolate; the inner sub-linear-ovate, acuminate, 3 lines long, tips obtuse and very pubescent, shining, dark-brown with broad yellow margins many-nerved (6–8), nerves dark-red, shorter than florets, with long linear erect yellowish scales between florets, longer than achenes, tips obtuse, 4-nerved; nerves dark-red. Florets sub 40, small, bright dark-orange: ray–few, tip of limb 4-cleft, each lobe with a dark-red central nerve; disk–many, very small infundibuliform, 4-nerved, all much dilated at base. Pappus, three stout erect barbed awns 1½ lines long, bright-yellow, glistering, appearing much above florets, the central awn shorter, sometimes but rarely 4 awns. Achene 2½ lines long, linear subcompressed, flattish, striate, bright-yellow, slightly hairy on upper margins and on striae, the outer ones shorter and stouter subobovate, with a few distant blunt mucros on their margins. Receptacle (fully ripe) with large alveolar sockets and smooth white flattish smooth raised margins.

_Hab._ Woods at Te Kawakawa, near East Cape; 1894: Mr. _H. Hill._

**Genus 17. Senecio, Linn.**

1. *S. heterophylla*, sp. nov.

A tall erect branching glabrous perennial herb, 5ft.–6ft. high; root-stems few, very stout, 1½ in. diameter; much-branched about middle, and still more so at top, branches long slender; branchlets very slender, erect, and sparingly leafed, bearing terminal corymbs. Leaves of two sizes, narrow-lanceolate, acute, thin, roughish, very much and closely veined, dentate-crenate, teeth straight, their tips hardened, sharpish, sub 1 line apart, dark-green above, paler beneath, midrib prominent on underside; the larger leaves few distant scattered on main stems, 5in.–6in. long, ¾ in. wide, sessile and largely auricled, auricles much dentate; the smaller leaves numerous, 2½–3½ in. long, 2–3 lines wide, almost linear, petiolate, subopposite and close on small branchlets, springing from the axils of the larger leaves; the young half-developed leaves are very hairy, with short fugacious white hairs, but the single scattered smaller leaves on the upper branchlets are sessile and auricled.
like the large ones. Heads small, in large loose-spreading corymbs. Peduncles and pedicels very slender, filiform, rather dry, \( \frac{3}{4} \) in.–1 in. long, each having 2–5 scattered bracteoles. Involucres small, narrow-cylindric, 3 lines long, nearly as long as the florets, green, with a few small bracteoles at base; scales 9, narrow subulate, 3-nerved, with white scariosous margins, their tips obtuse and slightly coloured, ciliolate. Florets sub 20, tubular, very slender, capillary, slightly campanulate at apex and dilated at base, greyish-green, glabrous, tips 3-fid, lobes laciniate, slightly tinged with yellow; stigmas spreading recurved subcylindrical scaberulous, tips thickened, dark-coloured. Achene linear, \( \frac{1}{3} \) in. long, slightly grooved, scabrid on angles, ends obtuse, pale-brown, apex with a ring of very minute white hairs. Pappus slender, erect, white, shining, scabrid, tips acute, longer than florets. Receptacle raised, pustulate, slightly ridgy with minute toothed scales.

Hab. In deep forests near Dannevirke, County of Waipawa; March, 1894; also near Woodville, 1890: W. C.

Obs. This fine and striking herb differs considerably from all our endemic species of this genus. I had met with one small plant of it, about 1 ft. high, late in the autumn of 1890, near Woodville, which was long past flowering, and only retained 2–3 dry and withered involucres without fruit; and not having seen it since, though diligently sought, had all but given it up, when, most unexpectedly, three years after I came on some very fine specimens in the forest. Unfortunately their larger leaves were all but quite devoured by small larvæ (apparently of some moth) that were feeding on them in great numbers.

2. *S. distinctus*, sp. nov.

Shrub 5 ft.–6 ft. high; branchlets (specimens) slender, erect, simple, 8 in.–10 in. long, 1 line diameter, much-ribbed-striate, leafy at tops, bare below. Leaves rather close, opposite, petiolate, 1\( \frac{1}{4} \) in.–2 in. long, 9–10 lines wide, narrow-oblong-obtuse, slightly tapering, deeply crenate-dentate, the toothed portion peculiar in shape, and in appearance reminding one—*prima facie*—of the merlons of a battlement, each being 1–2–3-toothed, teeth hard and pointed, and often with a small tooth in the crenate hollow, glabrous and finely veined above, but closely covered below with whitish-grey scurf that becomes brown in age; venules very numerous, compoundly anastomosing; midrib prominent below; petioles slender, 5–10 lines long, striate, channelled above, slightly pubescent-scurfy. Flowers terminal in small rather loose leafy corymbs; the extreme peduncles very slender (almost capillary), \( \frac{3}{4} \) in.–\( \frac{3}{4} \) in. long, each bearing a single
head with two long linear bracteoles at base; floral leaves rather numerous, one generally at base of each pedicel, sub-ovate, ¼in.–½in. long, on long and very slender petioles. Heads small, obconical, sub ½in. long, few-flowered. involucral bracts 5 (sub 2 rows), thickish, slightly scurfy, linear-ovate, the 2 outer with tips acute, the 3 inner broader, margins membranous, tips ciliolate. Florets few: ray– 3, limb yellow, 10-nerved, 4-notched at tips; disk– 4, pale, limb 6-lobed. Anthers and styles largely exserted; style curved, diverging, thick; stigmas truncate roughish. Pappus few, white, slender, scabrid, tips pointed bifid, shorter than floret. Achene glabrous, slightly striate, dark-brown, sublinear, thickened at top.

Hab. Woods between Poverty Bay and Tolaga Bay; 1894: Mr. H. Hill.

Order LIII. Scrophularineae.

Genus 1. Calceolaria, Linn.

1. C. (Jovellana) albulu, sp. nov.

Plant perennial, bushy, erect, 10in.–12in. high; stems stoutish, striate, much-branched, rough (scabrid) pubescent; hairs substrigosely appressed. Leaves broadly ovate, tip sub-acute, 1½in.–1¼in. long, 1in.–1⅛in. broad, chartaceous, rough subhispid and muricatulate on both sides, dark-green above, very pale green below, with a reddish tinge; margins coarsely bi- or tri-serrate, their base common, and slightly subtruncate; petioles 9–10 lines long. Flowering-stems erect, slender, 6in.–8in. high, yellowish-green tinged with red; flowers in a compound loose panicle, 3in.–4in. long, many-flowered; sub-panicles 1½in. long, opposite decussate, diverging, subcorymbose, each with several flowers on slender pedicels 3–4 lines long, 1½in. apart on main rachis, the lowest pair with two leafy lanceolate bracts ¼in. long at base; flowers erect, drooping, fugacious; calyx rather large, claspings (spreading in fruit), reddish-brown, rough-pubescent subhispid without, glabrous green and 3-veined within; segments 4, broadly deltoid, obtuse and subacute, not cut to base. Corolla suborbicular, 4 lines diameter, densely pubescent, white without, minutely purple-spotted within lower half; tube 0; lips concave entire nearly equal, the upper a little smaller, the lower scarcely incurved, margins thickened and largely pubescent, almost hairy; base of corolla within hairy, the hairs dense, long, wavy. Stamens short, stout, white; anthers orbicular; style erect, long, exserted; stigma small, capitate, penicillate. Ovary ovoid, glabrous, shining, tuberculate, tip obtuse.
Hab. Margins of woods, hilly country between Napier and Taupo Lake; 1893–94: Mr. W. F. C. Sturm.

Obs. I. A species very near to C. sinclairii, Hook., differing, however, from it mainly in the smaller size and entire lips of corolla, which is white without, with minute pale-purple spots within below, and the hairs at the base of corolla within long and wavy, the stigma rough, and the ovary more obtuse, shining, and tuberculate.

II. Sir W. J. Hooker, in describing C. sinclairii, observes that "the corolla has both its lips concave and so far expanded as to approach that of Jovellana"; and that "it may, indeed, be considered a connecting-link between the two genera." ("Icones Plantarum," tab. LXI.) Yet the inferior lip of C. sinclairii is 3-lobed. Had Sir William seen this plant, with nearly equal and entire lips not incurved, he would certainly have placed it under Jovellana.

2. C. (Jovellana) sturnii, sp. nov.

Plant erect, simple, very slender, 12in.–16in. high, few-leaved; stems reddish-brown compressed striate, slightly pubescent. Leaves distant, opposite in pairs (3–4 pairs on stem), 2in.–3in. apart, broadly elliptic, 2in.–2½in. long, 1½in.–1⅓ in. broad, very thin, spreading, slightly scabrous above, almost glabrous below, a few small hairs on veins; margins bi-serrate, teeth apiculate; tip subacute, base truncate; petioles very slender straight patent, 2in. long; ½ in. wide. Flowers few, in a small loose terminal panicle, 1in.–2in. long, the lowermost pair of subpanicles opposite on rhachis 1½in. long; pedicels filiform, 2–3 lines long. Calyx green, slightly scabrid-pubescent, segments 4, deltoid, tips subacute. Corolla very small, thin, globular; ⅛ in. diameter, white with large purple spots within, lips nearly equal, their margins thin and slightly puberulent, the upper lip emarginate; base of corolla within glabrous; stamens short, stout; anthers cordate, large, white; style and stigma simple. Ovary shining, pitted minutely.

Hab. On the west side of the Kaweka mountain-range, near Napier; 1893–94: Mr. W. F. C. Sturm.

Obs. I. This species, like the preceding, is near to C. sinclairii, but differs more largely in general appearance and in size; its peculiar membranous leaves patent on long narrow (almost filiform) petioles, and very small flowers, with much less pubescence and thin margins, and anthers cordate, and glabrous throat of corolla, which is also dark-purple spotted within, the spots larger and showing through the thin corolla.

II. I have seen and examined several specimens of this and of the other plant (supra), and find them to be remarkably regular throughout in their characters. I have also given a
large amount of time in close and repeated examinations of
them, thinking, at first, they were merely varieties of C.
sinclairii, and have concluded in their being distinct.

Genus 7. Veronica, Linn.

1. V. venustula, sp. nov.

A small compact bushy low shrub, 6in.–9in. high;
branches and branchlets many, short. Leaves numerous,
subdecussate and subimbricate, close, sub-ovovate-oblong,
7–8 lines long, 4 lines broad, acute, patent, thickish, dark-
green, glabrous, midrib rather prominent below at tip;
petioles very short, stout, flattish. Flowers rather large for
shrub, terminal, crowded in subcorymbs on short racemes
1in.–1½in. long; pedicels 2½ lines long, puberulent; bracts
subulate, acute, as long as pedicels, margins (as also sepals)
ciliolate, the hairs glandular. Sepals sub-linear-ovate, as
long as ovary. Corolla pure white (buds purple-tinted on
outside before expanding), segments 4, 3 of them sub-ovate-
acute, 1 smaller and narrower; tube as long as limb, throat
pubescent; stamens erect exserted, longer than corolla;
anthers purple, sagittate, tips obtuse, subversatile; style
longer than stamens; stigma capitate. Capsule broadly-
obovoid, obtuse turgid, glabrous, dark-brown, 2½ lines long,
twice length of calyx—which also increases in size in fruiting.
Seeds few, broadly-elliptic, 1 line long, thin, smooth, sub-
plano-convex, light-brown, notched at one end.

_Hab._ On eastern side of Ruahine mountain-range, County
of Waipawa; 1892–94: Mr. A. Olsen.

_Obs._ A neat-looking shrub of very compact growth, allied
to _V. laxis_, and to _V. buxifolia_, but differing from them in
several characters,—as, leaves not keeled nor cordate, pedicels
long, sepals and bracts long narrow acute and glandular,
flowers terminal forming thick heads, corolla tube long, and
throat hairy.

Order LXXIII. Piperaceae.

Genus 1. Peperomia, Ruiz and Pavon.

1. _P. muricatulata_, sp. nov.

Plant herbaceous, succulent, glabrous, glossy, ascending and
erect, simple, 10in.–12in. high; stems stout, as thick as a
goose-quill, green; rootlets produced from lower nodes where
stem decumbent. Leaves few, alternate distant (3in. apart
on stem), orbicular and orbicular-ovovate, 1in.–1½in. long,
slightly tapering at base, 3- (the largest 5-) nerved, nerves
apparent, anastomosing at tip and margins, dark-green above
pale-green below, petiolate; petioles 3 lines long; semiterete,
deeply channelled above, lateral edges at base decurrent.
Spike (damaged) axillary, narrow, ½ in. long; berry small, globular, muriculate, dark-brown when ripe.

*Hab.* Woods near the East Cape; 1894: Mr. H. Hill.

*Obs.* A far more robust and different-looking species than the commoner N. one, *P. urvilleana*. I received several specimens, but, owing to their succulent nature, and long and close confinement in carriage hither, they were all but useless.

2. *P. nova-zelandiae*, sp. nov.

Plant small, herbaceous, succulent, glabrous, cespitose-bushy, erect, 12–14 branches from one rootstock; rootstock thick, irregular, knotty; rootlets numerous, terete, 1–1¼ lines diameter, hairy. Branches dichotomous, 4in.–9in. high, spreading, leafy above, bare below, striate; upper branches puberulent; hairs patent. Leaves opposite whorled, 4 and 3 in a whorl, broadly elliptic and suborbicular, 4–5 (rarely 6) lines long, 4–5 lines broad, rounded at both ends, numerous above (not crowded), thickish, slightly concave, dark-green above, paler below, minutely and irregularly punctiform, young leaves puberulent below with short white patent and distant hairs; veins obsolete fresh, but tri-nerved with many veinlets dry; petioles stoutish, subterete, 1–1½ lines long, slightly pubescent, as also peduncles. Spikes terminal single erect, slender, ½in.–2½in. long, pale-green; peduncle slender, shorter than spike, 4–6 lines long; bracts (or squamae) under fruit, circular peltate, margins finely ciliolate; anthers very small, pale, orbicular with a deep crease, intermixed throughout spike, filaments very short. Berry ovoid, ½0in. long, tip produced obtuse, reddish when ripe.

*Hab.* Woods near the East Cape; 1894: Mr. H. Hill.

*Obs.* A peculiarly neat little plant, very different from all other species of this large genus known to me; unfortunately, it does not dry well, though better than the preceding species, from which the large fleshy leaves all fall away in drying.

Order LXXIV. BALANOPHOREAE.

Genus 1. DACTYLANTHUS, Hook. f.


[For description, see "Handbook of the New Zealand Flora," p. 255. I mention this highly curious, peculiar, and very scarce plant (it having only been met with twice during the last fifty years since its first detection by the Rev. R. Taylor—once by Mr. A. Hamilton, near Tarawera, Hawke's Bay, and now by Mr. H. Hill), though not quite new, to give its new, habitat—woods near the East Cape, whence Mr. Hill brought some very fine specimens, unfortunately, however, like the preceding, much damaged in long transit.]
Order LXXV. Coniferæ.


1. P. montana, sp. nov.

Plant a low rambling shrub of diffuse growth. Leaves numerous close subimbricate on all branchlets, subsex-fariously disposed, oblong-lanceolate, 3 lines long, apiculate, thickish, slightly falcate, spreading and recurved, yellowish-green, glabrous; midrib prominent on both sides and with the margins thickened, striate longitudinally (sub lens) in minute stippled white (glauceous) striae; petiole 1 line long, much decurrent, raised from one leaf to another, giving the branchlet a ridgy appearance. Male: Catkins axillary, erect on a slender peduncle 3 lines long, having a thin brown, oblong scarious bracteole 2 lines long at its base in front, its tip jagged; usually 3 (sometimes 2) spikes together, the central one longest, very slender as long as peduncle, sessile, red; 2 lateral bracts sub 2 lines long at their base, patent, green, oblong, subapiculate, thickish; the peduncle marked with decurrent sunken lines from them; between, in front, 3 small bracteoles, green, concave, appressed, tips entire and subacute; and, behind, 3 others, smaller, thinner, concave, with their tips jagged; anthers sub-broadly orbiculate, their tips, or connectives, 3-fid or jagged. Female: Ovule ovoid, subacute, 2 lines long, sessile on thickened peduncle, bright-red, subglobular or somewhat turbinate, 1/2 in. long, fleshy, juicy, edible, with 2 small lateral acute points or horns, 1 on each side of ovule (sometimes, but rarely, 3), the lower part of peduncle slender, green, short, axillary.

Hab. High up on Ruahine mountain-range, east side, County of Waipawa; April and December, 1894: Mr. W. F. Howlett.

Obs. 1. A species near to P. nivalis, Hook. f. (also discovered on same range, west side), but differing in its smaller leaves, slenderer amena which are also much bracteolate at their bases, and with the tips of their anthers jagged, somewhat resembling those of P. totara, but those of P. totara are larger, more produced, and more largely jagged. In one of my specimens there are three peduncles of male spikes very nearly forming a whorl near the top of a branchlet, two bearing each 3 and one 2 spikes. This species is also nearly allied to P. alpina, Br., a Tasmanian and Victorian species, which mainly differs in its produced connectivum ("connectivo apice in cornu producto") and in its spikes being "sessile and solitary," &c.—a plant, too, found there at "from 3,000 ft. to 4,000 ft. altitude," much the same as these two here in New Zealand.
II. I can quite fancy it becoming an interesting and useful scientific study in "days to come" for some future botanist to take up those three species (P. alpina, P. nivalis, and P. montana), and, being well supplied with fresh specimens of them all in their various states, to enter on a close and exhaustive examination and dissection of them, to ascertain whether they are not varieties of one mountain species.

Class II. MONOCOTYLEDONS.

Order I. ORCHIDÆ.

Genus 11. Caladenia, Br.

1. C. macrophylla, sp. nov.

- Stem stout below, glabrous; slender above with leaves and flowers glandular-hairy, 4in. high. Leaves 2 together within 1 sheath near base, 1 ½ in. from it, the larger and outer leaf ovate acuminate acute, 2in. long, 1 in. broad, 6-veined, margins ciliolate with weak white ciliola; the inner one much smaller, sub lanceolate acuminate; green, brownish-spotted, chartaceous; at top of scape a sheathing bract acuminate half embracing ovary, both also glandular-hairy. Flower single, sub 1 in. broad expanded, whitish with a tinge of pink, membranous. Dorsal sepal obovate-oblong, much veined, incurved, tip subacute; lateral sepals 7 lines long, linear oblong acuminate; lateral petals shorter and narrower, linear subacute; labellum oblong-ovate, no claw, veined, tip rounded, 2 rows of small yellowish rigid calli subconnected, one on each side of the middle line from the middle of labellum to base, increasing in size downwards, column largely incurved, the tip hooded, winged laterally and equally throughout. Ovary long, slender.

_Hab._ Ruahine mountain-range, east side; 1894: Mr. A. Olsen.

_Obs._ A plant that has caused me much trouble as to fixing its proper genus; it is certainly near C. (?) bifolia, Hook. f. (Chiloglottis, Mueller), and, were it not for its completely hooded column, from its wings being continued unbroken over it, I should have preferred placing it under Chiloglottis, this genus having its "column 2-fid at the tip" (Hook., l.c., p. 269).

Order VII. LILIACEÆ.

Genus 4. Dianella, Lamarck.

1. D. reflexa, sp. nov.

- Leaves distichous, sheathing at base, 20 in.–24 in. long, 6–7 lines wide, subcoriaceous, linear acuminate, green on both sides, shining above, margins and keel (prominent) entire, or
very slightly and distantly scaberulous with small dark-brown spots, margins somewhat revolute. Flowering-stems erect, slender, dark-green, terete, smooth, 15in. high, a single thin leafy bract 1½in.–2in. long near base; panicle loose, 10in.–12in. long; subpanicles few, 2½in.–3in. long, branched, spreading, 1½in.–2in. distant on stem, alternate; bract at base 1½in. long, sessile, membranous, subulate acuminate, green; branchlets very slender, 3–4 flowers on compound capillary pedicels, each 5–9 lines long, with a minute bracteole at base. Flowers: Buds (alabastron) linear, 2 lines long; perianth expanded 4½ lines diameter, segments membranous, glabrous, recurved, unequal; 3 outer narrow-oblong, tips obtuse tufted with short hairs, outside purplish, sides white, margins purple, many (5–6) nerved, nerves black; 3 inner broadly oblong, white, shining, tips emarginate, 3-nerved, nerves greenish. Filaments erect, a little shorter than style, the basal two-fifths white, the upper three-fifths bearded dark-orange thickening upwards close to anther, obovoid; anther pale-yellow, linear, narrower than filament, sessile. Style erect, stoutish; stigma simple, small. Ovary subglobose, glabrous, shining.

Hab. Woods near East Cape; 1893–94: Mr. H. Hill.


II. I have mentioned D. nigra, mihi. This species, I find, is disallowed in "Index Kewensis," stated therein to be = D. intermedia, Ensl.; but this I cannot agree in, seeing that it does not square with Endlicher's description, as shown by me in my full description of my plant (l.c.). One thing, however, is pretty certain: that the species are difficult to determine. Hooker fil., in his "Flora Tasmaniæ," says of this genus, "About ten Australian and Tasmanian species are known to me. They are very difficult to discriminate. The stamens appear to me to afford the best character" (l.c.,
vol. ii., p. 56). I wholly concur in his remark on the stamens. Bentham, in his "Flora Australiensis," enumerates twenty-one species. Of these he gives only five as Australian, disallowing sixteen. Many of them were also described and figured by eminent botanists. He also says, "In their typical forms the five Australian species are very distinct, but they are all so variable, and connected by so many intermediates, that I have found it very difficult to distribute satisfactorily the numerous dried specimens before me. It is not impossible, however, that a careful study of living plants in their native country may disclose more positive characters to distinguish even twice as many more or less permanent forms" (i.e., vol. vii., p. 14). In this remark I fully believe, and have acted upon it in examining and describing my two species, both from living specimens. And, later still, in "Index Kewensis," out of forty described species therein brought forward, only thirteen are allowed to stand. I may further observe that *D. intermedia*, Endl. (or our northern New Zealand plant), was pretty common at the north, among fern (*Pteris esculenta*), in the dry hilly grounds, and on margins of woods; but I have never seen it here. *D. nigra* I have only seen in two localities here south in thirty years; and this plant now described by me, Mr. Hill says he had never seen before.

Order XI. CYPERACEAE.

Genus 14. **Carex**, Linn.

1. *C. smaragdina*, sp. nov.

A low densely caespitose flaccid glabrous dark-green species of very peculiar aspect. Roots numerous, wiry, short. Culms 10in.–14in. long, \( \frac{3}{4} \)in. wide, very slender weak flat striate, with 2–3 short leaves near base, spread all around flat on the ground together with the leaves forming a circle. Leaves one-third length of culms, narrow linear acuminate, grass-like, \( \frac{3}{4} \)in. wide, minutely serrulate at tips (sub lens), slightly and distantly so below, generally 3 together with 3 sheaths at and near base, sheaths with netted veins, their tips obtuse and apiculate. Spikelets usually 3, sometimes (but rarely) 5, very close together, forming a small head or cluster, sessile, subquadangular, stout, \( \frac{3}{4} \)in.–1in. long, 2–3 lines wide; bracts 2, unequal, 3in. and 1\( \frac{1}{4} \)in., leaf-like, very narrow, the smaller one filiform, thin; glumes broadly ovate, acuminate, white with dark-green central nerve, tips serrate. Utricle as large as the glume, broadly ovate-lanceolate, plano-convex, green without and at margins below, pale-fawn within, many-nerved, nerves prominent, beak produced, sharply bicuspidate; stigmas 2, long, roughish, much curved, brown. Anther (?) linear, acute, serrulate at tip.
Colenso.—On some New Ferns.

Hub. Interior deep damp forests at Dannevirke, County of Waipawa; March, 1894: W. C.

Obs. A highly curious species, differing much from any other of this genus known to me; its bushy decumbent dark-green spreading aspect is most striking. It was plentiful there in two spots; but, though I brought away many specimens, I have not detected any male flowers save one old anther at the base of a spikelet; and, on seeking fresh specimens in the following summer season, I found the whole forest had been felled and burnt, thus destroying much valuable timber!

Art. XLVII.—A Description of Two New Ferns and One New Lycopodium, lately detected in our New Zealand Forests.

By W. Colenso, F.R.S., F.L.S. (Lond.), &c.

[Read before the Hawke's Bay Philosophical Institute, 12th November, 1894.]

Genus 2.* Hemitelia, Br.

1. H. microphylla, sp. nov.

Trunk erect, 9ft. to 10ft. high, stout, girth nearly equal throughout, at base 20in., near top 2½in., with numerous old and dry bleached stipites (without their pinnae) hanging down from below crown. Fruits, rather few, 1½, spreading, horizontal, sub-oblong-lanceolate, broadest above middle, 5½ft.-6ft. long, 2ft. 6in. wide, bipinnate, grass-green above, pale-green below, softish, densely clothed with light-brown scales and hairs; rachis dark mahogany-brown and glossy below, with a pale continuous raised line above, lateral from pinna to pinna; stipe short, sub 5in., very scaly, scales long. Pinnae linear-oblong, tip very acuminate, 13in. long, 3½in. wide near base, 3½in. apart on rachis, opposite, leafy to base; pinnules regular, close but not imbricate, 1½in. long, ½in. wide, broadest at base, lower pair of segments pinnate and overlapping rachis. Segments linear-oblong, entire, sometimes slightly crenulate, sub-serrate-crenate at tip; tip acute submucronate. Sori orbicular, regularly disposed at base of lowest pair of forked veins, 2-4 on a segment. Involute rather large, concave, three-fourths round sorus, gaping, persistent, closed on costal side, pale, with dark centre, margin

* In “Handbook of the New Zealand Flora” included in Cyathea.