

ART. VII. — *Descriptions of New Native Phanerogams.*

By D. PETRIE, M.A., Ph.D.

[Read before the Auckland Institute, 3rd December, 1913.]

1. *Ranunculus Grahami* sp. nov.

Folia radicalia pauca, coriacea,  $\pm 10$  cm. longa; petiolis 6–7 cm. longis, crassiusculis, subcomplanatis, inferne vaginantibus; laminis semi-orbicularibus, 5 cm. latis, in segmenta tria late cuneata partitis, segmentis in lobos 3–5 breves rotundatos sectis. Folia caulina 1–2, subdistantia, radicalibus similia sed minora breviusque petiolata.

Scapi foliis longiores, petiolis graciliores, in fructu  $\pm 15$  cm. longi, glabri, 1-flores (1–4-flores?).

Flores majusculi,  $\pm 1\frac{1}{2}$  cm. lati; sepala 5, obtusa, plurinervata, extra parce subpilosa; petala 10, sepalis longiora,  $1\frac{1}{2}$  cm. longa, anguste cuneata, obtusa; stamina 1–2-seriata; carpella plurima; achenia turgida, breviter 2-alata, rostro longo curvato.

Rootstock rather stout, descending, giving off numerous fleshy lateral roots.

Radical leaves few, coriaceous,  $\pm 10$  cm. long; petioles 6–7 cm. long, rather stout, glabrous, more or less flattened and expanded below into a broad sheath bearing sparse silky hairs at its mouth; blades semiorbicular in outline, broader than long, deeply parted into 3 broadly cuneate segments that are cut into 3–5 short rounded lobes, glabrous but for a few delicate silky hairs on the margin and upper part of the back, nerves obscure, reticulate, veining evident. Cauline leaves 1–2, rather distant, similar to the radical, but smaller and with shorter petioles.

Scapes more slender than the petioles, exceeding the leaves. in fruit  $\pm 15$  cm. long, glabrous, 1-flowered (in my specimens).

Flowers rather large,  $\pm 1\frac{1}{2}$  cm. across. Sepals 5, broadly ovate, obtuse, membranous, yellowish, many-nerved, sparsely covered outside with delicate white silky hairs; petals 10, longer than the sepals,  $1\frac{1}{2}$  cm. long, narrow-cuneate, obtuse, yellow, bearing a single nectary near the base; stamens in 1 or 2 series, with rather long flattened filaments; carpels very numerous; achenes turgid, shortly 2-winged with a long curved beak and a few delicate silky hairs chiefly on the wings.

*Hab.*—Rocks of "Aiguille Roque," a peak south of Malte Brun, Mount Cook district, 9,000 ft.; Coronet Peak, Mount Cook district.

Mr. Peter Graham, chief guide at the Hermitage, collected this plant, which is named in his honour. He writes me that the scapes frequently bear 3 or 4 flowers. The plant seems more nearly related to *R. pinguis* Hook. f. than to any of the mainland species.

2. *Epilobium antipodum* sp. nov.

*Epilobium E. confertifolio* Hook. f. affine; differt foliis majoribus, elliptico-obovatis, in petiolos latiusculos paene aequilongos attenuatis, capsulis robustioribus longioribusque.

Stems creeping and rooting at the nodes, leafy, moderately stout, glabrous.

Leaves in opposite pairs, connate at the base, close-set and often overlapping,  $2\frac{1}{2}$ – $3\frac{1}{2}$  cm. long,  $1$ – $1\frac{1}{2}$  cm. broad, narrow elliptic-obovate, obtuse, contracted into rather broad flat petioles nearly as long as the blades, semi-membranous, glabrous, delicately repando-denticulate above the middle, reddish at the edges; veins evident, diverging from the conspicuous midrib.

Peduncles short, elongating in fruit, slender, near the tips of the branches; calyx-lobes lanceolate-subulate, acute, nearly equalling the rather broad slightly notched pale-red petals.

Capsules glabrous, rather stout,  $\pm$  5 cm. long, when mature on slender erect peduncles about as long as the capsules; seeds obovate,  $1\frac{1}{2}$  mm. long, delicately papillose.

*Hab.*—Antipodes Island. B. C. Aston!

The above description has been drawn up from specimens grown in my garden, and raised from seed obtained from dried capsules kindly sent me by Mr. Aston, whose specimens were all past flower.

### 3. *Celmisia semicordata* sp. nov.

*Celmisia* *C. coriaceae* Hook. f. affinis; differt foliis subcordatis, supra pellicula delicatissima argenteo-cinerea levi vestitis; scapis gracilioribus brevioribusque; capitulis minoribus; petalis brevioribus glaberrimisque; acheniis glabris.

Leaves 15–30 cm. long, 3–5 cm. broad, oblong-lanceolate, acute or sub-acute, semicordate at the base, coriaceous, quite entire, with evident midrib but otherwise nerveless; above more or less furrowed longitudinally when dried, and covered with a very delicate smooth silvery or greenish-grey pellicle; below flat, more or less recurved at the edges, clothed with dense smooth closely appressed white silky tomentum; sheaths about  $\frac{1}{2}$  as long as the blades, thin, striate, narrowed above, more or less clothed with white cottony tomentum.

Scapes 30–40 cm. long, slender covered with loosely appressed cottony pubescence, scarcely tomentose; bracts erect, narrow-linear, becoming shorter upwards.

Heads  $2\frac{1}{2}$ –4 cm. across, few to each tuft; involucre bracts in 2–3 series, glabrate or the outer slightly cottony, linear-subulate, brown, thickened below; petals numerous, spreading, narrow,  $1\frac{1}{2}$  cm. long; tube of corolla narrow and quite glabrous.

Achene 5 mm. long, glabrous, linear, ribbed, slightly compressed; pappus equalling or slightly exceeding the achene.

*Hab.*—Buckland Peaks (near Westport), 3,300–4,000 ft.; Charleston, 30–40 ft.

The Charleston specimens have much shorter and more slender scapes and smaller flower-heads than usual, while their subacute leaves exhibit remarkable variation in size, being often less than half as long as in the typical mountain form, which shows very little variation. The plant is plentiful above the bush-line on the Buckland Peaks, and at higher levels is associated with *C. Armstrongii* and *C. Dallii*.

4. *Wahlenbergia Morgani* sp. nov.

*Wahlenbergia W. saxicolae* A. D.C. affinis; differt foliis laxioribus minoribus tenuioribus,  $\pm$  spathulatis, pedunculis brevibus, floribus multo brevioribus, capsula brevioribus globosa.

A depressed tufted almost glabrous perennial, more or less branched from the root, and often intricately so, when it forms matted patches 8–12 cm. across. Branches up to 8 cm. long but usually much shorter, when elongated diffuse and several times subdivided, slender, leafy towards the tips and occasionally sparsely villous; older bark pale, soft and spongy.

Leaves rather close set or (in matted forms) crowded,  $1\frac{1}{2}$ –2 cm. long, very variable in outline, orbicular- or obovate- or elliptic-spathulate, membranous or nearly so, more or less crenate-dentate, blades glabrous, midrib obscure when mature otherwise nerveless; the narrow petiolar part thin, considerably longer than the blade, and more or less ciliate along the edges.

Flowering-stems bearing 1–2 (or rarely 3) shortly peduncled lateral or terminal flowers; peduncles slender, terete, smooth, elongating in fruit to  $1\frac{1}{2}$ –4 cm.

Flowers campanulate, about 8 mm. long and 6 mm. across, pale blue. Calyx glabrous, shortly turbinate; lobes broadly subulate, erect, acute or subacute; corolla cut for rather more than  $\frac{1}{2}$  its length into 5 subacute scarcely spreading lobes; style expanded towards the top and rather deeply divided into flat lamellar plates.

Capsule globose, 5–6 mm. long, when ripe marked by blunt tubercles, 2-celled; seeds minute, very numerous, slightly plano-convex in section. (*W. saxicola* A. D.C. var. *congesta* Cheeseman.)

*Hab.*—Cape Farewell; W. Townson! Road-cuttings near Rahui (Charleston); moist sandhills near Fortrose (Southland).

The Fortrose specimens grew in pure sand, and have narrower more coriaceous and more strongly toothed leaves than the typical plant from south-west Nelson. The species is not confined to sandy situations, for at Rahui it flourishes in great profusion on nearly vertical faces of hard conglomerate rock. It is named in compliment of Mr. P. G. Morgan, M.A., Director of the Dominion Geological Survey, from whom I have received much valuable help in studying the plants of the Buller district.

5. *Myosotis suavis* sp. nov.

Perennis; ubique pilis albidis subrigidis dense hispida.

Caules pauci, graciles, ad 10 cm. alti.

Folia radicalia late obovato-spathulata, 3–4 cm. longa,  $1\frac{1}{2}$  cm. lata, subacuta, tenuia; caulina numerosa, late lanceolata, acuta, sessilia.

Flores brevissime pedunculati,  $\pm$  1 cm. longi, calyx corolla subduplo brevior, 5-partitus, lobis subulatis; corolla infundibuliformis, alba, dulce odorata, limbo in lobos 5 breves rotundatos secto; stamina corollae tubum haud excedentia, brevia, parva, paene sessilia.

A low tufted perennial, everywhere densely hispid with short stiff white hairs.

Flowering-stems few, erect or ascending, slender, leafy, 10 cm. high or less.

Radical leaves few, broadly obovate-spathulate, 3–4 cm. long,  $1\frac{1}{2}$  cm. broad, subacute, thin, midrib evident; cauline numerous, usually closely placed, broadly lanceolate, acute, sessile.

Racemes rarely branched; flowers crowded, very shortly pedicellate,  $\pm$  1 cm. long, strongly and sweetly scented; calyx half as long as the corolla, 5-lobed to the middle, lobes subulate; corolla funnel-shaped, white, tube narrow; scales of the throat 5, limb cut into 5 short rounded spreading lobes; stamens reaching to the top of the corolla-tube; anthers short, small, almost sessile; style slender, subcapitate, when full-grown a little longer than the corolla-tube.

*Hab.*—Slopes of Mount Sefton, between the Stocking and Huddleston Glaciers, 5,000 ft.; a high peak north of Stewart Glacier, Moorhouse Range (Mount Cook district). Flowers in February.

Specimens of this plant have been kindly sent me by Mr. Peter Graham, chief guide at the Hermitage. In recent years his careful observation has brought to light quite a number of new alpine plants that hail from places difficult of access to those who are not expert mountaineers.

#### 6. *Carex Gibbsii* sp. nov.

Species *C. Dallii* T. Kirk affinis.

Folia culmis multo breviora, omnino radicalia. Culmi gracillimi  $\pm$  50 cm. longi, teretes, reclinati.

Inflorescentia terminalis, 4 cm. longa breviorve; spiculæ 3-4, arcte approximatae, sessiles, brevissimæ; terminali mascula, ceteris femineis; bracteis foliis similibus, brevibus inflorescentiam tamen excedentibus; glumæ ovatae, subacutæ, breviter mucronatæ, utriculis maturis paulo breviores.

Utriculi anguste ovati, sub-plano-convexi, glaberrimi, 3 mm. longi,  $1\frac{1}{2}$  mm. lati, rostro bidentato valde brevi.

A slender laxly tufted reddish-green plant, giving off rather long stolons clothed with short reddish-brown striate scales.

Culms very slender, leafy only at the base, 50 cm. long or less, terete, smooth, slightly grooved, reclinant, reddish-brown.

Leaves much shorter than the culms ( $\pm$  10 cm. long), spreading, shortly sheathing, narrow-linear, concave when fresh, complicate when dried, flaccid, striate below, 2-nerved above, midrib little conspicuous.

Inflorescence 4 cm. long or less; spikelets 3-4, closely approximate, sessile, very short, dark reddish-brown; terminal male, slender, the others female; bracts short and leaf-like, but exceeding the flowering-spike; glumes ovate, membranous, reddish-brown, subacute, 3-nerved, the nerves confluent at the top and produced into a short mucro, slightly shorter than the mature utricles.

Utricles narrow-ovate, nearly plano-convex, nerveless or with 2 indistinct lateral nerves, substipitate, yellowish below, purplish above, 3 mm. long,  $1\frac{1}{2}$  mm. broad; beak very short, 2-toothed; style deeply divided into 3 stigmatic branches.

*Hab.*—Shallow open swampy flats at Cedar Creek, Waimangaroa River (near Denniston), west Nelson, about 1,760 ft.

This species differs from *C. Dallii* T. Kirk in the short inflorescence with closely approximate small spikelets, the almost plano-convex utricles, and the much longer, almost filiform, culms. The plants grew in perfectly open ground, but only a few were in flower. It is named in honour of Mr. F. G. Gibbs, of Nelson, who has done much excellent work in exploring the flora of that district, and has been a most obliging and helpful correspondent.

7. *Deyeuxia glabra* sp. nov.

Gramen *D. Forsteri* Kunth var. *littoralis* Hackel affine.

Spiculae parvae, pallide virides, 3-3½ mm. longae; glumae floriferae vacuis dimidio breviores, ovatae, apice ± truncatae ac erosae, glaberrimae, membranaceae, hyalinae, leviter 3-nervatae, nervis lateralibus vix excurrentibus, nervo medio in aristam terminalem persubtilem rectam vel curvatam raro extra glumam exsertam producto; glumae basi glaberrima; rachilla brevi gracili parce pilosa.

A slender laxly tufted grass, branching from the base.

Culms up to 30 cm. high, very slender, sparingly leafy. Leaves distant on the culms, the lower short, the upper longer; sheaths long, the uppermost reaching the base of the expanded panicle; blades flat, linear, smooth, thin, striate, gradually tapering to the tip, bright green; ligule long, membranous, coarsely toothed or cut at the top.

Panicle contracted in the young state, later lax and spreading, broadly ovate, 10 cm. long or less; branches in rather distant whorls of 4 or fewer, finely capillary, scaberulous, once or twice trichotomously divided, naked below, bearing few spikelets on long very delicate pedicels.

Spikelets small, 3-3½ mm. long, pale green; empty glumes equal, lanceolate, acute, membranous, obscurely 1-nerved, slightly ciliate on the upper part of the keel, scarious at the sides and top; flowering-glumes about half as long as the empty, ovate, more or less truncate and erose at the tip, perfectly glabrous, membranous and hyaline, faintly 3-nerved, the lateral nerves barely excurrent, the median produced into a delicate straight or bent terminal awn rarely exserted beyond the empty glumes, the base of the glume destitute of hairs; palea highly membranous, narrow, as long as the flowering-glume, its nerves obscure and glabrous; rachilla short, slender, sparingly pilose.

*Hab.*—Moist grounds by the seaside at Bluff and Fortrose, Southland.

This plant can be readily distinguished from *D. Forsteri* by the glabrous flowering-glumes, the short delicate terminal awn, and the absence of a tuft of hairs at the base of the flowering-glume.

8. *Danthonia teretifolia* sp. nov.

Gramen *D. ovatae* Buchanan affine; differt foliis gracilibus, firmis, teretibus, pilis subrigidis appressis ± dense vestitis, in apices elongatos filiformes undulatos attenuatis; paniculi ramis infimis 3-verticillatis; dentibus glumae floriferae lateralibus scariosis in aristas ciliatas gradatim attenuatis; et arista media subtus complanata ac contorta.

A densely tufted grass, forming large compact yellowish-green tussocks.

Culms 30-50 cm. long, exceeding the leaves, slender, terete, glabrous, slightly grooved, yellowish, invested by 2 distant long-sheathing cauline leaves not exceeding the panicle.

Leaves few on each culm, slender, involute, terete, wiry, pale yellowish-green, the sides and inner face densely pilose with stiff appressed hairs, the margins thickened and glabrous, the keel rounded and polished and sparingly pilose or almost glabrous, gradually narrowed into long filiform wavy tips; sheaths about ½ as long as the blades, broad and closed almost to the tops, coriaceous, striate, glabrous or nearly so, persistent; ligule a broad band of delicate hairs with longer tufts at the sides.

Panicle narrow-ovate, 6–10 cm. long; branches in whorls of 3 or fewer, sparingly subdivided, bearing few spikelets; rhachis glabrous.

Spikelets on long slender glabrous or sparsely pilose pedicels, large (10–13 mm. long without the awns), 5–6-flowered; empty glumes slightly unequal,  $\frac{2}{3}$  the length of the spikelet, lanceolate, acute, glabrous, pale, membranous, 3–7-nerved below, the median nerve alone reaching to the top, nerves greenish, scarious at the edges, the upper part glabrous the lower part pilosely hairy at the base back and sides, deeply bifid at the top, the lateral teeth scarious and gradually narrowed into short ciliate awns; central awn from between the teeth, as long as the glume or longer, flattened and twisted below and ciliate along the edges; palea as long as the flowering-glume, strongly 2-nerved, the nerves pilosely ciliate and the incurved edges pilosely silky below.

*Hab.*—End Peak, Lake Hauroto, 4,000 ft.; J. Crosby Smith! Top of Longwood Range, Southland, 3,000 ft.

This grass differs from *D. ovata* in the character of the awns, the median one being conspicuously flattened and twisted at the base, and in the terete wiry almost filiform leaves clothed with appressed stiff hairs. The plate accompanying the description of Buchanan's species shows the leaves more or less flat, with spreading distant or sparse soft hairs. He lays special stress on the "straight subulate awns" and on the absence of twisting in the median one. The drawing, moreover, shows a series of distinct pencils of hairs on the flowering-glumes that is wholly alien to the present plant. No specimen of his grass is known to exist in any herbarium.

9. *Danthonia Buchananii* Hook. f. var. *tenuis* var. nov.

Folia setaceo-filiformia, culmis breviora. Panícula linearis,  $\pm$  3 cm. longa.

Spiculæ quam in typo breviores angustioresque, 6 mm. longæ.

Glumæ floriferæ annulo piloso medio inferiusque flocco pilorum breviorum unico a latere utroque indutæ, basi glabræ vel sparse pilosæ; arista terminali setacea, brevi, recta; dentibus lateralibus acutis vel acuminatis, brevibus, in aristas haud productis.

Leaves filiform-setaceous, shorter than the culms.

Panicle linear, about 3 cm. long.

Spikelets shorter and narrower than in the type, 6 mm. long.

Flowering-glumes with a narrow band of stiff hairs across the middle of the back, and a single small tuft of shorter hairs lower down on each side; base and lower part of the glume glabrous or sparsely pilose.

Median awn setaceous, short, straight; lateral teeth short, acute or acuminate, not produced into awns.

*Hab.*—Swampy Hill (Dunedin), 1,500 ft.; Upper Waipori (Tuapeka County), 2,000 ft.; Mount Ida (Maniototo County), 3,000 ft.

In districts where it is abundant this variety forms an important element in the upland pastures of Otago.

10. *Danthonia semiannularis* R. Br. var. *nigricans* var. nov.

Gramen *D. semiannulari* R. Br. var. *setifolia* Hook. f. subsimile; differt spiculis multo brevioribus, flosculis minoribus, glumis vacuis atro-brunneis ac a marginibus late scarioso-pallidis, lobis glumarum floriferum lateralibus valde delicatulis scariosis in aristas haud productis, culmis folia multo superantibus.

Tufted, glabrous.

Radical leaves few; much shorter than the culms (usually  $\frac{1}{3}$  their length), involute, setaceous, erect, wiry, subpungent at the tips; cauline 3 or 4 with long closed sheaths and short blades.

Culms slender, wiry, erect, considerably overtopping the highest cauline leaf.

Panicle short ( $2\frac{1}{2}$ –4 cm. long), narrow-ovate to broadly linear; branches approximate, solitary, immediately more or less subdivided; lateral pedicels very short.

Spikelets  $\pm$  7 mm. long; florets small; empty glumes nearly equal, considerably exceeding the florets, dark brown or black, edged with broad pale scarious margins.

Flowering-glumes membranous with a dense band of hairs a little below the terminal lobes and equalling the delicate scarious acuminate awnless lateral teeth, their lower part almost glabrous or rarely sparsely pilose with 3 short tufts of very short hairs close to the base; awn setaceous, slightly flattened below, erect or bent to one side, not twisted.

*Hab.*—Mount Hector (Tararua Range), 3,800 ft.; Lake Harris (Lake County), 3,000 ft.; pakihi near Waimangaroa, 1,700 ft.; south of Miller-ton, 1,700 ft.; Burnett's Face (Denniston), 1,800 ft.

For specimens from two of the localities in south-west Nelson I am indebted to Mr. Percy G. Morgan, M.A., Director of the Dominion Geological Survey.

# 11. *Poa Poppelwellii* sp. nov.

Gramen caespitosum, perenne, laete viride.

Culmi foliaque *P. litorosae* Cheeseman plerumque similia; ligula late oblonga, acuta, membranacea.

Panicula lineari-oblonga, 10–15 cm. longa; ramis brevibus in fasciculis alternis densis imbricatis dispositis.

Spiculae  $\pm$  10 mm. longae, 4 mm. latae, 5–6-florae; glumae vacuae inaequales, spicula dimidio breviores, lanceolatae, acutae, glabrae, 3-nervatae (inferiore minus distincte), virides, a marginibus late scariosae; glumae florigerae ovato-lanceolatae, acutae, obscure 5-nervatae, delicatule scaberrulae, callo dorso marginibusque inferioribus pilis  $\pm$  longis vestitae; palea glumis florigeris quarta parte brevior, apice bifida, nervis ciliatis; styli rami palea dimidio breviores, stamina etiam breviora paene sessilia.

A strongly tufted smooth and polished dark-green perennial grass.

Culms numerous, branching at the base, erect, quite glabrous, 60–70 cm. high, moderately stout, leafy to the base of the panicle.

Leaves equalling or exceeding the culms, with long broad membranous grooved sheaths, narrow-linear, convolute, terete, obscurely striate, narrowed into stiff acuminate subpungent points, the margins thickened; ligule broadly oblong, acute, membranous.

Panicle linear-oblong, 10–15 cm. long; branches short, in alternate dense imbricating fascicles; rhachis and branches smooth and glabrous.

Spikelets  $\pm$  10 mm. long, 4 mm. broad, lanceolate, narrowed above and below, 5–6 flowered, florets sessile; empty glumes unequal, barely half as long as the spikelet, narrow-lanceolate, acute, glabrous or slightly scabrid on the upper part of the keel, 3-nerved (the lower less distinctly), green with broad scarious margins; flowering-glumes ovate-lanceolate, acute or

almost acuminate, obscurely 5-nerved, delicately scaberulous, green with scarious margins; keel scabrid above, its lower half clothed with long silky hairs, the callus and lower edges clad with similar but shorter hairs; palea  $\frac{3}{4}$  the length of the flowering-glume, bifid at the top, nerves ciliate; style branches half as long as the palea, stamens still shorter and almost sessile.

*Hab.*—Stewart Island (probably at Herekopere Island, off Half-moon Bay).

In the last volume of the "Transactions of the New Zealand Institute" I erroneously referred this grass to *Poa litorosa* Cheeseman. Though it closely resembles that species in habit and foliage, and is very readily mistaken for it on a hand and eye examination, the spikelets have a very different structure. The above description is founded on specimens grown in my garden from some live pieces kindly sent me by Mr. H. Guthrie-Smith. It is named in honour of Mr. D. L. Poppelwell, of Gore, whose botanical investigations in Southland and Stewart Island are well known.

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ART. VIII.—*On the Occurrence of Poa antipoda Petrie on Herekopere Island.*

By D. PETRIE, M.A., Ph.D.

[Read before the Auckland Institute, 3rd December, 1913.]

AMONG some live grasses sent me from Stewart Island by Mr. H. Guthrie-Smith was a piece of *Poa antipoda*. On receipt some of the culms were in flower, and others flowered after the plant had been established in my garden. This is a form that differs from the type in having slightly larger spikelets and somewhat stiffer leaves. It has been recorded previously only from our subantarctic islands, having been collected on Antipodes Island by the late Mr. T. Kirk in 1890, on Campbell Island by Mr. W. R. Chambers, and on the Auckland Islands by Messrs. Aston and Tennant. This extension of its range to the main islands of New Zealand is a matter of considerable interest.

The small islands off Stewart Island have now furnished a number of southern plants not found elsewhere outside the subantarctic area, and it is highly desirable that these islands, and especially the Snares, should be carefully explored. The Government might well use their steamers to facilitate this important piece of work.

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