

III.—BOTANY.

ART. XXXIX.—*On some New Species of New Zealand Plants.*

By JOHN BUCHANAN, of the Geological Survey Department.

(With Illustrations.)

[Read before the Wellington Philosophical Society, 6th July, 1871.]

Haloragis aggregata, Buchanan. n. sp.

A SLENDER much branched herb, procumbent at the base. Branches very narrow, erect, 4 angled, 4–5 inches high, scabrid. Leaves $\frac{1}{4}$ – $\frac{1}{2}$ inch long, opposite, distant, ovate oblong, acute, tapering into a short petiole, with 3–5 deep cut pungent serratures on each side, margin thickened and scabrid, both surfaces hispid with scattered appressed hairs, scarcely membranous. Flowers hermaphrodite, pedicellate, in pairs with bracteate leaflets, aggregated at the ends of the branches into dense round heads or corymbs, by the union of three or more heads; sepals 4, triangular acute; petals 4, hood shaped, with a few scattered long hairs, reddish, rather longer than the sepals; stamens 8, anthers linear, filaments equal in length to the anthers, exerted between the calyx lobes with the 4 large plumose stigmas, and persistent after the fall of the petals. Fruit 1 line long, 4 angled, with 4 intermediate costa, smooth and shining, 4 celled, 4 seeded.

This addition to an already large southern genus differs much from any of the described species either in New Zealand or Australia. The specific name has been chosen to indicate the most prominent character, the aggregation of the heads.

Collected by H. H. Travers, near Lake Guyon, Nelson Province, February, 1871.

Plate XIII.—Fig. 1. Plant *natural size*. 2. Fruit with persistent stamens and stigmas. 3. Stamen. 4. Plumose stigma. 5. Hood-shaped petal. 6. Section of fruit with 4 suspended seeds. 7. Leaf with thickened margin and appressed hairs. 8. Seed. All *magnified*.

Danthonia Raoulii, Steud.

a. australis, Buchanan. n. sub-sp.

A small rigid grass growing in dense tussocks; culms 8–16 inches long,



J.B. del. et lith.

Haloragis aggregata, Buchanan, n. sp.



slender, glabrous. Leaves 3–4 inches long, involute, filiform, rigid, setaceous; secund on the outer culms, glabrous; ligule none; sheaths broad, with long silky hairs at mouth; panicle 1–1½ inches long; spikelets 3–4 on short pilose pedicels 6–7 lines long, 4–7 flowered. Flowers unisexual; empty glumes unequal, oblong lanceolate; flowering glumes not included 4–5 lines long; hispid on the margins, and with long silky hairs at base and on sides, deeply bifid; awn one half longer than glume, recurved, flattened, and twisted like a corkscrew; scale fimbriate on the top.

This grass is found at considerable altitudes, and covered by the snows of winter during several months in the year; it forms a very coarse herbage for sheep, although like other species, of the genus, the early growth of spring is more grateful and nutritious; the close compacted mass of stems, leaf sheaths and roots, in this and other *Danthonia* become blanched and succulent, and are relished much by wild pigs, which root them up; this food is also extensively eaten by rats, which swarm on the grass lands of the South Island, and are vegetable feeders in those districts.

Collected by J. Buchanan, on the Kaikoura Mountains, and by H. H. Travers, near Lake Guyon, Nelson.

Danthonia semi-annularis, Br.

d. alpina, Buchanan. *n. sub-sp.*

Culms numerous, 12–16 inches high, slender, rigid, glabrous. Leaves as long as the culms, glabrous, filiform, setaceous, excessively numerous; ligule none; mouth of sheath with a very few erect hairs; panicle 1½–2 inches long, of 2–3 short, erect, branches, broad; spikelets ½ inch long, 3–5 on each branch, 4–6 flowered; empty glumes ½ inch long, white, nearly equal, longer than the spikelet; lower flowering glume villous, with tufts of hair at the base and on the sides to above the middle, deeply bifid; lateral awns shorter than the glumes; central awn slightly twisted, flat, as long as the glume, with lateral awns included, reflected or inflected; upper glume truncate or scarcely bifid, not villous; margins of glumes and awns scabrid; the anthers are much longer than in the other varieties.

This variety of *D. semi-annularis* is an abundant grass on the bald-headed mountains of the South Island, near Dusky Bay, forming a close sward of harsh pasture above the limits of bush, the mountains being covered by snow during winter, and its weight bearing so long on the grass, it shows flattened and appressed to the ground on their melting in spring.

The varieties of this species are very wide spread grasses in New Zealand, more common, however, at low altitudes, where they are found diffused over the pastures in single plants or small tufts, and are considered excellent feed for sheep and cattle.

It may perhaps be judged unnecessary to add another variety to the many already known of this variable species, but the habit of this Alpine form, with its succulent roots and confluent tussocks, demands notice.

Collected by J. Buchanan, at Dusky Bay, 1863.

Acæna glabra, Buchanan. n. sp.

A prostrate, perfectly glabrous herb, branches ascending, leafy. Leaves $\frac{3}{4}$ inch long; leaflets 3-4 pairs, coriaceous $\frac{1}{4}$ inch long, obovate or cuneate at the base, deeply cut into 2-3 obtuse teeth on each side; scapes 3 inches long, leafy at the base, with often one small leaf near the middle; heads large, globose; calyx much compressed, unarmed, 4 angled, 2 angles very small, the other 2 much produced, wing-like; petals 4, united at the base, persistent, green, tipped with dark red; bracteolæ entire, or 3 cleft at the point, fimbriate or lacerate on the margins; stamens 2; filaments long; stigma dilated upwards, fimbriate or lacerate on both margins; achene 1, pyriform, suspended from the point.

This very distinct species may easily be distinguished by the regular ascending branches, small coriaceous leaves and large capitulum of flowers, its more exact specific distinctions will be found in the much compressed calyx, the 2 lateral expansions, which are almost produced into wings, and the perfectly glabrous state of all its parts.

Collected on the mountains near Lake Guyon, Nelson, at an altitude of 3,000 feet, by H. H. Travers, February, 1871.

Plate XIV.—Fig. 1. Plant *natural size*. 2. Front view of flower with section at *a b*. 3. Side view of flower with 2 bracteolæ, *c d*. 4. Section of ripe fruit and carpel, showing the suspended seed. 5. Dehisced stamen. 6. Stigma dilated upwards with fimbriate or lacerate margins. All *magnified*.

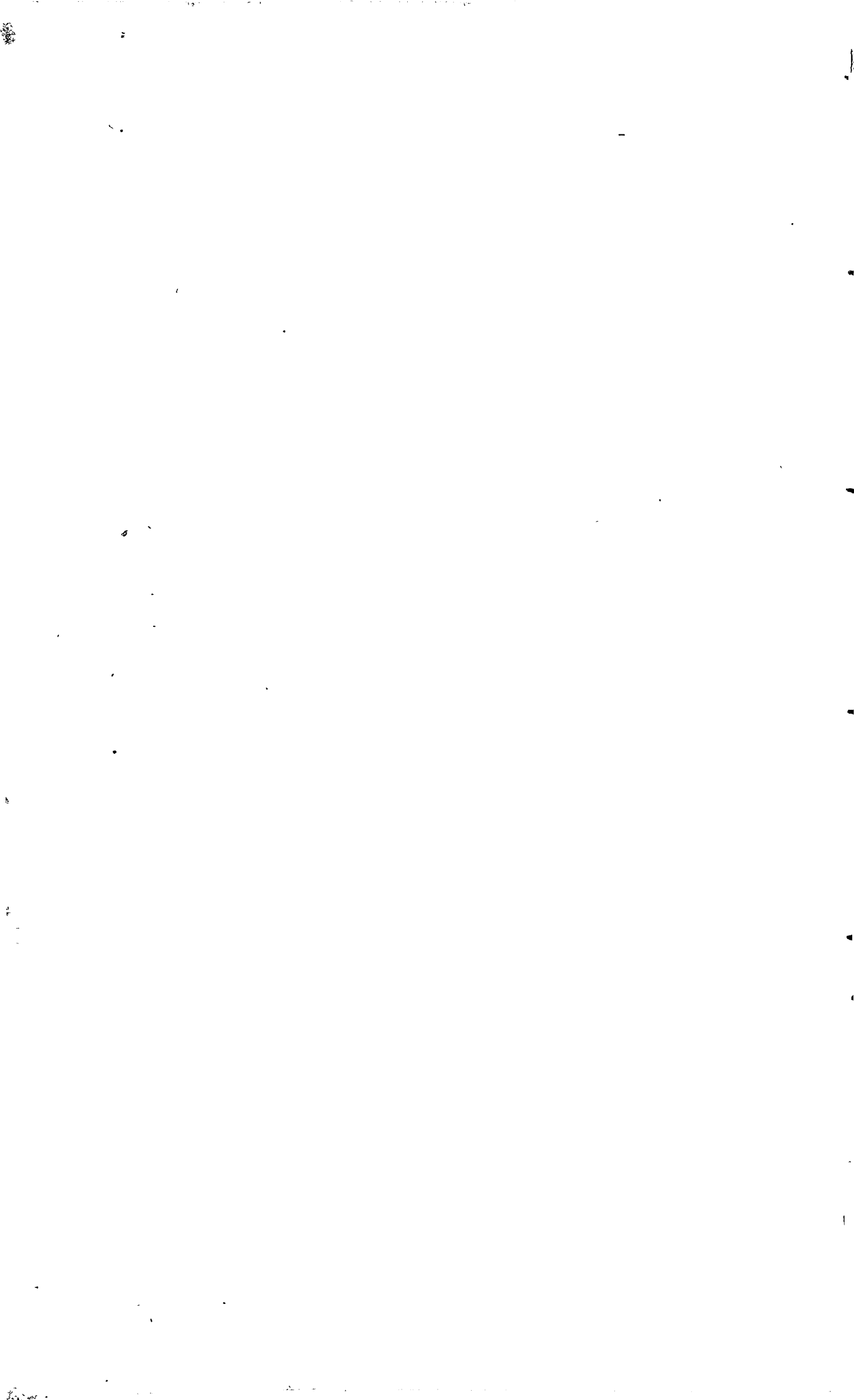
Celmisia lateralis, Buchanan. n. sp.

A small prostrate, glandular, pubescent plant; rhizome creeping, covered with appressed sheathing scales, branched. Branches ascending, $\frac{1}{2}$ inch long, densely covered with small sheathing leaves. Leaves rigid, erect, $\frac{1}{4}$ – $\frac{1}{2}$ inch long, entire, linear, acuminate or obtuse, broader at the sheathing membranous base, acerose, pungent, glabrous on both surfaces, or hispid on the backs of young leaves; margins glandular ciliate. Scapes 2-3 inches long, slender, lateral, solitary or in pairs towards the ends of the main branches; bracts few; linear subulate, very narrow; 2-3 alternate bracteate leaves at base of scape; the whole glandular pubescent. Heads large for the size of the plant, $\frac{1}{2}$ – $\frac{3}{4}$ inch diameter involucreal scales in 3 series, linear lanceolate, subulate; outer series glandular, inner series glandular and silky; borders white, mem-



Acæna glabra, Buchanan, n. sp.

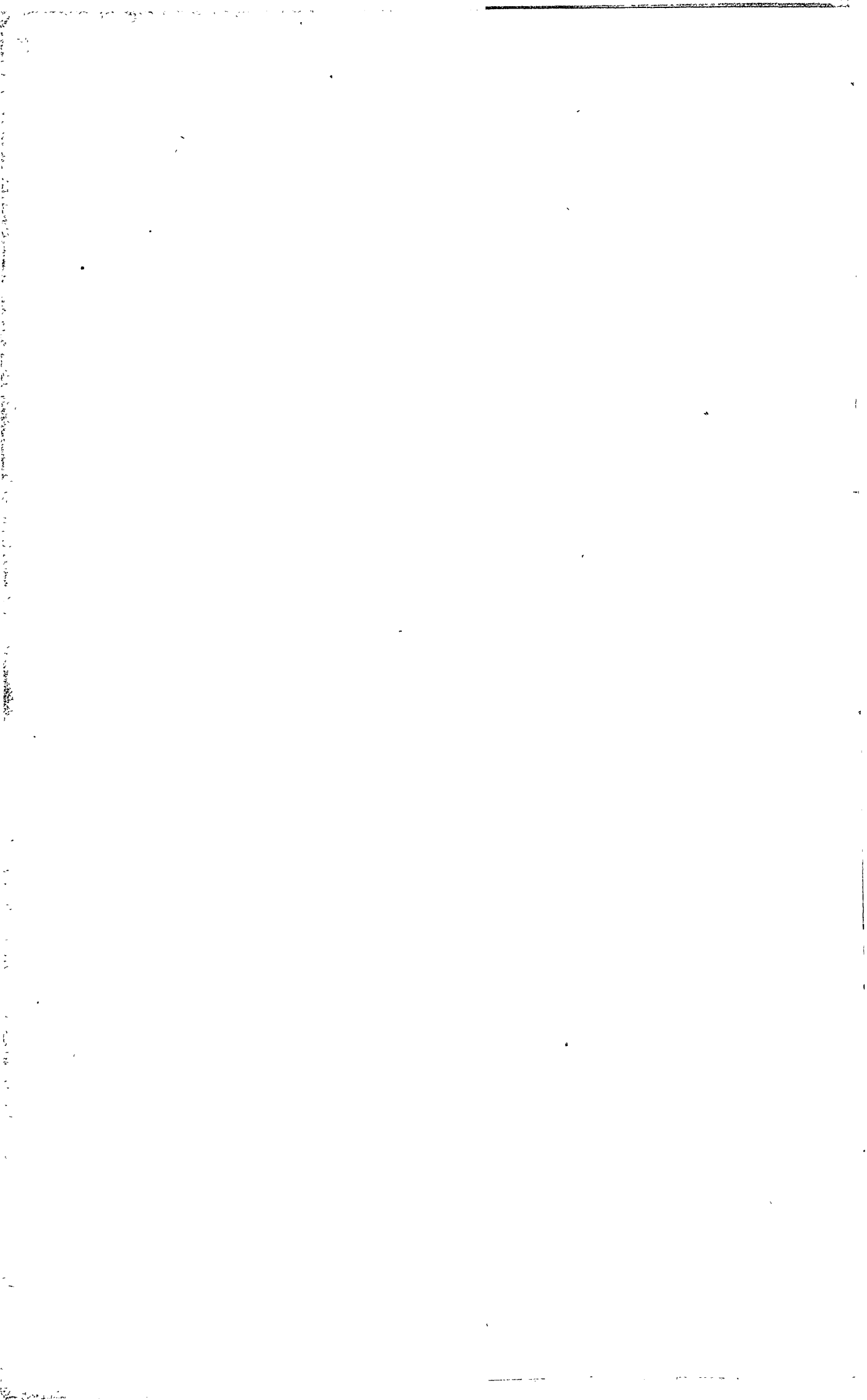
J. B. Col. sc. lith.





J.H. del. et lith.

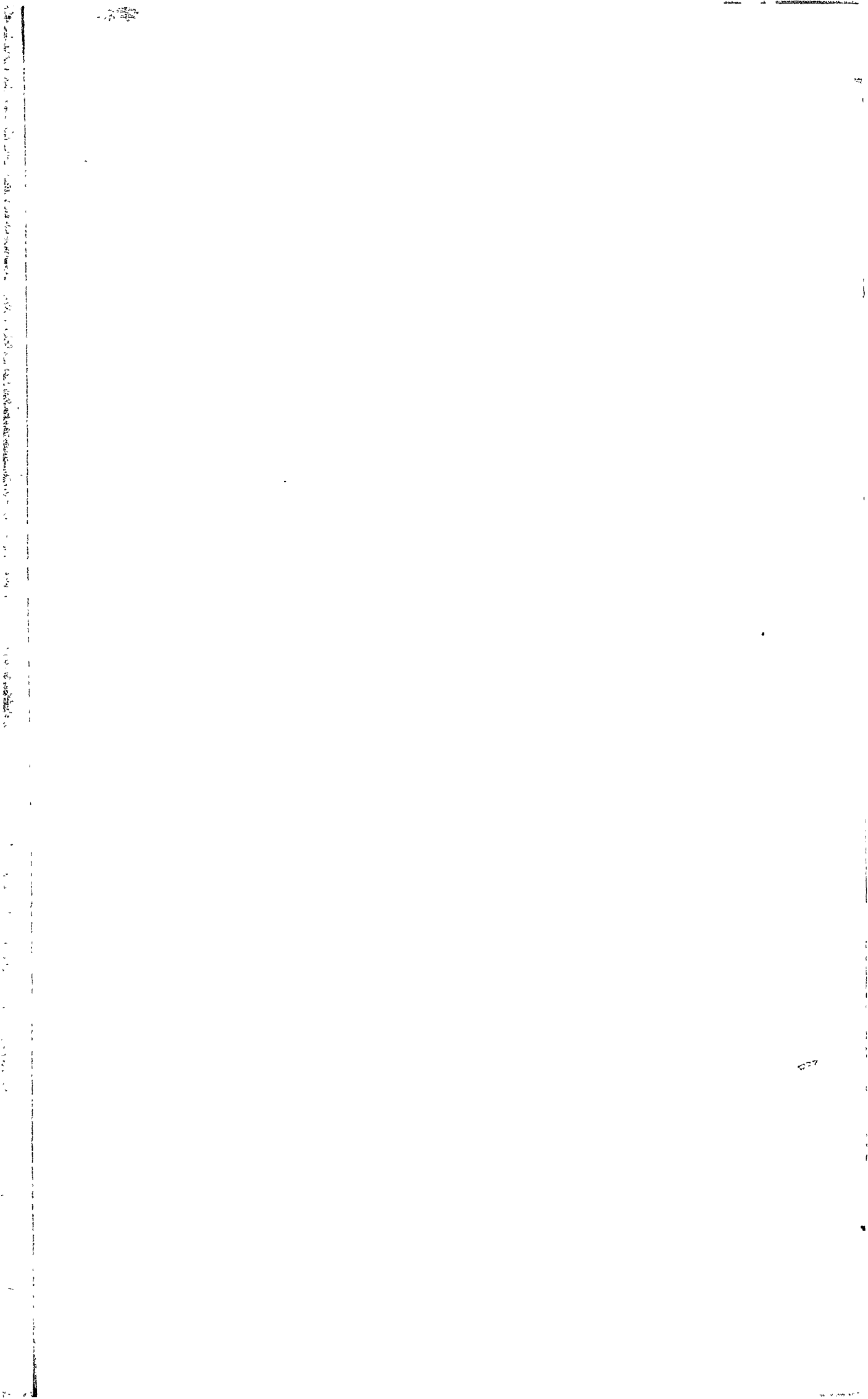
Celmisia lateralis, Buchanan, n. sp.





J.B. del. et lith.

Rostkovia nova Zelandiae Buchanan, n. sp.



branous. Florets numerous, those of the ray $\frac{1}{4}$ inch long, straight or spreading, revolute in old flowers; disc flat, deeply pitted; achene silky.

Collected by H. H. Travers, on the mountains near Lake Guyon, Nelson, March, 1871.

Plate XV.—Fig. 1. Plant *natural size*. 2. Head newly opened. 3. Floret of the disc. 4. Floret of the ray. 5. Arms of style. 6. Gland of style. 7. Stamen. 8. Pappus. 9. Outer involucral scale. 10. Inner involucral scale. All *magnified*.

Rostkovia Novae Zelandiae, Buchanan. n. sp.

Culms rising from a creeping rhizome, tufted, rigid, very narrow, 6–8 inches long, terete, finely grooved. Leaves numerous, rigid, very narrow, shining, plano-convex, terete near the top and pungent, each culm sheathed by three leaves to above the middle; leaves $\frac{1}{3}$ longer than the culms, enveloped below by 3 blunt apiculate sheaths. Flowers solitary, terminal, $\frac{3}{4}$ inch long, 1 bracteate; bract membranous $\frac{1}{10}$ inch long, very broad, entire, or sometimes bifid to the base. Perianth of 6 leaflets, pale brown, unequal, 3 outer longest; leaflets linear oblong, acute, with a membranous border; stamens 6, included; anthers long linear; stigma not seen, apparently falling off on the splitting of the capsule; capsule $\frac{1}{2}$ inch long, oblong, acute, bluntly triangular, coriaceous, dark brown, shining, 1 celled, loculicidally dehiscent by splitting at top into 3 valves. Seeds numerous, small, pale coloured, narrow, outer membrane produced at both ends, and thickened on one side, forming a white pearly ridge.

New to New Zealand, and closely allied to *Rostkovia gracilis*, a plant of the Auckland and Campbell Islands, from which it differs in having three short leaves on each culm instead of one long leaf, as described in Hooker's "Antarctic Botany."

Collected by H. H. Travers, on the Nelson mountains, at an altitude of 3,000 feet; and by Dr. Haast, on the mountains of Canterbury.

Plate XVI.—Fig. 1. Plant, *natural size*. 2. Flower. 3. Ripe capsule. 4. Section of capsule. 5. Seed. 6. Old stamen. All *magnified*.

Carex pyrenica, Wahlenburg. n. sub-sp.

A marked variation from this species is found on the mountains of the South Island.

Culms 5–8 inches high. Leaves about equal in length to the culms, soft and erect; spikelet pyriform, dark brown; glumes with a stout nerve; utricle with the beak dark brown and acute; stigmas 2, twisted back in fruit; nut ovate, flattened, smooth, pale brown.

Collected by me on the mountains of Otago; found previously only on the mountains of the North Island. See description of sp. in "Handbook of N.Z. Flora."