

New Species of New Zealand Bryophytes

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THESE two bryophytes, a moss and a liverwort, were found during a trip to the Lakes of South-west Otago towards the end of September, 1947, unfortunately too early in the season for the moss capsules to be quite ripe.

Dicranella temperata n.sp. Section: MICRODUS

Dioica; pallide flava, caules 3-6 mm. alti, simplices vel e basi longe ramosi. Folia inferiora suberecta, superiora subpatula, parva, stricta vel paulo flexuosa, siccitate valde crispata, angusta, e basi ad apicem sensim attenuata vel superiora basi sub-ovata sed non-vaginantia, lineari-lanceolata, integra, acuta, ca. 1.5 mm. longa: costa latiuscula, infra ca. 50 μ lata, luteo-brunnea, infra apicem soluta vel brevissime excurrente: cellulae basilares 8 \times 8 μ -8 \times 30 μ , hyalinae, isodiametricae vel oblongae, eae subulae minutae, isodiametricae, obscuratae, laeves, parietibus tenuibus. Flores masculi in caulibus propriis terminales, gemmiformes, parvi: seta flava, infra rubica, ad 1 cm. longa: theca minuta, 1 mm. longa, erecta, symmetrica, oblonga, laeves (sicca immatura rugosa), operculo $\frac{1}{2}$ - $\frac{3}{4}$ brevior, plus minusve obliquo, subulato. Annulus validus. Etothecii cellulae rectangulares. Peristomium parvum, infra orificium paulo insertum, dentibus anguste lanceolatis, haud papillois, pulchre rubris, apicem versus in 2 crura irregularia divisus vel hic illic perforatis.

Dioecious. The plants are light brownish-yellow with the stems simple or branched from the base and 3-6 mm. high. The leaves are about 1 $\frac{1}{2}$ mm. long, erect or somewhat spreading, strongly crisped when dry, gradually narrowed from the base or with the base rather ovate but not at all sheathing, linear lanceolate, acute and quite entire. The margin is sometimes bistratose towards the apex. The nerve is broad, about 50 μ wide, yellowish, hardly reaching the apex or very shortly excurrent. The basal cells are mostly much longer than broad, but vary from 8 \times 8 μ to 8 \times 30 μ , and are hyaline, those of the subula being very small with thin walls, isodiametrical and smooth, but opaque. The male flowers are small and terminal on separate stems. The seta is yellow, shading to reddish below and up to 1 cm. long. The capsule is 1 mm. long, oblong, erect, symmetrical and smooth except that operculate capsules become rugose when dry, but some of last season's capsules show that this is on account of immaturity. The cells of the capsule wall are rectangular. The peristome is small and inserted below the rim, the teeth narrowly lanceolate, red, not at all papillose and irregularly divided into two divisions at the apex or merely split here and there.

The capsules are not mature, the most advanced being still operculate, but they are so advanced that it seems most unlikely that the peristome teeth would become papillose before the operculum was cast.

Habitat: On isolated rocks in sheltered short fern land. Lake Te Anau near its outlet to the Waiau River about 650ft. altitude. Collected by K. W. A., 27/9/47. No. 1019, Herb. K. W. A. No. 8579, Herb. G. O. K. Sainsbury.

Remarks: Mr Sainsbury forwarded part of the gathering to Professor E. B. Bartrum, who referred it to the section *Microdus* of *Dicranella*, but being in Texas and away from his books, he could not say if it was new to our flora. It is, however, our only member of this section of the genus, and amongst our plants is perhaps nearest to *J. cyrtodonta*, which has a different habit, to judge by Dixon's* drawing, with the capsule asymmetrical and inclined, not symmetrical and erect as here.

The specific name refers to the temperate location of the species, most of the section *Microdus* being tropical.

***Ptilidium hodgsoniae* n.sp.**

Sterilia. Majuscula, caulibus subimplexis, adscendentis, pulvinum formans. Caulis ad 3 uncias longus, simplex vel rarius bifurcatus, pinnis numerosis, alternis, sat distantis brevibus, 2-3 mm. longis. Folia 1.5 mm. longa, dense imbricata, fere transverse inserta sed valde incubua, concava, plerumque 4-fida sed 2-5 fid, asymmetrica, lobo dorsale caulem tegente; lobae lanceolatae, ventralibus binis multo minoribus, sinu profundo, paulo reflectis, fere lobulum bifidum ventrale formans; margines ciliis longis, simplicibus vel ramosis, sparse vel dense muniti. Cellulae ca. 30 μ , plerumque versus margines opacae, trigonis fere magnis. Stipulae foliis duplo minores, lobis 2, lanceolatis saepe inaequalibus, ad basin sublobulatis quam bene evolutis, marginibus dense longeque ciliatis.

Sterile, forming a light green or brownish green cushion at least six inches across and one inch deep. The stems are slender and ascending to fully three inches long, occasionally forked with numerous rather distant alternate short branches 1/10in. to 1/8in. long. The leaves are 1-1.6in. long, alternate, closely imbricated, almost transversely inserted, but strongly incubous, 2-5-fid, normal leaves usually 4-fid, those at a branch insertion 2-fid, very asymmetric. the dorsal lobe the largest and covering the top of the stem; the lobes are lanceolate, the two ventral much smaller, with a very deep sinus and somewhat turned up to form a bifid ventral lobule: the margins are provided with long, sparse or dense, simple or branched cilia. The leaf cells are about 30 μ in diameter with usually large trigones. The areolation of the upper (live) leaves and stipules is partly obscured by dense dark cell contents.

The stipules are about half as large as the leaves, divided to almost halfway into lanceolate often unequal segments, the margins longly and densely ciliate. When well developed there is a basal lobule on each side of the stipule.

* H. N. Dixon, 1914 Studies in the Bryology of New Zealand. *Bull. N.Z. Inst.* no. 3, pt. 2, pl. 6, fig. 16.



FIGS. 1-3—*Dicranella temperata*. (1) Leaf base, showing width of nerve, $\times 160$.
(2, 3) Leaves, $\times 44$.

FIGS. 4-7—*Ptilidium hodgsoniae*. (4, 7) Leaves, $\times 44$. (5, 6) Stipules, $\times 44$.

Habitat: On earth in beech forest at Bob's Cove, near Queenstown. Lake Wakatipu, ca 1,100 ft. altitude. Collected by K. W. A., 24/9/47. No. H923, Herb. K. W. A. and Herb. E. A. Hodgson.

Remarks: This is the first record in the Southern Hemisphere of the genus *Ptilidium*, which consists of few species, including two from Europe, one from Japan and two from North America, one of these being the same as one of the European species. The New Zealand species is very close to the European ones, but differs in being of larger size and having slightly smaller cells with dense contents and small basal lobes on the well-developed stipules. The cells of the assimilating leaves and stipules are partly obscured by a broad dark peripheral band of cell contents which leaves a small clear lumen, giving much the same appearance as is given by the wall thickening in *Plagiochila circinalis*. The plant is named for Mrs E. A. Hodgson, who is doing so much to elucidate the New Zealand hepatics at present, and who sent pieces of this plant to Professor Th. Herzog, of Jena University. He considers the New Zealand species is close to two European species, specimens of which he sent for comparison.

Although the plant is sterile, there can be no doubt as to its genus. It is very similar to the robust *Lepidozias* with strongly dentate leaves, but it differs from that genus in having terminal inflated perianths. plicate only near the apex to form the small mouth.

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