

many seats and a pontoon to stop at along the lake walkway, and enjoy the abundant bird life, the forest and wetland (Fig. 40).

Then bizarrely there was the jet ski, a jarring note in all this peace and tranquillity.

The walkway makes its way gently through lowland forest and edges a lovely wetland with a diverse range of species: kahikatea and pukatea (*Laurelia novae zealandia*), with a number of maire tawake scattered through the wetland forest. A delightful fragrance wafted down from the canopy which was puzzling but was possibly the *Muehlenbeckia australis* which was observed in full flower elsewhere on the track.

Birds of Rotokare

Cheryl Taylor

Rotokare sanctuary was alive with birdsong. Tieke (N.I. saddleback) were the most common and could easily be seen rustling around in the undergrowth as blackbirds usually do. Also common were friendly toutouwai (N.I. robin), (Fig. 41). Other natives seen were miromiro (tomtit), a good sighting of a matatā (fernbird), kawau (black shag), pīwakawaka (fantail), tui, kererū (NZ pigeon), riroriro (grey warbler), hihi (stitchbird), popokatea (whitehead). Exotic birds noted were magpies, ducks (mallard?), blackbirds and chaffinches. Signage indicated that koekoeā (long-tailed cuckoo) adults had departed. It is wonderful to see what a difference predator control

makes, and it was a pity the noisy jetskis were not also controlled!

Trip Finale

Geoff Davidson

Many attendees left on Monday 1 February to return home. Others explored Taranaki and beyond. Several visited Anne Fraser at Ongarue N.E. of Tauramanui. Bev and I spent a night with her, and she hospitably took us to see her botanical mysteries. See Ewen's article in this issue (p. 27). Here we share her secret for a long and healthy life: relax even when gardening (Fig. 42).

Acknowledgements

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References

Smith Val 2015: *Common Ground*, Wordsmith 80 Mill Rd, New Plymouth 4310. 106p.

Mahood Lowe Reserve links:

<https://www.nftrt.org.nz/reserves/taranaki-mahood-lowere-reserve/>

<https://www.trc.govt.nz/assets/Documents/Research-reviews/KNES/kne2.pdf>

For a 'GNS Science' video explaining the mountain's geology in more detail see: <https://www.youtube.com/watch?v=ehK0oPgWYjA>

Mosses of Mahood-Lowe Reserve, Taranaki

Jessica E. Beever

Mosses were recorded in two distinct habitats in the Reserve (Fig. 1; also see Fig. 20, in Davidson 2021, p. 16 this issue): firstly, in the forest at a spot where entry was feasible (arrowhead A, Fig. 20, p. 16), due to a break in both the surrounding blackberry (*Rubus fruticosus* agg.) and a deep ditch; secondly, in the open on the broad farm vehicle tracks with associated large boulders, rank pasture and a farm shed (Fig. 2).

The forest was dominated by kamahi (*Weinmannia racemosa*) with occasional emergent kahikatea (*Dacrycarpus dacrydioides*), and a subcanopy/shrub layer of fuchsia (*Fuchsia excorticata*), toro (*Myrsine salicina*), pigeonwood (*Hedycarya arborea*), mahoe (*Melicactus ramiflorus*), wheki (*Dicksonia squarrosa*), *Coprosma autumnalis*, and *C. tenuicaulis*, with thickets of *Ripogonum scandens*. Ground cover was sparse.



Fig. 1. Sandra Jones and Ewen Cameron at the entrance to the Reserve. Photo: JE Beever. Photos taken on the trip, 30 Jan 2021.

At the disturbed forest margin, on a well-lit humic substrate, *Thuidiopsis furfurosa* and *Campylopus introflexus* were recorded. Here also were *Ptychomnion aciculare*, *Wijkia extenuata*, and *Dicranoloma menziesii*, all perhaps relics from earlier intact forest.

Deeper into the forest no ground mosses were observed, but epiphytes were common, including *Cladomnion ericoides*, *Crosbya straminea*, *Hypnum chrysogaster*, *Leptotheca gaudichaudii*, *Lopidium concinnum*, *Macromitrium longipes*, *Papillaria flavolimbata*, *Trachyloma diversinerve*, *Weymouthia cochlearifolia* and *Zygodon intermedius*, while on trunks of wheki (*Dicksonia squarrosa*) the specialist tree-fern moss, *Rhizogonium novae-hollandiae* was noted.

Emerging out into the light, we observed a quite different suite of mosses. On the huge volcanic boulders along the margins of the farm vehicle tracks was the abundant and robust growth of a single species: the yellow-green *Racomitrium crispulum*. On bare soil between grasses and forbs of the tracks *Breutelia pendula*, *Campylopus clavatus*, *Polytrichum commune* and *Campylopodium capillaceum* were found. This last species was striking because of an abundance of strongly grooved capsules held on highly flexuous setae. Formerly known in New Zealand under the names *Campylopodium medium* and *Campylopodium euphorocladum*, the species has



Fig. 2. Two contrasting habitats: forest and farm-roads, overlooked by Taranaki Maunga. Jessica exploring the rank pasture. Photo: EK Cameron.

been shown by Allan Fife to have an earlier name: the type was collected by J.D. Hooker in the Bay of Islands, and described by Hooker and Wilson in 1844 as *Campylopus capillaceus*. The transfer to *Campylopodium* was made by Allan Fife (Fife 2019), distinguishing features of *Campylopodium* being the lack of differentiated alar cells at the basal corners of the leaves, and a narrow costa. New Zealand's six species of *Campylopus* may all be distinguished from *Campylopodium* by their very broad leaf costae (usually more than ½ the width of the leaf base) and, usually, by the prominence of their alar cells.

An unexpected microhabitat in the reserve: on soil under the drip-line of the walls of a corrugated iron shed (see Fig. 20, p. 16). Here was abundant growth of a form of *Weissia controversa*. Pure swards of this moss are often to be found in sites with similar chemistry: for example, under crash barriers at road margins, and in the run-off from stacked corrugated iron for example, observed in the yard of our accommodation in the Catlins, ABS trip of January 2014 (Beever 2014).

Acknowledgements

I thank Ewen Cameron for reminding me of the vascular plant vegetation of the Reserve, and Bev and Geoff Davidson for their superb organisation of this expedition. I am pleased also to acknowledge the cheerful companionship of fellow members of the Auckland Botanical Society.

References

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Appendix. Mosses recorded in Mahood-Lowe Reserve, Taranaki, on 31 Jan 2021.

AK = vouchers in Auckland War Memorial Museum Herbarium

<i>Breutelia pendula</i>	<i>Hypnum chrysogaster</i>	<i>Pyrrhobryum bifarium</i>
<i>Calomnion complanatum</i>	<i>Hypnum cupressiforme</i>	<i>Racomitrium crispulum</i>
<i>Campylopodium capillaceum</i> (AK)	<i>Leptostomum inclinans</i>	<i>Rhaphidorrhynchium amoenum</i>
<i>Campylopus clavatus</i>	<i>Leptotheca gaudichaudii</i>	<i>Rhizogonium novae-hollandiae</i>
<i>Campylopus introflexus</i>	<i>Leucobryum javense</i>	<i>Thuidiopsis furfurata</i>
<i>Cladomnion ericoides</i>	<i>Lopidium concinnum</i>	<i>Trachyloma diversinerve</i>
<i>Crosbya straminea</i>	<i>Macromitrium longipes</i>	<i>Weissia controversa</i>
<i>Cyathophorum bulbosum</i>	<i>Papillaria flavolimbata</i>	<i>Weymouthia cochlearifolia</i>
<i>Dicnemon calycinum</i>	<i>Polytrichum commune</i> (AK)	<i>Wijkia extenuata</i>
<i>Dicranoloma menziesii</i>	<i>Ptychomnion aciculare</i>	<i>Zygodon intermedius</i>

Liverworts of Mahood-Lowe Reserve, Taranaki

Joshua Salter

On the day of our ABS visit on 30th Jan 2021, the battery of my new camera decided to expire, so having resolved to return another day to take some photos, I contented myself with walking around the grassy 'farm tracks' and admiring the kamahi-dominated forest (for map see Fig. 20, in Davidson 2021, p. 16 this issue). Especially memorable was a climbing rata (*Metrosideros perforata*) in full flower that had reached the top of a young rimu (*Dacrydium cupressinum*). The central bush patch seemed inaccessible, being ringed by a deep ditch filled with blackberry, but we noted two spots (arrowheads A & B, Fig. 20, p. 16) where no ditch barred the way. However, by the time I had walked the 'farm road' circuit (red dotted line, Fig. 20, p. 16) there was no time to explore the small central patch let alone the much larger forest that extended to the boundary of the National Park.



Fig. 1. *Radula grandis*, amongst mosses and lichens on a small kamahi at the edge of the central bush patch. Photo: J Salter, 5 Feb 2021.

A few days later, on 5th Feb 2021, I returned with my partner Bill (who had joined me after the ABS trip ended). This time I had made sure the camera was charged overnight. And, since Jessica was going to record the mosses, and there was no liverwort expert available, I decided to see what liverworts I could find (see Appendix). If the festooned forest higher up the mountain was anything to go by, a forest at the foot of Mt Taranaki was surely going to yield some interesting gems, even to a rank amateur like me.

Leaving Bill to explore the 'farm tracks', I headed for the SE corner of the central bush patch where I knew I could get into the forest avoiding the ditch of blackberry (arrowhead B, Fig. 20, p. 16). The first liverwort I found was a *Radula grandis*, on the trunk of a kamahi at the forest margin (Fig. 1). Going further in, I found another two liverworts – (*Plagiochila annotina* on another kamahi, and a shrivelled *Porella elegantula* on a kahikatea trunk). Some distance from the margin I encountered a large swamp maire (*Syzygium maire*) (asterisk no. 2 marks the spot on Fig. 20, p. 16), but although hosting an *Asplenium flaccidum* nearly 2 m long (see Fig. 23, p. 16), even this old tree lacked liverworts. All the other green coverings on roots and tree trunks examined in my short time there, were assorted mosses (see Jessica's account of the mosses in this issue: Beever, 2021, p. 24).

What might be the explanation for this dearth of liverworts? They typically require a more moist environment than many mosses. Have the ditches altered the water table? This would perhaps account for lack of ground-dwelling liverworts. But they seemed lacking on the trees too. Does Mt Taranaki