

*Nematoceras* "Pollok" (*Corybas rivularis* agg.)  
*Nematoceras triloba* "pygmy" (*Corybas trilobus*)  
*Oplismenus hirtellus* subsp. *imbecillis*  
*Phormium tenax*  
*Poa anceps*  
*Poa pusilla*  
*Pterostylis banksii*  
*Pterostylis cardiostigma*  
*Rhopalostylis sapida*  
*Ripogonum scandens*  
*Uncinia banksii*  
*Uncinia unciniata*  
*Winika cunninghamii*

#### Fungi

*Auricularia cornea*  
*Cordyceps* sp. (on spider)  
*Coprobia granulata*  
*Crucibulum laeve*  
*Daldinia* sp.

*Favolaschia calocera* (exotic)

#### Myxomycetes

*Physarum lateritium*  
*Pluteus raediarum*

#### Lichens

*Chrysothrix candelaris*  
*Ramalina celastri*  
*Rimelea reticulata*  
*Usnea* sp.  
*Xanthoria parietina*

#### Bryophytes (under-recorded)

*Achrophyllum dentatum*  
*Cyathophorum bulbosum*  
*Lepidolaena taylorii*  
*Monoclea forsteri*  
*Plagiochila* cf. *gregaria*  
*Schistochilus balfouriana*

## Field Trip: Kopouatai Peat Dome, Hauraki Plains 16/10/04

Mike Wilcox

Auckland Bot Soc visited the Kopouatai Peat Dome on the Hauraki Plains on Saturday 16 October 2004. Our group was: Doug Ashby, Tricia Aspin, Enid Asquith, Jan Butcher, Lisa Clapperton, Brian Cumber, Bev Davidson, Geoff Davidson, Gael Donaghy, Leslie Haines, Graeme Hambly, Jane Hart, Rosa Henderson, Graeme Jane, Anthony Keen, Joan Kember, Alistair MacArthur, Juliet Richmond, Clive Shirley, Shirley Tomlinson, Alison Wesley, Mike Wilcox and Maureen Young. We assembled in Ngatea at 10 am, but it took some time to get everyone together as the annual "big day out" was on in town, with hundreds of people milling about and stalls selling country things. After negotiating the crowds we headed down Kaihere Road beside the canal and after 20 km got to the end of Awaiti Canal Road, from where it was a half-hour walk along the Tee Canal embankment to the Elstow Canal which we crossed by a weir to the eastern margin of the peat dome (Map Reference: 260-T13, 383 194).

Kopouatai Peat Dome is a huge expanse covering c.9000 ha. It is a restiad bog sitting on a great accumulation of peat. The ground moves when you jump on it. The fringes of the dome have 6 m tall manuka (*Leptospermum scoparium*), with some *Dracophyllum lessonianum*, but the dome itself is covered in quite short vegetation 1-3 m tall, dominated by *Sporadanthus ferrugineus* in dense stands, abundant wire rush (*Empodisma minus*), *Schoenus brevifolius* and *Baumea teretifolia*, and with scattered shrubs of manuka and *Epacris pauciflora* – this latter in full bloom and much admired. The flora is not particularly rich, but nonetheless distinctive and of

great interest, as well described by Regnier and Champion (1986) and Clarkson *et al.* (2002).

The Tee and Elstow canals and adjoining swamps have several plants we did not see in the Kopouatai Peat Dome or the manuka fringe. These include *Carex scoparia*, *Eleocharis acuta*, *Glyceria maxima*, *Isolepis prolifer*, *Juncus sarophorus* and *Ranunculus flammula*.

Our observations of the Kopouatai Peat Dome flora are summarised in the following brief profiles of the species present (\* = introduced plants).



Figure 1. A busy group in the Peat Dome (Photo: Alistair MacArthur)



Figure 2. *Epacris pauciflora*



Figure 3. Cane rush (*Sporadanthus ferrugineus*)



Figure 4. Leslie Haines and Jane Hart amongst *Sporadanthus* (Photo: Alistair MacArthur)

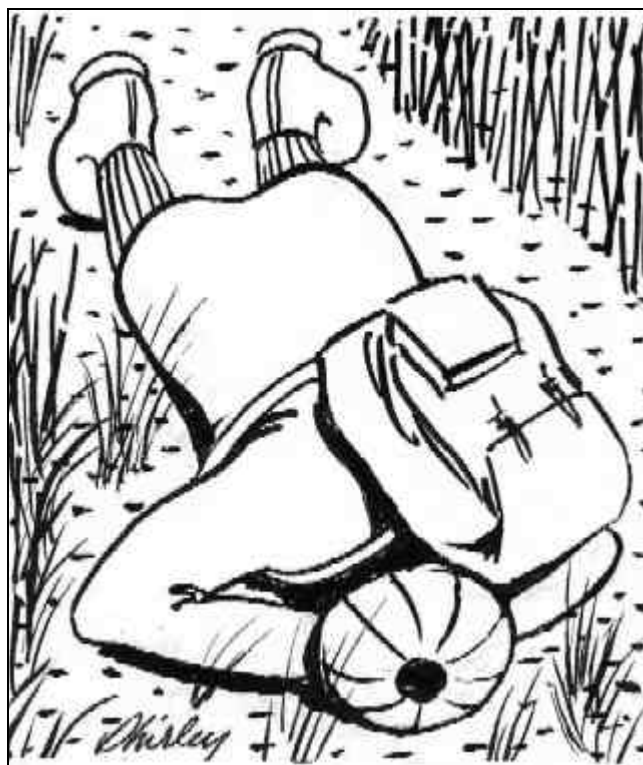


Figure 5. Close examination of the liverworts (Drawing: Shirley Tomlinson)

## Species List

### Liverworts

*Goebelobryum unguiculatum* (Hook.f. & Taylor) Grolle  
This distinctive prostrate liverwort is attached to the ground (peat) by rhizoids, forming a dense carpet in the shade amongst the bases of plants such as *Schoenus brevifolius*, *Baumea teretifolia* and *Empodisma minus*. The foliage is two-tone reddish-brown, with green leaf bases. It is abundant in this peat bog. It is illustrated in Scott (1985).  
Jungermanniales: Acrobolbaceae.

*Kurzia calcarata* (Steph.) Grolle var. *temnoides* (R. M. Schust.) R.M.Schust  
Dense green, fine tufts on damp peat surface.  
Jungermanniales: Lepidoziaceae.

*Riccardia crassa* (Schwaegr.) Carrington & Pearson  
A green-coloured thalloid liverwort growing on the ground in pure colonies or mixed with *Goebelobryum*. It is illustrated in Scott (1985).  
Metzgeriales: Aneuraceae.

*Telaranea tetrapila* (Hook.f. & Taylor) Engel & Merrill  
A fine, creeping, weak-stemmed green liverwort, with *Sphagnum* moss on the peat surface.  
Jungermanniales: Lepidoziaceae.

## Mosses

*Campylopus acuminatus* Mitt. var. *kirkii* (Mitt.) Frahm  
This yellowish-green tufted moss is about 1 cm tall, with a blackish base, and occurs on wet sites in the open. It is illustrated (as *Campylopus kirkii*) in Sainsbury (1955). Bryales: Dicranaceae.

*Sphagnum cristatum* Hampe

A common moss in the bog, though not forming large expanses because of the dense shade of tall monocots. It grows particularly strongly beside drainage channels. Sphagnales: Sphagnaceae.

*Sphagnum falcatum* Besch

Fine and bright green, more or less submerged, and otherwise known as 'drowned kittens'. The leaves have long fine tubular apices (Jessica Beever, pers. comm.). Sphagnales: Sphagnaceae.

## Ferns & fern allies

*Blechnum novae-zelandiae* T.C.Chambers & P.A.Farrant

The slender swamp form of this fern occurs in the swampy manuka fringes.

*Dicksonia squarrosa* (Forst.f.) Swartz

A few rather squat, exposed examples in the manuka fringes.

*Gleichenia dicarpa* R.Br.

A dominant plant in the manuka fringes and in the open on the peat dome itself.

*Histiopteris incisa* (Thunb.) J.Smith

Just a few young plants seen in the manuka fringes.

*Hypolepis distans* Hook.

Plentiful in the manuka fringes.

*Lycopodiella serpentina* (Kuntze) B.Oellg.

Not seen by us, but has been previously recorded by Regnier and Champion (1986).

*Lycopodiella lateralis* (R.Br.) B.Oellg.

Frequent on the peat dome, nestled at the base of taller plants such as *Schoenus brevifolius* and *Empodisma minus*. This club moss is comparatively short, with distinctive lateral sporangia.

*Pteridium esculentum* (Forst.f.) Cockayne

Bracken fern is common in the manuka fringes.

## Dicots

*Coprosma tenuicaulis* Hook.f.

This small coprosma occurs commonly in the understorey of the wet manuka fringes.

*Dracophyllum lessonianum* A.Rich.

A shrub to 5m tall occurring intermixed with manuka, mainly in the manuka fringes.

*Drosera binata* Labill.

We saw only some very young plants, but it has been previously recorded by Regnier and Champion (1986).

*Epacris pauciflora* A.Rich.

Plentiful and one of only two common small shrub species on the peat dome. It was in full bloom during our visit.

*Leptospermum scoparium* J.R. & G.Forst.

Manuka is the dominant tall shrub in the fringes, growing to 6 m tall, and is also common on the dome itself, as scattered small slender shrubs 0.5 to 1 m tall, with short, very slender leaves.

\**Lonicera japonica* Thunb.

Japanese honeysuckle has become established only in the outer disturbed margins of the manuka fringe.

\**Lotus pedunculatus* Cav.

Disturbed outer fringe on old track

*Muehlenbeckia complexa* (A.Cunn.) Meissn.

Occasional, mainly young vines, in the manuka fringes.

*Nertera scapanioides* Lange

The habitat of this creeping herb is on damp, shaded ground in the manuka fringe, commonly with sphagnum moss. We saw several fruiting clumps.

\**Rubus fruticosus* L.

Blackberry is found mainly on the outer margins of the manuka fringe.

\**Salix cinerea* L.

Grey willow or sallow is frequent in the disturbed margins of the manuka fringe, but we did not see it on the peat dome itself.

\**Ulex europaeus* L.

Gorse occurs in the outer margins of the manuka fringe.

*Utricularia delicatula* Cheeseman

Not seen by us, but has been previously recorded by Regnier and Champion (1986).

*Utricularia novae-zelandiae* Hook.f.

Not seen by us, but has been previously recorded by Regnier and Champion (1986).

## Monocots

*Baumea teretifolia* (R.Br.) Falla

A common plant in the manuka fringe and peat dome itself, flowering during our visit.

*Carex virgata* Sol. ex Boott

Occasional in the manuka fringes.

*Dianella nigra* Colenso

A robust, broad-leaved form of this species is plentiful in the manuka fringes.

*Empodisma minus* (Hook.f.) L.A.S.Johnson & D.F.Cutler

This peat-forming restiad is a feature species of the site, occurring both in the manuka fringes where it grows almost as a liane in the undergrowth, and densely on the dome itself. It was in flower during our visit. The pinkish-grey, sphagnum-like root mats which grow upright attracted much attention, and when dead form the main body of peat of the dome (see Clarkson *et al.* 2002).

\* *Holcus lanatus* L.

Yorkshire fog was recorded from the disturbed margins.

\* *Juncus effusus* L.

In the outer part of the manuka fringe.

*Juncus pallidus* R.Br.

In the outer part of the manuka fringe.

*Juncus planifolius* R.Br.

Beside drainage channels in the manuka fringe.

*Juncus prismatocarpus* R.Br.

Beside drainage channels in the manuka fringe.

*Phormium tenax* J.R. & G.Forst.

Manuka fringe.

*Schoenus brevifolius* R.Br.

This rush-like sedge is dominant in places on the peat dome, growing to 0.5 m tall.

*Sporadanthus ferrugineus* de Lange, Heenan & B.D.Clarkson

Known as bamboo rush, it is the dominant late successional species of raised peat bogs. The culms are 10-15 mm diameter and 1- 4 m tall (de Lange *et al.* 1999).

*Thelymitra cyanea* (Lindl.) Benth.

Frequent on more open, bare places on the peat dome.

*Typha orientalis* C.B.Presl

Raupo occurs only on the outer margins,

#### References

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#### Acknowledgements

Sincere thanks to Dr John Braggins for identifying the liverworts *Telaranea tetrapila* and *Kurzia calcarata*, to Dr Jessica Beever for information on mosses, and to Graeme Jane for comments on the plant records.

## Field Trip: Howarth Memorial Wetland, Te Aroha. 16/10/04

Mike Wilcox

The Howarth Memorial Wetland in Te Aroha, is managed by the Auckland/Waikato Fish & Game Council as a wildfowl refuge. Auckland Bot Soc visited the wetland on 16 October 2004 as part of our "Te Aroha weekend". Our group was accompanied by Te Aroha Fish & Game Association people *Ross Johnson, Guy Rasmussen, Ron Hannah, Ray Needham and Irene Needham*, who showed us around and told us something of the history and management of the area.

The wetland (Map Reference: 260-T13, 487-493, 026-034) lies beside the Waihou River. It is essentially man-made as the main pond was dug out in the 1940's, followed later by a tree-planting project to beautify the area and provide habitat for wildfowl.

#### Cultivated trees

Much work has been done over a period of forty years to establish a woodland fringe of mostly deciduous trees surrounding the wetland. Many of these have

done well and resulted in impressive groves. Among the most successful have been pin oak (*Quercus palustris*), Algerian oak (*Quercus canariensis*), mazzard or wild cherry (*Prunus avium*), black walnut (*Juglans nigra*), and swamp cypress (*Taxodium distichum*) – this latter in the wetland itself.

Crack willow (*Salix fragilis*) had invaded the wetland but Fish & Game has managed to kill most of it. Tree species recorded are listed below.

<i>Acacia melanoxylon</i>	blackwood
<i>Acer negundo</i>	box elder
<i>A. pseudoplatanus</i>	sycamore
<i>Amelanchier canadensis</i>	shadblow serviceberry
<i>Arbutus unedo</i>	strawberry tree
<i>Castanea sativa</i>	sweet chestnut
<i>Catalpa bignonioides</i>	Indian bean tree
<i>Cinnamomum camphora</i>	camphor laurel
<i>Cordyline australis</i>	cabbage tree