

The low tide gave us plenty of room to amble along the river bank where Mike Thorsen pointed out many species of interest. These included marsh ribbonwood – *Plagianthus divaricatus* – a relative of ribbonwood that likes brackish situations and is often confused for a small coprosma; *Korthalsella clavata* – a hemi-parasitic mistletoe; *Meliccytus flexuosus* – a relative of mahoe that is divaricating and has almost no leaves with the stems being the main photosynthetic organ; narrow-leaved lacebark - *Hoheria angustifolia* – rare nationally but common around Otago and Southland; and *Olearia fragrantissima* – a deciduous tree with branches that zigzag between leaves.

Of special interest was the rare and threatened *Coprosma obconica* – so named for the obconic shape of its fruit. Two shrubs were previously known from this area, and on this occasion we managed to add a third.

Once we reached the river mouth there was a brief break for lunch before exploring the rich flora of the coastal platform. Plants of interest were: *Carex litorosa*- a coastal sedge in serious decline, and *Raoulia subsericea* – a species of vegetable sheep belonging to a genus I am more used to associating with alpine environments. We failed to find *Myosotis pygmaea* which had been seen in the area before, but found a healthy population of *Lepidium tenuicaule*, most individuals of which were particularly large and green.

All in all a very pleasing day, the threatened rain never eventuated and we had a fine wander along the scenic Akatore. My day was also completed after a find near the car-park of plentiful juicy *Rubus fruticosus* - delicious in apple crumble.

Akatore Lichen list: Some of the lichens on one short Coprosma twig overhanging the estuary we have identified so far include: *Chrysothrix candelaris*, *Lecanora* sp, *Megalospora gomphaloma*, *Opegrapha agelaeoides*, *Pyrenula deliquescens*, *Ramalina glaucescens*, *Teloschistes chrysophthalmus*, *Thelotrema lepadinum*, and *Usnea* sp. In places the crustose lichen, *Opegrapha diaphoriza* formed a distinct white zone on the bank of the estuary.

Allison Knight and Jennifer Bannister

BSO AGM 5 April 2006

Allison Knight

Didn't take much more than 15 minutes to elect and welcome a new Chairman, Secretary, Event Manager, Web Manager, Communication officer, Talks co-ordinator and 2 new committee members, not forgetting to thank heartily the out-going and the remaining office-bearers. Details on back page and web site. A new botanical photographic competition was announced, see p20, and reminders given for the BSO Audrey Eagle Botanical Drawing competition. Then followed a mistletoe feast – an authoritative talk and an intriguing video.....

New Zealand Mistletoes

After the AGM came the really interesting presentations. Emeritus Prof. Peter Bannister is a real authority on mistletoes and his talk was a revelation. First, the nuts and bolts. New Zealand mistletoes can be divided into 3 groups; the green, the beech and the dwarf mistletoes. There are two green species, both found in Dunedin. *Ileostylus micranthus* has yellow berries in autumn and is abundant on native and introduced trees. *Tupeia antarctica* has white berries and scented pollen, possibly to attract flies. Colourful red or orange flowers distinguish the three beech mistletoes. In the summer the orange flowers of *Alepis flavida* can be seen perched in *Nothofagus* near the Mavora Lakes. The red flowers *Peraxilla colensoi* (Maungatua) and *P. tetrapetala* (Craigieburn) are pollinated by tui and bellbird. When the birds tweak the flower open to get at the nectar the pollen explodes over their head feathers. The dwarf *Korthalsella* mistletoes are the most mysterious. They are so tiny and cryptic that even though they often occur at eye level on shrubs it is easy to miss them. Their flower is little more than a naked ovary, the fruits appear to just drop off and the dispersal mechanism is unknown. *K. clavata* occurs in limestone areas such as Castle Hill. The other two can be found around Dunedin if you look hard enough – *K. salicornioides* on kanuka (*Kunzea ericoides*) and *K. lindsayi* on divaricating shrubs such as *Melicope* and *Coprosma* spp. The dwarf mistletoes all mimic their hosts extremely well. But why? What do they have to hide from now that all the sharp-eyed, flightless browsing birds are extinct? These mistletoes are xylem parasites, with one-way uptake, which makes them more nutrient-rich than their hosts. With painstaking measurements, Prof Bannister found, to his surprise, that the biggest nutrient differences between *Korthalsella* and host were on divaricating shrubs - classic moa fodder! In addition, Peter's water potential measurements show that New Zealand mistletoes are more succulent as well as more nutritious than their hosts – another reason to hide from herbivores – either up a tree or in disguise! Fascinating work.

Exhuming Adams. (DVD)

Thassilo Franke and Brant Backlund are two botanical sleuths who covered a lot of country in their one year Natural History Film Making Course. Their aim was to discover why the Adams mistletoe became extinct some time after Europeans arrived in New Zealand. They presented their findings in a most dramatic way, exploring all manner of archived material. There was a wonderful interview with Audrey Eagle, who was the last person to record Adams mistletoe, when she painted it in 1954. Dave Kelly described the recent discovery that existing red-flowered mistletoes need to have their flowers tweaked by a bird, and how the flowers then explode pollen over the bird's forehead as it dips its beak in for nectar. By carefully measuring herbarium and museum specimens from around the world our filmmakers re-created a 3D flower and 3D beaks. Their graphics showed that a tui's beak was too large but the bellbird was a perfect fit for Adam's mistletoe, suggesting that the bellbird was the main pollinator. More sleuthing found that, according to Buller, bellbirds were abundant in Northland in 1859, very rare by 1862 and extinct by 1866. But what killed the bellbirds? In 1830 the ship-borne Southern House mosquito arrived in Hawaii, along with bird malaria, and bird genocide followed. This same mosquito formed a northern distribution in New

Zealand. Around 1860 European songbirds were shipped to home-sick New Zealanders. This timing and distribution fit with the blood-sucking mosquitoes transmitting a European disease to native birds that had no resistance, just as European human diseases were devastating to native people around the world. A fascinating illustration of the need to preserve the pollinator as well as the plant to maintain biodiversity. Thanks to Lloyd Davis, for making the DVD available, and to Lyn Bentley, for tracking it down just in the nick of time.

29 April. **Nenthorn** trip – postponed till better weather. Watch the BSO website.

Korthalsella lindsayi on *Melicope simplex* - Peter Bannister



DVD review

Reviewed by *Rodney Lewington*

Interactive "*Key to Australasian Liverworts and Hornwort Genera* "

David Glenny and Bill Malcolm. Published by the ABRS.
Manaaki Whenua Press.

Available in New Zealand from

If you can read a CD on your computer and have an interest in liverworts and hornworts then this key is a must. It comes with the Lucid Player software, a glossary and is generously illustrated.

It is more than a key. The notes and illustrations make it the most complete liverwort and hornwort flora at the generic level available for New Zealand. The comprehensive references to literature and the lists of species for each genus provide a lead-in to the species level.