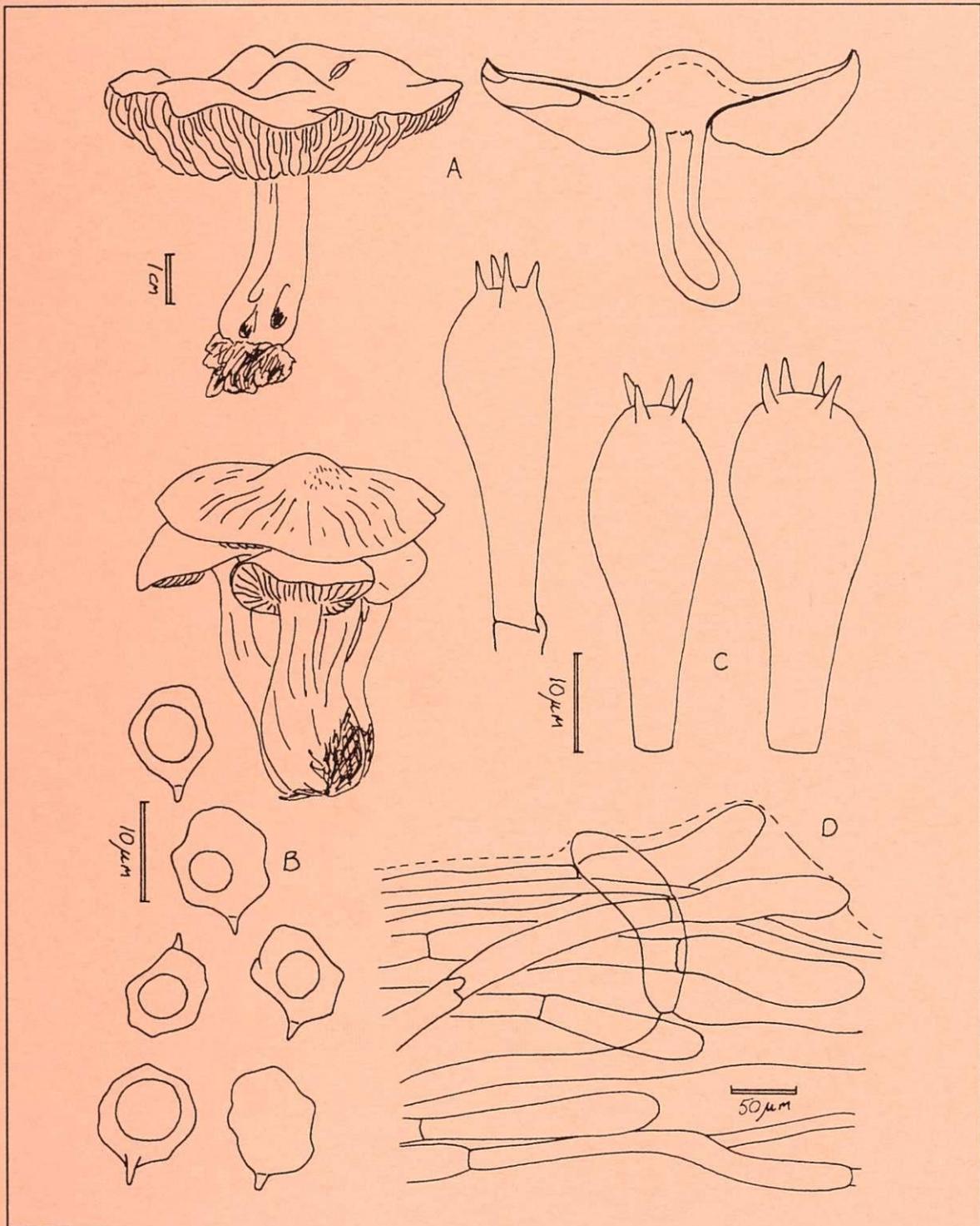


# NEW ZEALAND BOTANICAL SOCIETY NEWSLETTER

NUMBER 38

DECEMBER 1994



NEW ZEALAND BOTANICAL SOCIETY  
**N E W S L E T T E R**  
NUMBER 38 DECEMBER 1994

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The naturalised mushroom *Entoloma clypeatum*: A, habit and section of fruit body; B, spores; C, basidia; D, pileipellis. Illustration by **Geoff S. Ridley** (see article p. 9).

## **New Zealand Botanical Society**

President: Dr Eric Godley  
Secretary/Treasurer: Anthony Wright  
Committee: Sarah Beadel, Colin Webb, Carol West,  
Beverley Clarkson, Bruce Clarkson  
Address: C/- Auckland Institute & Museum  
Private Bag 92018  
AUCKLAND 1

### **Subscriptions**

The 1995 ordinary and institutional subs are \$14 (reduced to \$10 if paid by the due date on the subscription invoice). The 1995 student sub, available to full-time students, is \$7 (reduced to \$5 if paid by the due date on the subscription invoice).

Back issues of the *Newsletter* are available at \$2.50 each - from Number 1 (August 1985) to Number 37 (September 1994). Since 1986 the *Newsletter* has appeared quarterly in March, June, September and December.

New subscriptions are always welcome and these, together with back issue orders, should be sent to the Secretary/Treasurer (address above).

Subscriptions are due by 28 February of each year for that calendar year. Existing subscribers are sent an invoice with the December *Newsletter* for the next year's subscription which offers a reduction if this is paid by the due date. If you are in arrears with your subscription a reminder notice comes attached to each issue of the *Newsletter*.

### **Deadline for next issue**

The deadline for the March 1995 issue (Number 39) is 28 February 1995.

Please forward contributions to: Bruce & Beverley Clarkson, Editors  
NZ Botanical Society Newsletter  
7 Lynwood Place  
HAMILTON

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## NEWS

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### New Zealand Botanical Society News

#### ■ From the Secretary

Nominations received for 1995 Officers and Committee positions for the New Zealand Botanical Society were:

President	Dr Eric Godley
Secretary/Treasurer	Anthony Wright
Committee	Sarah Beadel, Colin Webb, Carol West

As the number of nominations equalled the number of vacancies there was no need for a ballot and the above are declared elected.

#### Newsletter Editors for 1995

Bev and Bruce Clarkson have been re-appointed as joint Editors of the Society's *Newsletter* for 1995. Their contact address is:

Bruce and Beverley Clarkson  
NZ Botanical Society Newsletter  
7 Lynwood Place  
HAMILTON

With this re-appointment, Bev and Bruce continue as members of the NZBS Committee *ex officio*. Please support them in their endeavours to maintain a newsy and informative *Newsletter*. Many thanks to them both for this year's *Newsletters*.

#### Subscriptions for 1995

Subscriptions for next year remain unchanged. Ordinary subscriptions are \$14 (reducible to \$10 if paid by the due date); student subs are \$7 (reducible to \$5 if paid by the due date). An invoice for 1995 subscription accompanies this issue of the *Newsletter*.

**Anthony Wright**, Secretary, New Zealand Botanical Society, C/- Auckland Institute and Museum, Private Bag 92018, Auckland

### Regional Botanical Society News

#### ■ Wanganui Museum Botanical Group

##### Recent activities

The July outing was a visit to Palmerston North. In the morning Dave Bull guided us around part of the extensive grounds of Massey University. Some of the many plants that interested us included a large specimen of *Halocarpus kirkii* with both juvenile and mature foliage and a small group of *Syzygium maire*, a precious remnant of swamp forest previously dominant in the area. In the afternoon we spent two fascinating hours in the Science Centre, Manawatu Museum.

The August outing was to Round Bush, Himatangi and the Himatangi Scientific Reserve. We were joined by members of the Manawatu Botanical Society. John Barkla of DoC Wanganui was the leader. The swampy areas have been maintained by the use of weirs, since the area had been drained at some time in the past. The *Phormium* swamp to the west and the pukatea swamp to the east looked in good heart. The Scientific Reserve was much reduced from our previous visit, some 25 years ago. Some of the dunes have been dated at 500 years BP and the older, more easterly, ones at 5000 years BP. This ancient forest remnant was very impressive.

The October outing was to Tunnel Hill Farm. The tunnels were constructed in 1890 to feed water to the flumes of a flax mill. *Phormium* was plentiful on the flats at that time. Several large swampy areas remain, some not easily accessible after a very wet session. *Hypolepis distans*, *Blechnum minus* were clearly visible together with several *Coprosma* hybrids. We plan to visit the area again when it is drier and more accessible.

At the August evening meeting, Dr Anthony Cole gave an interesting illustrated talk on his geographical, anthropological and botanical studies on a small island off the Fijian mainland. The evening meeting in September was a talk on a botanical trip to Tasmania by Dr Jill Rapson from Massey. The very interesting talk was illustrated with excellent colour slides. The October meeting was a members meeting at which members talked or showed slides on various topics.

#### Botanical note

On 21 October 1994, Colin Ogle noted a heavy infestation of *Equisetum arvense*, with many mature cones scattered among the vegetative structures, on a stop bank in James McGregor Kowhai Park (also known as The Esplanade).

#### Forthcoming events:

#### Field trips

10 December 1994 - To Lake Waiau, a dune lake  
8 January 1995 - To Turoa skifield area, Mt Ruapehu  
28 January 1995 - To Hine's bush, Mangamahu  
16 February 1995 - Picnic Tea, Bason Park.

#### Evening Meeting

7 February 1995 United Kingdom ramblings by Colin and Robyn Ogle

Secretary: Robyn Ogle, 4 Brassey Road, Wanganui

**Alf King**, 180 No. 2 Line, Wanganui

#### ■ **Wellington Botanical Society**

#### Trip report - 3 September 1994, Ohariu Valley, Leader - Barbara Mitcalfe

After the southerly buster of the day before, we were very fortunate to have a perfect spring day for this visit to two important forest remnants nestled in what is otherwise a totally pastoral landscape, gambolling lambskins and all.

First up was Mr and Mrs Horrobin's QEII-covenanted bush, "Huiawa" (the name referring to the nearby confluence of the Ohariu Stream and Mill Creek at NZMS 260 R27 Pt Q27, Wellington, GR 571973). The bush is on a gentle northwest-facing slope and is in two sections, one fenced 14 years ago (A), and the other three years ago (B).

We botanised (B) first, and Chris and I were astonished at the amount of regeneration which had occurred since we visited last July. Seedling titoki, putaputaweta, tawa and karaka carpeted the ground in their thousands and ferns were up to knee height. There was one kahikatea with a trunk of c. 30 cm d.b.h., a substantial miro and several tawa. Of note was one specimen of the unusual and attractive hybrid *Coprosma crassifolia* X *C. repens*. In passing we cleared an infestation of *Stachys sylvatica* which unfortunately had obtained quite a hold. Perhaps other members visiting might feel like clearing any re-growth?

Area (A) has a small creek running through it and contains several large tawa and pukatea. Ponga, mamaku, *Lastreopsis glabella* and *L. hispida*, *Asplenium bulbiferum*, the very dainty hybrid *A. bulbiferum* X *A. flaccidum*, *Blechnum chambersii*, *B. filiforme*, *Phymatosorus scandens*, and *Pneumatopteris pennigera* were plentiful, and one small patch of *Trichomanes endlicherianum* was found. Among lianes, *Metrosideros colensoi*, *M. diffusa*, *M. fulgens* and *M. perforata* were present. Podocarps were represented by totara, miro, rimu and kahikatea. *Melicope simplex*, *Coprosma* and *Parsonsia* sp. were abundant on the northern edge. One sapling of *Streblus heterophyllus*, and a single *Fuchsia excorticata* were recorded. Altogether there were 21 additions to the species list.

The bush is only about 50 metres from the house of Mr and Mrs Horrobin who told us that they regularly enjoy a dawn chorus. Kereru have been seen there recently, along with tui and ruru. Mr Horrobin has had considerable success in trapping possums, which accounts for the fact that we saw very little sign of possum browse. The Horrobins are to be congratulated for their foresight in caring for and covenanting this valuable remnant, for posterity. It is one of a mere handful of sites in the area that are representative of Wellington's natural vegetation.

From our lunch spot we could see our afternoon destination, Mr Gavin Bruce's remnant kohekohe-tawa-matai-titoki forest, in a sheltered hanging valley approximately one kilometre away. This bush has only recently been fenced, so in sharp contrast with the Horrobin Covenant there is virtually no understorey yet. Closed-canopy kohekohe is the distinguishing feature of this remnant which in variety of species is similar to the Horrobin Covenant. We were pleased to see again two of the substantial matai which Chris and I had noted in 1993, but also noted that a horse trail three to four metres wide has been bulldozed through the bush. As well as the matai, other podocarps were a few kahikatea, totara and miro. The ferns list totalled 27 species including *Trichomanes endlicheranum*, each species being represented by a few individuals on virtually bare ground. Stock browsing and possum damage were very evident. We look forward to noting the benefits of recent fencing work.

Meeting and trip schedule:

Saturday Dec 4th 1994

Cape Palliser and surrounding areas with an emphasis on looking at the two regional endemics (*Brachyglottis greyii* var. *greyii* and *Chionochoa beddiei*) and dry rock vegetation near the lighthouse and later a possibility of finding *Pleurosorus rutifolius*, *Muehlenbeckia astonii* and *M. ephedroides* nearby, with a search for *Leptinella pusilla* (a regionally threatened species) thrown in.

Meet at Cape Palliser Lighthouse Carpark 10am Saturday 4 Dec 1994.

Leader: Tony Silbery, Ph 569 9188 (h).

Deputy Leader: Olaf John, Ph 479 7605 (h), 570 6505 (w).

Friday Jan 20th - Monday Jan 23rd 1995 (Anniversary weekend)

Port Underwood/Ocean Bay. Day trips to Mt Robertson and Rarangi-Whites Bay with shorter local trips 12-14 beds are available with ample space for tents. Cooking facilities available but if the weather is fine barbeques may be the order of the day. Catch the 5.30pm ferry on Thursday night. Transport will be available at Picton so unless you want to, leave your car at home. Depending on numbers, a minivan will be hired (estimated cost \$20-\$30 per head). There will be an accommodation charge of \$10 per person. A volunteer is required to handle the catering. Please advise the secretary if you are willing to take on this responsibility. Bookings to the trip leader as soon as possible please.

Leader: Paul Blaschke, Ph 471 1669 (w), 384 9783 (h).

Feb 4th 1995 (9.30am - approx 2pm)

Working bee at Te Marua Bush (the entrance to the proposed Kaitoke Regional Park). You will be surprised to see the progress since your last visit, but there is still a variety of work to be done in this matai/totara/maire remnant "adopted" by Botsoc in 1989. Carpool at Upper Hutt station to meet the 8.50am train from Wellington arriving at approx 9.00am. Bring lunch and drink. Gardening gloves and tools such as loppers and grubbers will be handy.

Leader: Barbara Mitcalfe, Ph 475 7149 (h).

Deputy Leader: Chris Horne, Ph 475 7025 (h).

Saturday 11th Feb 1995 - Course in navigation with map and compass

(Special event - sponsored by the Hillary Commission)

This trip will involve basic navigation training in easy untracked bush in the East Harbour hills/Gollans Valley area. Meet Wainuiomata Road at corner of Ngaio St (on South side of Wainuiomata Rd about 1 km before Wainuiomata Mall) at 9.15am. Catch 8.35am Hutt line train from Wellington to Waterloo Station, then connecting 9.15am No. 61 bus to Wainuiomata Return to Wellington by ferry from Days Bay. We will lend registrants: Map - NZMS 260 sheet R27 Pt. Q27 Wellington, Compass - Silva type orienteering compass. We will give registrants: Notes: - "Navigation with the 'Silva' type compass" - "How to determine a map reference." Please bring boots, pencil, paper and usual day trip equipment, clothing, food and drink. Bookings essential: to Chris Horne 475 7025 or Deputy Leader Barbara Mitcalfe 475 7149.

Monday Feb 20th 1995 Evening meeting: Makara Estuary and Foreshore

In 1992 Maggy Wassilieff was commissioned by Wellington Forest and Bird Protection Society to undertake a botanical survey of the Makara Estuary and Foreshore as a prototype study for the sites identified in the "Natural Wellington" document.

Speaker: Maggie Wassilieff.

Saturday Mar 11th 1995

Study trip to Makara Foreshore. Help map and record the vegetation of the small *Raoulia* Reserve on the Makara Foreshore. Is the vegetation in a healthy state? Our results will be useful for monitoring the condition of the native plants in this reserve. Meet at Makara Beach 10am. Bring lunch.

Leader: Maggie Wassilieff, Ph. 383 6100.  
Deputy Leader: Pat Enright, Ph 499 0355 (w) 479 1208 (h).

Monday Mar 20th 1995

Pot luck dinner at 6pm with members slides to follow at 7.30pm.

Follow the notices to the staff tearoom, School of Biological Sciences, VUW, Floor 5, Room K501 then K301 at 7.30pm.

Friday Apr 14th - Tuesday Apr 18th (Easter)

Rocky Hills Sanctuary Area Wairarapa. Exploring the Wainuioru River valley, Rocky Hills Sanctuary and Carter Scenic Reserve. Join the trip for one, two or three days. In order to arrange necessary accommodation, please advise Margaret Aitken whether you wish to overnight in the area for the whole trip (Saturday and Sunday night or for parts of it. Please advise whether you can assist with transport for all or part of the trip. For more information contact John Sawyer.

Leader: John Sawyer, Ph 384 1485 (h), 472 5821 (w).

Bookings to Margaret Aitken, Ph 566 2731 (h), 801 8838 (w).

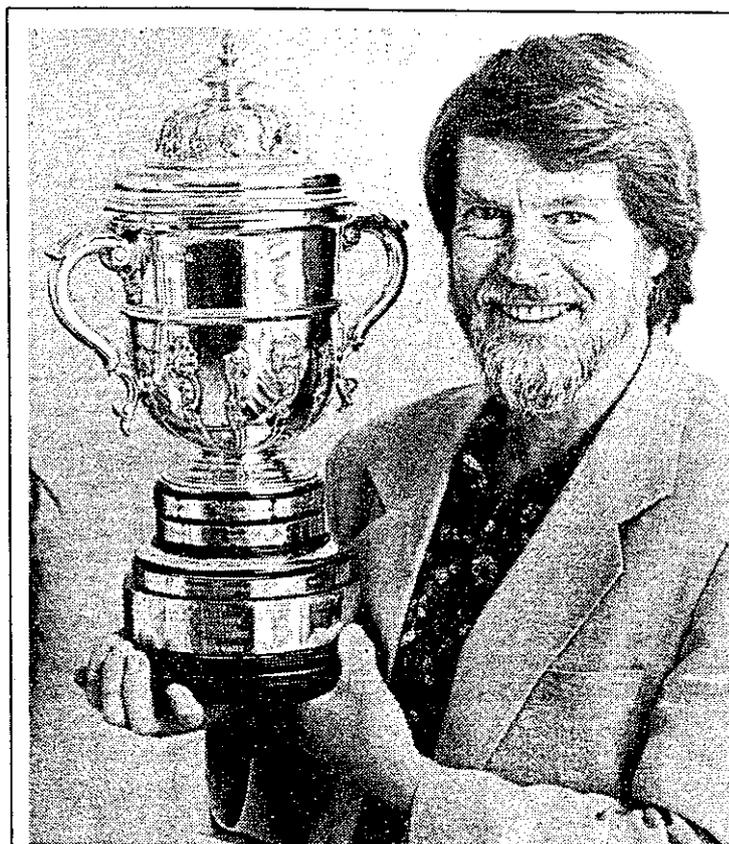
Pat Enright, Secretary, Wellington Botanical Society, P O Box 10412, Wellington

## Congratulations

### ■ Loder Cup awarded to Dr Peter Johnson

All members will be pleased to note that Dunedin botanist Dr Peter Johnson was awarded the Loder Cup recently for his many contributions to protection and cultivation of New Zealand's indigenous flora. The following article appeared in the *Dunedin News* of 18th November 1994.

### Editors



Dr Peter Johnson displays the Loder Cup.

## City botanist awarded Loder Cup

By Ann-Marie Johnson

Dunedin botanist Dr Peter Johnson became the 1994 recipient of the Loder Cup this week in recognition of his work in protecting and cultivating native plants.

He was presented with the cup by Conservation Minister Denis Marshall, who said Dr Johnson was the kind of scientist who combined professional and private commitment to conservation. Dr Johnson is the site manager for Landcare Research in Dunedin.

The cup is awarded annually "to lovers of nature to encourage the protection and cultivation of the incomparable flora of the Dominion".

Dr Johnson played a leading role in the establishment of the Otago Botanical Society and was an adviser on many botanical projects, Mr Marshall said. He was currently chairman of the New Zealand Botanical Society's sub-committee on threatened plants.

His published work included the popular *Wildflowers Of Central Otago* and *Wetland Plants Of New Zealand*, and he was a regular contributor to the *New Zealand Gardener* magazine.

Dr Johnson's shoreline studies of Lakes Manapouri and Te Anau had contributed to the sensitive management of those lake shores. He also grew many native plants in his own garden. "He's a scientist, communicator, gardener and committed conservationist," Mr Marshall said.

Dr Johnson said his interest in botany started as a child.

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## NOTES AND REPORTS

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### Plant records

#### ■ An unusual moss habitat: Canterbury

This note records establishment of an introduced moss, *Kindbergia praelonga* (Hedw.) Ochyra, in a vegetable garden in Canterbury in the winter of the "Big Snow" (1992) [Voucher specimen: CHR. 457722]. The moss was growing in a dense "sward" on the soil under a tangle of sprawling stems of chickweed (*Stellaria media*) and scrambling speedwell (*Veronica persica*). This lower tier of vegetation was under a canopy of dense drooping leaves of garden carrot (*Daucus carota*).

I had not observed this behaviour during 40 odd years of gardening in Canterbury, and it has not occurred in the 1993-94 season.

My thanks to Miss B H Macmillan, and Dr A Fife, Landcare Research, Lincoln, for identification of the moss.

A.J. Healy, 98 Rattray Street, Riccarton, Christchurch 4

#### ■ The rise and demise of *Calluna vulgaris* on the Pouakai Range, Egmont National Park

##### Introduction

The presence of introduced Scottish heather (*Calluna vulgaris*) on the Pouakai Range of Egmont National Park provides an interesting contrast to its invasive behaviour in red tussock grassland about Tongariro National Park. According to Scanlan (1961), James Henry an Edinburgh nurseryman, seeded heather on the summit of the Pouakai Range in the late 1860s. The species evidently established, because Henry demonstrated to mountain visitors how well the heather was "blooming" in February 1872. Whether the word "blooming" can be interpreted as vegetative or flowering vigour is problematic, although peak flowering of populations in Tongariro National Park occurs in February. Along with heather, Henry also seeded blue currant ..... "for the purpose of gathering the honey, and we hope that no one will touch them. Seventy years later a New Plymouth botanist, offended by the incongruity of the Scottish heather, slashed at it angrily on top of the ranges and regretted he lacked a spade to destroy it" (Scanlan 1961).

We can be confident that the heather survived through to 1961, because Scanlan noted ..... "And his (James Henry) Scottish heather bravely endures to this day". Barry Hartley, current chairperson of the Taranaki-Wanganui Conservation Board, remembers prostrate flowering heather "beside the tarns" on a ridge toward Maude and Henry Peaks between 1949 and 1953 (C.C. Ogle pers. comm. 1994). Tony Druce then recorded it in his botanical surveys of the Park in the early 1960s (Druce 1973), and likewise Bruce Clarkson (Clarkson 1986) in his botanical survey of the Park between 1975-78 (Clarkson 1981). Tony Druce (1973) reported removing the species wherever he encountered it, and Bruce Clarkson also weeded the species on at least two occasions (B.D. Clarkson pers. comm. 1994). Bruce Clarkson remembers the species as almost prostrate, ramifying through the low herbs of the prominent clearing on the east side of the Pouakai Track at its junction with the Mangorei Track (NZMS 260 P20 997183). This prostrate habit precluded thorough weeding of individual plants in the tightly compact bases of herbs and tussocks.

##### A recent investigation

This year a park visitor notified a Department of Conservation staffer, Jim Clarkson of the species' presence adjacent to a track on the summit of the Pouakai Range. In response Jim Clarkson and Kerry Matthews (also of DoC) relocated the species adjacent to the Pouakai Track, but this time, some 25 m west of the track junction.

Using directions and a grid reference provided by Jim Clarkson I recently located the same plant(s) as recorded by Clarkson and Matthews adjacent to the Pouakai track. Decumbent heather occurred over a 4.5 x 1 m area, ramifying through prostrate herbs and scattered tussock bases of a herbfield surrounded by shrubland. Important plants of the small herbfield were *Celmisia gracilentia* var. (*C. major* var. *brevis*), *Ourisia macrophylla* subsp. *macrophylla*, *Poa colensoi*, *Gaultheria* sp. unnamed (*G. depressa* var. *novae-zelandiae*), *Coprosma depressa*, and *Luzula* sp. The higher canopy and shaded understorey of subalpine shrubs surrounding the herbfield seemed to contain the plant therein. Subalpine shrubland of the Pouakai Range in the vicinity of the heather was dominated by *Brachyglottis rotundifolia* var. (*B. elaeagnifolia*), *Coprosma pseudocuneata*, *Dracophyllum longifolium*, *Hebe odora*, *Pseudopanax colensoi*, *Gahnia procera*, and *Astelia* sp. unnamed (aff. *A. nervosa*). The altitude of the site is

approximately 1250 m, within the 850-1600 m altitudinal range of heather at Tongariro National Park (Chapman & Bannister 1990).

I failed to uncover additional plants of heather during a thorough search of the mosaic of herbfield and tussock grassland within shrubland around the summit saddle. The search extended 150 m either side of the summit track and the junction between the Pouakai and Maude Tracks.

Several behavioural traits suggest a poorly performing species compared to the behaviour of heather in Tongariro National Park:

- an absence of seedlings despite apparently ideal establishment conditions in surrounding herbfield;
- an excessively decumbent habit;
- attenuated stems of small diameter and flaccid habit;
- a low foliar biomass to total biomass ratio;
- large amounts of decomposing stems and foliage.
- an absence of empty seed capsules pointing to no seed set or perhaps even no flowering last summer.

#### Comparison with Tongariro National Park

Physical factors apparently limiting the vigour and spread of heather in this environment are:

- a perhumid atmosphere;
- humic, moderately gleyed, and excessively leached soils;
- a low level of irradiance;
- mechanical buffeting from persistently strong winds.

Equally high humidity, persistent cloud, and windiness of the Pouakai Range all appear to substantially exceed their comparable levels at Tongariro National Park. In addition, the invasive and population growth potential of heather onto poorly-drained and leached sites of Tongariro National Park is substantially less than that demonstrated on zonal well-drained sites (Rogers 1993). Site stability on the rounded Pouakai ridges produce deeply weathered, leached, and moderately gleyed soils. Extensive subalpine scrub dominated by *Brachyglottis rotundifolia* var. restricts the available habitat for heather on the Pouakai Range to open herbfield and tussocks on the most poorly-drained sites. Dense ground cover and root competition within the herbfields probably also inhibit heather recruitment whereas bare ground of consistently 5-10% is a feature of seral tussock grassland and shrublands of Tongariro National Park. Furthermore, discs cut from the largest diameter stems of heather on the Pouakai Range were 21 years of age suggesting a conservative life expectancy for the plant compared with 30 years for Tongariro plants (G. Rogers unpubl. data).

Another factor possibly contributing to its uncharacteristically poor performance on the Pouakai Range compared to central North Island is a difference in genetic stock. Bagnall (1982) reports some of the Tongariro National Park heather was sourced from seed from France and the British Isles, including Scotland, but the Scottish material "contained little viable seed". James Henry on the other hand, being an expatriate Scot probably obtained seed from Scotland and his seed could have similarly suffered from poor viability.

#### Conclusions

This investigation suggests the following:

- James Henry broadcast seed across the summit herbfield and tussock grassland immediately above the present Pouakai Hut and that disparate groups of plants established;

- The species survives to the present day, but in low numbers partly due to a succession of mid to late 20th century weeding attempts on individual patches;
- The species is rare on the Pouakai Range and probably restricted to the remains, after weeding, of just one patch;
- Climatic, edaphic, and community competition factors have acted in concert to contain the population to the summit clearings. In contrast to the apparently ideal conditions of Tongariro National Park and environs, the soils are consistently too wet, insolation is insufficient, and the perhumid, windy atmosphere all act to suppress species' performance. Shaded understoreys of shrublands inhibit population growth and spread and the species is accordingly restricted to herbfields with scattered tussocks on poorly-drained soils;
- Reproductive performance is conservative and is mostly vegetative (both basal resprout and layering). Seed set is probably inconsistent, but germination can occur as the species originally established from seed.

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Geoff Rogers, Manaaki Whenua - Landcare Research, Private Bag 3127, Hamilton

■ **The naturalised mushrooms of New Zealand, 1: *Entoloma clypeatum* (Linnaeus: Fries) Kummer, in *Der Führer in die Pilzkunde*, 98 (1871)**

Illustration: See cover.

Etymology: Latin *clypeatus*, shaped like a circular Roman shield (Stearn 1983). Trivial name roman shield entoloma (Svrcek 1983).

Pileus 34-74 mm diam., convex-complanate to broadly umbonate, margin entire and undulating, splitting with age, not obviously hygrophanous, fibrillose, fibrils pale hazel over white context, white radial sheen developing and margin tending to dark umber with age, white bloom speckled over umbo, flesh white, pale hazel beneath pileipellis, grey line above lamellae. Lamellae emarginate to subfree, 10-11 mm wide, cinnamon to rosy buff, margin broadly undate. Stipe 40-50 mm high, 6-10 mm diam. at apex and 8-12 mm diam. at base, cylindrical to tapering basally, or fasciculated into a large bulbous base, stipipellis fibrillose, white to sordid white, insect hollowed although stuffed at apex, flesh white.

Spore print dark rosy buff.

Spores 9.0-10.9 x 7.5-9.4 μm, subspherical to oblong, 6-7 angled in side-view. Basidia 30.2-46.8 x 10.5-15.1 μm, clavate, 4-spored, with clamp connections.

Pileipellis an ixocutis, hyphae 8-42 μm diam., with repent or occasionally ascending, slightly inflated terminal cells, pigment finely encrusted on inner surface.

Clamp connections present but not abundant and difficult to distinguish.

Specimen examined: under *Crataegus monogyna* Jacq., Bay of Plenty (Crosby *et al.* 1976), Rotorua, Hannahs Bay Pony Club Reserve, 36°6' S 176°18' E, 10.x.1993, J. Hutcheson, NZFR1(M) 3514.

The New Zealand collection fits well the description of *Entoloma clypeatum* in Phillips (1981), of *E. clypeatum* forma *clypeatum* in Noordeloos (1981), and of *E. clypeatum* var. *clypeatum* forma *clypeatum* in Noordeloos (1988). Noordeloos recognised two varieties of *E. clypeatum*, var. *clypeatum* and var. *defibulatum*, the former with and the latter without clamp connections. He then divided var. *clypeatum* into four varieties largely based on minor colouration differences. These varieties have a similar geographic range and habitat and often appear in intermixed fruitings.

*Entoloma clypeatum* is usually associated with *Crataegus monogyna* but also occurs with other members of the Rosaceae, i.e. *Malus*, *Pyrus* and *Prunus*, in Europe. *Crataegus monogyna* has a wide urban and rural distribution in both the North and South Islands of New Zealand (Webb *et al.* 1988), so it is reasonable to expect that *E. clypeatum* will have a similar distribution.

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#### ■ *Dactylanthus taylorii*: the early years

Members of the Wellington Botanical Society may recall that on the weekend visit to the Makino Scenic Reserve at Mokai on the Rangitikei River on, 7-8 December 1991, an extract from Rev. R. Taylor's journal was produced which recorded his discovery of *Dactylanthus taylorii*.

There seems to be some uncertainty as to the place and altitude at which the discovery took place. This stems in part from Hooker's citation (Hooker 1859) which notes that the altitude was 4000ft, a figure he apparently got from Taylor himself, but at a later date.

If we refer to Taylor's journal entry of the time, and follow his route, we can determine to within quite narrow limits where and at what altitude this discovery took place. On 27 February 1845, Taylor left Wanganui proceeding south along the coast to Parewanui on the Rangitikei River which he then ascended by canoe and foot, intending to reach a remote pa, Matuku, in the upper reaches and not far from the present Makino Scenic Reserve. By an odd coincidence, William Colenso left his mission station at Ahuriri on 4 February 1845 for the same destination but on this, his first attempt to cross the Ruahine Range, he was unsuccessful.

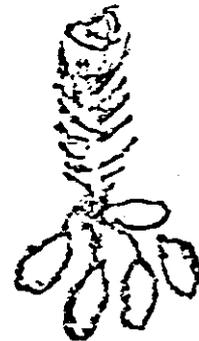
On reaching Matuku Taylor preached and baptised and on 13 March continued his journey in a northwesterly direction, crossing the Moawhango River, passing the Murimotu falls on the Hautapu River not far south of Hihitahi, and after crossing the Whangaehu River joined the track from Rangipo which would take him to the Whanganui River at the Hikurangi pa.

It was on 17 March that Taylor crossed the Whangaehu and his journal continues - "...about 10 we reached the Rangipo road, though not so good as a sheep walk still being the road we were making for, it gave us pleasure in finding after being so long without one. My natives dug a hole at the spot we entered it to commemorate the circumstance and asked me for some seeds to sow in it, as they knew I always fill my pockets with different kinds before I begin a journey (1) I sowed there the tree mallow, stocks and turnips, we dined by the side of the Wangaeahu, the ta te kapua (unlike Wanganui which after it leaves the mountain from whence it derives its source makes a great detour to the W. and thus intercepts all the streams on that side) flows more direct to the sea and thus never attains anything like the size of its neighbour. After a long walk about 4 we bid farewell to the Mania or plains (2) and entered the wood about 6 we encamped

by a stream having had a hard day's walk, the plains seem to encroach on the forest whenever a fire destroys any portion of the latter grass takes its place while in every other part of the island the destruction of the forest is succeeded by the growth of fern. We met some natives returning from Kapiti to Tauronga[sic] these plains or Mania agree with the prairie and pampas of America. Forde one of my boys brought me some roots which when cooked were superior to the potatoe, the Perei."

March 18 "It was a rainy night and very cold wet and cheerless in walking through the dense humid forest I was soon as wet as if I had been in the water. We had constant ascending and descending we crossed the Mangawero [Mangawhero] after dinner the stream here makes a remarkable noise which I fancy is occasioned by its flowing through some cavern in the rock. The natives said it was a large tuna. I found the Perei [sic] myself to-day, it is certainly one of the most remarkable vegetable productions I have seen and appears to be the union of the fungus with the plant I passed several taking them for toad stools but one more remarkable than the rest caused me to stop and gather it I then found it was a plant in full flower although much resembling a fungus it has no leaves and has a calyx containing a kind of pollen with rather a disagreeable smell. The natives say it is more prolific than the potatoe but will only grow in the forest. We passed through several small Manias to-day and had some very wearisome and precipitous ascents, we are encamped for the night where the road for Pukehika (3) branches off from that to Ikurangi (4)." Here Taylor has inserted a sketch of the plant, a copy of which is below (scale: x 2).

Taylor crossed the "Mangai a te toroa" [Mangaetoroa] river the next day reaching the Whanganui river in the evening and his home on 20 March. It was Taylor's practice to refer to the correct route as a "road" and his reference in this case to the "Rangipo road" is possibly the reason why later writers assumed that he was travelling from the Taupo area and, by further inference, that an altitude of 4,000 feet was that at which Taylor found the plant. With Hooker's entry in the Transactions of the Linnean Society in 1859 when the plant was first described, it is difficult to understand how Kirk, writing in 1895, could state that Taylor discovered the plant "about 1857..... near the head of the Wanganui River at an estimated altitude of 4,000ft". Henry Hill, writing in 1907 refers to this discrepancy over dates and adds that it was Francis Williamson (5) [of Wanganui] who was the actual discoverer, and cites a son, D H Williamson, who made the claim. [Francis Williamson had been head gardener at the Sheffield botanical gardens before emigrating to New Zealand, arriving in the 'Bernicia' at Wellington on 3 November 1848 and Wanganui on the 6th, not the "early forties" as his son stated.]



James Grant, in communication with T W Downes of Wanganui is next to throw his hat into the ring. In 1910 he quotes part of the above extract of Taylor's journal and refers also to the Williamson claim, concluding that Taylor was the discoverer and was not part of any sharp practice as implied by Williamson.

Finally Cheeseman in 1914 tries to sort it out and here we find a further quirk when Taylor himself, some time after the event, is quoted as saying he first met with the plant on a mountain range near Hikurangi returning from Taupo. The place is correct [although it was a spur running down to Hikurangi on the river, not a mountain] but he was not returning from Taupo, as his diary clearly shows. In all these writings an interesting little feature of the actual discovery that is worth notice is that Mead, in quoting Taylor's journal, identifies the Perei or Parei as *Gastrodia cunninghamii*. When the Maori boy brought the tubers to camp for the meal it is unlikely that he would have brought in the stems as well. By March they would have dried and served no purpose except to locate the roots. So we could assume that Taylor fed that night on the tubers of *Gastrodia*, without having seen the stems of the plant. When, on the next day, Taylor came across the plant that now bears his name, he assumed that he had discovered the plant from which the tubers of the previous evening's meal had come. His simple sketch is recognisable as the scaly stem and flower head of *Dactylanthus* with the tubers of *Gastrodia* attached. There can be no doubt, however, from his written description of the plant, that *D. taylorii* was what he had found.

It is interesting to note Taylor's observation on this journey that it is grass that covers the land in the Murimotu country after fire while it is fern that does so in other parts of the island.

From Taylor's description of his route the location of this place can be determined to within quite narrow limits. The position is assessed as being in the vicinity of map reference 040830 on sheet S21, NZMS 260

and at an altitude of some 500m, certainly below the spot height of 683m (Papahaua Trig), the highest point on the ridge which separates the Mangawhero and the Mangaetoroa just north of their confluence. To those travelling on SH4 this area can be seen when looking across the Mangawhero to the southwest from the junction of the highway and Oruakukuru Road. The area is some 12km south of Raetihi.

#### Acknowledgement

I am indebted to Colin Ogle of DoC, Wanganui for his encouragement and help in the preparation of this article.

#### Footnotes

(1) Elsewhere in his journal Taylor mentions his custom of carrying seeds and spreading them and that they were supplied by Mr Bidwill. This was possibly John Carne Bidwill who climbed Ngauruhoe in 1839, who had some knowledge of botany and who helped in the foundation of the Sydney botanical gardens. (2) Taylor often referred to manias or plains but was often referring to open spaces rather than extensive flat areas. (3) Pukehika was a large pa on the right bank of the Whanganui River roughly opposite the present Jerusalem. (4) Ikurangi was Hikurangi, a large pa on the right bank of the Whanganui River opposite the present Matahiwi. (5) Williamson was known to Taylor, indeed he pruned Taylor's fruit trees on Tuesday 20 July 1852. This little bit of historical trivia comes from the journal of Taylor's daughter Laura, later Mrs Henry Harper, whose son Harry was the H.S.G. Harper referred to in Grant above as the holder of the Taylor journals.

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## Herbarium notes

### ■ A method of preparing succulent specimens for the herbarium

#### Introduction

Plants growing in dry or coastal areas are often fleshy or "succulent" because fluid, mostly water, is stored within leaves, stems or roots to ensure survival during periods of climatic or physiological drought. The three principal succulent families are Crassulaceae or Stonecrop family, Aizoaceae or Iceplant family, and Cactaceae or Cactus family. A few species from other families naturalised in New Zealand have succulent features, examples being *Pelargonium peltatum*, the ivy-leaved geranium (Geraniaceae), and species of *Impatiens* or water fuchsias (Balsaminaceae) (Webb *et al.* 1988).

During pressing and drying, succulents need special care because of their high moisture content. Pressed in the normal way without treatment most dry very slowly, different parts dry at different rates, and eventually leaves fall from stems or flowers fall apart. The method described below of freezing the specimens before drying helps retain the colour and appearance of the specimen and reduces the drying time, but care must be taken to guard against mould appearing during the process.

#### Method

When succulents are presented for pressing, the following procedure should yield good specimens for the Herbarium.

1. Do not wash the specimen. Label and press some flowers in the usual way, having some opened or dissected. The previous year's dry inflorescence is better removed, dampened if too inflexible, pressed, and stored while the fresh material is drying.

2. Check the label and place the remaining material in a new plastic bag, making sure that different specimens are not bagged together. Pour 70% ethanol into the bagged specimen, enough to get good coverage (this will vary with the size of the specimen), seal the bag, shake and invert contents gently, then drain the excess ethanol off.
3. Put the specimen in the freezer for at least 24 hours if the specimen is small (*Sedum*); or for 1 week if the specimen is large-leaved or bulky (*Aeonium*, *Cotyledon* or rosettes of *Echeveria*).
4. Defrost on a benchtop at room temperature or in sunlight. Wash if necessary to remove soil from roots or between leaves.
5. With a dissecting needle pierce leaves, stems and roots to allow fluid to escape, using a towel to press out moisture.
6. Because old folders and felts are more likely to carry mould spores which could contaminate the specimen, select clean materials and arrange the specimen on a new pressing folder, using several thicknesses of paper if the plant is very wet. Separate leaves and flowers with small squares of plain newsprint. Keep succulents together within one press as they will need to be inspected often.
7. After tightening up the press, allow it to drip over the sink or a tray before placing in the drier. Providing other specimens will not be affected, turn up the temperature of the drier a few degrees above 30°C and make sure the room extractor fan is switched on.
8. Near the end of the day, check the press, removing and discarding the sodden folders and changing the paper felts and aluminium or corrugated card ventilators.
9. The press needs to be checked each morning and afternoon and wet materials changed. It is very important to refreeze the whole press if this routine is interrupted by weekends or holidays.
10. When the plant has dried to a flaccid state the danger of mould appearing seems to be greatest and can occur overnight without warning. If mould appears remove with 70% ethanol or household fungicide, using a stiff, 10mm paint brush. Allow the surface moisture to dry off in sunlight or open upon the drier shelf before returning the specimen to the press.
11. Drying may continue for 3 weeks or more, but the twice-daily check may be reduced to once a day when it seems there is no likelihood of mould appearing. Dried specimens should be handled and stored with care as they are often brittle.

#### Comment

Do not attempt to press too many specimens at once because of the time taken in processing. Succulents are unharmed by longer freezer storage. However, some succulents may not need freezing; the small *Crassula* species such as *C. moschata* and *C. helmsii*, and the thin-leaved *Tetragonia* species can be pressed in the ordinary way, as earlier herbarium specimens demonstrate. When there is doubt and enough material, some could be frozen and some pressed as usual.

An earlier method used to dry succulents included the addition of c. 10 ml of 4% formalin solution to the bagged specimen during defrosting to prevent the onset of mould. The plant was then washed carefully and pressed as above. However, because of the dangers to health associated with the use of formalin, this practice should be discontinued (Forman & Bridson 1992). The substitute suggested here is to use 70% ethanol before the freezing process.

#### Examples of good reference specimens

Crassulaceae		CHR
1	<i>Aeonium arboreum</i>	439730
2	<i>A. haworthii</i>	437493
3	<i>A. urbicum</i>	243419
4	<i>Bryophyllum aliciae</i>	437453
5	<i>B. manginii</i>	437240
6	<i>Cotyledon orbiculata</i>	439028
7	<i>Crassula bipanata</i>	439879

8	<i>C. cultrata</i>	455823
9	<i>C. coccinea</i>	420252
10	<i>Dudleya farinosa</i>	459145
11	<i>Echeveria secunda</i>	465497
12	<i>Sedum acre</i>	455744
13	<i>Umbilicus rupestris</i>	464283

#### Aizoaceae

1	<i>Carpobrotus aequilaterus</i>	439014
2	<i>Lampranthus glaucus</i>	385762

#### Cactaceae

1	<i>Opuntia vulgaris</i>	460531
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#### Acknowledgements

Mr W.R. Sykes, Dr Matthew Cromey, Bryony Macmillan & Kerry Ford assisted in the preparation of this paper.

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#### ■ Some interesting plant collections in the Whanganui Regional Museum

The Whanganui Regional Museum is currently reviewing its collections and in doing so has started by sorting and cataloguing the holdings of ornithological and botanical specimens.

In the botanical section a collection of 22 herbaria has been found in which are specimens gathered as long ago as September 1850. These are 28 ferns gathered from northern New South Wales. There are five collections of plants gathered in England, also in the 19th century, but most of the herbaria are of New Zealand flora. There is a collection of 75 marine algae all of which are unidentified and which were gathered at Wanganui and the Bay of Plenty between 1854 and 1858.

Of particular interest are two collections, one of 40 genera of ferns and the other of 83 genera of shrubs and other plants which are represented by 157 fern and fern ally specimens together with 106 specimens of shrubs, herbs, etc. These two collections appear to be of the same provenance. In the wide range of genera represented, the specimens have been collected from as far south as Dunedin and as far north as Mount Camel on the Houhora Harbour. Most of the plants were collected in the following areas, with the dates of collection given in brackets: Wellington - Hutt Road to Petone, for which the old name of Pito-one was used (December 1855); the Marlborough sounds (January-February 1856); the immediate vicinity of Auckland (April-November 1856); Great Barrier Island and the Coromandel Peninsula (January 1857 to January 1859); New Plymouth (October-November 1866); Dun Mountain, near Nelson (1869); Poverty Bay (1869).

From Wellington where the oldest specimens were gathered, one can follow the collector's progress as he goes. On 30 December 1855 he collected seven plants in places he describes as - Hutt Rd nr Pito-one, Gully on Hutt Road, Hutt Rd in the gullies, Hutt Bridges, Cliffs nr Kaiwarawara. On the next day he picked on "nr Hutt Bridge" and another in "Swamp nr Hutt Bridge". There is one collected "nr Wellington" in January 1856. The collector then crosses Cook Strait and starts collecting in Port Underwood from 25 January until 13 February 1856, by which time he has covered Port Underwood (mainly in Guard's Bay), the Wairau River mouth to what he refers to as the South Bluff, Waitohi (now Picton), Waikawa, Anakiwa and Pelorus. This pattern of collecting is apparent in the other areas described above. A full list of plants collected is not possible here but a small sample follows (the names are taken from the herbarium sheets):

Plants collected along the Hutt Road, 30 December 1855 -

*Lobelia anceps*, *Craspedia fimbriata*, *Gnaphalium kerriense*, *Plantago raoullii*, *Luzula campestris*, *Isolepis prolifer*, *Isolepis riparia*.

Plants collected along the Hutt Road, 31 December 1855 -  
*Arthropodium candidum*, *Triticum scabrum*.

Plants collected at Miner's Bay, Great Barrier Is, 20 October 1857 -  
*Lomaria lanceolata*, *Nephrodium velutinum*, *Adiantum cunninghamii*, *Pteris comans*, *Cyathea medullaris*.

The specimens gathered in the immediate vicinity of Auckland comprise a large proportion of the collection and came from such places as Mt Eden, near the caves at Three Kings, the Grafton cemetery gully for which the collector used several names, the Domain, Waipapa (Mechanics Bay), Ligar's Gully (Queen Street), Freeman's Bay and the Whau Creek.

Considering the age of these specimens, they are in remarkably fine condition. Photocopies of two are shown, Fig. 1.

One of the intriguing things about the herbaria is the wide range of collectors. These include names well known in the annals of New Zealand botany such as Thomas Kirk (3 specimens) and Julius Haast (one from Mt Torlesse), with others not so well known such as Dr Knight (1) and Dr Monro (1). Other collectors were J.J. Piercy (5 - mainly from the far north), J.B. Charlesworth (5), J.G. (1), Lt Sewell (1), Capt Thompson (2), O. Davis (1), J. Henry (1), Mrs Tattersall (1 from Coromandel), and Mrs Young (1 from Hokianga). Archdeacon Williams collected two from Turanganui. J. Lawson whose name is inscribed on only one sheet is possibly the same person who is signified by "J.L." on others, and who collected 9 specimens from Great Barrier Island in 1869 and five from Dun Mountain, Nelson, for which no collection date is given. If "J.L." was J. Lawson, who then was he? Enquiries so far have revealed nothing. Four specimens are inscribed as having been collected by E.B. Dickson. There is evidence to suggest that Dickson was the collector of most of the plants in the two herbaria being described.

In an article "A *Pterostylis* from Taranaki in 1866" by I.M. St George and E.D. Hatch in the journal of the New Zealand Native Orchid Group for June 1994, we learn something of E.B. Dickson. A previously unknown botanist, he collected an orchid near New Plymouth in November 1866 and wrote about it to an as yet unidentified addressee. This particular specimen is thought to be in the herbaria at present being described. Although not ascribed to Dickson, it seems certain that he was responsible. From Dickson's letter it can be gathered that he was familiar with his subject, an impression confirmed by a handwritten letter to him from Thomas Kirk in 1865 which is held in the Whanganui Regional Museum. In this letter Kirk writes to Dickson to ask for identification of a fern he found in the Titirangi Ranges. From this one concludes that Dickson was not only an acquaintance of Kirk's but recognised by him as an authority on New Zealand ferns. St George and Hatch pose the question of Dickson's identity and give a record of his Government service taken from "Quill and wax", a collection of biographical notes on early Post Office officers. Dickson served in Auckland (initially in the Native Secretary's office) and in New Plymouth at various times between 1856 and about 1886. He was Chief Postmaster at New Plymouth 1864 to 1868. Another clue to Dickson being the collector of most of the specimens lies in the fact that many of the inscriptions on the herbarium sheets include, on the bottom right hand corner, the Maori name of the plant. Some sheets, mainly of plants collected in Coromandel and Great Barrier Island, even have the Maori name according to local tribes, most of the references being to Ngatiwhatua, Ngatipaoa and Ngatimaru. Dickson came to Wanganui in 1886 as Registrar of the Native Land Court and died at Wanganui in 1891. He was known to S.H. Drew, the founder of the institution now known as the Whanganui Regional Museum and it is this link which suggests that Dickson was the owner of the two collections being described. It should also explain how the collections came to be housed in the Whanganui Regional Museum.

It is interesting to note that although many of the plants were gathered in the 1850s and early 1860s the herbarium sheet inscriptions include the reference in Hooker's handbook which did not arrive in New Zealand until after February 1865.

How did the collection come together? If Dickson was the owner did he know all the other collectors represented in the collection? If he was not the owner of the collection then who was? Only very recently did a possible clue come to hand when it was learned that Dickson was for a time Honorary Curator of the Auckland Museum of which he had unpaid charge from early in 1860 to near the end of 1864. He was a resident in part of its building in Grafton Road, and an unsuccessful applicant for the position of Secretary of the Auckland Institute and Museum in 1873. His access to specimens if not to all the collectors would seem to be explained.

Fig. 1.

- (1) "Gully on Hutt Road 30 Decr 1855, Ord: 39 - A - Compositae.  
(x/1) *Craspedia Fimbriata* - D.C. Fl:N:Z:i,131 - Handb:i,144. 387".
- (2) "Ligar's Gully Auckland August 1856. *Cyathea Dealbata*  
- Sw: Syn: Fil: 140 et 356. H:f:Fl:N:Z:ii,7.  
New Zealand only. Ponga".



*Cyathea Dealbata* - Sw: Syn: Fil: 140 et 356.  
H:f:Fl:N:Z:ii,7  
New Zealand only  
"Ponga"



Ord: 39 - A - Compositae.  
(A) *Craspedium Fimbriatum* - DC.  
H:f:Fl:N:Z:ii,7  
New Zealand only  
"Ponga"

The identity of some of the ferns was determined by B.S. Parris in 1970. The inscriptions on the herbarium sheets have been transcribed on to worksheets and these are now in the process of being transferred to the Wanganui District Council's computer. The Museum would be pleased to reply to any enquiry. Enquiries should be addressed to Kate Pinkham, Registrar, Whanganui Regional Museum, P O Box 352, Wanganui.

I am collecting information on E.B. Dickson for a biographical essay and would be pleased to have further contributions. My thanks to the Whanganui Regional Museum for permission to copy the two old herbarium sheets, to I.M. St George and E.D. Hatch for the use of the information in their article on the *Pterostylis* in Taranaki, and to Mr Stuart Park, now of the Museum of New Zealand Te Papa Tongarewa, for additional information about Dickson's early days in Auckland.

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## Herbarium Report

### ■ Auckland Institute & Museum Herbarium (AK) Report for 1 July 1993 to 30 June 1994

#### Staff News

On 6 July 1993 Ewen Cameron, the Acting Curator of Botany, was appointed Curator of Botany. Juliet Herrick was appointed as Botany Technician in September after the departure of the acting technician, Michael Clearwater.

#### Caring for the Collections

The upgrade of the department's computer system with the purchase of two new machines networked together, has facilitated the input of label data and the overall management of the AKILLES system. Most of the herbarium work has focussed on databasing the existing backlog specimens and adding two large donated herbaria to the main collection. 36% of the herbarium is now databased onto AKILLES, which includes all bryophytes and lichens. The backlog databasing concentrated on the native ferns (completed), native gymnosperms (completed) and native monocots (almost completed) totalling 12,140 specimens. This work was funded by a Lottery Board grant and was carried out by contract staff: Douglas Rogan, Cecelia Street (part-time) and, since January, Kathryn Howard.

The second project funded by the Lottery Board is the accessioning of gifted herbaria into the main collection. The Auckland Regional Authority Hunua Forest herbarium totalling 2,311 specimens gifted to the Museum in 1986, is now fully incorporated, and Alan Esler's herbarium of 3,232 specimens, gifted to the Museum in 1989, is fully databased and partly incorporated. The Hunua herbarium took longer than anticipated because of the high number of mixed herbarium sheets which required separating. The work was carried out by contract staff: Rhys Gardner, Marcel Smits and Joshua Salter.

The 515 Fijian vascular plant specimens from Waya Island collected by Rhys Gardner in 1992 and 1993 have now been databased, mounted and incorporated into the herbarium. Volunteer Vic May mounted the collection.

All type material is being moved into grey acid-free folders and stored in a fire-resistant type cabinet. Juliet Herrick has completed a large proportion of the dicot type folders. At the same time a dummy sheet for each type specimen is being filed into the main collection for cross-referencing purposes.

Partitioning of the botany office has created more wall space for book shelves and four new work stations, which has alleviated overcrowding in the herbarium.

Volunteers have again been of great assistance to the Botany Department, with all new specimens being mounted and packeted by the weekly attendance of Kay Haslett, Vic May and Joshua Salter (until December), and the bi-monthly attendance of Joan Dow and Meryl Wright. Wendy Patterson and Brenda May have continued their weekly proofing of new AKILLES labels for the bryophyte backlog specimens, almost completing this task of checking and attaching 14,010 labels. Dr Jessica Beever, Research Associate, Manaaki Whenua - Landcare Research, has assisted in advising the updating of moss names and checking many moss identifications. Rhys Gardner assisted with difficult vascular identifications and Lynda Jones spent two weeks completing the archiving of the department's correspondence and reports.

To assist the School of Biological Sciences, University of Auckland, the Museum herbarium is temporarily housing most of the University herbarium while a new room is built to house their collection displaced by building alterations. While it is in the Museum's care the University is funding Jared Boow to interim label their specimens ready for databasing onto the AKILLES system.

#### Researching the Collections

Juliet Herrick completed the herbarium search for native dicotyledon types. This work was supported by a Lottery Board grant, and Juliet, together with Ewen Cameron are preparing a paper on the dicotyledon types for the *Records*, to continue the already published series.

Field work and collection of specimens by Ewen Cameron was limited to day trips to Ruapuke Island (The Noises), Motutapu, Awhitu, Waipareia Bay (upper Waitemata Harbour); five days on Waiheke Island leading an Auckland Botanical Society Trip, and during monthly field trips with the Auckland Botanical Society.

Rhys Gardner spent two months in the Bismarck Range, Papua New Guinea, working with Andy Pawley (Australian National University) and Sam Majnep (an indigenous expert) towards an encyclopaedic dictionary of the Kalam language. Some 400 plant collections were made which includes duplicates for LAE.

Research was carried out for botanical material for Auckland Museum's *Caltex Volcanoes and Giants* exhibition and *Weird and Wonderful* children's discovery centre. Dr John Ogden, School of Biological Sciences, University of Auckland, counted the annual rings (815) of the giant rimu section prior to its exhibition in *Caltex Volcanoes and Giants*.

#### External

The annual Council for Heads of Australia Herbaria (CHAH) meeting in Adelaide was attended by Ewen Cameron, representing the New Zealand Herbarium Network. Many topics of common interest were discussed and valuable new contacts were made. A one day field trip to an area of mallee (low forest dominated by multi-stemmed eucalypts) made an interesting comparison with New Zealand flora and vegetation.

Ewen Cameron served in the following professional and community organisations:

Member, Auckland Conservation Board; President, Auckland Botanical Society; Rural Services Appointee, Environmental Management Committee of the Auckland Regional Council; Member, New Zealand Botanical Society National Threatened Plant List Committee; Judge, Central Auckland Science Fair; Member, Management Plan Working Party of the Auckland Regional Botanic Gardens.

#### Visitors using the herbarium included:

Steve Benham, Auckland Regional Council Botanic Gardens; John Braggins, University of Auckland; Paul Champion, MAF - Ruakura; Anna Davison, University of Auckland; Peter de Lange, Department of Conservation; Mary de Winton, NIWA - Ecosystems; Mairie Fromont, University of Auckland; Peter Heenan, Manaaki Whenua - Landcare Research; Alistair Jamieson, Auckland Regional Council - Environment; Gerald McCormick, Cook Islands; Wendy Nelson, Museum of New Zealand; Barbara Parris, Fern Research Foundation; Matt Parsons, University of Auckland; Bill Sykes, Manaaki Whenua - Landcare Research; Anni Watkins, Otago University.

#### Donated Specimens

Jessica Beever, Peter Bellingham, Paul Champion, Peter de Lange, Mary de Winton, Lisa Forester, Rhys Gardner, Max Goodey, Dan Hatch, Bruce Hayward, Alistair Jamieson, Mr M Mead, Anthony Wright, Maureen Young.

#### Staff

Curator	Ewen K. Cameron
Hon. Botanist	Lucy M. Cranwell
Hon. Research Associates	Rhys O. Gardner, Jeanne H. Goulding
Technician	Juliet F. Herrick
Technicians (contract)	Douglas Rogan, Cecelia Street, Kathryn Howard (since January).

<u>Statistics</u>		(1992-1993)
New accessions		
30 June 1994	219,058	
30 June 1993	<u>211,193</u>	
Increase	7,865	(4,387)
Records on AKILLES electronic database		
30 June 1994	77,899	
30 June 1993	<u>57,894</u>	
Increase	20,005	(10,394)
Exchange specimens		
Inwards 356 specimens from 6 institutions		(222 from 6)
Outwards 564 specimens to 11 institutions		(576 to 12)
Loans of specimens		
Inwards 20 [706 specimens] from 9 institutions		(23[952] from 16)
Outwards 79 [1956 specimens] to 15 institutions		(71[1748] to 18)
Total number of specimens out on loan	5160	(4614)

A significant proportion of the new accessions are from the donated Esler herbarium. Other sources include other donated herbaria, staff collections, ongoing exchange programmes and donated specimens. Several hundred New Zealand specimens were donated by Peter de Lange and a collection of 60 algae specimens from the Bay of Plenty were donated by Paul Champion and Mary de Winton.

**Ewen Cameron**, Curator of Botany, Auckland Institute and Museum, Private Bag 92018, Auckland

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## BIOGRAPHY/BIBLIOGRAPHY

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### ■ Biographical Notes (16): John Kimberley Forbes (1900-1976)

"J.K." or "Jack", as he was variously called, was born on 6 May, 1900, at Waiau, North Canterbury, where he attended school and lived all his life. He was not related to George Forbes of North Canterbury, Prime Minister of New Zealand from 1930 to 1935. From 1928 to 1931 Forbes served his time with his father, Frank, as a carpenter. From 1932 to 1941 he made a living as a gardener and storekeeper, selling fruit and home-grown vegetables from a converted room in his house, and delivering as far afield as Hanmer. Then from 1942 to 1952 he was a baker and pastry-cook, involved in catering for weddings, etc., throughout the Amuri (1,2,3,4). Forbes then became a contractor and built the Rotherham Memorial Baths which opened on 2 April, 1955 (4,5).

Forbes's interest in plants found expression in collecting, photography, and conservation. An early and favourite locality was Mount Terako in the Amuri Range, north of Waiau. A photo of this mountain by Forbes can be seen in (6). In December, 1948, Harry Talbot (then teaching at Springfield), and Gordon Clark (teaching at Timaru), passed through Waiau on their way to climb Terako and discussed plans with Forbes (7). On 2 March, 1952, Forbes took W.B. Brockie to the summit where they were photographed together (8). Brockie took back material of a novel willow-herb which Allan named *Epilobium forbesii* "in honour of Mr J.K. Forbes, who has done much to increase our knowledge of the flora of the mountains accessible from Waiau" (9). And in March of 1952 and of 1953 Forbes collected plants reminiscent in some ways of *Haastia sinclairii* and in others of *Leucogenes*, which Allan classified as of uncertain status (9).

In 1944 Forbes purchased some 40 acres of steep eroding bluffs on the western bank of the Mason River near its junction with the Waiau and only some ten minutes walk from the little township. He called this "Tuke Ngahere" (from "tuke", a cliff, and "ngahere", a forest) and successfully reduced scouring of eroded material by building boulder groynes on the river flat, thus diverting the river; and he further encouraged regeneration by eradicating rabbits and planting species indigenous to the region. Paths were formed and visitors welcomed. In addition, Forbes obtained a leasehold of some 48 acres of Crown Land adjacent to "Tuke Ngahere" and hoped to have it proclaimed a sanctuary. For this kind of work Forbes was nominated for the Loder Cup in October 1950. He was strongly supported by W.B. Brockie, by then at

the Otari Open-air Native Plant Museum (Wellington), who wrote "I have myself been much assisted by him in the collection of native plants, both for the Christchurch Botanic Gardens and for Otari" (10). But Forbes was competing against L.W. McCaskill (1951), Marguerite Crookes (1952) and Perrine Moncrieff (1953), etc., and was unsuccessful (11). Deservedly though, he was to receive the Canterbury equivalent of the Loder Cup, the Bledisloe Trophy, then administered by the Canterbury Native Flora Society.

The Canterbury Native Flora Society (now Canterbury Botanical Society) was formed at a public meeting on 28 November, 1952. At the third meeting, on 8 May, 1953, Forbes signed the attendance sheet; and on 2 October, 1953, he spoke on "Tuke Ngahere - an example of practical conservation" (12). In 1954 the Annual Report stated that "at the last meeting we were able to display a specimen trophy submitted by one of our members Mr J.K. Forbes. This has been very favourably commented on by members and it seems certain that this pattern will be the one from which the three trophies will be made" (12). This refers to the Primary, Post-Primary, and Senior Bledisloe Trophies made possible by a gift of forty pounds sterling from Lord Bledisloe. The trophies were of 'Cenotaph' form, and made by Mr. A. Lamb from three native woods supplied by Mr. Charles Barrell (13). The first recipient of the Senior Trophy was Mr Oliver Hunter in 1954. In 1955 the Society visited Waiau in November and the award was to Forbes with the following citation: "The work of Mr Forbes in regenerating a piece of deteriorated native bush is outstanding. His energy and singleness of purpose, his interest and enthusiasm, his sacrifice and example, should be a source of inspiration to our Society both individually and collectively" (12).

Forbes also used the radio to spread his message. In May, 1954, he broadcast on "Creating your own native bush" in which he "made some suggestions for planting native trees and shrubs in that waste piece of ground that some of you may have on your properties! The piece that's of no use for grazing and cropping; or that the stock don't relish very much" (12). And under the same title he gave four more short talks beginning on Monday 12 September, 1955. He also broadcast two longer talks about the trees of Tuke Ngahere, as seen on a walk through the reserve (12). The following extract shows his skill in this difficult medium.

"And the birds. They're flying about everywhere - some darting swiftly in and out among the trees, others seemingly in no hurry whatever - each making its own peculiar call, whistle or song. Fantails may follow us along for a bit; bellbirds whistle continuously; we'll see plenty of red polls, grey warblers, gold finches, thrushes, silver eyes and chaffinches, and up there you'll see two hawks gliding around high overhead, keeping a watchful eye on the big ngahere below them.

"At one point here there's a break in the trees and we can see out over the riverbed. There, skimming along, in close, undulating formation, is a large flight of blue gulls, and if their silvery wings, gleaming in the sunlight and showing out sharply against the background of the hills doesn't delight you, then - well perhaps you're not a nature lover."

"At this point you may say - Here! This isn't a talk on birds! You're supposed to be talking about trees'. Then my answer would be this 'If you like the trees without the birds, or the birds without the trees, well that's all right - perhaps? But I don't see how we or they could get on very well, the one without the other'. The track through the bush without any birds would be to me, like eating porridge cooked without salt. And now let's get on again".

On Friday 5 April, 1957, Forbes spoke to the Native Flora Society on "Methods of collection of native plants, and a trip up Mount Terako" (12); and on Terako he led excursions of the Amuri Camera Club, founded in 1962 (5,14). In his latter years "J.K." helped with the hardware business which his son Bruce had opened in Waiau; and on 5 June, 1976, this talented man died at Princess Margaret Hospital, Christchurch. He is buried in the Waiau Cemetery.

#### Acknowledgements

I am particularly grateful to Mr Bruce Forbes (Waiau) son of J.K. Forbes, for help with this note; and also to Margaret Bulfin (Lincoln); Ngaire Dalmer (*Annandale* Waiau); Myra McKie (Waiau); and Ian Tweedy and Gordon Clark (both of Christchurch).

#### References

(1) Death Certificate; (2) Stone's Directory (3) Wise's NZ Post Office Directory, (4) Bruce Forbes, pers. comm.; (5) Gardner, *The Amuri*, Edn. 2, 1986; with Forbes in a group photo at the opening of the Rotherham Memorial Baths; (6) Raven & Raven *The genus Epilobium in Australasia* NZ DSIR Bull. 216, 1976; (7) Gordon Clark pers. comm.; (8) annotated photograph, courtesy Bruce Forbes; (9) Allan *Flora of NZ* 1961 (10) Loder Cup nomination, courtesy Bruce Forbes; (11) History of the Loder Cup; (12) Archives,

Canterbury Native, Flora Society; (13) Metcalfe *Canterbury Bot. Soc. Journal* 1978; (14) Ms Myra McKie pers. comm.

E.J. Godley, Research Associate, Manaaki Whenua-Landcare Research, P.O. Box 69, Lincoln

### ■ Leonard Cockayne's gardens in Wellington

A request from Mr Ewen Cameron regarding the source of a Cockayne herbarium specimen provided the incentive to summarize data on Cockayne's gardens during the period he lived in Wellington. This note also provides some reminiscences relating to Cockayne's link with the Line family of Wellington.

Cockayne established gardens of different levels of complexity wherever he lived and the first evidence we have is of his "Dilcoosha" farm at Styx near Christchurch (1885-1892). Two Cockayne manuscripts (1,2) in the National Museum's Cockayne Collection refer to plants established at "Dilcoosha" as early as 1888. Cockayne's Tarata Experimental Garden at New Brighton (1892-1903) was his most extensive garden (3).

Cockayne and his wife Maude first moved to Wellington (Island Bay) in 1904 and he immediately organised facilities for growing plants; "...my landlord, who lives next door, has a nice little greenhouse and I am to have full use of it for my seedlings!" (5). Cockayne had intended studying prolonged juvenile stages and "reversion-shoots" in the greenhouse. However, he returned to Christchurch in 1905 and remained there until 1913. Cockayne and Maude returned to Wellington in 1914 (4, p.40-1) where they lived at 20 Colombo Street (1914-15) and then at 13 Colombo Street (1915-17) before settling at Ngaio in 1917 and they died in Wellington in 1934.

Colombo Street today includes many interesting old wooden houses which have probably changed little since Cockayne's time; they seem to have limited space for a garden. The Cockayne property at 13 Colombo Street was contiguous with that of Cockayne's friend Dr Leonard Arthur Line (1864-1943) who lived in Rintoul Street adjacent to Colombo Street. Dr Line was a much-respected medical practitioner and incidentally, like Cockayne, was a late-starter; after a career in teaching he qualified in medicine at the University of Otago Medical School in 1909 (10) when he was 45. Dr and Mrs Line's daughter Mrs Freda Forde is the late Dr Margot Forde's mother-in-law. Through the kindness of Margot, in October 1991 I received a collection of newspaper clippings relating to Cockayne that had been retained in the Line family for many years. Diane and I interviewed Mrs Freda Forde and her sister Mrs Mary McGavin in 1992 about their reminiscences of Cockayne when both were children. It seems that Cockayne developed a close rapport with Dr Line and used a small portion of the Line garden in Rintoul Street for growing *Acaena*. Mrs McGavin can recall Cockayne coming through a gap in the common fence between the two properties, "I used, as a small girl to go and talk to him, and one day, for fun, he put me down our compost pit. I was furious, and called him a silly old man! As you'll have gathered he could be a somewhat forbidding personality, but this delighted him, and I became a favourite thereafter, called little bidibid, and held up to Madeline [Cockayne's granddaughter Miss Madeline Cockayne now of Waikanae] as a paragon!" (11). Mrs Freda Forde generously gifted to the Centre a 4pp. holograph letter from Cockayne to Mrs Forde's father and dated 8 December 1928 in which Cockayne thanks Dr Line for sending his congratulations on Cockayne's award of the Darwin Medal in 1928 and comments, "It was in your garden that part of the seed was sown which grew into the award. For, in *Acaena*, there came before my eyes a bewildering maze of forms, at that time impossible for me to deal with. The secret of "variation" lay hidden in that mass of weeds, which since have proved the best weapon for attacking the problem of wild hybridism and its bearing on the evolution of true-breeding groups. Most of our wild hybrids are either too difficult to cultivate and experiment with, or of too slow a growth, but *Acaena* is most easy of culture and will give results in a year. And the genus is entirely of the Southern Hemisphere and so offers material more unusual for European and North American geneticists than do their northern genera" (12).

The Otari Open-Air Native Plant Museum is of course associated with Cockayne in Wellington though he did maintain a small garden at his cottage in Ngaio (the cottage is still extant at 14 Ottawa Road). He grew plants here that were of special interest or were included in his current studies. Dr Lucy M. Cranwell Smith and Dr Lucy B. Moore visited Cockayne at Ngaio and Dr Cranwell (6) has provided some record of the Ngaio garden (the notes were originally written in 1934 at the time of Cockayne's death), "...gooseberries, red and white, Koromiko and the row of pansies near the tiny lawn. In the first visits [1928?] the garden was trim with unfamiliar annuals; later these dwindled, and a few hardy natives and a "breath of heaven" bush stayed on, *Corokia* I remember especially. The front window gave out on the Wellington Street, with wires, dark pine foliage, and beyond - more hills, but from that window one seemed to look out on a scene where that day's distance played no part. One saw instead the Rock and Pillar, Pisa, Ida, beloved Torlesse,

and the open face of the Canterbury Plains - everywhere that the master had trod".

Cockayne would have had difficulty in maintaining the garden at Ngaio, even with the dedicated assistance of Maude because he was away on his field botany for many months of the year during the 1920s (4, p.41); in addition his poor eyesight from about 1930 would have made gardening difficult (4, p.46). Among the many visitors to Ngaio was A.W. Hill (1875-1941) during his tour of New Zealand in 1927-28. Hill's diary of his visit to New Zealand (7) records his visit to Ngaio, "...went out with L.C. and Alfred [Cockayne's son A.H. Cockayne] to Ngaio and called on Mrs Cockayne and saw the very rough and weedy small garden full of *Veronica*, *Celmisia* and other hybrids - he badly needs a gardener to keep the place in order and look after his plants" (4 February 1928).

Some illustrations of the Ngaio garden have been published (8,9) and a photograph of *Corokia cotoneaster* and adjacent plants in the garden (possibly taken by George Simpson) was received by Dr Ross Beaver from Dr Cranwell Smith in 1987. A manuscript by Cockayne is retained in the Cockayne Collection in the National Museum and is entitled "N.Z. Species in garden of L.C. (Ngaio)" (4pp.) and records 148 species and hybrids of indigenous plants (13). Another manuscript by Cockayne entitled "List of plants in Ngaio garden, excluding experiment plants" (38pp.) is also retained in the Collection (14).

#### Acknowledgements

I thank Dr Lucy M. Cranwell Smith of Tucson, Arizona for her generosity over many years in providing data relating to Dr Cockayne, and Mrs Mary McGavin of Auckland, Mrs Freda Forde of Wellington, and the late Dr Margot Forde for their helpful assistance and generosity.

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(1) Cockayne, L. MS retained at National Museum, Wellington, "Catalogue of perennial herbs, ferns and flowering shrubs Dilcoosha Nov. 25th 1888"; (2) Cockayne, L. MS retained at National Museum, Wellington, "List of Plants now growing at Dilcoosha 25 August 1891"; (3) Thomson, A.D. 1978: Leonard Cockayne: horticulturist. *New Zealand Journal of Botany* 16: 397-404; (4) Thomson, A.D. 1983: "The Life and Correspondence of Leonard Cockayne". Christchurch, Caxton Press. 55pp; (5) Letter of 2 January 1905 from Dr L. Cockayne at Island Bay to Professor Goebel in Munich. 10pp; (6) Letter with enclosed notes of 15 November 1987 from Dr Lucy M. Cranwell Smith to A.D. Thomson. 9pp; (7) Thomson, A.D. 1980: A. W. Hill's diary of his visit to New Zealand in 1928. *Botany Division Newsletter No.54*: 11-12; (8) Allan, H.H. 1934: Leonard Cockayne 1855-1934. *Journal of the New Zealand Institute of Horticulture* 4: 10; 9) Leonard Cockayne: horticulturist. *Journal of the New Zealand Institute of Horticulture (Cockayne Memorial Number)* 8(1): 2, 1938; (10) Obituary: Leonard Arthur Line. *New Zealand Medical Journal* 42: 139, 1943; (11) Letter of 13 November 1991 from Mrs Mary McGavin to A.D. Thomson. 2pp; (12) Letter of 8 December 1928 from Dr L. Cockayne to Dr L.A. Line. 4pp; (13) Cockayne, L. MS retained at National Museum, Wellington "N.Z. Species in garden of L.C. (Ngaio)". 4pp; (14) Cockayne, L. MS retained at National Museum, Wellington "List of plants in Ngaio garden, excluding experiment plants". 38pp.

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## PUBLICATIONS

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#### ■ Journals received

New Zealand Native Orchid Group Journal 52

(December 1994; ISSN 1170-4543). Edited by Ian St George. 48pp.

Contents include 9 papers and abstracts from the first New Zealand Native Orchid Group Conference, Iwitahi, December 1994: Ian St George on orchid fertilisation, Malcolm Campbell on hybrids involving *Drymoanthus adversus*, Bruce Irwin - Seek and ye shall find, George Fuller on pollination of *Corybas* "A", Cathy Jones on the vegetation of central North Island, Dan Hatch on *Corybas* in New Zealand, Randal Springer on a *Pterostylis* in Taranaki - 1866, Chris Ecroyd on *Caleana minor*, and Bruce Clarkson, Peter de Lange & Bev Clarkson on *Corybas carsei*. Other articles are: orchid artists - Fanny Bertha Good, Clare Scott, Lydia & Eleonore Blumhardt, New Zealand and Australia notes, and a revised list of New Zealand orchids by Ian St George.

#### Editors

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## DESIDERATA

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### ■ Request for samples of *Echinopogon ovatus*

Ryegrass staggers is a poisoning of livestock caused by the presence in perennial ryegrass of the endophytic fungus *Acremonium lolii* (closely related to the ergot fungi). The symptoms are caused by neurotoxins produced by the endophyte. In Australia, *Echinopogon* spp. have been reported to induce symptoms indistinguishable from those of perennial ryegrass staggers.

When we examined herbarium specimens of *E. ovatus*, a species native to both Australia and New Zealand, we found characteristic hyphae within the leaf tissue which are similar in appearance to those in infected ryegrass. As far as we know, *E. ovatus* is New Zealand's only endophyte-infected native grass. We now wish to examine fresh specimens of the above-ground parts of *E. ovatus*, and to obtain viable seed. It would be beneficial if the plant material were obtained from a number of localities, and from several plants within each locality (to obtain a representative sample).

If any readers could help us to obtain foliage and seed samples of *E. ovatus*, I would be most grateful. For mycological examination, foliage samples need to be stored in a paper containers (NOT in plastic bags) in the fridge, and seed in a cool, dry place, until postage. Anyone interested in helping us to obtain samples is invited to contact me at the address and telephone number given below.

**Chris Miles**, AgResearch, Ruakura, Private Bag 3123, Hamilton (phone 07-838 5194 work, or 07-856 5243 home)

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## FORTHCOMING CONFERENCES/MEETINGS

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### NINTH NZ FUNGAL FORAY

Monday 8 May to Friday 12 May 1995

#### TAUTUKU OUTDOOR EDUCATION CENTRE

I am organising this fungal foray and have booked accommodation at the centre for four nights, ie. arrive on the Monday and depart on the Friday.

Tautuku is fully equipped with laundry, cooking facilities and 88 bunks. The charges are \$7-00 per night. There will be additional charges for food. Mattresses, pillows and extra blankets are available but pillowcases and sleeping bags are personal baggage.

The Tautuku Outdoor Education Centre is situated in the William King Scenic Reserve, S.E Otago and is reached by following SH 92 (the coast road between Balclutha and Invercargill) 32km south of Owaka. Mixed broadleaf evergreen forests are nearby.

Please complete the form below and return to me as soon as possible.

Lynley Evans                      Email [EvansL@crop.cri.nz](mailto:EvansL@crop.cri.nz)  
**ORGANISER**

Crop and Food Research  
Invermay Agricultural Centre  
Private Bag 50034  
Mosgiel

Phone: 489-3809              Fax: 489-3739

CLIP & SEND

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#### REGISTRATION FOR FUNGAL FORAY TAUTUKU MAY 8-12 1995

Name: _____ Address: _____ _____ _____ _____ Phone: _____ Fax: _____ Email: _____	Number attending: <input type="text"/> Regret cannot come: <input type="text"/> Herewith deposit \$30/person: <input type="text"/> I will find my own transport: <input type="text"/> I require assistance with transport: from airport: <input type="text"/> from bus: <input type="text"/>
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*Acknowledgements: Thanks to Leisa Layet, Manaaki Whenua - Landcare Research Hamilton who typed up several articles, and Antoinette Nielsen and Ewen Cameron of Auckland Museum who produced camera-ready copy for the printer.*

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