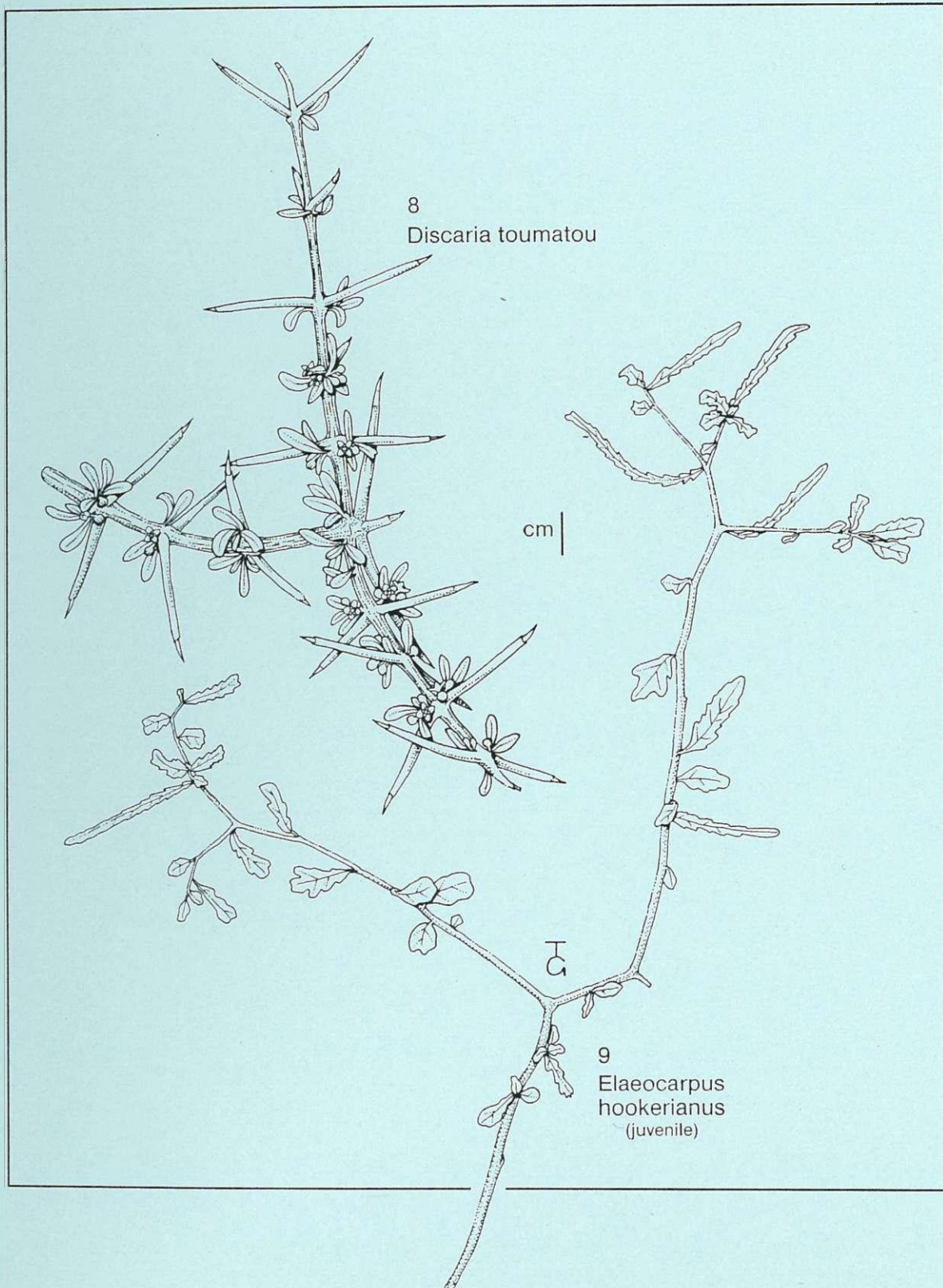


NEW ZEALAND BOTANICAL SOCIETY  
**NEWSLETTER**

NUMBER 45

SEPTEMBER 1996



NEW ZEALAND BOTANICAL SOCIETY  
**N E W S L E T T E R**  
NUMBER 45                      SEPTEMBER 1996

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**Cover Illustration**

Matagouri (*Discaria toumatou*), a member of the buckthorn family (Rhamnaceae), is a spiny grey shrub well known to South Islanders but occurring only sparingly in the North Island (see article page 10). Illustration by **Tim Galloway** from Wilson and Galloway 1993: *Small-leaved shrubs of New Zealand*. Manuka Press, Christchurch.

## **New Zealand Botanical Society**

President: Jessica Beever  
Secretary/Treasurer: Anthony Wright  
Committee: Catherine Beard, Colin Webb, Carol West,  
Beverley Clarkson, Bruce Clarkson  
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Private Bag 92018  
AUCKLAND

## **Subscriptions**

The 1996 ordinary and institutional subs are \$14 (reduced to \$10 if paid by the due date on the subscription invoice). The 1996 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 43 (March 1996). 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 December 1996 issue (Number 46) is 29 November 1996.

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

Contributions may be provided on an IBM compatible floppy disc (in Word Perfect 5.1) or by e-mail (ClarksonB@Landcare.CRI.NZ).

### Regional Bot Soc News

#### ■ Auckland Botanical Society

##### July Field Trip

The wet winter which Auckland has been experiencing meant that the popular Lower Kauri Track in the Cascade-Kauri Park, Waitakere Range, was at its muddiest. Although the resident flock of sulphur-crested cockatoos was not seen, nor the *Ascarina lucida*, the species rich kauri forest was looking very beautiful, and seeing king fern (*Marattia salicina*) was a bonus. The promised short cut home, led by the ranger, went somewhat awry, and resulted in an even muddier return over farm land.

##### July Evening Meeting

David Norton spoke on threatened plant management. The four case studies, with a largely South Island bias, covered the distribution, habitat needs, and problems involved in protecting: 1. *Carex inopinata*, 2. *Hebe cupressoides*, 3. Lorantheaceous mistletoes, and 4. Coastal lepidiums. David stressed that measures such as growing plants in botanical gardens, while important in ensuring the species do not become extinct, are really just the 'band-aid' solutions. Studies of the plants' requirements in the wild, habitat protection and enhancement, and predator control are necessary to ensure that viable populations are maintained in natural communities.

##### August Field Trip

Forty-five people left Panmure bound for Browns Island, sentinel to the Waitemata Harbour. Calm seas and a couple of showers were considered to be a good deal, considering the prevailing weather conditions. The volcanic island, largely under pasture, is jointly managed by DoC and the Auckland City Council. Leaders for the day were Rhys Gardner (botany) and Bruce Hayward (geology and archaeology). There are only small remnants of bush present, and these are badly infested with weeds, including moth plant (*Araujia sericifera*) and bone seed (*Chrysanthemoides monilifera*). Ngaio was common and *Euphorbia glauca* was seen on a slip on a cliff. This field trip, one of a series in the Hauraki Gulf, proved yet again the popular appeal which islands have for the botanical community.

##### Forthcoming Activities

Wednesday, 4 September: "A new beginning - The Auckland Regional Plan Pest Management Strategy"; Lance Vervoort.

Saturday, 21 September: Umupuia/Duders Regional Park, South Auckland.

Wednesday, 2 October: Lucy Cranwell Lecture - Easter Island: Its Botanical History, Professor John Flenley.

Saturday, 19 October: Hamiltons Road, Awhitu Peninsula.

Wednesday, 6 November: Graduate student research projects: Astrid Dijkgraaf and one other.

Saturday, 16 November: Cornwallis Peninsula gumland scrub.

**Maureen Young**, 36 Alnwick Street, Warkworth

#### ■ Canterbury Botanical Society

##### Obituary

The death occurred on 2 September of Ross Elder. Ross has been an active member of the Society for about 30 years. He and his wife Yvonne have welcomed to Christchurch, botanists from all over New Zealand, and from overseas. Ross was President from 1969 to 1973 and was very influential on the direction taken by the Society. He edited the Journal from 1981 to 1988, and contributed 12 articles. He was well known for his interest in *Coprosma*.

##### Forthcoming meetings

4 October: "Plant photography", P. Harper

5 October: Orton Bradley Park, Lyttelton Harbour

16 October: Fleming Award Lecture (Royal Society Canterbury Branch) "The management of Riccarton Bush", Dr Brian Molloy

1 November: Student talks

23 November: Raoul Sesquicentennial Symposium  
6-8 December: Mt Vernon Lodge, Akaroa

**Bryony Macmillan**, Canterbury Botanical Society, P.O. Box 8212, Christchurch

#### ■ Nelson Botanical Society

##### June field trip - John Slow's Garden and Snowdens Bush

In spite of the dull morning a dozen people were taken around the large shrub and tree collection of John Slow at Richmond. The species included many from the North Island, offshore islands and the Kermadecs. It was quite amazing to see some from the latter two localities (including *Elingamita*, *Tecomanthe*, *Homalanthus* and *Boehmeria*) surviving in the open, in spite of severe local frosts.

After lunch at Snowdens Bush, we explored the intriguing small remnant of the riverine forest of the Waimea Pains. The masses of mistletoe (*Ileostylus micranthus*) are quite spectacular, drooping in profusion from the marginal totara and quite common in the stand. Under the stand, recent attempts have been made to remove the dense mats of wandering Jew (*Tradescantia fluminensis*) but much work is still required. At the rear of the stand a very large mature *Streblus heterophyllus* provided interest. It was only after considerable searching that a few remnants of *Adiantum diaphanum* were located almost smothered by wandering Jew. A similar search for *Myosotis spathulata*, seen at the last visit, revealed only dense mats of wandering Jew.

##### August field trip - Mangatapu saddle

A fine day and a great turn-out of nearly 35, including several new members and some long absent faces, including the welcome presence of Chris Ecroyd from the Rotorua Botanical Society.

Many rushed ahead through the sun-less gorge and on to the ultramafics and sunshine while a smaller group sought treasures in the tawa forest and amongst the banks of maidenhair fern (*Adiantum cunninghamii*) through the gorge. Plants of interest here included the flax like *Astelia fragrans*, huge *Cordyline banksii*, tanekaha (*Phyllocladus trichomanoides*), wheki-ponga (*Dicksonia fibrosa*) and Jean's fern (*Leptopteris hymenophylloides*). At the top of the gorge you are suddenly in ultramafic country and the huge boulders are carpeted in *Hymenophyllum sanguinolentum* and draped in the spring orchid *Earina mucronata*, not yet in flower. The vegetation alternates between hard and black beech (and hybrids) interspersed with rata (*Metrosideros umbellata*), and low manuka/kanuka, and open areas with scattered large boulders. The first of the special plants was the twiggy shrub, *Olearia serpentina*, soon followed by the undescribed *Colobanthus* "Red Hills" on the bare patches. The track then continues through forest containing all the beeches, pokaka, and the odd hinau in a mosaic on the different soils. As the Mangatapu saddle was approached the forest understorey on steeper slopes is dominated by a tall tussock (*Chionochloa cheesemani*).

At the saddle the low shrubland contains several densely divaricating plants including weeping matipo (*Myrsine divaricata*), *Pittosporum rigidum*, *Aristolelia fruticosa*, *Corokia cotoneaster* and *Coprosma propinqua*. Other plants were quite stunted including manuka, kanuka and alpine toatoa. Almost hidden and tangled in the shrubs is *Clematis forsteri* var. *rutifolius*. On the return journey detours were taken to seek out *Astelia grandis* and *Scutellaria novae-zelandiae*, seen on previous trips but memories failed us.

##### Coming field trips:

15 September: Dovedale

20 October: Pelorus Bridge

Labour Weekend (26-28 October): Mistletoe Bay

#### ■ Wanganui Museum Botanical Group

##### Forthcoming meetings

1 October: "Travels in Southern Africa". Vicky Froude and Chris Richmond from DoC Wellington have offered us an illustrated talk about their recent visit, including seeing *Welwitschia* in the wild.

5 November: "Travels in Laos". Geoff Mills, from Marton, has recently worked in Laos and will give an illustrated talk.

3 December: Christmas function - programme to be announced.

##### Forthcoming fieldtrips

Sunday 29 September: Ian McKeen's Pinetum, Rangiwahia. Leader: Clive Higgle.

Saturday 2 November: Dune forest beside Lake Alice - the largest remnant of dune forest north of the Manawatu River; contains *Corokia cotoneaster*, dense *Coprosma crassifolia*, *Ileostylus* mistletoe (and matagouri nearby). Maybe time to look at lake edge as well. Leader: Colin Ogle.

Sunday 1 December: Little Sutherlands/Lairds Bush, Turakina Valley. Leader: Randal Springer.

Sunday 19 January 1997: Jean D'Arcy Reserve. Leader: Alf King.

#### Reports of recent trips

Tangimoana, 3 March: Nick Singers of Massey University, guided 13 of us (including three from the Levin Native Flora Club) around the dunes at Tangimoana. This is the site of Nick's MSc study of vegetation and water dynamics in dune hollows. The threatened sedge, *Eleocharis neozelandica*, has been a focus for this study, and Nick showed us young and old plants and discussed their growth rates, flowering, fruiting and seed germination. We also saw plants of one of New Zealand's most threatened shrubs, an unnamed *Pimelea*. It grows naturally on private land only, near Himatangi, from where cuttings were grown by Tony Silberry at Percy Reserve then planted by Nick at Tangimoana. All plants survived the shift, and some were already fruiting. Weeds were seen to be a problem for maintaining the indigenous vegetation of this very important site at Tangimoana.

Virginia Lake Reserve, Wanganui, 7 July: Ian and Jocelyn Bell led a trip around some of the more unusual planted trees of this popular urban park, where participants each pointed out plants that they enjoyed or wished to identify. Australian trees are a feature of the plantings, including large specimens of *Angophora costata*, *Syncarpia glomulifera* and *Archontophoenix australis*. Chris Ecroyd and Ewen Cameron identified other specimens for us subsequently. Among these were *Lophostemon confertus*, *Tristaniopsis laurina*, *Eucalyptus megacarpa* (in flower), *Euonymus pendulus* (= *E. lucidus*?), *Asparagus falcatus*? - an asparagus with large stem thorns and climbing to 5 m up a phoenix palm.

Pakipaki Bush, Hokio, Levin, 21 July: At the invitation of the Levin Native Flora Club, four of our group joined an unprogrammed trip to this, the largest area of dune forest between Wellington and Taranaki. Though some of us had seen this forest before, we were all thrilled by the large range of tree and shrub species, some of them very rare or otherwise absent from other dunes of this coast. They include narrow-leaved maire (*Nestegis montana*), *Corokia cotoneaster*, *Coprosma crassifolia*, and akeake (*Dodonaea viscosa*). Patches of flowering orchids, *Pterostylis alobula* and *Corybas trilobus*, were another feature during our visit.

Kowhai Park (James McGregor Memorial Park), Wanganui, 4 August: Clive and Nicki Higgle guided members on a trip similar to that in July at Virginia Lake. Again we delighted in the mature plantings, resulting from far-sighted tree enthusiasts in the past. Here there we saw a greater variety of conifers, including what is claimed to be NZ's largest specimen of Japanese umbrella pine (*Sciadopitys verticillata*). Later we were taken on a mystery car rally to see several other notable trees in Wanganui. Some memorable ones were a very large Chilean wine palm (*Jubaea chilensis*) and, in one garden, large trees of hoop pine (*Araucaria cunninghamii*), bunya pine (*A. bidwillii*), monkey puzzle (*A. araucana*) and Norfolk pine (*A. heterophylla*). We also saw a healthy 2 m tall specimen of Cook pine (*A. columnaris*) that Clive had donated to this garden a few years ago.

#### Reports of recent meetings

4 June: a two-part meeting; Colin Ogle spoke first, about the results from three surveys at two year intervals of a population of *Ileostylus* mistletoes near Wanganui. The talk was a prelude to this year's survey; Botanical Group members had helped on each of the previous surveys. Alf King then spoke about cone morphology in conifers, illustrated with a wide variety of live material for the audience to study.

2 July (AGM): Robyn and Colin Ogle talked and showed slides of the landscapes and natural history of Magnetic Island, near Townsville, Queensland.

6 August: Clive and Nicki Higgle of Fordell gave an illustrated talk on a recent visit to New Caledonia where they had made a special study of the island's *Agathis* and *Araucaria* species.

#### Botanical Group details

Evening meetings are the first Tuesday of each month in the Museum Davis Lecture Theatre: commencing 8pm summer time; 7.30pm winter time (April-September). Field trips are usually in the weekend preceding the monthly meeting

**Robyn Ogle** (Secretary) and **Colin Ogle**, 4 Brassey Road, Wanganui

## ■ Wellington Botanical Society

Programme: September 1996 - February 1997

Sunday 8 September: Field Trip - Manawa Karioi Workbee: NOTE: SUNDAY, NOT SATURDAY. Take advantage of this chance to participate in yet another Wellington ecosystem restoration project, now in its 6th year under the guidance of Botsoccer Maggie Wassilieff. There will be a range of things to do, from potting-up to planting out and track-cutting. Bring hardy, Wellington native plants if you wish, and garden tools to supplement those available on site. Meet at 9am at Tapu Te Ranga marae, 44 Rhine Street, Island Bay, or catch the 8.30 am Island Bay bus at Lambton Interchange, alighting at Dee Street. The workbee will finish with lunch provided by the marae. Children are especially welcome. Leader: Barbara Mitcalfe, Ph (h) 475 7149. Deputy: Daphne Suggate, Ph (h) 479 7301.

Monday 16 September: Evening Meeting- An ecologist in Bolivia; from the Amazon to the Andes: Speaker: Dr Kath Dickinson, Senior Lecturer in Plant Ecology at Victoria University, who visited South America this summer.

Saturday 5 October: Field Trip - Jacobsen Covenant: This 12ha forest remnant is protected by a QE II National Trust Open Space Covenant. Carpool at Platform 9, W'gton Station 9am, or 9.30 on west side Manor Park Station. Hutt line trains from W'gton 8.35am & Upper Hutt 9am. Meet at Jacobson's home, Rural Fire Code No.2E8, Moonshine Rd, 2nd house on right 1.5km from SH 58 (Haywards) at Judgeford, past first one-way bridge. Please park snugly in yard, so that few cars have to park on Moonshine Rd. Leaders: Christine and Mike Jacobson ph 235-7648  
Contact re car-pooling: Chris Horne ph 475-7025.

Monday 21 October: Evening Meeting - Karori Wildlife Sanctuary: Speaker: Stephen Fuller, Manager. Stephen will describe the restoration, ecological monitoring, pest control, fence trials and weka recovery work in New Zealand's first "mainland island" project.

Saturday 2 November: Field Trip - Karori Wildlife Sanctuary: Hans is a BotSoccer, an ecologist with Wellington Conservancy, studying the impact of possums on the vegetation in the Sanctuary, and the condition of the possums, as part of his work for an M.Sc. at Victoria University. Hans will show us some of his permanent plots, some of the less common species in the reserve, e.g. swamp maire, kamahi, matai, etc., and take us to areas where we can prepare species lists. Rex is a BotSoccer who has just completed a 6 month Royal Society Fellowship. Having just completed a monitoring programme for the ecology of the valley, he will show us sample permanent plots, a phenology transect and a rapid inventory transect. Meet 9am at Sanctuary Trust Visitor Centre, 31 Waiapu Rd. First turn left west of Karori Tunnel. No. 23 Mairangi bus 8.10am zoo, 8.15 Hospital, 8.20 Courtenay Place, 8.27 Pastoral House, OR No.12 Karori Pk bus 8.10 Lyall Bay, 8.20 Hospital, 8.25 Courtenay Place, 8.32 Pastoral House. Alight from buses 1st stop past Karori Tunnel. Co-Leaders: Hans Stoffregen ph. 386-1280, Rex Bartholomew ph 235-8774.

Monday 18 November: Evening Meeting - Pollen of some primitive flowering plants: Speaker: Dr Bruce Sampson, School of Biological Sciences, VUW.

Friday 6 - Sunday 8 December: Field Trip - Corner Creek, Mukamuka, South Saddle, (Mt Matthews?), Catchpool: A variety of trips, from short ones near Corner Ck, to see *Pseudopanax ferox*, *Brachyglottis greyi* and a wetland, medium trip in Mukamuka valley and an *Austrofestuca littoralis* site, and an all-day trip to Catchpool via South Saddle, (option of visiting beech forest on Mt Matthews, en route). Prepare to camp at Corner Creek, though bach accommodation may be possible for a few people. "Overlanders" will be able to leave camping gear with party staying at Corner Ck. Leader: Olaf John ph 479-7605 Deputy Leaders: Pat Enright (possibly) ph 479-1208, Margaret Aitken ph 566-2731.

27 Dec 1996 - 4 or 5 Jan 1997 Waiouru: North, South, East, West: Possible trips are Moawhango River headwaters, Hauhangatahi, Mt Tongariro, Mataroa, Paengaroa SR, Irirangi Swamp, Rangataua, Lake Rotokura, Hihitahi State Forest Sanctuary, Tukino Rd, Tufa. Other ideas welcomed. Participants will be able to choose between trips of 1 - 4 hours, 4 - 6 hours, or 6 - 10 hours duration. Over-night trips in Moawhango headwaters are possible. Recommended Reading: Wanganui Conservation Management Strategy; Moawhango and Rangitikei Protected Natural Area reports; Dr Ian Atkinson's Map of Tongariro National Park Vegetation. Accommodation: Twelve-bed house, approximately 6km west of Waiouru on SH 49. Most people will need to camp. Transport: South Islanders should have booked on ferry by now. Waiouru is served by trains and buses daily. Maps: T20 Ruapehu, T21 Taihape.

Wellington Anniversary Weekend: Wellington's wild west: Terawhiti Hill, Mount Misery, Oteranga Stream, etc. Camp out in Floyd's Clearing. Further details to be advised.

Saturday 1 February 1997: Field Trip - Beech Spur, Hugeratas, Turere Stream, Orongorongo Track: An easy climb up an untracked spur in Catchpool valley to McKerrow Track. Descend untracked spur and travel down Turere Stream. Return via Orongorongo Track, or, time permitting, Old Five Mile Track. A full and varied day. Leader: Jane Shearer ph 476-8186. Deputy Leader: Chris Horne ph 475-7025.

#### Wellington Botanical Society Jubilee Award

Wellington Botanical Society now invites applications for an award of up to \$1000 to encourage and assist appropriate people to further knowledge of the New Zealand indigenous flora, and to commemorate the Jubilee of the Society.

#### Purpose of the Award

The Award is open to anyone working in New Zealand and will be granted for: field work; artistic endeavour; publication; research; the propagation or cultivation of New Zealand native plants for educational purposes; or other studies which promote the better understanding of the New Zealand indigenous flora and vegetation. The interpretation of these conditions will be flexible except that the main criterion will be the furtherance of knowledge or promotion of the intrinsic value of the New Zealand indigenous flora and vegetation. The award may be used to defray costs such as travel, accommodation, materials or publication.

#### Applications for the Award

Applications should be made in typescript to the Secretary, Wellington Botanical Society, PO Box 10-412, Wellington by 10 October 1996. There is no prescribed application form, but the following should be provided: the applicant's name, mailing address, telephone number, and any relevant position held; a summary statement of the applicant's accomplishments in the field of botany (no more than one page); the name, address, telephone number and designation of a referee who is familiar with these accomplishments; an outline and timetable for the proposed project for which the award is sought; and a proposed budget for the project.

#### Selection

The Award will be made to one or more applicants selected by a subcommittee nominated by the general committee of the Wellington Botanical Society. An Award will be made, and applicants informed of the results in writing, by 10 November 1996. Successful applicants will be required to provide, at an agreed time, a short report on what they have achieved and an account of their expenditure of Award funds. The names of Award recipients, the value of the Award, and synopsis of the project provided by the recipients will be published in the Annual Report of the Wellington Botanical Society.

Pat Enright, Secretary, PO Box 10-412, Wellington

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## NOTES AND REPORTS

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### Plant Records

#### ■ Additional "special" plants of the Moawhango River catchment, central North Island

##### Summary

The first North Island record of *Carex capillacea* adds to the number of indigenous plant taxa of the central North Island which have similar disjunct distributions, the majority being found in the Moawhango Ecological Region and in eastern parts of the South Island. In addition, the discovery of a previously unknown *Hebe* in the Moawhango Ecological Region may be another species with a disjunct distribution, or a local endemic taxon.

##### Background

A group of indigenous vascular plant species is known from only the central North Island and eastern South Island (Rogers 1989, 1991). The species are mostly small herbs which grow in non-forested sites below the treeline. In the North Island, they are concentrated in the Moawhango Ecological Region [ER]



(Rogers 1993) and about 15 are confined to it. A full list is given by Rogers (1989, 1993). They include *Carex berggrenii*, *Gnaphalium ensifer*, *Myosotis pygmaea* var. *glauca*, *Ourisia modesta*, *Tetrachondra hamiltonii* and *Uncinia strictissima*. Some are nationally threatened or local species (Cameron et al. 1995).

Much of the Moawhango River catchment east of Waiouru is land managed by the New Zealand Defence Force. There are proposed changes for the management of wild horses in this area, with total removal of horses from some parts (Department of Conservation 1995). As a result of horse removal, native species currently eaten or trampled by horses are expected to recover. Among these are the larger species of tussock grasses (e.g., *Chionochloa rubra*, *C. pallens*, *Festuca novae-zelandiae* and *Poa cita*) and sedges, especially *Schoenus pauciflorus*.

An increase in stature and abundance of adventive plants is also expected to follow the removal of horses, which may harm the survival of the area's "special" plants. Permanent monitoring plots for some species of special plants were established in 1990 by Geoff Rogers, then of Manaaki Whenua - Landcare Research, and by staff from the Wanganui Conservancy of the Department of Conservation. It was to fill some gaps in the monitoring system that we visited parts of the Moawhango River catchment recently.

#### The survey

On 12 March 1996 we inspected an ephemeral wetland on an elevated terrace above the Awapatu River, a tributary of the Moawhango River. This wetland was already known to contain *Amphibromus fluitans* and *Gnaphalium ensifer*. Both were first found here by A.P. (Tony) Druce (then of Botany Division, DSIR) with one of us (CCO) in January 1974, before the ground was pugged by horse trampling. *G. ensifer* had been seen by the present authors in 1990. The Awapatu wetland is pictured by Ogle (p.47, 1991) and Rogers (Fig. 7, 1994).

On 13 March 1996, a steep greywacke gorge in the middle reaches of the Moawhango River was surveyed to assess the habitat and conservation status of *Pimelea aridula*, and to collect fresh material for cultivation and comparison with plants from other populations of this species. *P. aridula* appears in the New Zealand threatened plant list (Cameron et al. 1995) with a status of "taxonomically indeterminate, insufficiently known". It was discovered by Tony Druce during the 1974 survey, and plants were brought into cultivation by CCO and distributed to other growers. However, no Moawhango plants are known to have survived in cultivation, and there had not been an assessment of their status in the wild for more than 20 years.

We found that *P. aridula* occurs as scattered shrubs on sunny faces and common to locally dominant on shady faces. The Moawhango plants resemble specimens included under *P. aridula* in the northeast of the South Island and in three other North Island sites, viz. Te Mata Peak near Havelock North, Maungaharuru Range in western Hawkes Bay, and on the coast south of Titahi Bay near Wellington.

Plants from each of the four North Island sites have been propagated in the past, sometimes side by side. In cultivation they retain some different morphological features, but they share characters such as red drupes, sprawling habit (pendent over rock faces) and leaves silky tomentose on both surfaces, especially the lower surface. There is need for a taxonomic examination of these North Island "forms" and comparison with others in the South Island, including the type locality at Kurow, where *P. aridula* forms erect near-spherical bushes.

#### Discoveries of additional species

##### 1. *Carex capillacea*

On our 1996 visit to the Awapatu River terrace wetlands, we set up a permanent transect for long-term monitoring of part of the *Amphibromus fluitans* population. We could not re-find *G. ensifer* after considerable searching among scattered red tussocks along the wetland edge, but in the same spot we found a single 10 cm diameter patch of *Carex capillacea*, a sedge not previously recorded in the North Island.

In a 0.5 x 0.5 m quadrat containing *C. capillacea*, we also recorded the monocot herbs, *C. coriacea*, *Uncinia rubra*, \**Holcus lanatus*, \**Juncus articulatus*, and the dicot herbs \**Leontodon taraxacoides*, \**Linum catharticum*, *Gonocarpus micranthus*, \**Prunella vulgaris*, *Pratia angulata* s.l., *Plantago triandra*, *Viola cunninghamii*, *Gnaphalium ?traversii* and *Hydrocotyle microphylla*. The presence of five species of potentially smothering adventive plants (marked \* above) may be a problem for the survival of *C. capillacea*, and may have already reduced the abundance of *G. ensifer*, or even eliminated it.

## 2. *Hebe* species

Early during the search for *Pimelea aridula*, we found one shrub of a *Hebe* which was unknown to us. The shrub was about 25 cm tall, erect and compact, with round-tipped leaves up to 4 mm x 7 mm. The plant had no flowers or fruit. The gathered specimens are glabrous, except for pubescence around the sinus of the leaf bud and near the petiole on the edges of young leaves. Material collected for propagation has been successfully rooted (Tony Silberry pers. comm., May 1996). Several other people familiar with *Hebe* in the field have examined the rooted cuttings but, at least until plants flower, there has been no firm suggestion of the taxonomic relationships of the Moawhango plant. Whatever its identity, the *Hebe* does not seem to be conspecific with any species of the central North Island.

## Discussion

Rogers (1989) proposed that disjunct distributions of plants between the central North Island and the South Island resulted from tectonic processes that may have interrupted previously more continuous ranges of these species in the southern North Island. The species' survival also required the long-term existence of non-forest habitats below the treeline, such as wetlands.

*Carex capillacea* is an addition to Rogers' (1989, 1993) list of species which are disjunct between the Moawhango ER and the South Island, and it is ecologically similar to a number of other wetland herbs with "replicated patterns" (Rogers 1989) of distribution. Its discovery reiterates the biological importance of the Moawhango ER, and the upper catchment of the Moawhango River in particular.

Until more is known of the cliff-dwelling Moawhango *Hebe*, it is not possible to say whether it can be regarded as another disjunct species or a local endemic. Moawhango ER has two species recognised as endemic to the region, namely *Acaena rorida* and *Logania depressa*, the latter apparently extinct. Both of these are wetland species.

Although no cliff plants are endemic to Moawhango ER, the ER has several which are endemic to the central North Island, including *Hebe colensoi* and *Myosotis eximia*. At least one cliff-dwelling species is disjunct between the central North Island and the South Island, namely *Senecio glaucophyllus* ssp. *toa*, and others such as *Pimelea aridula*, discussed above, which have slightly wider, but still disjunct, distributions. Unlike tussocklands and wetlands, cliff vegetation of the Moawhango ER has not been modified by wild horses.

Other species may well await discovery in the region, which emphasises the need to protect remaining indigenous vegetation there. Suggestions that notable plants in the Moawhango River catchment be protected from wild horse impacts by moving the plants to other wetlands, or to botanic gardens, ignore the importance of the plants *in situ* and the indigenous ecosystems.

## Acknowledgements

We thank Kingsley Field for his company during the survey in March 1996, the New Zealand Army for access and accommodation; Tony Silberry, Peter Johnson and Phil Garnock-Jones for their comments on specimens we collected; Geoff Rogers for his comments on a draft of this paper.

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## ■ Moreton Bay fig - first wild record

Gardner & Early (1996) recently recorded for the first time the presence of the Moreton Bay fig (*Ficus macrophylla*) pollinating wasp in New Zealand which they first discovered in Auckland in April 1993. With searching they extended the wasp's known distribution north to Whangarei and south to Tauranga. Viable seed was shown to be produced but no wild Moreton Bay fig seedlings were found.

In November 1995 I first observed a large-leaved epiphytic fig on a tall cultivated Canary Island palm trunk (2m below the fronds) in Myers Park, central Auckland. As it was some 7m up the trunk I was unable to collect a specimen at that time. It wasn't until I returned with Douglas Rogan and an extension ladder in July 1996 that I was able to secure a specimen (AK 228402 and 228442) and confirm its identity as Moreton Bay fig. This appears to be the first wild record for New Zealand. It is also New Zealand's second naturalised epiphyte, the first being another Australian banyan-type fig, the Port Jackson fig (*Ficus rubiginosa*). The epiphytic Moreton Bay fig had six main branches, many over 2m long. There appeared to be a separate Moreton Bay fig (well out of reach) in the head of the same Canary Island palm (amongst the fronds) of at least a similar size to the first fig. Two very large cultivated Moreton Bay figs are present in Myers Park some 70 to 80m either side of the palm with the wild figs.

The size of these epiphytic figs with fairly stout branches over 2m long and roots not yet reaching the ground would suggest a plant of over six years old, most likely older, giving an introduction date of the gall wasp of at least 1989, probably earlier. This date is three years earlier than what Gardner & Early (op. cit.) suggested from the evidence they had seen. If these banyan figs have annual growth rings it may be possible to be more precise about the date of establishment of these wild Moreton Bay figs. I'm waiting for the annual trimming of the Canary Island palms with a cherry-picker before I can obtain such a specimen.

Another commonly cultivated banyan fig in Auckland is the Port Jackson fig; it is absent from Myers Park. Its fig wasp reached New Zealand in the 1960's or early 1970's and although Gardner & Early (op. cit.) say the rate of appearance of Port Jackson fig seedlings has declined, their seedlings are still frequent in the vicinity of parent trees, such as in Cornwall Park.

Myers Park is also the first place in New Zealand where Dutch elm disease was detected (December 1989) which resulted in 10 large elm trees being removed. Gardner & Early (op. cit.) do not advocate the removal of Moreton Bay or Port Jackson figs (unless they are in or close to areas of unique ecological interest) but they do recommend stopping the planting of them because of their potential risk to naturalise into native vegetation. I agree with their recommendation.

### Acknowledgements

I thank Tony Palmer of the Auckland University Grounds Department for lending an extension ladder, and Doug Rogan for ascending the ladder and managing to just reach the fig while I steadied the ladder base.

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### Footnote

When I returned to Myers Park on 20 September all the Canary Island palms had had their lower fronds recently trimmed. The wild Moreton Bay fig on the side of the palm trunk had been trimmed to its base, leaving only a stump and roots. The fig in the head of the palm survived untouched. Oh well, maybe a stem section from the surviving wild fig next year!

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## ■ A case for conserving matagouri

DoC scientists and managers recently announced that they were excited by the discovery of the native shrub, matagouri (see cover illustration), near Bulls. This was greeted with incredulity by some people, even though the publicity said the species had been thought to be extinct on the western North Island sand country. Sceptics were quick to point out that matagouri is a very common shrub in some parts of the South Island, it is thorny, and it can grow into thickets in pastoral land.

Because of matagouri's rarity in the North Island today, few people realise that it used to be widespread and sometimes abundant here. Old records of matagouri come from dunes as far north as near the Manukau Harbour and Bay of Plenty. A large inland population east of Waiouru has been reduced to fewer than 20 scattered plants through pasture improvement in the past decade. The Wairarapa plains still have a few matagouri in old fence lines where they have escaped cultivation and grazing. Some occur on coastal dunes to the east.

The re-discovery of matagouri on dunes in the south-west of the North Island is, therefore, a link with the past. So why is this significant? Firstly, in many of its features, including its thorns, matagouri (*Discaria toumatou*) is a very unusual native plant. It is as uniquely a part of New Zealand's natural heritage and landscapes as pohutukawa or kauri, weka or bellbird. Matagouri is very tolerant of hot or cold dry conditions and it fixes nitrogen in the soil. Stony ground with a broken ground cover is best for matagouri seed establishment. It seldom regenerates in intact pasture, which makes it prone to local extinction as mature plants die. It is not a potential "weed" in improved pasture or arable land.

Secondly, matagouri can be regarded as an indicator species, one of the more persistent survivors of native shrublands which once flourished, but which almost disappeared following human settlement. Palatable species of such shrublands have often gone, but there are places in the South Island where low levels of stock grazing and burning have left a matagouri shrubland with many other native plants. Matagouri can be important in protecting other members of these plant communities, and it also provides habitat for native animals. Lizards and nesting birds get some protection from predators, and even the introduced California quail uses matagouri as a safe escape and night roost.

Thirdly, much of the character of the New Zealand natural landscape - what makes New Zealand different from any other country - is defined by native vegetation. Regional differences are part of our national character. Some matagouri is protected already in national parks and other reserves in the South Island. However, botanists expect that there are genetic differences between different populations of matagouri; maintaining plants in different parts of New Zealand will help keep this genetic diversity for future study. The last known matagouri shrubland on the Manawatu dunes deserves protection for its genetic resources and because it is part of the original natural character of the sand country. Only 12 shrubs were found near Bulls, but we hope this will be the core for a larger population in years to come.

Fourthly, just because matagouri has thorns is no reason to eradicate it all. Part of the appeal of cacti, holly, and roses is their thorns. Snakes and sharks, or spiny or poisonous plants may harm humans, but scientific and much popular opinion favours keeping these species in the wild, and managing the risk to people. In other words, species preservation should not be just for "warm fuzzies" like panda or kakapo.

Matagouri is remarkable as one of the North Island's most depleted native plants and it features in most regional lists of threatened species. We owe future generations the ability to see this special plant in the wild, in places where it was once an important part of natural ecosystems and landscapes.

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## BIOGRAPHY/BIBLIOGRAPHY

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### ■ Biographical Notes (23): John Scott Thomson FLS, FCS, Hon. FRNZIH (1882-1943)

John Scott Thomson, industrial chemist, horticulturist, and honorary botanist to the Otago Museum, was usually called "Jack", but occasionally (as in the New Zealand Alpine Club or for botanical purposes) he was called "Scott" (1, 2). He was born in South Dunedin on 30 June, 1882, the fourth son of Jessie and Alexander Thomson (3, 4). The story of his parents and of the highly successful cordial manufacturing business founded by his father is given in the biographical note on William Alexander ("Bill") Thomson, his eldest brother (5).

About 1884 the family moved from Anderson's Bay Road, South Dunedin, to Duke Street, near the Botanical Gardens, and from here Jack probably attended the George Street School, as did Bill (5). Then, from 1897 to 1899, Jack attended the Otago [Boys] High School (6). He did not attend University but worked as a clerk in the National Mortgage and Agency Company, Dunedin (7). He played rugby for the Pirates Football Club as hooker representing Otago in 1907 (8), and in 1907 he is first mentioned in Stones Directory. His address is the family home at Halfway Bush, Wakari, where his father had bought, renovated and extended

the historic Ferntree House (5). His occupation is given as "labourer", suggesting that he may have helped to create the extensive garden and woodland at Wakari. But by 1909 he is a "cordial manufacturer of Thomson and Co." (9) thus beginning his life's work in the family firm, of which he became managing director and the driving scientific force.

On 14 September 1910, Thomson married Margaret Lindsay Corbett, and they lived in Castle Street near the footbridge to the Botanical Gardens. From here he took the General Chemistry Course of the International Correspondence Schools (London) and his Diploma, awarded on 10 June 1913, certifies that he had been examined and found duly qualified in 'Arithmetic, Formulae, Elementary Mensuration, Physics, Inorganic Chemistry, Qualitative Analysis, Organic Chemistry and Quantitative Analysis (1).

After the 1914-1918 War (during which Jack managed the family firm) the Thomson's moved back to Wakari, building on Corbett land at 4 Cromwell Street next to the Corbett seniors who lived at 222 Taieri Road, just across from Bill Thomson's home at Ferntree House; and at 2 Cromwell Street was Stuart Corbett who had married one of the Thomson daughters. The family of Peter McIntyre, the artist, was just over the back paddock (1).

Laying out his  $\frac{3}{4}$  acre section as a setting for native plants now became a major interest for Jack Thomson, supplementing his interests in photography and motoring. He purchased a Standard 9 just after the War and then an unreliable Waverley sports car. In 1926 he graduated to a 20hp, 4 cylinder Austin, with a good local agent and custom coachwork by the respected British firm of Arthur Mulliners (1). This more robust car was better suited to the botanical expeditions that he had now begun with his great friend, George Simpson (1880-1952), builder, valuer, and son of a builder.

I do not know when the friendship between Thomson and Simpson began, or what brought them together. Simpson is not in the Otago Boys High School list. In 1912 he first appears (with his father) in the membership list of the Otago Institute and would have known Bill Thomson who first appears in 1915; but Jack does not appear until 1926 (*TNZI* 44, 47, 56). Perhaps Simpson built Jack Thomson's house. Two other friends were Dr. Irwin Hunter (1869-1929) the specialist in genito-urinary diseases, who had bought the H.J. Matthews property at Hawthorn Hill, and Hunter's gardener, John McIntyre (1850-1931). On his way to work from Wakari, Jack Thomson would call at Hawthorn Hill to chat with McIntyre and give Hunter a lift to town (5).

By 1925 Thomson and Simpson were recognised as a team and had made useful expeditions together. In March they planted *Raoulia buchananii* from the Humboldt Mountains in Thomson's garden (*TRSNZ* 66, 1937). In a paper by Cockayne & Allan, read on 2 December (10), they contributed locality records from the Otago Peninsula and Mount Maungatua, as well as from near Lake Wakatipu (Mount Dick, Bold Peak, Lochy River, and the valley of the Dart near Kinloch). This paper also describes *Aciphylla scott-thomsonii* Cockayne & Allan, *Ranunculus simpsonii* Cockayne & Allan, and, cites Thomson as a Fellow of the Chemical Society (London). He had been elected as an analyst and bacteriologist (11), the latter probably referring to his interest in the effects of bacteria on foodstuffs, especially carbonated water and cordial drinks (1).

By 1925 Thomson and Simpson were also part of Cockayne's distinguished visitors circuit. In April, Dr. J.P. Lhotsky, the Dutch geneticist, lectured on evolution in Dunedin. He saw Bill and Jack Thomson's gardens (12) and on 25 April was taken up Maungatua by a group of local botanists: G.M. Thomson (no relation), J.E. Holloway, J.S. Thomson, G. Simpson, W. Martin, I. Hunter, and J. McIntyre (5). In September and October Cockayne himself was in Dunedin on three occasions (13) and "The Firm", as he christened the two friends, took him up Maungatua to see Thomson's spear-grass (10). Then, in December, Professor E.C. Jeffrey of Harvard was in Dunedin after visiting Nelson-Marlborough with Cockayne (12).

In 1927 Thomson & Simpson were writing their first paper, a study of the occurrence of *Nothofagus* in the vicinity of Dunedin in which they described 12 stands, all of silver beech (*N. menziesii*). For two stands they gave a list of lichens and wrote: "for the identification of these we are indebted to Dr G. Einar Du Rietz of Upsala, who accompanied us on a visit to this forest [Bethune Gully, below Mount Cargill]. He also kindly identified specimens from Silver Peaks forest" (*TNZI* 59, 1928). This visit to Dunedin during April 1927, by the young Swedish botanist and his wife Greta aroused Thomson's interest in lichens and in making a collection (14).

The "Cockayne" visitor in 1928 was Sir Arthur Hill, Director of the Royal Botanic Gardens, Kew, who arrived in Dunedin on 23 January from Invercargill (ex Australia) and after seeing the Botanic Gardens and the Town Belt was given a Mayoral reception in the evening at the Savoy, where he talked about Kew. His

diary continues: "Got away about 10 and went to see Mr Thomson and Simpson's photos of probable *Ranunculus*, *Olearia*, *Veronica* and other hybrids - they are now trying to produce these artificially and should get useful results. Back to hotel 10.45 and wrote up notes and then bed. Jan. 24th. Up at 7 a.m. and breakfast 7.45, then off with Tannock up the Leith Valley to Half Way Bush - Mr W. Thomson's house and saw some hybrids - very pretty garden, then across to his brother's place, Mr G. [sic] Thomson, (they are soda water makers in Dunedin and spend all their spare time with plants), saw his very int. colln. of *Aciphyllas*, *Panax*, *Carmichaelias*, *Celmisias*, *Veronicas*, etc. and the work he is doing in trying to get hybrid forms artificially to throw light on question of natural hybrids, very good cultivn. and most interesting small colln. of native stuff - *Stilbocarpa*, *Ranunc. lyallii*, *Aciphylla spedeni*, *Raoulia*, *Myosotis*, and a *Carmichaelia* with a bell jar over it was producing trifoliate leaves" (15). Then on to Sir George Fenwick's garden and Oamaru.

In 1929 Simpson and Thomson were elected members of the New Zealand Alpine Club on a botanical qualification. Thomson served on the Otago Section Committee in 1931-4 and 1936, and in 1935 he was both the Chairman of the Otago Section and Vice-President of the Club (2). Then on 15 May, 1930, they were elected Fellows of the Linnaean Society of London (16) no doubt supported by Hill, Cockayne, and Allan.

February, 1930, saw perhaps the most strenuous of "The Firm's" journeys. Accompanied by two geologists, Professor J.A. Bartrum (Auckland University College) and Dr F.J. Turner (University of Otago) they set off with pack-horses from Makarora at the head of Lake Wanaka for the Red Hill country in South Westland. The 60 mile tramp over the Haast Pass to the Cron's Station at the mouth of the Haast took 2 days; and it took a further 3 days on the southward leg to reach the Cascade River Hut. They were held up by rain at Okuru and by difficult crossings of the Waiatoto and the Arawata (where they nearly lost their horses and gear). Simpson and Thomson wrote: "Our time was strictly limited, and even with good weather, a few days was all that could be spared for our reconnaissance of the Red Country. Geologically and botanically, the peridotite belt is most interesting. Examinations of the Martyr Spur, Martyr Hill, Red Spur, Mount Collyer and Cascade Plateau were made, and our work was confined mostly to the mineral outcrop". The return to Makarora took 7 days, with heavy rain in the Haast (17).

In February, 1931, Simpson and Thomson toured South Island in search of photographs for the famous "Vegetationsbilder" series, founded by Karsten and Schenck. This and other journeys with Simpson were described by Thomson on 23 September in an illustrated lecture to the Otago section of the Alpine Club. The Otago Daily Times reported that "the first views to be shown depicted scenes in the Routeburn district, and showed in minute detail the botanical characteristics of the region. The audience was then transported successively to the Bayonet Peak, Cecil Peak and Rough Peak districts, the slides giving an excellent idea of the nature of the country as well as the various types of mountain flora". "The mountainous country lying about halfway between Lake Wanaka and Mount Aspiring was next visited, after which the scene changed to the Humboldt Range, with its many interesting peaks and their individual characteristics". Thomson also described the journey from Makarora to the Cascade River, and "the remarkable red hill country in which stunted rata, manuka, and other forms of vegetation had their habitat" (18).

1932 was a special year for "The Firm" with two important overseas publications co-authored with Cockayne. Their account of "Some New Zealand indigenous-induced weeds and indigenous-induced modified and mixed plant-communities" was published by the Linnaean Society of London, and included 8 photographs by Simpson and Thomson; (19) and in "Die Vegetation der Südinsel von Neuseeland" with text in both German and English, eight of the 11 large plates are by Simpson and Thomson from localities as diverse as the Marlborough coast, Arthur's Pass, the Red Hill Range and the Humboldt Mountains. The annual February expedition for 1933 included an ascent of Mt Tapuaenuku, Inland Kaikouras. Simpson and Thomson, accompanied by D. Wastney (20) "left the coast at Keckerangi, and after two days' trek reached the Dee hut. From here they followed the Dee Gorge and established camp at 4,000 feet. Next day Mt Tapuaenuku was climbed. There was no snow, and the climb was a trudge up shingle slides. This country is interesting botanically, but can have no great appeal to the climber". Then, in February 1934, they traversed the mountain. "The ascent was made by a spur on the south side of the Dee River, the descent being made by the party's route of last year along the main ridge to the pinnacle (8,850 ft), thence down rock and debris slopes to the main gorge of the Upper Dee" (21).

In 1935 Thomson gave the Banks lecture of the N.Z. Institute of Horticulture on "Some aspects of the vegetation and flora of South Island" (*JNZIH* March, 1935), and in 1936 he and Simpson were awarded the Loder Cup "for outstanding botanical exploration, surveys, research, cultivation, photography and lectures in respect of the native flora" (22). About 1935 they built an artificial scree in Thomson's garden (23) and over 3 years measured the growth rates of 19 species, mainly cushion plants (*TRSNZ* 70, 1940).

In 1938 they wrote about "Some characteristics of South Island mountain plants" (24) and in February, 1939, Thomson was elected an Honorary Fellow of the Royal New Zealand Institute of Horticulture (25).

The Thomson's took their holidays on the North Otago coast, first at Karitane and later at Waikouaiti. From here Thomson explored the Waikouaiti River - Mt Watkin area on foot or with the help of his car, training for his major trips and collecting plants (1). In December 1935, he gathered a salt-grass in the Waikouaiti salt-marshes which Allan and Jansen christened *Puccinellia scott-thomsonii* (TRSNZ 69, 1939) but which Elizabeth Edgar considers a form of the naturalised *P. fasciculata* (NZJB 34, 1996). "The Firm's" local investigations came to fruition in 1938 with the definition and description of a Dunedin Sub-District of Cockayne's South Otago Botanical District (TRSNZ 67). Their last 4 papers dealt with "Records of Plant Stations" (TRSNZ 71, 1941) and with "Notes on some New Zealand Plants and descriptions of New Species" (TRSNZ 70, 1940; 72, 1942; 73, 1943).

On 4 April, 1943, at the age of 60, John Scott Thomson died suddenly of a coronary thrombosis at his home in Cromwell Street. He was cremated at the Anderson's Bay Cemetery and his photographs given to the Hocken Library. His son, Thomas Alexander Thomson, B.Sc. who died in 1992, succeeded him as managing director of the family business. George Simpson now continued alone and in 1945 published his revision of *Carmichaelia* in which he wrote: "Words cannot adequately express the value of a long companionship in the field with the late Mr J. Scott Thomson and his assistance in the collection of both living and dried material for a study in which it was intended he should collaborate. In recognition of his work one sub-genus has been named Thomsoniella". And he noted: "Plants of this subgenus are the most attractive of the genus; they flower in profusion and, whatever the direction of the branchlets, the racemes stand strictly erect" (TRSNZ 75).

In the 60's or 70's, inland from Waikouaiti and westward of Mt Watkin (616 m), twin hills were named Mt Scott (680 m) and Mt Thomson in honour of Jack Thomson (1).

#### Acknowledgements

For help with this note I am very grateful to the Rev. John Scott Thomson, grandson of J.S. Thomson and now of Masterton. I also thank Professor Geoff Baylis (Dunedin) who drove me to Wakari and the Waikouaiti hinterland, and Dr A.D. Thomson of Christchurch (no relation), for extracts from the Hill diary.

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### ■ Journals received

Auckland Botanical Society Journal 51 (1)  
(June 1996; ISSN 0113-4132); Edited by Marjorie Cutting. 37 pp.

#### CONTENTS

1. Murimotu, North Cape. A.E. Wright and E.K. Cameron.

7. *Gahnia pauciflora* and *G. procera*, and a note on *G. lacera*. R.O. Gardner.
10. Field Trip to North Piha and Whites Beach, 11 November 1995. Graeme Hambly.
11. North Piha, Whites Beach and Fishermans Rock. E.K. Cameron.
21. Sunset Western Garden Book - A review. Rhys Gardner.
22. *Gastrodia* aff. *sesamoides* in Auckland City (2). E.K. Cameron.
27. O Ye Vitex and Carex, Bless the Lord. Helen Preston Jones.
28. Field Trip to North Cape, October 20-25 1995. Maureen Young, Stella Rowe, Marilyn Merrett, Gordon Perry, and Geoff Davidson.
31. *Andropogon virginicus* and *Stipa tenuissima*. R.O. Gardner, P.D. Champion, and P.J. de Lange.
34. Auckland Botanical Society Field Trip to Taporā, September 1995. Fran Hintz.
34. Flora of Kauritūhā Island, Awhitu. E.K. Cameron.
37. Seed dispersal by kereru (*Hemiphaga novaeseelandiae*) at Wenderholm Regional Park. Rachael Bell.

New Zealand Native Orchid Group Journal 60  
(September 1996; ISSN 1170-4543). Edited by Ian St George. 40 pp.

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2. *Corybas* on the southern islands. Editor
3. Could the dreaded South African weed orchid infest New Zealand? Editor
4. *Gastrodia* aff. *sesamoides* in Auckland city (2). E.K. Cameron
9. A history of South African weed orchid *Monadenia bracteata* (Sw.) Dur. & Schinz in Australia (will it reach New Zealand?). Bob Bates
13. Australasian hybrids. Malcolm Campbell
16. *Pterostylis puberula* - is it really so scarce? Peter de Lange
19. Val Smith photographs *Pterostylis tristis*; Chris Hubbert on *Lyperanthus antarcticus* on Enderby Island;
20. Bob Goodger on *Orthoceras* in NZ, and on *Earina aestivalis*;
23. Beryl Goodger on *Thelymitra* "Whakapapa"; Oops column; The Orchadian; *Microtis arenaria* from Hooker's *Flora Tasmania*, 1860;
24. *Corybas iridescens* and *Corybas papa* drawn by Bruce Irwin;
26. Peter de Lange on *Corybas carsei*; A code of ethics for NZNOG;
27. Taxonomic news; Winter orchids near Wellington; Taranaki *Corybas* Crawl 96; Rare books; Iwitahi 97.
29. *Orthoceras strictum* in New Caledonia - Nicolas Hallq
30. Iwitahi Native Orchid Reserve (Nina's news)
32. Bob Goodger (Orchid photographer)
34. Henry Blencoe Matthews's "*Caladenia calliniger*" (Historical reprint)
35. Bob Bates on - the *Prasophyllums* in South Australia
36. Small *Caladenias* in South Australia. *Pyrorchis* - the fire orchids. More on fires and flowers. *Monadenia* around Adelaide.
37. "A flower personality" - R.S. Rogers and Rosa Fiveash c.1914.

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## DESIDERATA

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### ■ Survey of the weediness of exotic plant invaders into New Zealand

As part of some research on factors associated with weediness or invasiveness in New Zealand, I am trying to establish a database on the current extent of various aggressive or potentially aggressive weeds, together with an assessment of their future potential as weeds. As a baseline, I am using the New Zealand botanical regions (from Wardle, 1991), as I am interested in weeds of natural or disturbed areas, rather than those of crops, gardens, pastures or lawns.

I would be grateful if you could fill out the questionnaire below, and dispatch it to me at Massey. I am interested to receive as many replies, records and points of view as possible. Thanks for your assistance. All responses and comments welcomed!

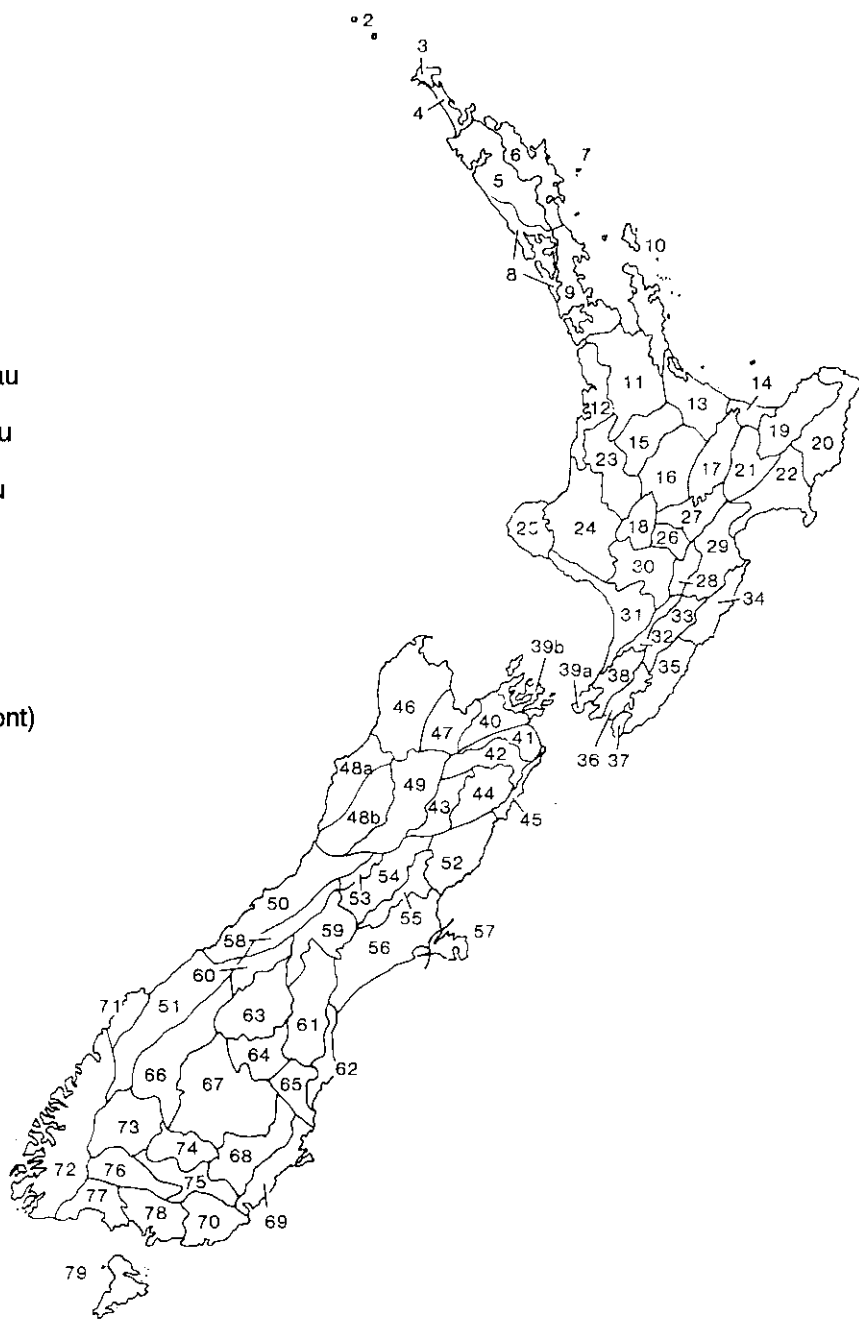
**Jill Rapson**, Department of Ecology, Massey University, Palmerston North, New Zealand



Map of the New Zealand botanical regions (from Wardle 1991, ex MacEwan 1987)

REGIONS

- 2 Three Kings
- 3 Te Pahi
- 4 Aupouri
- 5 Western Northland
- 6 Eastern Northland
- 7 Poor Knights
- 8 Kaipara
- 9 Auckland
- 10 Coromandel
- 11 Waikato
- 12 Tainui
- 13 Northern Volcanic Plateau
- 14 Whakatane
- 15 Western Volcanic Plateau
- 16 Central Volcanic Plateau
- 17 Eastern Volcanic Plateau
- 18 Tongariro
- 19 Raukumara
- 20 East Cape
- 21 Urewera
- 22 Wairoa
- 23 King Country
- 24 Eastern Taranaki
- 25 Western Taranaki (Egmont)
- 26 Moawhango
- 27 Kaimanawa
- 28 Ruahine
- 29 Hawkes Bay
- 30 Rangitikei
- 31 Manawatu
- 32 Manawatu Gorge
- 33 Pahiatua
- 34 Eastern Hawkes Bay
- 35 Eastern Wairarapa
- 36 Wairarapa Plains
- 37 Aorangi
- 38 Tararua
- 39a Wellington
- 39b Sounds
- 40 Richmond
- 41 Wairau
- 42 Inland Marlborough
- 43 Molesworth
- 44 Clarence
- 45 Kaikoura
- 46 North-west Nelson
- 47 Nelson
- 48 North Westland
- 49 Spenser
- 50 Central Westland (Whataroa)
- 51 Aspiring
- 52 Lowry
- 53 Hawdon
- 54 Puketeraki
- 55 Canterbury Foothills
- 56 Canterbury Plains
- 57 Banks
- 58 D'Archiac
- 59 Heron



- 60 Tasman
- 61 Pareora
- 62 Wainono
- 63 Mackenzie
- 64 Waitaki
- 65 Kakanui
- 66 Lakes
- 67 Central Otago
- 68 Lammerlaw
- 69 Otago Coast
- 70 Catlins
- 71 Olivine
- 72 Fiord
- 73 Mavora
- 74 Waikaia
- 75 Gore
- 76 Southland Hills
- 77 Te Wae Wae
- 78 Makarewa
- 79 Rakiura

- PROVINCES
- Kermadec
  - Campbell
  - Chatham

**SURVEY OF THE WEEDINESS OF EXOTIC PLANT INVADERS INTO NEW ZEALAND**

1. For which botanical regions in the country can you speak with confidence? Please use their numbers.

\_\_\_\_\_

2. Which regions have you some reasonable botanical acquaintance with?

\_\_\_\_\_

3. How would you define a weed? Please tick the option of your choice, or add your own definition.

- an unwelcome plant
- an alien plant
- a naturalised plant which is invasive
- a plant more aggressive in its new home than in its old
- an alien plant displacing native species

other (please specify) \_\_\_\_\_

4. What 10 species of weeds would you rate as the most important for New Zealand as a whole? Please rank them in terms of their significance (10 = most important, 1 = least important), using each rank only once. What are your reasons for including each species, in terms of invasiveness, extent of spread, threat to natural areas, impact on ecosystems, etc.?

| Rank | Species (scientific or common name) | Reason |
|------|-------------------------------------|--------|
| 10   |                                     |        |
| 9    |                                     |        |
| 8    |                                     |        |
| 7    |                                     |        |
| 6    |                                     |        |
| 5    |                                     |        |
| 4    |                                     |        |
| 3    |                                     |        |
| 2    |                                     |        |
| 1    |                                     |        |

5. What are the five most important (widespread or conspicuous or dominant) weeds in the botanical regions for which you can report with confidence? Do these weeds have any official status (e.g. through DoC, pest legislation, regional council management plans, etc.)?

| Species (scientific or common name) | Status |
|-------------------------------------|--------|
| 5                                   |        |
| 4                                   |        |
| 3                                   |        |
| 2                                   |        |
| 1                                   |        |

6. What are the ten species of weeds which appear to you to be increasing most in the regions with which you are familiar? Remember that doubling a small area of occupation is a faster rate of increase than adding a small amount to a large area of occupation. Please rank these species (1 = increasing slowest, 10 = increasing fastest). Please give a rough estimate of the size of the weedy populations (a population having a minimum density of 1 individual per 10x10m<sup>2</sup>), over all of the regions in which they occur (in square m or square km). If possible, give an estimate of the % cover (average +/- range) of the weed within those areas.

| No. | Species | Rank | Size of area (+ units) | Cover (%) |
|-----|---------|------|------------------------|-----------|
| 10  |         |      |                        |           |
| 9   |         |      |                        |           |
| 8   |         |      |                        |           |
| 7   |         |      |                        |           |
| 6   |         |      |                        |           |
| 5   |         |      |                        |           |
| 4   |         |      |                        |           |
| 3   |         |      |                        |           |
| 2   |         |      |                        |           |
| 1   |         |      |                        |           |

7. What are the five species of weeds currently causing you the greatest concern in terms of their future potential as weeds in the regions you are familiar with (scientific name preferred, but common name OK)? For each, please give the botanical regions in which the weed is a problem, and if possible, the type of habitat (forest, wetland, scrub, wasteground, etc.).

| No. | Species | Botanical regions | Habitat(s) |
|-----|---------|-------------------|------------|
| 5   |         |                   |            |
| 4   |         |                   |            |
| 3   |         |                   |            |
| 2   |         |                   |            |
| 1   |         |                   |            |

8. For each of the five species above, what reason do you have to be concerned, in terms of current or future distribution, rate of spread, impact on other species, etc.? Please rank them (1 = least weedy, 5 = most weedy) in order of your concern.

| No. | Species | Rank | Reason |
|-----|---------|------|--------|
| 5   |         |      |        |
| 4   |         |      |        |
| 3   |         |      |        |
| 2   |         |      |        |
| 1   |         |      |        |

9. What are the characteristics which make a weed a success (at invading) in your experience? Please tick any or all terms which seem appropriate, or add your own.

- |   |  |
|---|--|
| <input type="checkbox"/> high rate of reproduction  | <input type="checkbox"/> high genetic variation or forms ecotypes                        |
| <input type="checkbox"/> human commensal (uses humans for dispersal)                              | <input type="checkbox"/> competitive   |
| <input type="checkbox"/> effective dispersal mechanism  | <input type="checkbox"/> pioneer   |
| <input type="checkbox"/> large seed banks   | <input type="checkbox"/> occupies disturbed habitats                                     |
| <input type="checkbox"/> habit (tree, shrub, herb, etc.)  | <input type="checkbox"/> occupies vacant niches  |
| <input type="checkbox"/> high growth rates  | <input type="checkbox"/> finds similar environment (soils and climate) to its home range |
| <input type="checkbox"/> forms hybrids  | <input type="checkbox"/> receives high number of introduction opportunities              |
| <input type="checkbox"/> effective mechanism for vegetative spread (rhizomes, runners, plantlets) |  |
| <input type="checkbox"/> other (please specify) _____   |  |

10. Please tick any terms which describe the source of your information base.

- |  |                                       |
|--|---------------------------------------|
| <input type="checkbox"/> professional botanist             | <input type="checkbox"/> tramp        |
| <input type="checkbox"/> amateur botanist/naturalist       | <input type="checkbox"/> field worker |
| <input type="checkbox"/> scientist                         | <input type="checkbox"/> weed lover   |
| <input type="checkbox"/> conservancy officer/warden/ranger |                                       |
| <input type="checkbox"/> other (please specify) _____      |                                       |

11. Is there any other information which you think might be useful?

\_\_\_\_\_

\_\_\_\_\_

12. I would like your name, address, and (if available) email, so that I may contact you to follow up your responses if needed (optional).

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Email: \_\_\_\_\_

*When completed please return to  
Jill Rapson, Department of Ecology, Massey University, Private Bag 11222, Palmerston North, New Zealand*

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## CORRIGENDA

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### Corrigenda for Newsletter number 44

#### ■ A revised checklist of New Zealand mistletoe (Loranthaceae) hosts

In the last newsletter a revised checklist of mistletoe (Loranthaceae) hosts was published without the authorship indicated at the end of the article. An erratum slip was inserted in the newsletter and the bibliographic reference is here given in order to correct this unfortunate error.

De Lange, P.J.; Norton, D.A.; Molloy, B.P.J. 1996: A revised checklist of New Zealand mistletoe (Loranthaceae) hosts. *New Zealand Botanical Society Newsletter 44*: 15-25.

■ **In praise of the research achievements of older scientists**

Dr A.D. Thomson has noted two errors which were in the original manuscript which are here corrected:

1. In the Acknowledgements, the text referred to should be "The Conservation of Plant Biodiversity".
2. In the References, reference 6 was published in 1966 not 1965.

■ **Tribute to Dr Michael Edward Hoare (1941-1996)**

Dr A.D. Thomson has noted one error which was in the original manuscript and is here corrected:

1. In the References, reference 1 - the First Cook Lecture was given in 1975 not 1995.

**Editors**

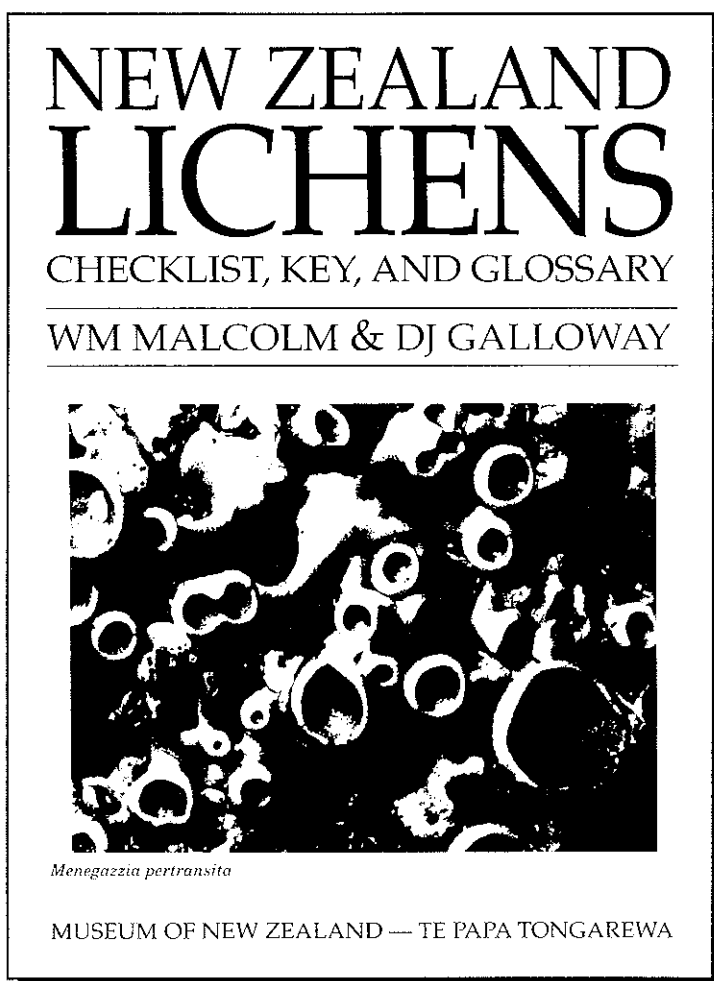
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■ **New Zealand Lichens: Checklist, Key and Glossary, W.M. Malcolm & D.J. Galloway**

Due to be published December 1996. See enclosed flier for information and ordering details.



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