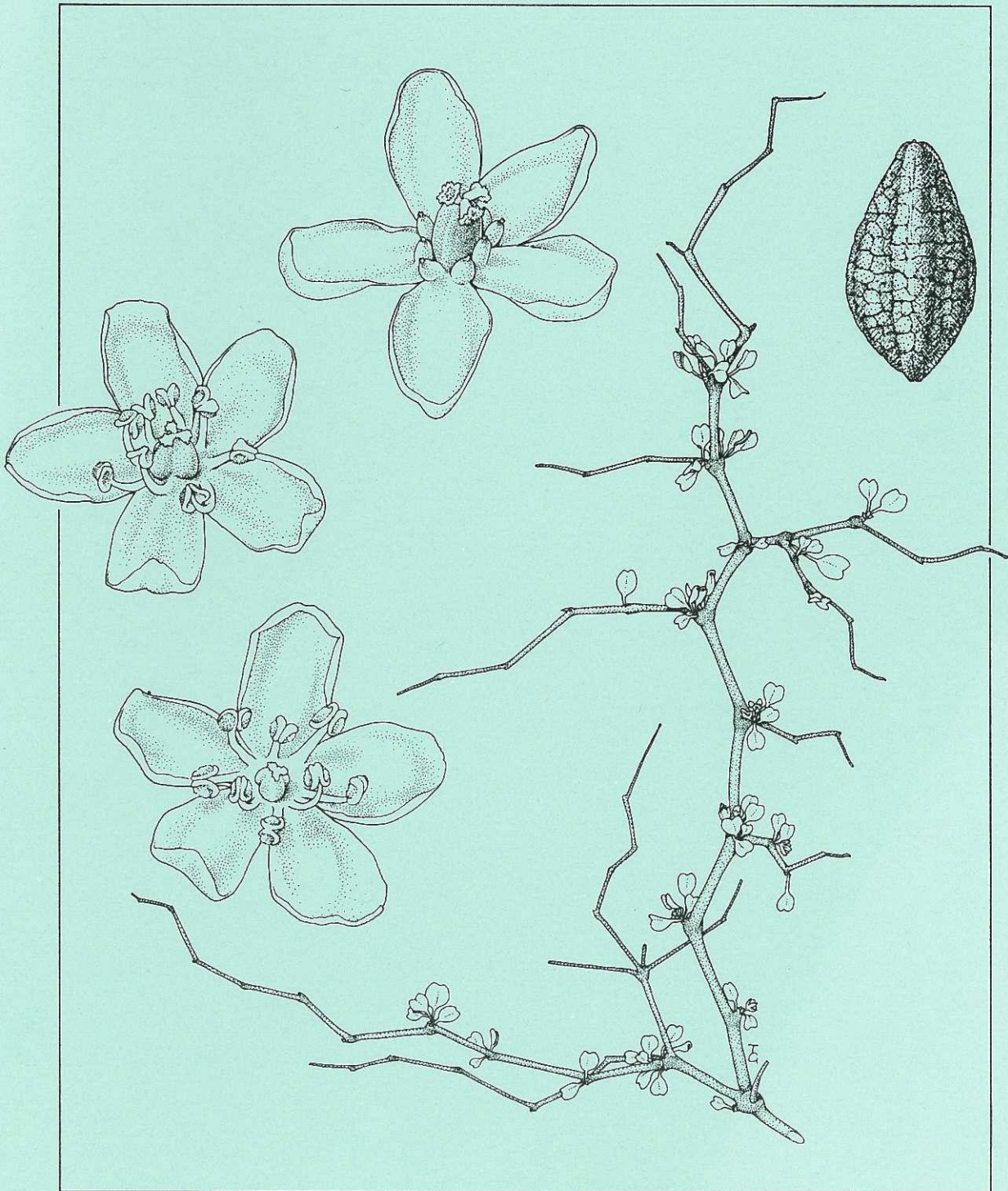


NEW ZEALAND BOTANICAL SOCIETY

NEWSLETTER

NUMBER 32

JUNE 1993



NEW ZEALAND BOTANICAL SOCIETY
N E W S L E T T E R
NUMBER 32 JUNE 1993

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Cover illustration

Muehlenbeckia astonii an 'endangered' shrub (see Revised Threatened and Local Plant List, p. 14). Drawn by Tim Galloway. Top right: fruit x17 ex cult. Percy Reserve, Petone. Bottom right: Habit of adult from near Cape Turakirae. Top left: female flower x13.6 from Wainuiomata Coast Road. Middle left: Perfect flower x13.6 from near Cape Turakirae. Bottom left: Male flower x13.6 ex cult. Percy Reserve, Petone.

New Zealand Botanical Society

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Subscriptions

The 1993 ordinary and institutional subs are \$14 (reduced to \$10 if paid by the due date on the subscription invoice). The 1993 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 31 (March 1993). 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 September 1993 issue (Number 33) is 27 August 1993.

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

NEWS

Regional Botanical Society News

■ Auckland Botanical Society

Programme, June - August 1993:

19 June: Fungal foray to Goldie Bush, followed by laboratory session at Mt Albert Research Centre (Dr Ross Beaver)

7 July: Annual ABS pot-luck dinner

17 July: Field trip to a new plant fossil field at Putataka, inland from Port Waikato (Mike Eagle)

4 August: Evening meeting: Vegetation monitoring for possum control operations in Northland (Lisa Forrester)

21-22 August: Field trip: Aongatete, Kaimai Range (Catherine Beard)

1 September: Lowland Rarotonga: an assignment to draw weeds (Cathy Jones & Catherine Beard)

Sandra Jones, Secretary, Auckland Botanical Society, 14 Park Road, Titirangi, Auckland 7

■ Canterbury Botanical Society

Journal 26 is now available. It contains 11 articles, spread over 46 pages. The longest article, 16 pages, is on Plant Growth Rule Systems or the architecture of inflorescences by David Robinson of the Department of Mathematics, University of Canterbury. There are 12 figures to illustrate the floral arrangement of several species. The other articles are on the following topics: Pollen content inside a building; Flora of Blue Mountain Station, Marlborough; *Chordospartium stevensonii*; *Orobanche minor*; native orchids at Hanmer; *Ranunculus sericophyllus*; *Olearia arborescens* X? *Celmisia* sp. hybrid; crumbs of Canterbury - Part I (an account of two small vegetation areas, upper Canterbury plains); tussock form of *Festuca novae-zelandiae*; and Convention on Biological Diversity, a summary of parts of the Earth Summit in Brazil.

This Journal is available from the Society, PO Box 8212, Christchurch, at a cost of \$10.00, includes postage.

Ron Close, President, Canterbury Botanical Society, PO Box 8212, Christchurch

■ Manawatu Botanical Society

Meetings: 7.30 pm 1st Thursday of the month. Seminar Room, Biology Building, Massey University.

Upcoming programme:

Meetings

June: Potential for biocontrol of *Calluna vulgaris*

July: Workshop on divaricating and small leaved shrubs

August: Trekking in Nepal

Trips

5 June: Nga Manu swamp forest

3 July: Mataroa and Robert Bruce Reserves

7-8 August: Mt Messenger weekend

Peter van Essen, Department of Ecology, Massey University, Palmerston North

■ Nelson Botanical Society News

In March a good crowd visited Beebys Knob in somewhat dubious weather. In the shelter of the forest we saw many of the common plants of the more open grasslands including *Ourisia lactea*, *Microseris scapigera* and *Celmisia incana*. We also met some of the troublesome species pairs such as *Raoulia glabra* and the white leaf-tipped *Raoulia subsericea*, and "*Anaphalis bellidioides*" with its large ray-like bracts and the tiny-flowered *Helichrysum filicaule*. After lunch we ventured out above the treeline. At the

forest edge there was a wide carpet of bog pine (*Halocarpus biformis*) and snow totara (*Podocarpus nivalis*) with many gentians in the gaps between the plants. The lower grassland of the mid-ribbed snow tussock soon gave way to broad areas of carpet grass (*Chionochloa australis*). Odd plants of the very twiggy *Coprosma* "paludosa" occurred on the edge of the beech forest, and the abundant *C. ciliata* was covered in pale orange berries. For those who made the summit there was a reward of carpets of gentians still in flower.

In April about 20 had a great day climbing Editor Hill. The steep and rewarding climb at first traversed regenerating forest and then tall beech forest. The scrub contained occasional saplings of rimu (*Dacrydium cupressinum*), the bronze rumple-leaved ramarama (*Lophomyrtus bullata*), odd patches of silver tussock (*Poa cita*) and, for those with an eagle eye, one plant of the perching orchid (*Drymoanthus adversus*). At first the forest was dominated by huge red beech (*Nothofagus fusca*), miro (*Prumnopitys ferruginea*), hinau (*Elaeocarpus dentatus*), pokaka (*E. hookerianus*) and the occasional black mamaku (*Cyathea medullaris*) but near the summit silver beech (*Nothofagus menziesii*) stinkwood (*Coprosma foetidissima*), alpine toatoa (*Phyllocladus alpinus*) and other high altitude plants were common. In rocky areas the forest tussock (*Chionochloa cheesemani*) was present.

The summit provided grand views of Okiwi Bay and D'Urville Island from rocky outcrops. Here were more interesting plants including 3 species of *Dracophyllum* (*D. longifolium*, *D. uniflorum* and probably *D. prostratum*), a variety of *Hebe rigidula*, *Chionochloa defracta*, *Gentiana bellidifolia* and even a stunted southern rata (*Metrosideros umbellata*) in flower. At the ultramafic clearings about 10 minutes away were many wetland and alpine plants, including pygmy pine (*Lepidothamnus laxifolius*), *Oreobolus pectinatus*, *Celmisia* "rhizomatous" and *Sticherus cunninghamii*. We were able to see the local endemic *Chordospartium muritai* in its main stronghold and the revegetation project. At the same time it was a good chance to familiarise ourselves once more with the coastal plants of sandy shores. The most spectacular was the purple-flowered introduced *Senecio elegans* amongst the marram, sand convolvulus (*Convolvulus solandri*) and spinifex (*Spinifex sericeus*). On the dune terraces pingao (*Desmoschoenus spiralis*) was fighting a wide array of introduced grasses, purple-flowered salsify (*Tragopogon porrifolius*) and tangles of *Muehlenbeckia complexa*. Near Blind River we saw a stand of *Olearia solandri*. At Marfell's we stepped it out to Cape Campbell, returning only just in time to beat the tide. Interesting plants seen on this trip included *Convolvulus verecundus*, *Plantago raoulii*, and the prickly *Eryngium vesiculosum*.

On Saturday we spent the afternoon close at hand on the shores and beach ridges near the Wairau Diversion. The first stop was in the short tussock and shrublands near the shore. Plants of interest included the coastal tussock (*Austrofestuca littoralis*), silver tussock, pingao and tumblegrass (*Deyeuxia billardierei*). The only ferns noted were *Cheilanthes humilis* and *Phymatosorus diversifolius*, both protected amongst the tangles of *Melicactus crassifolius*. The second stop was at one of the fossil beaches, now a freshwater swamp. It was dominated by flax (*Phormium tenax*) and raupo (*Typha orientalis*) with the odd cabbage tree (*Cordyline australis*) and a dense tangle of coprosmas. At one point there was a large patch of the uncommon *Urtica linariifolia*.

On Sunday we first visited Rarangi and walked the cliff track to Whites Bay. Most of the route was lined by second growth vegetation. The track up from Rarangi was spectacularly lined with *Ourisia cuneata* in full flower. In the afternoon we visited Onamalutu, a glorious mature kahikatea, where we were greeted by a grand chorus of tuis and bellbirds. We spent several hours wandering the various tracks. Unusual plants included the uncommon *Coprosma rubra* and seedlings of tawa, many kilometres from the nearest stands.

On Monday we drove to the summit of Altamarlock (5000 feet), near the summit over a light dusting of snow from Saturday. Several stops sampled the altitudinal cline in vegetation. At the summit we saw a range of cushion plants including *Luzula colensoi*, *Haastia pulvinaris*, *Raoulia bryoides* and *Chionohebe pulvinaris*. At lower stops the effects of past burning and grazing were evident in the low species diversity. Perhaps the most spectacular species was *Helichrysum parvifolium*, often still in flower. Time and the cool temperatures did not encourage a wide exploration. Still it is worth a revisit nearer the main flowering season.

Coming Field Trips

20 June: Gardens - Atawhai - Julie McLintock

18 July: Motueka sandspit

15 August: Covenants - Motueka Valley - Les Moran

Graeme Jane, 136 Cleveland Terrace, Nelson

■ Rotorua Botanical Society News

Recent trips

A boat trip on Lake Ohakuri in March attracted 9 people. The day was spent investigating lake edge vegetation with some interesting finds made and some new records. Notable finds were *Hymenophyllum cupressiforme*, and the thermal ferns *Cyclosorus*, *Cristella*, *Dicranopteris* and *Nephrolepis*.

Rotorua Botanical Society based their annual Easter camp this year at Gisborne. About 14 people took part in the activities which included, on the first day a trip to a *Pittosporum obcordatum* site. An old pa site on the outlying spur, Areoma Peak, was visited on the second day, and a relaxing third day was spent at Eastwoodhill Arboretum, in all its autumn glory.

A return trip to Mt Tauhara (the venue of the first ever Rotorua Botanical Society outing) was made in May. Several changes were noted, particularly the absence of some species probably removed by possum browsing. Some additions were made to the species list (though most of these were expected). About an hour was spent fossicking around boulders and rock outcrops at the summit for the likes of *Pentacondra acumula* and *Epacris alpina*.

Upcoming events

12 June: AGM (with talk by Willie Shaw on Auckland Islands)

13 June: Mt Ngongotaha (Grant Milligan)

10 July: Sedges and rushes (Chris Ecroyd and Robyn Irving)

14 August: McLaren Falls and Omahanui Nursery (Barbara Knowles and Mark Dean)

Robyn Irving, Rotorua Botanical Society, RD 4, Rotorua

■ Waikato Botanical Society News

The AGM was held on 20 April and following officers and committee elected:

President:	Paul Champion
Secretary:	David Wardle
Treasurer:	Catherine Beard
Committee:	Dieter Adam, Phyllis Leigh, Ron Locker, Helen MacKay, Liz Stanway, David Stephens, MarkThompson

After the meeting, Cathy Jones and Catherine Beard gave a very entertaining talk on their botanical forays to Rarotonga including a display of their excellent drawings and paintings.

The programme for the next few months is:

20 June: Taupiri Scenic Reserve -trip leader Paul Champion

18 July: Herbarium (WAIK) Workshop - directed by Catherine Beard

22 August: Te Tapui-Te Miro Scenic Reserve - trip leader David Wardle

19 September: Te Purua Scenic Reserve - trip leader Catherine Beard

For further details on these and future field trips etc. see our regular newsletters or contact me.

Paul Champion, President, Waikato Botanical Society, C/- Department of Biological Sciences, University of Waikato, Private Bag 3105, Hamilton

■ Wanganui Museum Botanical Group

Chairman:	Ian Bell
Treasurer:	Pat Robinson
Secretary:	Joan Liddell, 15 Moore Avenue, Wanganui

Coming Events:

Field Trips and Evening Meetings

1 June: Cathy Jones, DoC, will talk on Rarotonga

4 July: To Kitto's property Tokomaru West Road to an unusual bush area

6 July: Annual General Meeting and members' evening
31 July: To Kitchener Park, Fielding
3 August: Dr Alastair Robertson on *Myosotis*
Evening meetings 7.30 pm Museum Classroom

25th Anniversary celebrations

The Group plans to celebrate its twenty-fifth anniversary during the last weekend of August.

On Saturday 28th there will be an opportunity to look at the native plant garden around the Museum. This garden, which has been tended by members of the group for about 20 years, is to be removed this year in order to facilitate water-proofing of the basement. A new garden will be planted in due course. Afternoon tea will follow at the Bason Botanic Reserve.

A dinner, cutting of the cake, and a slide programme will be held in the museum classroom in the evening.

On the Sunday there will be a field trip to "Westoe", Marton, the home of Diane and Jim Howard. After viewing the garden, the more energetic can go on to a patch of bush.

The Wanganui Museum Botanical Group would like to extend an invitation to all members and ex-members and to the many kind folk who have helped the group with talks and field trips over the years. Billets can be arranged if required. The cost of the dinner is \$25 to be paid by August 2nd, to Ian Bell, 115 Mt View Road, Wanganui.

Alf King, Wanganui Botanical Society, PO Box 388, Wanganui

■ **Wellington Botanical Society News**

21 June: Evening meeting: Vegetation changes in the Lake Taupo district in pre-European time and into the 19th century. Speaker: Ann Williams, Department of Conservation

3 July: Field trip Karori Reservoir. Leader: Jim Lynch, 'phone (home) 476 6309

19 July: Evening meeting: The role of the Parliamentary Commissioner for the Environment and the case of Whakaki Lagoon. Speaker: Kirsty Woods, Researcher, Parliamentary Commission for the Environment.

7-8 August: Field trip Manawa Karioi-Tapu Te Ranga Marae: Work bee and Noho Marae (overnight stay).
Leader: Barbara Mitcalfe, 'phone (home) 475 7149

16 August: Annual General Meeting followed by Composition of forests buried at Pureora and Benneydale, West Taupo, during the Taupo eruption (c. AD 130). Speaker: Bev Clarkson, Research Associate, Manaaki Whenua- Landcare Research, Hamilton.

Wellington Botanical Society Jubilee Award - 1992

The 1992 Jubilee Award of Wellington Botanical Society has been made to Lesley Milicich, Victoria University of Wellington. Lesley receives the full award of \$1000 to assist with her study on the taxonomy of *Bulbinella* in New Zealand. She proposes to collect and study material from Stewart Island as a continuation of the work which she undertook for her PhD.

Congratulations to Lesley and thanks to the other people who applied. Thanks to the subcommittee who considered the applications: Patrick Brownsey (convenor), Olaf John and Rodney Lewington.

Bruce Irwin, who received the 1991 Jubilee Award, has continued his work on description and distribution of the forms of *Corybas rivularis*, most of which grow in the Taranaki region.

A call for applications for the 1993 Jubilee Award will be made later in the year. Funds for the Jubilee Award are steadily rising but further donations are welcome.

Carol West, 9 Mamari Street, Rongotai, Wellington 3

NOTES AND REPORTS

Plant records

■ Apparent Additions to the Adventive Flora

- 1: *Gomphocarpus physocarpus* - Victory Road, Laingholm, 24.2.1993, E.D. Hatch. Specimens in AK. Identification confirmed by Ewen Cameron.

In Jack Mackinder's booklet *Adventive Flora of the Waitakere Range*, p.2, I listed *Gomphocarpus fruticosus* in error. I first noted this plant in January 1992 when it was only in flower. This year however I managed to obtain specimens (AK 210703) with both flowers and fruit, and the follicles immediately proclaimed it to be *G. physocarpus*. *Flora NZ 4:p.150.1988*, does not list this species from the wild. The Laingholm plant however was growing among gorse and other adventives well down on a crib wall in a most inaccessible place and had certainly not been planted there.

- 2: *Pratia pedunculata* - Victory Road, Laingholm, 15.11.1992, E.D. Hatch. Specimens in AK (AK 210580). Identified by Ewen Cameron.

Not listed in *Flora NZ 4*: Apparently a garden escape and again most unlikely to have been planted where I found it growing, matted in grass beside the road, 100 yards or so below the *Gomphocarpus*.

E D Hatch, 25 Tane Road, Laingholm, Auckland 7

Comment

■ *Celmisia X Olearia* hybrids: a comment

Sondergaard (1993) has described a putative hybrid between *Olearia arborescens* and a *Celmisia* sp. (possibly *C. semicordata*) and suggested that, whatever species of *Celmisia* entered into the present hybrid, it seems to be the first time that this combination has been recorded and described.

Prior to Sondergaard's record some four intergeneric hybrids between *Celmisia* and *Olearia* had been reported (Clarkson 1988). Unlike the plant described by Sondergaard (*loc. cit.*), which was grown from seed collected from a wild plant of *Olearia arborescens*, these were hybrid plants growing in the wild. Three apparently had *Olearia arborescens* as one parent, but for the fourth (the plant originally described by Simpson and Thompson [1942]) opinions varied as to which *Olearia* was involved. Sondergaard's record is further evidence that, of the non-macrocephalous species of *Olearia*, *O. arborescens* has most retained the ability to cross with other members of the *Celmisia-Olearia* complex.

Several of the features of Sondergaard's plant, including adventitious roots generating from the base of the plant and the tendency to loss of vigour following flowering, also occur in *Celmisia gracilentia X Olearia arborescens* (Clarkson 1988).

The name *XCelmearia ruawahia* 'Nebulous' has recently been given to this last- mentioned hybrid in order to more effectively market its horticultural potential in New Zealand and the United Kingdom (Heenan 1993).

References

- Clarkson, B.D. 1988: A natural intergeneric hybrid, *Celmisia gracilentia X Olearia arborescens* (Compositae) from Mt Tarawera, New Zealand. *New Zealand Journal of Botany* 26: 325-331.
- Heenan, P. 1993: *XCelmearia ruawahia* 'Nebulous' - a new intergeneric, collective epithet, and cultivar name. *Horticulture in New Zealand* 4: 2-3.
- Simpson, G.; Thompson, J.S. 1942: Notes on some New Zealand plants and descriptions of new species. *Transactions of the Royal Society of New Zealand* 72: 21-40.

Sondergaard, P. 1993: *Olearia arborescens* (Forst. f.) Ckn et Laing X ? *Celmisia* species. *Canterbury Botanical Society Journal* 26: 39-41.

Bruce Clarkson, Manaaki Whenua-Landcare Research, C/- Department of Biological Sciences, University of Waikato, Private Bag 3105, Hamilton

RETIREMENT

■ Retiring Ecologist Honoured by Fellowship

Reader in Plant Science, Dr Colin Burrows, who recently retired, has been made a Fellow of the Linnean Society of London, joining only 21 other New Zealanders.

The Society was founded in 1788 with the purpose of "the Cultivation of the Science of Natural History in all its branches", and is named in honour of the Swedish scientist Carl Linne, often regarded as the founder of modern Botany.

In May colleagues are organising a symposium to mark Dr Burrows' retirement, and acknowledge his contribution to work on ecology of New Zealand plants, which will be its theme.

Dr Burrows joined the staff of the university in 1960; ecology was his main teaching subject and research interest. In particular he has been deeply committed to studying the ecological problems of Canterbury and New Zealand. He has included alpine grasslands, wetlands and forests in his studies and is responsible for many reports on natural areas suitable for conservation, in Westland and Manapouri - Te Anau, as well as Canterbury.

It could well have been otherwise. Originally from Methven, and a secondary school education at Timaru Boys High, in 1950-52 Colin Burrows studied part-time for his BSc while at Teachers Training College. In 1957 he completed his MSc with First Class Honours in Botany and was awarded a Fulbright Scholarship to go to Stanford University in the USA. Unfortunately his wife became very ill and he couldn't take up his scholarship. Dr Burrows believes these circumstances had a profound effect on his career. Had he gone, "I would have been a very different scientist". At that time he was involved in evolutionary biology, but when the position came up at Canterbury "I changed my research thrusts, so I turned out to be an ecologist".

In 1963 Colin Burrows received the Hamilton Memorial Prize of the Royal Society of New Zealand for his work in evolutionary studies and systematics. In 1967 he was awarded his PhD. His thesis was on the ecology of some alpine grasslands. Since the late 60s, after a sabbatical leave at Cambridge University, he has had a deep involvement with palaeoecology (Quaternary Studies). He has an international reputation and was awarded a DSc for his work in this field. More recently he has returned to present-day ecology with a book on vegetation change and on-going research on seed ecology of native forests.

Dr Burrows sees cycles of public interest in ecology. "I'm long enough in the tooth to observe we're onto about the third cycle of the ecology bandwagon. It's becoming more and more apparent that people really have to start listening to ecologists." Equally importantly, he sees the necessity of many fields of study contributing to the care of the environment. "It must be interdisciplinary. One of the really good things I've experienced here has been working with geographers, geologists and zoologists. In fact, I have often worked more in collaborative work than in the department."

On this theme Dr Burrows thinks his most important recent academic work has been to help initiate the interdisciplinary Environmental Science MSc, working with Professor Jim Cole (Geology), Professor Jane Soons (Geography) and Dr Vida Stout (Zoology). 1992 was the first year the course was offered and Dr Burrows will contribute to it again this year.

This is not the only course that Colin Burrows has helped to initiate. He started the development of Soil Science as a degree subject at Canterbury, and promoted the interdisciplinary course of Peace Studies. "The Cold War was so crazy, there had to be some way of struggling against this thing. My motivation was mainly to do with the nuclear issues, but other people brought into it quite different perspectives. It covered the whole array of possibilities, from your personal state of mind and peacefulness to the very broad global issues."

Dr Burrows has much enjoyed being part of the Plant and Microbial Sciences department. "I guess the first highpoint was moving from the old site to here because the old site may be a bit picturesque but it was pretty grotty. Old oiled floors, and we lived in what seemed like outhouses, the old prefab buildings by the boilerhouse, so moving here was great." The people in the department - academic colleagues, secretaries, technicians and students - have contributed to an enjoyable working life. "The atmosphere has been very supportive and cooperative. Partly this is because we've had good HODs and it's been a very pleasant working atmosphere."

Colin Burrows has made a significant contribution outside the university as well. He is a former member of the Arthurs Pass National Park Board and is still the Park Botanist. Since 1972 he has been working on the vegetation of Arthurs Pass and one retirement plan is to complete that description of the vegetation and compile lichen, moss and liverwort floras for the park. He has also been the University representative on the Canterbury Museum Trust Board for about ten years.

Dr Burrows claims his retirement plans are "a bit vague" but they do involve more research. "Research has been the highpoint in what I have done. The department has very kindly made some space available in a house in Creyke Road and I'm going to press on." It certainly doesn't sound like a life of idleness: "I've scores of unwritten things to work up, including a book or two. It's good to be able to retire while I've still got my marbles and am reasonably hale and hearty."

Reproduced from *Chronicle University of Canterbury* 28(3): 3

BIOGRAPHY/BIBLIOGRAPHY

■ Biographical Notes (10): Harry Howard Barton Allan (1882–1957). The early years.

Harry Allan was born in Nelson on 27 April 1882, the sixth and youngest child of Robert and Emma Maria Allan. He attended Nelson Central School, where the headmaster was F. G. Gibbs, a distinguished amateur botanist referred to in the dedication of Allan's first book as "F. G. G. who revealed to the writer the romance of the world outside of books". From primary school Allan won a scholarship to Nelson College, which he attended from 1897 to 1902, overlapping with J. E. Holloway (1895–1900). He won the Junior Gymnastics Cup (1897), the Simmons Prize for Literature, and in 1902 played in the First Cricket Eleven (1–5). The English and Latin master from 1897 to 1906, Mr Frank Milner, voluntarily coached senior pupils outside normal hours for terms at the University (6); and in 1902 Allan passed in Latin, Pure Mathematics, Mechanics, Jurisprudence, and Constitutional History (7).

Allan then began a career in teaching, first at the small West Coast mining town of Denniston (2), followed by Kings College, Auckland, in 1904 (8) and then Napier Boys' High School (3). In Auckland Allan attended the University part-time and completed his B.A. with passes in English and Mental Science. The degree was conferred in 1905. And it was at Auckland that Allan received his only formal training in botany, "a few greatly appreciated lectures from A. P. W. Thomas" (3). The examinations for the degree of M.A. in Mental Science were passed in 1906 and the degree conferred in 1908. Mental Science (Psychology, Ethics, and Logic) was classified as a Science and was Allan's prerequisite for the degree of D.Sc. (7).

In 1907, at the end of the second term, Allan joined Waitaki Boys' High School where Milner was now headmaster. He was master in charge of the Preparatory Department; and as Captain Allan commanded No. 2 Company of the Cadets. In 1909 he married Louise Arnold of Korere, Nelson; and in 1910 he was promoted to teach botany, entomology and meteorology in the newly established Agriculture Course (9). His first publication, a note entitled *Potatoes, Variety test at Waitaki Boys' High School* appeared in the [N.Z.] *Journal of Agriculture* for 1913. In (6) Allan appears in two photographs: the Agricultural class in 1910, and the Rector and staff in 1913.

In 1916 Allan left Oamaru to introduce an Agricultural Science Course at Ashburton High School and remained there until 1921. His salary was met partly by the Board, partly by donations, and partly by the Department of Agriculture because of his duties in connection with the Experimental Farm. This comprised 136 acres in Albert Street leased to the Department by the Board (10).

At this time the Biologist in the Department of Agriculture was Alfred Hyde Cockayne (1880–1966) who became Allan's friend, as did his famous botanist father, Leonard Cockayne (1855–1934). These two men were to have a major influence on Allan's life. He dedicated his first book (after F. G. G.) to "A. H. C. who

guided his first steps in learning to name our plants, and L. C. who taught him that to name was not yet to understand". On 4 September 1917, Leonard Cockayne wrote to Prain at Kew recommending Allan's election as a Fellow of the Linnaean Society; and on 9 August 1918 he referred to "my esteemed friend H. H. Allan, F.L.S. of Ashburton (a new disciple)" in a letter to the soldier-botanist, C. E. Foweraker (11).

The modest beginnings of a notable partnership can be seen in a paper by Cockayne on floristic botany, read in October 1917. Allan is one of several thanked for assistance, having contributed two records: *Epilobium pedunculare* var. *minutiflorum* from "Rakaia river bed, not far from mouth of river"; and *Veronica amplexicaulis* from "Mount Peel subalpine" (*T.N.Z.I.* 1918).

Mount Peel rises from the Canterbury Plain some 45 km inland from Ashburton, and Allan had begun a study of its vegetation in order to fill a gap in the phytogeography of eastern South Island. "Observations were made at all seasons during the period 1917–21, some 30 weeks being spent in the field –" (*T.N.Z.I.* 1926). The motorbike and sidecar shown in Allan's photograph reproduced as Fig. 30 in Cockayne's *Vegetation of New Zealand* (1928) is considered to be taken at Kitchener Park, Feilding (12) but this, or a similar vehicle could have taken him to and from Mt Peel.

Allan's thesis on *The Vegetation of Mount Peel, Canterbury* was awarded a D.Sc. (N.Z.) in 1923 (3) and led to two papers in 1926 and 1927 (*T.N.Z.I.*). But probably the most important outcome of the Mount Peel survey was that it led to a life-long interest in lichens. On 20 October 1920, in search of identifications and literature he sent a box of specimens from Mount Peel and Ashburton to Annie Lorrain Smith, lichenologist at the British Museum (Natural History); and he "became the first local botanist to enquire seriously into a possible field role for New Zealand's lichens in an expanded context of general plant ecology –" (13).

As a member of the Educational sub-Committee of the Ashburton A. & P. Association, Allan was involved with the editing of the Association's magazine; and he also contributed notes on three hawkweeds (1920) and on the root structure of white clover (1921). He was also involved with the lecture programme which included, on 17 July 1920, a talk on *Knowing the Soil* by L. J. Wild, Lecturer in Chemistry and Physics at Canterbury Agricultural College, Lincoln (14).

Leonard Wild lectured at Lincoln College from 1915 to 1920 and at Christchurch Teachers College in 1921 (15). He then became founding Headmaster of Feilding Agricultural High School, which opened in February, 1922; and in the second term he was joined by his "old friend" Harry Allan, as First Assistant. G. V. Wild, younger brother of the headmaster, recalled that "Allan was an English scholar of great merit, and it was to teach English that he was appointed to Feilding. He was a splendid teacher and an outstanding botanist. I occasionally called on him at his home in Camden Street, where he would be engrossed in his botanical research or writings till the early hours of the morning; but never too busy to talk over the problems of the junior member of staff" (16).

In fact Allan's six years as a teacher at Feilding were arguably the most important of his career and certainly some of the busiest. He not only taught English but Agricultural Botany with its attendant practical work. Thus he applied Raunkiaer's method to the analysis of pastures, and in 1923 received a grant from the New Zealand Institute for research on cocksfoot and ryegrass (*Proceedings* 1925). But from 1922 to 1928, by working at night and in the holidays, he brought out 23 papers, and was joint author of 9 others, 6 with Cockayne (2). His name appeared in *Nature*, the *New Phytologist*, the *Journal of Ecology*, and *Genetica*. In 1926 he was author of a chapter in Tansley and Chipp's *Aims and Methods in the Study of Vegetation*, and in 1928 his first book appeared (5). From a relatively unknown secondary-school teacher, he had become an internationally known botanist, particularly for his expansion of the work on wild hybrids begun by Cockayne.

The work in hybrids was encouraged by Dr J. P. Lotsy who visited New Zealand in March-April, 1925, and began publishing Allan's series on *Illustrations of wild hybrids in the New Zealand flora* in the May-August number (1925) of the Dutch journal *Genetica*, of which he was co-editor. Lotsy was also adviser to the Netherlands government on the use of *Spartina townsendii* for reclamation; and Allan showed him the population on the Foxton mudflats which he had studied (*N.Z.J.S.T.* 1924; *N.Z.J.Ag.* 1930).

Allan continued his work on forests by first studying the remnants in the neighbourhood of Feilding. In this connection he sent epiphyllous lichens from Kitchener Park to A. Zahlbruckner in Vienna for identification (*T.N.Z.I.* 1928). Then, in August, 1924 he received a grant from the New Zealand Institute to study the forests of Mount Egmont (*Proceedings* 1925); and in August, 1925, he sent lichens from Egmont and Feilding to the young Uppsala lichenologist G. E. Du Rietz with whom he had begun corresponding in May that year (13). When Du Rietz came to New Zealand in 1926–27 Allan took him to Egmont where

they discussed "various problems especially those connected with the significance of the lichen flora and vegetation, and a representative set of lichens was determined by Dr Du Rietz" (*Proceedings* 1927).

In the summer of 1927–28, supported by a grant from the Royal Society, London, Allan made a 3 month survey of hybridism in the mountain plants of South Island. Car transport was supplied by G. H. Cunningham (1892–1962) a mycologist with the Department of Agriculture and they became great friends (17). Material was sent back to Cockayne for comment. Allan also met A. W. Hill, Director of Kew, who visited New Zealand in January, 1928; and he recalled the joy Hill had "in watching from the depths of his armchair Cockayne L. arguing with Cockayne A. for argument's sake" (*T.R.S.N.Z.* 1942). Then, in August, 1928, Allan left teaching to become Systematic Botanist at the newly-formed Plant Research Station in Palmerston North. The Director was A. H. Cockayne, and the Head of the Mycological Laboratory was G. H. Cunningham. Allan's assistant was Victor Zotov, who had been his pupil at Feilding.

This earlier part of Allan's botanical career was rounded off by his first overseas visit at the age of 48. In 1930, with support from the Empire Marketing Board, he went to Kew. While there he attended the Fifth International Botanical Congress at Cambridge from 16 to 23 August, and spoke on *The importance of the Jordanon in problems of geographical distribution*; and on 23 October he addressed *Some remarks on hybridism in the New Zealand flora* to the Linnaean Society of London. In the field he accompanied Professor F. W. Oliver to Poole Harbour, the classical locality for *Spartina townsendii*; and with Lotsy he saw the reclamation work in Holland (*N.Z.J.Ag.* 1931)

I am grateful to Arthur Healy for lending me Feilding A. H. S. magazines, and to Alan Esler and Andy Thomson for answering questions.

(1) Death Certificate; (2) L. B. Moore *P.R.S.N.Z.* 1959, with portrait dated 1945; note that the periods in Allan's early career are wrongly dated in this obituary and the following article; (3) L. B. Moore in *An Encyclopaedia of New Zealand* 1966; (4) J. G. McKay & H. F. Allan *The Nelson College Old Boy Register* 1956; (5) H. H. Allan *New Zealand Trees and Shrubs and how to identify them* 1928; (6) Ian Milner *Milner of Waitaki* 1983; (7) E. J. Godley *Botany Division Triennial Report 1976–78*; (8) Kings College Register 1896–1972; (9) K. C. McDonald *The History of Waitaki Boys' High School 1883–1958*; (10) *Ashburton High School, 1881–1956, 75th Anniversary Celebrations*; (11) A. D. Thomson *N.Z.J.B.* 1979, 1980; (12) L. B. Moore & J. Clarke *Tuatara* 1968; (13) D. J. Galloway *N.Z.J.B.* 1976; (14) *Mag. Ashburton A & P Association* 1920; (15) I. D. Blair *Life and work at Canterbury Agricultural College* 1956; (16) *Kia Toa, Feilding A.H.S. 1922–1971*; (17) E. E. Chamberlain *P.R.S.N.Z.* 1965.

Eric Godley, Research Associate, Manaaki Whenua-Landcare Research, PO Box 69, Lincoln

BOOK REVIEW

■ **Wild orchids in the far south of New Zealand**

by Ian St George. Published November 1992 by the New Zealand Orchid Group, 22 Orchard St., Wadestown, Wellington. ISBN 0-9597931-0-8, price \$11 incl. p & p. 107 pp.

Forty-six species, nearly half of New Zealand's wild orchid species, are described and illustrated in this book on orchids occurring south of the Waitaki River. The author, Ian St George, has spent many years searching for orchids in the area covered by this book which includes Otago, Southland, Fiordland and Stewart Island.

The species are presented alphabetically, and a brief, simple botanical description, together with notes on habitat, locations, cultivation and history are given. The text is informative and easy to read. The historical notes are always interesting and show the thoroughness of the author's search of the botanical literature. A full-page detailed drawing is provided for each species. Except for four species, the drawings are of specimens the author has found in the region. They are clear and accurately depict the structure of the flowers.

The book contains a key to the southern species of *Thelymitra*, notes on pollination (copied from another book "The New Zealand Native Orchids: Natural History and Cultivation" edited by Ian St George with Doug McCrae) and a table on flowering times of the southern orchids. There is an index, a page explaining the meaning of the scientific names, and a map of the region.

The text has few, if any obvious errors. Perhaps the map would have been better placed in the front just before the preface and a few subheadings in the preface would have been helpful to the reader, but any faults are very minor.

Ian has combined his talents as a field botanist, botanical illustrator and botanical historian with his excellent eye for detail to produce this book and I hope we will see more of his work in the future. At \$11 this book represents excellent value. The drawings alone are worth having for anyone trying to identify these orchids, wherever they might occur.

Chris E Ecroyd, 33 Raniera Place, Rotorua

PUBLICATIONS

■ People, plants and conservation conference proceedings

Comprehensive proceedings of this important conference on botanic gardens are now available from Denis Hicks, RNZIH Wellington Branch, 19 Waddington Drive, Lower Hutt. Cost \$20 (includes GST and postage). They contain papers that give a New Zealand perspective on botanic garden management, plant conservation, promotions and fund raising, and collection management.

■ Progress Report : Small-leaved shrubs of New Zealand

by Hugh Wilson and Tim Galloway

Initiated by the Canterbury Botanical Society, written by Hugh Wilson, illustrated by Tim Galloway, and published by Manuka Press in Christchurch, the field guide is now off to Singapore to be printed and bound, for release in the spring. Financial assistance from the Koiata Botanical Trust, the New Zealand Lottery Grants Board, the Canterbury Botanical Society, the Wellington Botanical Society, and Trustbank Canterbury, means that the book will be available at an easily accessible price. Details and an order form will be included in the next issue of the *Newsletter* (we hope!), and also sent to subscribers of the New Zealand Journal of Botany.

The guide is a detailed identification manual to a fascinating but tricky and controversial part of the New Zealand flora. Produced in hard-covered, field guide-format and of over 300 pages, it is fully keyed and indexed, with some 70 pages of line drawings and a section of colour photographs. It should foster greater interest in the extraordinary range of small-leaved, twiggy shrubs in New Zealand and help in understanding their unusual predominance in our flora and vegetation.

DESIDERATA

■ Request for wood samples of *Lophomyrtus bullata*

Rajni Patel would appreciate wood samples of *Lophomyrtus bullata* for his research on wood anatomy of native trees and shrubs. Please send to:

Rajni Patel, Landcare Research NZ Ltd, PO Box 69, Lincoln.

FORTHCOMING CONFERENCES/MEETINGS

■ Buzz Group: Informal Meetings of NZ Ecologists

South Islands Weekend, Cass, 8-10 October 1993

For some years there has been a tradition of informal meetings to facilitate contact, co-operation, and exchange of bright ideas and enthusiasm between local ecologists from different parts of New Zealand. This year it is the South Island's turn, with a weekend at the University of Canterbury field station at Cass, on the Arthurs Pass road. The meeting will be held on the weekend immediately preceding the symposium to mark Colin Burrows's retirement (see below) to allow you to cover both events with a single trip.

The weekends involve some time in the field, to give outsiders some idea of the beauty and ecological highlights of the area; some informal presentations of work in progress, by staff and research students; discussions on issues of scientific interest; and socialising. They are open to any interested ecologists of any level, but numbers are strictly limited to about 30 by the available space at the field station. First come, first served. We hope to be able to provide minibuses (around \$15 each) and food. We can also hopefully arrange billets in Christchurch on Sunday night for those staying on for the Burrows Symposium.

Anyone interested in attending this meeting should register their interest (form below) to stake a place in the queue; more details will be sent to those on the mailing list. Remember, places are allocated on a first-come basis.

Dave Kelly, Plant and Microbial Sciences, University of Canterbury, Private Bag , Christchurch 1

■ **Seminar to mark Colin Burrows's Retirement: "New Zealand Plants and Environment"**

Monday 11 October 1993, University of Canterbury

Colin Burrows retired this year after more than three decades in the Botany Department at the University of Canterbury. To make the occasion we are organising a one-day seminar on the theme of *New Zealand Plants and Environment*. During the day there will be about a dozen speakers covering various topics related to work that Colin has done over the years, and in the evening there will be a formal dinner. We hope it will provide an opportunity for New Zealand ecologists to gather, review the progress of the last few years and consider directions for the future, as well as socialising of course. There will be NO CHARGE for attendance (user pays be damned!) but there will be a charge for the symposium dinner.

The seminar will begin at 9.15 am; we can collect travellers from the airport early on Monday and/or arrange some billets in Christchurch for Sunday and Monday nights. Morning and afternoon tea will be provided; lunch will be available for purchase, but we need to know approximate numbers beforehand. Book your tickets now and take advantage of the cheap air fares currently on offer!

If you are interested,, please notify your interest to us giving the details below, and we will put you on the mailing list for the complete information when the programme is finalised.

Dave Kelly, Plant and Microbial Sciences, University of Canterbury, Private Bag, Christchurch 1

REGISTRATION OF INTEREST (this is indicative, not binding)

- I am interested in attending the WEEKEND BUZZ GROUP Y/N
- I am interested in coming to the BURROWS SYMPOSIUM Y/N
- I am interested in coming to the SYMPOSIUM DINNER Y/N
- I am interested in a billet on SUNDAY night Y/N
- I am interested in a billet on MONDAY night Y/N

NAME

POSTAL ADDRESS

PHONE DAY..... NIGHT..... FAX

Please either
email to KELLY@BOTN.CANTERBURY.AC.NZ
or fax to (3) 3642-083;
or post to Dave Kelly, Plant & Microbial Sciences, University of Canterbury, Private Bag, Christchurch 1

New Zealand Botanical Society THREATENED AND LOCAL PLANT LISTS (1993 Revision)

E.K. Cameron¹, P.J. de Lange², D.R. Given³, P.N. Johnson⁴, C.C. Ogle⁵

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³ 101 Jefferys Road, Christchurch

⁴ Manaaki Whenua - Landcare Research, Private Bag 1930, Dunedin

⁵ Wanganui Conservancy, Department of Conservation, Private Bag, Wanganui

ABSTRACT

A revision of the 1990 New Zealand threatened plant list is presented. A total of 315 vascular plant taxa are considered at risk within the New Zealand botanical region using current IUCN Red Data Book categories of threat. Taxa are distributed as follows, Extinct 9 taxa, Endangered 44 taxa, Vulnerable 61 taxa, Rare 98 taxa, Insufficiently Known 46 taxa, and Taxonomically Indeterminate 57 taxa. Using an additional New Zealand system of classification one taxon is ranked as extinct in wild and a further 124 taxa as Local. Twenty-one species previously listed under some level of threat have been deleted from this list.

INTRODUCTION

Lists of New Zealand plants at risk were initiated by Given (1976) and have been periodically revised up until 1990. In July 1991, a Threatened Plants Symposium at Kaitoke identified the need to formalise the revision process (de Lange and Taylor 1991). The present revision is the first part of an intended annual review by an independent committee of experts (the authors), appointed by the New Zealand Botanical Society, and serviced by the Department of Conservation.

The New Zealand Threatened and Local Plant lists serve to assist in planning management actions for conservation of botanical diversity, and to encourage and focus further field studies and research.

Criteria for selection

The lists include vascular plant taxa (species, subspecies, varieties) believed to be indigenous to the New Zealand Botanical Region (comprising the main islands, Kermadec Islands, Chatham Islands, and the New Zealand subantarctic islands, but excluding Macquarie Island). Included are plants which are indigenous also to overseas countries, where they may or may not be considered threatened.

The present revision comprises two distinct lists. The list of Threatened Plants concentrates on taxa which are at risk nationally, using the IUCN threat categories listed below. The second list of Local Plants (not an IUCN category) contains taxa sufficiently restricted in distribution to warrant monitoring.

The revision process

A call for submissions on candidate taxa and threat categories was made in the September 1992 *New Zealand Botanical Society Newsletter*. By the deadline date of 31 January 1993 a total of 145 written submissions were received by the convener (de Lange 1993). Prior to the meeting of the committee most submissions were transferred to a standard form (although the originals were kept). The quality of submissions was variable. While many included detailed information on the former and present range, habitat, population size and floral biology of taxa, most lacked this detail and required some follow-up action from members of the committee. For this reason a threatened plant submission form has been prepared. These are available from members of the committee.

It was agreed that all submissions received were the joint property of the New Zealand Botanical Society and the authors of submissions. Submissions are held on file by the committee convener. We would ask that those seeking to use information contained within these documents, obtain either the permission of the New Zealand Botanical Society Committee or the submission author(s).

Threat categories

The threat categories are those used by the Species Survival Commission of the International Union for Conservation of Nature (IUCN). These categories are:

Extinct (Ex)	Endangered (E)
Vulnerable (V)	Rare (R)
Taxonomically Indeterminate (I)	Insufficiently Known (K)

Two additional (non-IUCN) categories are used. These are Extinct in Wild (ExW) - which includes taxa which are no longer known from the wild but are still held in cultivation, and Local (L) - which is defined by Given (1981) and used here in the New Zealand Botanical Society Local Plant list. These categories are undergoing revision and a new classification has been proposed (D.R. Given *pers. comm.*, 1993). This new system of classification will be adopted by the committee once it is published.

Nomenclature

The treatment adopted for taxa, in general, follows Cheeseman (1925), Allan (1961), Connor and Edgar (1987), Webb *et al.* (1988), and Brownsey and Smith-Dodsworth (1989). Families of Dicotyledons follow Webb *et al.* (1986), and those of the Monocotyledons, Dahlgren *et al.* (1985) and Webb *et al.* (1990).

As with Given (1990) the taxa listed include a considerable number (95) of undescribed taxa. This is because many of these are under some level of threat and their conservation should not be precluded by lack of a formal name (Given 1990).

Undescribed taxa are listed either by the tag names under which they appeared in Given (1990), or those supplied with the submissions made to the committee. The manner in which tag names are presented follows that used by the Australian Journal of Botany (e.g., Pate *et al.* 1991). A full annotated list of threatened undescribed taxa is being prepared for later publication by the committee.

Nomenclature changes affecting taxa listed by Given (1990)

Given (1990)	This Revision
<i>Acaena</i> "NW Ruahine"	<i>Acaena rorida</i> (Macmillan 1991)
<i>Chiloglottis gunnii</i>	<i>Chiloglottis valida</i> (Jones 1991)
<i>Corybas</i> aff. <i>unguiculatus</i>	<i>Corybas rotundifolius</i> (Hatch 1991)
<i>Geniostoma ligustrifolium</i> "Surville"	<i>Geniostoma rupestre</i> var. <i>crassum</i> (Conn 1980, Connor & Edgar 1987)
<i>Hebe matthewsii</i>	(in part) <i>Hebe</i> "Bald Knob Ridge" ¹
<i>Hebe</i> "Unuwahao"	<i>Hebe adamsii</i> (Cheeseman 1925)
<i>Lepidium obtusatum</i>	<i>Lepidium obtusatum</i> "obtusatum" ²
	<i>Lepidium obtusatum</i> "Manukau" ²
<i>Macropiper</i> "Three Kings"	<i>Macropiper melchior</i> (Sykes 1992)
<i>Mazus pumilio</i>	<i>Mazus novaezeelandiae</i> (Barker 1991)
<i>Meliccytus augustifolius</i>	<i>Meliccytus</i> "flexuose" ³
<i>Olearia</i> "Glen Hope"	<i>Olearia polita</i> (Wilson & Garnock-Jones 1992)
<i>Pittosporum michiei</i>	<i>Pittosporum pimeleoides</i> subsp. <i>major</i> (Cooper 1956)
<i>Pittosporum pimeleoides</i> var. <i>pimeleoides</i>	<i>Pittosporum pimeleoides</i> subsp. <i>pimeleoides</i> (Cooper 1956)
<i>Pittosporum obcordatum</i> var. <i>kaitaiaensis</i>	<i>Pittosporum obcordatum</i> (Clarkson 1991)
<i>Pomaderris oraria</i> var. <i>novae-zelandiae</i>	<i>Pomaderris paniculosa</i> subsp. <i>novae-zelandiae</i> (Walsh 1992)
<i>Pomaderris phyllicifolia</i> var. <i>polifolia</i>	<i>Pomaderris polifolia</i> (Riessek & von Mueller 1858)
<i>Pratia physaloides</i>	<i>Colensoa physaloides</i> (Hooker 1853)
<i>Pseudopanax arboreus</i> var. <i>kermadecensis</i>	<i>Pseudopanax kermadecensis</i> (Sykes 1993)

Theleophyton billardieri
Utricularia lateriflora

Atriplex billardierei (Wilson 1984)
Utricularia delicatula (Taylor 1989)

¹ P.J. Garnock-Jones pers. comm. 1993

² D.A. Norton pers. comm. 1993

³ B.P.J. Molloy pers. comm. 1993

Comparison with previous lists

This revision recognises 315 threatened taxa using IUCN Red Data Book Threat Categories. A further 124 taxa are ranked as Local and one taxon as Extinct in Wild, providing a combined total of 440 taxa under some level of threat within the New Zealand Botanical Region. Twenty-one taxa previously considered threatened are deleted, and listed separately.

These changes represent an increase of 70 taxa on the figures reported by Given (1990) and comprise about 18% of the New Zealand Flora as estimated by Druce (1992). Of these additions, 48 (51%) are listed either as Taxonomically Indeterminate or Insufficiently Known; committee would make a special plea for further information on these taxa.

Using the lists

In comparison to previously published New Zealand threatened plant lists the committee has adopted a number of annotations to help clarify the decisions reached. All new entries, changes in taxonomic or IUCN rankings are annotated with footnotes. This will enable the user to determine the types of criteria used to effect changes in rank. Another difference is the use of a single * to indicate indigenous taxa known to be conspecific with overseas populations and under no threat outside the New Zealand Botanical Region e.g., *Wahlenbergia stricta* subsp. *stricta*. Taxa annotated with ** are those indigenous species threatened both within and outside New Zealand, and/or not recently demonstrated as conspecific with overseas populations e.g., *Caladenia* aff. *iridescens*.

Call for submissions

Submissions for the 1994 revision of the New Zealand Threatened and Local Plant List are now sought. These should be made on the appropriate form (available from the convener (P.J. de Lange) or your nearest threatened plant committee representative), and be received no later than **31 January 1994**.

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The New Zealand Threatened Plant Committee would like to thank the staff of the following Head Office Divisions of the Department of Conservation; the Protected Species Policy Division (PSPD) and Science and Research (S&R), for meeting the logistic and funding requirements of the committee. In particular we would like to thank Graeme Taylor for organising and booking our flights and accommodation, Richard Sadleir for his support of the committee activities, Carol West and Gillian Crowcroft, for helping proofread the manuscript. Margot Bowden (Librarian, Landcare Research Ltd.) and Fiona Pitt (Museum of New Zealand - Te Papa Tongarewa) are thanked for their assistance with the bibliography. The editing staff and typists (in particular Nesta Black and Joanne Horner) of Science and Research are thanked for their significant contribution to the format of this publication.

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NEW ZEALAND THREATENED PLANT LIST (1993)

Key

- * Indigenous taxon found naturally overseas and not considered threatened within the overseas part of its range. New Zealand populations have been confirmed as conspecific with overseas counterpart.
- ** Indigenous taxon known or thought to be threatened outside the New Zealand Botanical Region, or taxon presently treated as indigenous with additional overseas distribution but which may, on revision, prove endemic to the New Zealand Botanical Region.

(!) Addition to list (56 spp.)

EXTINCT (9)

Taxa which are no longer known to exist in the wild or in cultivation after *repeated* searches of the type localities and other known or likely places.

<i>Chiloglottis formicifera</i> *	Orchidaceae ^{1,2}
<i>Lepidium obtusatum</i> "obtusatum"	Brassicaceae ¹
<i>Lepidium obtusatum</i> "Manukau" (!)	Brassicaceae ¹
<i>Logania depressa</i>	Loganiaceae ¹
<i>Myoporum debile</i> *	Myoporaceae ^{1,5}
<i>Myosotis traversii</i> var. <i>cinerascens</i>	Boraginaceae ¹
<i>Pterostylis nutans</i> *	Orchidaceae ^{1,2}
<i>Stellaria elatinoides</i>	Caryophyllaceae ¹
<i>Trilepidea adamsii</i>	Loranthaceae ¹

EXTINCT IN WILD (1)

Taxa known or presumed to be *extirpated from the wild* but which are known to be cultivated.

<i>Carmichaelia prona</i>	Fabaceae
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ENDANGERED (44)

Taxa in danger of extinction and whose survival is unlikely if the causal factors continue operating. Included are taxa whose numbers have been reduced to a critical level or whose habitats have been so drastically reduced that they are deemed to be in immediate danger of extinction.

<i>Acaena rorida</i>	Rosaceae ^{3,4}
<i>Amphibromus fluitans</i> *	Poaceae ^{3,5}
<i>Astelia chathamica</i>	Asteliaceae
<i>Atriplex billardierei</i> **	Chenopodiaceae ⁴
<i>Atriplex cinerea</i> **	Chenopodiaceae ⁵
<i>Australopyrum calcis</i> subsp. <i>calcis</i> (!)	Poaceae ⁴
<i>Boehmeria australis</i> var. <i>dealbata</i>	Urticaceae ³
<i>Caleana minor</i> **	Orchidaceae ²
<i>Carex inopinata</i>	Cyperaceae
<i>Carmichaelia kirkii</i> s.l.	Fabaceae
<i>Celmisia macmahonii</i> var. <i>macmahonii</i>	Asteraceae
<i>Chordospartium muritai</i>	Fabaceae
<i>Christella dentata</i> "N.Z." (incl. <i>C.</i> "basket")	Thelypteridaceae
<i>Clianthus puniceus</i>	Fabaceae
<i>Cortaderia turbaria</i>	Poaceae
<i>Corybas carsei</i>	Orchidaceae
<i>Cyathea kermadecensis</i>	Cyatheaceae
<i>Davallia</i> "Puketi"	Davalliaceae
<i>Gunnera hamiltonii</i>	Gunneraceae
<i>Hebe breviflora</i>	Scrophulariaceae ³
<i>Hebe cupressoides</i>	Scrophulariaceae ³
<i>Helichrysum dimorphum</i>	Asteraceae
<i>Lepidium banksii</i>	Brassicaceae

<i>Lepidium kirkii</i>	Brassicaceae
<i>Lepidium sisymbrioides</i> subsp. <i>matau</i>	Brassicaceae
<i>Leptinella dioica</i> subsp. <i>monoica</i>	Asteraceae ^{3,6}
<i>Leptinella nana</i>	Asteraceae
<i>Metrosideros bartlettii</i>	Myrtaceae
<i>Muehlenbeckia astonii</i>	Polygonaceae ^{3,6}
<i>Olearia hectorii</i>	Asteraceae ^{3,6}
<i>Olearia polita</i>	Asteraceae
<i>Pennantia baylisiana</i>	Umbelliferae ²
<i>Peperomia leptostachya</i> *	Piperaceae
<i>Plectranthus parviflorus</i> * (!)	Lamiaceae ⁵
<i>Plantago spathulata</i> subsp. <i>picta</i>	Plantaginaceae
<i>Pterostylis micromega</i>	Orchidaceae ^{3,6}
<i>Pterostylis nana</i> *	Orchidaceae ²
<i>Sebaea ovata</i> **	Gentianaceae
<i>Simplicia laxa</i>	Poaceae
<i>Tecomanthe speciosa</i>	Bignoniaceae
<i>Thelymitra matthewsii</i> **	Orchidaceae
<i>Wahlenbergia stricta</i> subsp. <i>stricta</i> *	Campanulaceae
"X it"	?Elatinaceae ^{4,11}

VULNERABLE (61)

Taxa believed likely to move into the Endangered category in the near future if the causal factors continue operating. Included are taxa of which most or all the populations are decreasing because of over-exploitation, extensive destruction of habitat or other environmental disturbance; taxa with populations that have been seriously depleted and whose ultimate security is not yet assured; and taxa with populations that are still abundant but are under threat from serious adverse factors throughout their range.

<i>Aciphylla dieffenbachii</i>	Apiaceae
<i>Aciphylla traversii</i>	Apiaceae
<i>Alepis flavida</i>	Loranthaceae ³
<i>Asplenium pauperequitum</i>	Aspleniaceae ⁶
<i>Australopyrum calcis</i> subsp. <i>optatum</i> (!)	Poaceae ⁴
<i>Baumea complanata</i>	Cyperaceae ^{6,7}
<i>Brachyglottis huntii</i>	Asteraceae ^{3,6}
<i>Calystegia marginata</i> *	Convolvulaceae
<i>Chiloglottis valida</i> *	Orchidaceae ^{2,7}
<i>Celmisia adamsii</i> var. <i>rugulosa</i>	Asteraceae ⁷
<i>Chionochloa spiralis</i>	Poaceae ^{6,7}
<i>Chordospartium stevensonii</i>	Fabaceae
<i>Coprosma waima</i>	Rubiaceae ^{6,7}
<i>Crassula hunua</i>	Crassulaceae ³
<i>Crassula peduncularis</i> *	Crassulaceae ^{3,6}
<i>Dactylanthus taylorii</i>	Balanophoraceae
<i>Deschampsia caespitosa</i> ** (!)	Poaceae ³
<i>Doodia aspera</i> *	Blechnaceae ^{6,7,8}
<i>Eleocharis neozelandica</i>	Cyperaceae
<i>Embergeria grandifolia</i>	Asteraceae
<i>Euphorbia glauca</i>	Euphorbiaceae
<i>Hebe acutiflora</i>	Scrophulariaceae
<i>Hebe armstrongii</i>	Scrophulariaceae
<i>Hebe barkeri</i>	Scrophulariaceae
<i>Hebe speciosa</i>	Scrophulariaceae
<i>Hibiscus diversifolius</i> *	Malvaceae
<i>Hydatella inconspicua</i>	Hydatellaceae ⁶
<i>Juncus holoschoenus</i> *	Juncaceae ^{3,6}
<i>Lepidium flexicaule</i> **	Brassicaceae
<i>Lepidium oleraceum</i> s.l.	Brassicaceae
<i>Lepidium</i> "Open Bay Islands" (!)	Brassicaceae ⁴
<i>Lepidium sisymbrioides</i> subsp. <i>kawarau</i>	Brassicaceae ³

<i>Leptinella featherstonii</i>	Asteraceae
<i>Lycopodium serpentinum</i> **	Lycopodiaceae
<i>Mazus novaezeelandiae</i>	Scrophulariaceae ⁴
<i>Meliclytus "flexuose"</i>	Violaceae ^{4,10}
<i>Myosotis albosericea</i>	Boraginaceae ^{6,7,8}
<i>Myosotis "lytteltonensis"</i>	Boraginaceae ⁴
<i>Myosotis colensoi</i>	Boraginaceae
<i>Myosotis oreophila</i>	Boraginaceae ⁶
<i>Myosotis "pottsiana"</i>	Boraginaceae ⁴
<i>Olearia pachyphylla</i>	Asteraceae
<i>Olearia "Waima"</i>	Asteraceae
<i>Ophioglossum petiolatum</i> *	Ophioglossaceae
<i>Peraxilla colensoi</i>	Loranthaceae ^{3,6}
<i>Peraxilla tetrapetala</i>	Loranthaceae ^{3,6}
<i>Pimelea tomentosa</i> s.s.	Thymelaeaceae ^{3,6}
<i>Pittosporum dallii</i>	Pittosporaceae
<i>Pittosporum obcordatum</i>	Pittosporaceae
<i>Pomaderris apetala</i> *	Rhamnaceae ^{6,7}
<i>Pomaderris polifolia</i> *	Rhamnaceae
<i>Prasophyllum</i> aff. <i>patens</i>	Orchidaceae ⁴
<i>Puccinellia "Central Otago" (!)</i>	Poaceae ^{3,4,6}
<i>Rhopalostylis "Chatham"</i>	Arecaceae
<i>Ranunculus recens</i> "Moawhango"	Ranunculaceae ³
<i>Rorippa divaricata</i>	Brassicaceae
<i>Senecio scaberulus</i> (!)	Asteraceae ^{3,6}
<i>Scutellaria novae-zelandiae</i>	Lamiaceae ^{6,7,8}
<i>Todea barbara</i> *	Osmundaceae
<i>Triglochin palustre</i> *	Juncaginaceae
"Zombi"	Asteraceae ^{4,6}

RARE (98)

Taxa with small populations which are not Endangered or Vulnerable *but are at risk*. These taxa are usually localized within restricted geographical areas or habitats or are thinly scattered over a more extensive range. Rare plants are often endemics with a narrow distribution whereas vulnerable and endangered plants have often been formerly more widespread.

<i>Aciphylla trifoliolata</i>	Apiaceae
<i>Aciphylla "flaccida"</i>	Apiaceae
<i>Adiantum formosum</i> *	Adiantaceae
<i>Alectryon excelsus</i> var. <i>grandis</i>	Sapindaceae
<i>Anisotome acutifolia</i>	Apiaceae ^{6,7,9}
<i>Anogramma leptophylla</i> *	Gymnogrammaceae
<i>Austrofestuca littoralis</i> *	Poaceae ^{6,7,8}
<i>Botrychium</i> aff. <i>lunaria</i> **	Ophioglossaceae ⁴
<i>Brachyglottis arborescens</i>	Asteraceae
<i>Brachyglottis compacta</i>	Asteraceae
<i>Brachyglottis pentacopa</i>	Asteraceae
<i>Brachyscome humilis</i>	Asteraceae
<i>Brachyscome linearis</i>	Asteraceae
<i>Calochilus paludosus</i> *	Orchidaceae ^{3,6}
<i>Carex kirkii</i> var. <i>elatior</i>	Cyperaceae
<i>Carmichaelia compacta</i>	Fabaceae
<i>Carmichaelia curta</i>	Fabaceae
<i>Carmichaelia hollowayi</i>	Fabaceae
<i>Carmichaelia williamsii</i>	Fabaceae ^{6,7,8,9}
<i>Celmisia morgani</i>	Asteraceae
<i>Celmisia philocremna</i>	Asteraceae
<i>Celmisia spedenii</i>	Asteraceae
<i>Celmisia thomsonii</i>	Asteraceae
<i>Clematis marmoraria</i>	Ranunculaceae
<i>Coprosma obconica</i>	Rubiaceae

<i>Cordyline kaspar</i>	Asphodelaceae
<i>Corokia macrocarpa</i>	Escalloniaceae ^{3,6}
<i>Crassula ruamahanga</i>	Crassulaceae
<i>Cryptostylis subulata</i> *	Orchidaceae ^{6,7}
<i>Cyclosorus interruptus</i>	Thelypteridaceae ^{6,7,8}
<i>Elingamita johnsonii</i>	Myrsinaceae ^{6,7,9}
<i>Epilobium purpuratum</i>	Onagraceae
<i>Gentiana antipoda</i>	Gentianaceae
<i>Geum pusillum</i>	Rosaceae
<i>Gnaphalium nitidulum</i> *	Asteraceae
<i>Grammitis rawlingsii</i>	Grammitidaceae
<i>Gratiola nana</i> *	Scrophulariaceae ^{3,6}
<i>Hebe adamsii</i>	Scrophulariaceae ^{4,6,7,8}
<i>Hebe dieffenbachii</i>	Scrophulariaceae ^{3,4,11}
<i>Hebe "George"</i>	Scrophulariaceae ⁴
<i>Iphigenia novae-zelandiae</i>	Colchicaceae ^{3,6}
<i>Iti lacustris</i>	Brassicaceae ⁶
<i>Lepidium tenuicaule</i>	Brassicaceae
<i>Leptinella albida</i>	Asteraceae
<i>Leptinella pyrethrifolia</i> var. <i>linearifolia</i>	Asteraceae
<i>Leptinella rotundata</i>	Asteraceae ^{6,8}
<i>Linum monogynum</i> var. <i>chathamium</i>	Linaceae ³
<i>Luzula crenulata</i>	Juncaceae
<i>Macropiper melchior</i>	Piperaceae ^{4,6,8,9}
<i>Marattia salicina</i> *	Marattiaceae
<i>Meryta sinclairii</i> (!)	Araliaceae ³
<i>Myosotidium hortensia</i>	Boraginaceae ^{6,7}
<i>Myosotis concinna</i>	Boraginaceae
<i>Myosotis laeta</i>	Boraginaceae
<i>Myosotis matthewsii</i>	Boraginaceae ⁸
<i>Myosurus minimus</i> subsp. <i>novae-zelandiae</i>	Ranunculaceae ^{6,8}
<i>Myriophyllum robustum</i>	Haloragaceae ^{6,7,8}
<i>Myrsine oliveri</i>	Myrsinaceae ⁷
<i>Notospartium torulosum</i>	Fabaceae
<i>Olearia chathamica</i>	Asteraceae
<i>Olearia traversii</i>	Asteraceae ³
<i>Ourisa modesta</i>	Scrophulariaceae ³
<i>Pachystegia rufa</i>	Asteraceae
<i>Phylloglossum drummondii</i> *	Lycopodiaceae ⁶
<i>Pimelea arenaria</i>	Thymelaeaceae ⁶
<i>Pittosporum fairchildii</i>	Pittosporaceae
<i>Pittosporum pimeleoides</i> subsp. <i>pimeleoides</i>	Pittosporaceae
<i>Pittosporum turnerii</i>	Pittosporaceae ^{6,7,8}
<i>Plagianthus regius</i> var. <i>chamicus</i>	Malvaceae
<i>Plantago obconica</i>	Plantaginaceae
<i>Poa aucklandica</i> subsp. <i>rakiura</i>	Poaceae
<i>Poa senex</i>	Poaceae
<i>Poa sudicola</i>	Poaceae
<i>Polystichum "Chathams"</i>	Dryopteridaceae
<i>Pomaderris hamiltonii</i>	Rhamnaceae ^{6,8}
<i>Poranthera microphylla</i> *	Euphorbiaceae
<i>Pratia "Woodhill" (!)</i>	Lobeliaceae ⁴
<i>Pterostylis plumosa</i> * (!)	Orchidaceae ³
<i>Puccinellia antipoda</i>	Poaceae
<i>Ranunculus macropus</i>	Ranunculaceae ^{6,8}
<i>Ranunculus godleyanus</i>	Ranunculaceae ³
<i>Ranunculus recens</i> "Manaia"	Ranunculaceae ⁶
<i>Ranunculus ternatifolius</i>	Ranunculaceae ³
<i>Ranunculus viridis</i>	Ranunculaceae ^{6,7,9}
<i>Rytidosperma petrosum</i>	Poaceae
<i>Rytidosperma tenue</i>	Poaceae
<i>Stilbocarpa lyallii</i>	Araliaceae ⁹

<i>Stilbocarpa robusta</i>	Araliaceae ⁹
<i>Senecio lautus</i> var. <i>esperensis</i>	Asteraceae ^{6,9}
<i>Senecio marotiri</i>	Asteraceae
<i>Stellaria decipiens</i> var. <i>angustata</i>	Caryophyllaceae
<i>Stipa petriei</i>	Poaceae
<i>Thelypteris confluens</i> *	Thelypteridaceae
<i>Thelymitra malvina</i> *	Orchidaceae ^{6,8}
<i>Thelymitra tholiformis</i>	Orchidaceae
<i>Tupeia antarctica</i>	Loranthaceae ³
<i>Utricularia australis</i>	Lentibulariaceae ⁶
<i>Utricularia delicatula</i>	Lentibulariaceae ^{4,6,7,8}

INSUFFICIENTLY KNOWN (46)

Taxa that are *suspected* but *not definitely known* to belong to any of the above categories because of lack of information. An "Insufficiently Known" taxon does not have to be *proved* to be in any of the three categories - Endangered, Vulnerable or Rare. It is hoped that listing a taxon as "Insufficiently Known" will stimulate others to find out its true category of threat.

<i>Aciphylla leighii</i>	Apiaceae ¹⁰
<i>Brachyglottis southlandica</i> var. <i>albidula</i>	Asteraceae ^{10,11}
<i>Caladenia</i> aff. <i>iridescens</i>	Orchidaceae ^{4,10}
<i>Calochilus herbaceus</i> *	Orchidaceae ¹⁰
<i>Carex chathamica</i>	Cyperaceae ¹⁰
<i>Carex ventosa</i>	Cyperaceae ¹⁰
<i>Chenopodium detestans</i>	Chenopodiaceae ^{3,10}
<i>Chenopodium pusillum</i>	Chenopodiaceae ^{10,11}
<i>Chionohebe myosotoides</i>	Scrophulariaceae
<i>Centipeda minima</i>	Asteraceae ¹⁰
<i>Coprosma neglecta</i> "Three Kings" (!)	Rubiaceae ⁴
<i>Coprosma neglecta</i> "Maunganui Bluff" (!)	Rubiaceae ⁴
<i>Coprosma neglecta</i> "neglecta"	Rubiaceae ⁴
<i>Coriaria pottsiana</i>	Coriariaceae ¹⁰
<i>Coriaria</i> "Rimutaka"	Coriariaceae ¹⁰
<i>Crassula colorata</i> var. <i>acuminata</i>	Crassulaceae ¹⁰
<i>Deschampsia pusilla</i>	Poaceae
<i>Hebe annulata</i>	Scrophulariaceae ^{4,11}
<i>Hebe</i> "Bald Knob Ridge"	Scrophulariaceae ^{4,10,11}
<i>Hebe imbricata</i>	Scrophulariaceae
<i>Hebe</i> "Takahe"	Scrophulariaceae ^{4,10}
<i>Isolepis basilaris</i> (!)	Cyperaceae
<i>Ischnocarpus novae-zelandiae</i> (!)	Brassicaceae ³
<i>Kunzea sinclairii</i>	Myrtaceae ¹⁰
<i>Lagenifera stipitata</i> *	Asteraceae ¹⁰
<i>Leptinella filiformis</i>	Asteraceae ¹⁰
<i>Libertia peregrinans</i>	Iridaceae ^{10,11}
<i>Limosella curdieana</i>	Scrophulariaceae ^{5,10}
<i>Microlaena thomsonii</i>	Poaceae ¹⁰
<i>Muehlenbeckia ephedroides</i> (!)	Polygonaceae ¹⁰
<i>Myosotis cheesemanii</i>	Boraginaceae
<i>Myosotis</i> "glauca"	Boraginaceae
<i>Myosotis glabrescens</i>	Boraginaceae
<i>Myosotis laingii</i>	Boraginaceae
<i>Myosotis</i> "petiolata"	Boraginaceae ¹⁰
<i>Olearia angulata</i>	Asteraceae ¹⁰
<i>Olearia capillaris</i>	Asteraceae ¹⁰
<i>Olearia fragrantissima</i> (!)	Asteraceae ¹⁰
<i>Peperomia</i> "Purple Vein" (!)	Piperaceae ¹⁰
<i>Pimelea aridula</i> agg.	Thymelaeaceae ^{10,11}
<i>Senecio dunedinensis</i> (!)	Asteraceae ¹⁰
<i>Spiranthes</i> "Moturangi"	Orchidaceae ¹⁰
<i>Swainsona novae-zelandiae</i>	Fabaceae ¹⁰

<i>Teucrium parvifolium</i>	Verbenaceae ¹⁰
<i>Thelymitra</i> "Ahipara" **	Orchidaceae ^{4,10}
<i>Thelymitra</i> "Rough Leaf" **	Orchidaceae ^{4,10}
<i>Uncinia purpurata</i>	Cyperaceae ¹⁰

TAXONOMICALLY INDETERMINATE (57)

This includes: (1) Taxa about which there is doubt regarding taxonomic status and which require further investigation; and (2) genetic variants which are distinct at a level which may not warrant formal taxonomic recognition. Entries are grouped by probable category of threat.

Endangered (24)

<i>Brachyscome</i> "Pareora" (!)	Asteraceae
<i>Cardamine</i> "Tarn" (!)	Brassicaceae
<i>Carmichaelia arenaria</i>	Fabaceae
<i>Carmichaelia fieldii</i>	Fabaceae
<i>Cheesemania</i> "Chalk Range" (!)	Brassicaceae ^{6,11}
<i>Colobanthus</i> "Pareora" (!)	Caryophyllaceae
<i>Colobanthus</i> "Tengawai" (!)	Caryophyllaceae
<i>Craspedia</i> "Kaitorete" (!)	Asteraceae
<i>Dracophyllum</i> "Puketi" (!)	Epacridaceae
<i>Deyeuxia</i> "Flaxbourne" (!)	Poaceae ⁵
<i>Gentiana</i> "Charleston" (!)	Gentianaceae
<i>Gentiana</i> "Pareora" (!)	Gentianaceae
<i>Gentiana</i> "Waitaki" (!)	Gentianaceae
<i>Geranium</i> "Pareora" (!)	Geraniaceae
<i>Geranium</i> "Red Hills" (!)	Geraniaceae
<i>Geranium</i> "Tengawai" (!)	Geraniaceae
<i>Leptinella</i> "Clutha" (!)	Asteraceae
<i>Leptinella intermedia</i>	Asteraceae ^{10,11}
<i>Leptinella</i> "Pareora" (!)	Asteraceae
<i>Leptinella</i> "Tengawai" (!)	Asteraceae
<i>Limosella</i> "Opunake" (!)	Scrophulariaceae
<i>Notothlaspi</i> "Red Hills" (!)	Brassicaceae
<i>Pittosporum</i> "Surville"	Pittosporaceae
<i>Pimelea</i> "Turakina" (!)	Thymelaeaceae

Vulnerable (10)

<i>Brachyscome</i> "Ward" (!)	Asteraceae
<i>Gentiana</i> "Brown" (!)	Gentianaceae
<i>Gentiana</i> "Ward" (!)	Gentianaceae
<i>Gingidia patula</i> (!)	Apiaceae
<i>Hebe</i> "Awaroa"	Scrophulariaceae
<i>Hibiscus trionum</i> "NZ" **	Malvaceae
<i>Melicytus</i> "Egmont"	Violaceae
<i>Myosotis</i> "Volcanic Plateau" (!)	Boraginaceae
<i>Pseudognaphalium</i> "compactum" (!)	Asteraceae
<i>Ranunculus</i> "Waihao" (!)	Ranunculaceae

Rare (10)

<i>Brachyglottis saxifragoides</i>	Asteraceae ¹¹
<i>Carmichaelia nigrans</i>	Fabaceae ¹¹
<i>Chionohebe glabra</i>	Scrophulariaceae ⁴
<i>Deyeuxia</i> "Waima" (!)	Poaceae ⁴
<i>Limosella</i> "Manutahi" (!)	Scrophulariaceae
<i>Melicytus</i> "Burnett"	Violaceae
<i>Myrsine</i> "Burnett"	Myrsinaceae
<i>Myrsine</i> "Poor Knights"	Myrsinaceae
<i>Wahlenbergia brockiei</i>	Campanulaceae ⁴

Wahlenbergia simpsonii

Campanulaceae⁴

Insufficiently Known (12)

Cardamine "Rata Peak" (!)

Brassicaceae

Carex allanii

Cyperaceae

Celmisia "Mangaweka" (!)

Asteraceae

Craspedia "Chatham" (!)

Asteraceae

Dracophyllum viride

Epacridaceae

"*Hebe bishopiana*"

Scrophulariaceae⁴

Hebe matthewsii s.l.

Scrophulariaceae^{4,10,11}

Hydrocotyle "Ototoa" (!)

Apiaceae

Muehlenbeckia debilis (!)

Polygonaceae^{10,11}

Phormium "Surville" (!)

Phormiaceae

Phormium "Chatham"

Phormiaceae

Pimelea "Three Kings" agg.

Thymelaeaceae^{6,10}

Pygmaea armstrongii

Scrophulariaceae

Explanation of Footnotes

¹Repeated systematic surveys have failed to locate taxon in the wild. Taxon is not known in cultivation.

²Species constrained by either reproductive behaviour or ecological requirements.

³Apparently less common or more threatened than previously believed.

⁴Systematic name change either recently published or revision in process.

⁵Possibly adventive.

⁶Ecology and distribution better understood.

⁷Previous threat(s) lessened by management.

⁸More abundant on known sites than previously believed.

⁹Island endemic under no immediate threat or less threatened than previously believed.

¹⁰Conservation status uncertain.

¹¹Taxonomic status uncertain.

¹²Taxonomically indistinct.

NEW ZEALAND LOCAL PLANT LIST (1993)

Key

* Taxon found naturally overseas and not considered uncommon within that range. New Zealand taxon has been demonstrated as conspecific with overseas counterpart.

** Indigenous taxon known or thought to be uncommon outside the New Zealand Botanical Region, or taxon presently treated as indigenous but which may, on revision, prove endemic to the New Zealand Botanical Region.

(!) Addition to list (2 spp.)

LOCAL PLANT LIST (124)

This is not an IUCN Threat Category. This is designed to act as a 'watchlist' for taxa which are sufficiently restricted to warrant noting and some monitoring. It may include taxa which occupy habitats potentially threatened in the future, and those found in sensitive habitats which are prone to damage.

Acaena pallida *

Rosaceae^{1,2,3}

Aciphylla montana var. *gracilis*

Apiaceae

Aciphylla stannensis

Apiaceae

Brachyglottis bifistulosa

Asteraceae

Brachyglottis perdicioides

Asteraceae^{1,2,3}

Brachyglottis sciadophila

Asteraceae

Brachyglottis traversii

Asteraceae

Brachyglottis turneri

Asteraceae

Bulbinella talbotii

Asphodelaceae

<i>Calochilus robertsonii</i> *	Orchidaceae ^{1,3}
<i>Carex edgarae</i>	Cyperaceae ³
<i>Carex elingamita</i>	Cyperaceae
<i>Carex traversii</i>	Cyperaceae
<i>Carmichaelia appressa</i>	Fabaceae ^{1,3}
<i>Carmichaelia astonii</i>	Fabaceae
<i>Cassinia leptophylla</i> var. <i>amoena</i>	Asteraceae ^{1,2,3}
<i>Celmisia haastii</i> var. <i>tomentosa</i>	Asteraceae
<i>Celmisia hookeri</i>	Asteraceae
<i>Celmisia inaccessa</i>	Asteraceae
<i>Celmisia mackaui</i>	Asteraceae
<i>Celmisia macmahonii</i> var. <i>hadfieldii</i>	Asteraceae
<i>Centrolepis minima</i>	Centrolepidaceae
<i>Ceratocephalus pungens</i>	Ranunculaceae
<i>Cheesemaniania wallii</i>	Brassicaceae
<i>Chionochloa lanea</i>	Poaceae
<i>Christella</i> "Thermal"	Thelypteridaceae
<i>Colensoa physaloides</i>	Lobeliaceae
<i>Coprosma acutifolia</i>	Rubiaceae
<i>Coprosma obconica</i> subsp. "Surville"	Rubiaceae ^{1,2,3,4,8}
<i>Coprosma propinqua</i> var. <i>martinii</i>	Rubiaceae
<i>Coprosma spathulata</i> subsp. "Surville"	Rubiaceae ^{1,2,3,4,8}
<i>Coprosma talbrockiei</i>	Rubiaceae
<i>Corybas cryptanthus</i>	Orchidaceae ¹
<i>Corybas rotundifolius</i>	Orchidaceae ^{1,4}
<i>Crassula manaia</i>	Crassulaceae ^{1,2,3}
<i>Crassula multicaulis</i>	Crassulaceae
<i>Davallia tasmanii</i>	Davalliaceae ⁵
<i>Desmoschoenus spiralis</i>	Cyperaceae
<i>Dicranopteris linearis</i> *	Gleicheniaceae ^{1,2}
<i>Epilobium gunnianum</i> *	Onagraceae
<i>Fimbristylis squarrosa</i> *	Cyperaceae ^{1,2,3,6}
<i>Fuchsia procumbens</i>	Onagraceae ^{1,2,3}
<i>Geniostoma rupestre</i> var. <i>crassum</i>	Loganiaceae ^{1,2,3}
<i>Gentiana gibbsii</i>	Gentianaceae
<i>Gentiana lilliputiana</i>	Gentianaceae ¹
<i>Geranium traversii</i>	Geraniaceae
<i>Geum divergens</i>	Rosaceae ^{1,3}
<i>Haloragis erecta</i> subsp. <i>cartilaginea</i>	Haloragaceae ³
<i>Hebe</i> "angustissima"	Scrophulariaceae
<i>Hebe</i> "Bartlett"	Scrophulariaceae ^{1,2,4}
<i>Hebe biggarii</i>	Scrophulariaceae
<i>Hebe</i> "brevifolia"	Scrophulariaceae ^{3,4}
<i>Hebe elliptica</i> var. <i>crassifolia</i>	Scrophulariaceae ^{1,2,3}
<i>Hebe gibbsii</i>	Scrophulariaceae
<i>Hebe insularis</i>	Scrophulariaceae ⁵
<i>Hebe ligustrifolia</i> var. "Surville" (!)	Scrophulariaceae ^{1,2,3,4}
<i>Hebe</i> "Mokohinau"	Scrophulariaceae ⁴
<i>Hebe pareora</i>	Scrophulariaceae
<i>Hebe raoulii</i> var. <i>maccaskillii</i>	Scrophulariaceae
<i>Hebe townsonii</i>	Scrophulariaceae
<i>Hebe</i> "Wairoa"	Scrophulariaceae ⁴
<i>Helichrysum plumeum</i>	Asteraceae
<i>Helichrysum intermedium</i> var. "tumidum"	Asteraceae ⁴
<i>Homolanthus polyandrus</i>	Euphorbiaceae ^{1,2,3,5}
<i>Hypolepis amaurobachis</i> *	Dennstaedtiaceae
<i>Ileostylus micranthus</i>	Loranthaceae
<i>Ipomoea pes-caprae</i> subsp. <i>brasiliensis</i> *	Convolvulaceae
<i>Leptinella dispersa</i> subsp. <i>rupestris</i>	Asteraceae ^{1,2,3}
<i>Leptinella calcarea</i>	Asteraceae
<i>Leucogenes</i> "Peel"	Asteraceae ^{1,3,4}
<i>Leucopogon parviflorus</i> s.l. **	Epacridaceae

<i>Macrothelypteris torresiana</i> *	Thelypteridaceae
<i>Mitrasacme montana</i> var. <i>helmsii</i>	Spigeliaceae
<i>Myosotis arnoldii</i>	Boraginaceae
<i>Myosotis</i> "pansa"	Boraginaceae
<i>Myosotis saxosa</i>	Boraginaceae
<i>Myrsine coxii</i>	Myrsinaceae ^{1,2,3}
<i>Nephrolepis</i> cf. <i>cordifolia</i> **	Davalliaceae
<i>Notospartium carmichaeliae</i>	Fabaceae
<i>Olearia allomii</i>	Asteraceae ⁵
<i>Olearia coriacea</i>	Asteraceae
<i>Ourisia goulandiana</i>	Scrophulariaceae
<i>Ourisia spathulata</i>	Scrophulariaceae
<i>Phyllocladus</i> "serpentine"	Podocarpaceae ^{1,2,3}
<i>Pimelea crosby-smithiana</i>	Thymelaeaceae
<i>Pimelea suteri</i>	Thymelaeaceae
<i>Pisonia brunoniana</i> **	Nyctaginaceae ^{1,3}
<i>Pittosporum pimeleoides</i> subsp. <i>major</i>	Pittosporaceae ^{1,2,3}
<i>Pittosporum virgatum</i>	Pittosporaceae ^{1,2,3}
<i>Pleurosorus rutifolius</i> *	Aspleniaceae
<i>Poa pygmaea</i>	Poaceae ³
<i>Pomaderris paniculosa</i> subsp. <i>novae-zelandiae</i>	Rhamnaceae ^{1,2,3,4}
<i>Pseudopanax kermadecensis</i>	Araliaceae ^{1,2,3,4,5}
<i>Pseudopanax ferox</i>	Araliaceae
<i>Pseudopanax gilliesii</i>	Araliaceae ^{1,2,3}
<i>Pterostylis</i> "linearis"	Orchidaceae ^{1,3}
<i>Ranunculus brevis</i>	Ranunculaceae
<i>Ranunculus grahamii</i>	Ranunculaceae
<i>Ranunculus haastii</i> subsp. <i>piliferus</i>	Ranunculaceae
<i>Ranunculus maculatus</i>	Ranunculaceae
<i>Ranunculus recens</i> var. <i>lacustris</i>	Ranunculaceae
<i>Ranunculus scrithalis</i>	Ranunculaceae
<i>Ranunculus stylosus</i>	Ranunculaceae ^{1,3,5}
<i>Raoulia cinerea</i>	Asteraceae
<i>Schizeilema cockaynei</i>	Apiaceae
<i>Sicyos australis</i> ** (!)	Cucurbitaceae ⁶
<i>Senecio hauwai</i>	Asteraceae ^{1,3}
<i>Simplicia buchananii</i>	Poaceae ¹
<i>Solanum aviculare</i> var. <i>latifolia</i>	Solanaceae ^{1,5}
<i>Sprengelia incarnata</i> *	Epacridaceae
<i>Stellaria</i> "Poor Knights"	Caryophyllaceae ^{1,2,5}
<i>Tetrachondra hamiltonii</i>	Tetrachondraceae
<i>Thismia rodwayi</i> *	Thismiaceae
<i>Urtica linearifolia</i>	Urticaceae
<i>Xeronema callistemon</i>	?Phormiaceae ⁴
<i>Yuania australis</i>	Orchidaceae

INSUFFICIENTLY KNOWN (8)

<i>Cardamine</i> "Reporoa Bog slender var."	Brassicaceae
<i>Celmisia cordatifolia</i> var. <i>similis</i>	Asteraceae
<i>Hebe murellii</i>	Scrophulariaceae
<i>Hebe ramosissima</i>	Scrophulariaceae
<i>Helichrysum aggregatum</i> var. "Surville"	Asteraceae
<i>Notospartium glabrescens</i>	Fabaceae
<i>Parsonsia</i> "Surville"	Apocynaceae
<i>Senecio</i> "Cuvier"	Asteraceae ^{4,10}

Explanation of Footnotes

¹Ecology and distribution better understood.

²Previous threat(s) lessened by management.

³More abundant on known sites than previously believed.

⁴Systematic name change either recently published or revision in process.

⁵Island endemic under no immediate threat or less threatened than previously believed.

⁶Possibly adventive.

⁷Apparently less common or more threatened than previously believed.

SPECIES NO LONGER CONSIDERED THREATENED (21)

Taxa formerly considered under some level of threat in Given (1990) but which are here rejected from the New Zealand Botanical Society Threatened Plant and Local Plant Lists, because they are more widespread or abundant than previously thought.

Formerly ranked as Endangered:

<i>Earina aestivalis</i>	Orchidaceae ^{1,2,3}
<i>Pittosporum obcordatum</i> var. <i>kaitaiaensis</i>	Pittosporaceae ⁴

Formerly Ranked as Vulnerable:

<i>Corybas</i> "short tepals"	Orchidaceae ^{1,3,5}
<i>Olearia semidentata</i>	Asteraceae ^{1,2,3}
<i>Sporadanthus traversii</i>	Restionaceae ^{1,2,3}

Formerly Ranked as Rare:

<i>Celmisia adamsii</i> var. <i>adamsii</i>	Asteraceae ^{1,2,3}
<i>Coprosma repens</i> "Poor Knights"	Rubiaceae ⁴
<i>Ranunculus urvilleanus</i>	Ranunculaceae ^{1,2,3}

Formerly Ranked as Indeterminate, Insufficiently Known or Taxonomically Indeterminate:

<i>Corokia cotoneaster</i> var. "Survive"	Escalloniaceae ^{1,2,4}
<i>Hebe</i> "Whangarei"	Scrophulariaceae ^{1,3}
<i>Hydrocotyle</i> "Ecroyd"	Apiaceae ^{1,3}
<i>Myoporum laetum</i> var. <i>decumbens</i>	Myoporaceae ⁴
<i>Pachystegia</i> "Ohau Bluff"	Asteraceae ⁴
<i>Sophora microphylla</i> "Chathams"	Fabaceae ⁶
<i>Sophora microphylla</i> "Cook Strait"	Fabaceae ⁶

Formerly Ranked as Local:

<i>Bulbophyllum tuberculatum</i> *	Orchidaceae ^{1,2,3}
<i>Festuca coxii</i>	Poaceae ^{1,2,3}
<i>Hebe chathamica</i>	Scrophulariaceae ^{1,2,3}
<i>Loxosoma cunninghamii</i>	Loxosomataceae ^{1,2,3}
<i>Nestegis apetala</i>	Oleaceae ^{1,3}
<i>Pomaderris rugosa</i>	Rhamnaceae ^{1,2,3}

Explanation of Footnotes

¹Ecology and distribution better understood.

²Previous threat(s) lessened by management.

³More abundant on known sites than previously believed.

⁴Taxonomically indistinct.

⁵Systematic name change either recently published or revision in process.

⁶Taxonomic status uncertain.

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