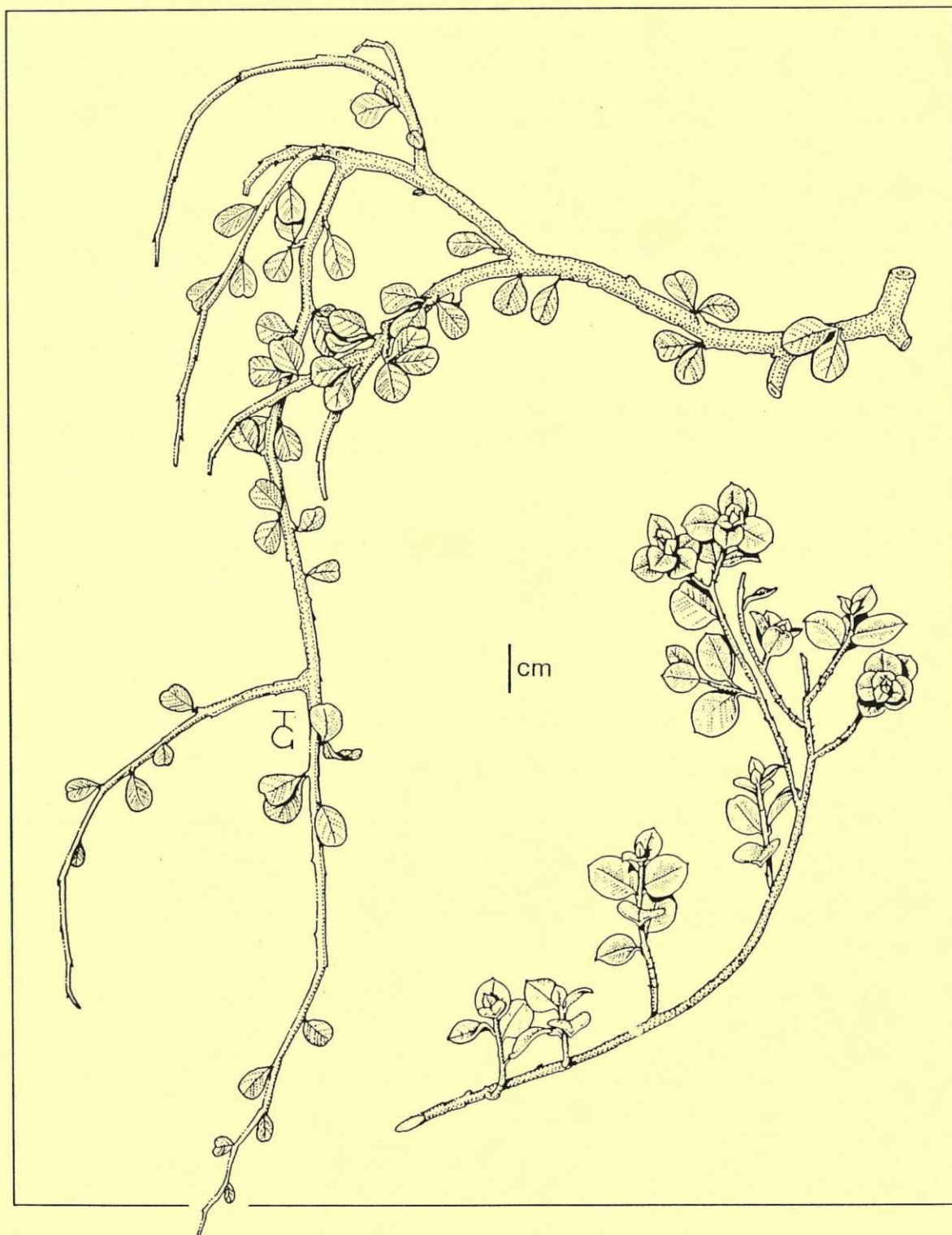


NEW ZEALAND BOTANICAL SOCIETY
NEWSLETTER
NUMBER 23 MARCH 1991



NEW ZEALAND BOTANICAL SOCIETY
N E W S L E T T E R
NUMBER 23 **MARCH 1991**

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New Zealand Botanical Society

President:	Dr Eric Godley
Secretary/Treasurer:	Anthony Wright
Committee:	Sarah Beadel, Wendy Nelson, Colin Webb, Carol West
Address:	New Zealand Botanical Society c/- Auckland Institute & Museum Private Bag AUCKLAND 1

Subscriptions

The 1991 ordinary and institutional subs are \$12. The 1991 student sub, available to full-time students, is \$6.

Back issues of the *Newsletter* are available at \$2.50 each - from Number 1 (August 1985) to Number 22 (December 1990). 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 June 1991 issue (Number 24) is 27 May 1991.

Please forward contributions to:	Dr Wendy Nelson, Editor NZ Botanical Society Newsletter C/- National Museum PO Box 467 WELLINGTON
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Cover Illustration

Myrsine divaricata (top left) and *M. nummularia* (bottom right); illustrations by Tim Galloway for the "Field Guide to New Zealand's small leaved shrubs" by Hugh Wilson, soon to be published by the Canterbury Botanical Society. [Refer to p. 8 "Jubilee Award ..." and "H.H. Bloomer Award".]

NEWS

New Zealand Bot Soc News

■ Australian Systematic Botany Society - New Zealand Botanical Society : Joint Meeting

SYSTEMATIC AND ECOLOGICAL RELATIONSHIPS OF SOUTH PACIFIC FLORAS

The Australian Systematic Botany Society and the New Zealand Botanical Society will hold a joint conference in Auckland, New Zealand, in late November 1991. The conference will be preceded by a small workshop on cladistics and followed by a botanical tour of the South Island. An organising committee comprising both Australian and New Zealand representatives is in the process of being formed.

Timetable

Fri 22 November	Cladistics Workshop
Sat 23 November	Cladistics Workshop
Sun 24 November	Local field trip - Rangitoto Island and/or Waitakere Ranges
Mon 25 November	ASBS-NZBS Conference
Tue 26 November	ASBS-NZBS Conference
Wed 27 November	ASBS-NZBS Conference
Thu 28 November - Mon 1 December	Nature Quest Tour of botanical Highlights in the South

Cladistics Workshop

This will be an introductory Workshop for practicing plant systematists, organised by Pauline Ladiges of the Botany Department, University of Melbourne, and Phil Garnock-Jones of DSIR Land Resources, Lincoln. It will cover the philosophy and methods of cladistics, including the main computer packages. We hope to give you the opportunity to analyse real data for your group of plants. Numbers will be limited, so please signal your intention to attend as soon as possible.

Conference

There will be three days of papers on Australian and New Zealand Botany, and the usual social events. The theme of the meeting will be Systematic and Ecological Relationships of the New Zealand and Australian Floras. There will also be an evening event open to a wider and less-specialist audience which we hope will draw attention to plant systematics. Poster papers will be welcome. Both Societies will hold a General Meeting during the Conference period.

Venue and accomodation

The Conference will be held at the University of Auckland's Conference Centre. Accomodation will be available in nearby University Halls of Residence; the current cost is \$41 + GST (12.5%) per night for bed and breakfast.

Tour

Nature Quest New Zealand Ltd will organise the post-conference tour, probably of five days. At the time of writing exact itinerary and costs are not available. The tour will concentrate on botanical highlights of the South Island including podocarp forest, *Nothofagus* forest, and alpine vegetation.

First Circular

The first circular will be sent out in early April. If you are interested in receiving this please write to:

Anthony Wright, Auckland Institute and Museum, Private Bag, Auckland 1

■ Gone - no address

The following subscribers' Newsletters have been returned by NZ Post. Any members knowing the current address of these persons please contact the Secretary as soon as possible:

Mrs C J Saunders	Mrs Dorothy Maher
Entomology Division	c/- Grasslands Division
DSIR	DSIR
Private Bag	Private Bag
Palmerston North	Palmerston North

Mr D S Hunt
Department of Conservation
Private Bag
Auckland 1

Linda Watson
R D 7
Arohena
Te Awamutu

Anthony Wright, Secretary NZBS, C/- Auckland Institute & Museum, Private Bag, Auckland 1

Regional Bot Soc News

■ Auckland Botanical Society

Our April 1991 to March 1992 programme of field trips and evening meetings won't be finalised until mid-late March. However, if any member of N.Z. Bot. Soc. will be visiting Auckland and would like to join us on a field trip (third Saturday of each month) or at our evening meeting (first Wednesday of each month), they should give the Secretary a call. Visitors are most welcome.

Sandra Jones, Secretary, Auckland Botanical Society, 14 Park Road, Titirangi, Auckland 7 (ph. 0-9-817 6102)

■ Waikato Botanical Society

The year has started well with a trip to the Waihaha Track on the edge of Pureora Forest. We covered a very short distance but managed a fairly long species list, getting nowhere near the fabled giant podocarps of Pureora but seeing very interesting regenerating scrub with elements of both gumland and frostflat type vegetation.

Our programme for the rest of the year is as follows:

Saturday March 8: Awaroa Scenic Reserve - a wetland trip - please supply a canoe if possible.

Sunday April 28: Karangahake Mountain gorse - help a local scientist identify the plants growing in his experimental plots.

Tuesday May 7: AGM, Potluck Dinner, and slides of Stella Rowe's and Peggie Jenner's forays into the islands of the southern oceans.

Saturday May 11: Hapuakohe Kauri forest

Sunday June 9: Rangitoto Range

Tuesday July 9: Evening workshop

Friday - Sunday, July 12-14: Weekend trip to Katikati - excursions into the Kaimais

Sunday August 18: Western Mamaku Range

Sunday September 22: Joint trip with Rotorua Bot Soc to Ruakuri Scenic Res, Waitomo

Tuesday October 8: Evening Speaker (to be finalised)

Saturday October 19: Joint Auckland and Rotorua Bot Socs to Mt Donald McLean and Whatipu

Sunday November 10: Aotea Harbour

Tuesday December 10: Christmas supper and members' slide evening

Contact Catherine Beard (ph. 0-71-490 812 for more details and also for your copy of "Plants of the Whangariro Peat Bogs" at a very reasonable \$12.50 including packing and postage.

Cathy Jones, 40 Puataata Road, Turangi

■ Rotorua Botanical Society

Field trip programme is as follows:

March 17: Raroa Valley, Te Urewera National Park. Leader: Willie Shaw (ph. 0-73-24 546)

March 29 - April 1: Te Araroa, East Cape. Coordinator: Robin Irving (ph. 0-73-24 625)

April 13: Motiti Island, Bay of Plenty.

Leader: Barry Spring-Rice (ph. 0-73-24 675)

May 18: Otupaka Ecological Area, Whirinaki Conservation Park.

Leader: John Nicholls (ph. 0-73-27 729)

June 15: AGM details to be finalised

June 16: Utuhina Stream, Mamaku Plateau.

Leader: Chris Ecroyd (ph. 0-73-479 067)

The newsletter contains articles on a field trip to Ohinekeao Scenic Reserve including a species list, Pohutukawa Survey on the eastern Bay of Plenty, *Pittosporum obcordatum* in Hurumua Nature Reserve, and an article on the occurrence of lowland ribbonwood in the Rotorua Lakes Ecological District.

Sarah Beadel, Okere Road, R.D. 4, Rotorua

■ Wanganui Museum Botanical Group

Chairman: Ian Bell, 115 Mt View Road, Wanganui

Secretary: Joan Liddell, 15 Moore Avenue, Wanganui

Meetings at 8pm on first Tuesday of the month in the Museum classroom.

The first field trip for 1991 was to the Ohakune Mountain Road (Tongariro National Park). Although the weather forecast was not good we took a chance and had a very enjoyable and interesting field trip, the highlight being a little valley near the Turoa Ski Centre which was carpeted with alpine. *Ranunculus insignis* and *Parahebe catarractae* were prominent.

Forthcoming field trips:

2nd March to Simpson's Bush near Hunterville.

24 March to Greystoke (fern flats) and Makahou Reserve.

4 May to a property on the Kauarapoa Road, a short distance up the Wanganui River.

When visiting the Mataroa Scenic Reserve near Taihape we were shown the mistletoe *Korthalsella lindsayi* on *Melicope simplex*. Since then it was seen growing on *M. simplex* near Bulls and also near Wanganui. It would appear that *K. lindsayi* is more widespread in this area than we had realised and we shall look for it wherever we find *Melicope* (or *Coprosma* sp. or *Helichrysum* agg. given as other hosts).

A.E. King, 180 No 2 Line, R.D. 2, Wanganui

■ Wellington Botanical Society

Monday March 18: Evening Meeting - Problem Plants of Protected Natural Areas. Susan Timmins, Science and Research Division, Department of Conservation.

Thursday March 28 - Tuesday April 2: Easter Field Trip - Pelorus Scenic Reserve, Red Hill (Whangamoa Valley), mineral belt above Whangamoa Saddle, Mt Royal and Mt McLaren. Field leader - Tony Druce.

Monday April 15: Evening Meeting - Ever Upwards - Vegetation of Upraised platforms at Turakirae Head. Maggie Wassilieff, free-lance ecologist, Wellington.

Saturday May 4: Field Trip - Turakirae Head. Leader - Margaret Aitken.

Monday 20 May: Evening Meeting - to be arranged.

For further information contact:

Carol West, Secretary, 9 Mamari Street, Rongotai, Wellington 3 (ph. 0-4-878 398)

■ Nelson Botanical Society

The first trip of the summer season in December to Mt Robert didn't quite eventuate. After waiting till nearly lunch time at the Mt Robert car park the party of 16 decided to invade Ray Clarke for lunch. He provided comfortable and interesting surroundings and plenty of enthralling conversation. After lunch we attempted the Peninsula Walk which was bedevilled by short and frequent showers interspersed by equally short sunny spells but was rewarding. It was a good time for native orchids and ten species were recorded in flower with *Pterostylis banksii* and *P. graminea* being the most common near the shore and plants of *Caladenia lyalli* and *C. catenata* more common near the end of the walk on the drier scrubby slopes.

The small leaved shrubs, *Aristotelia fruticosa*, *Pittosporum anomalum*, *Pseudopanax anomalus*, *Coprosma rhamnoides* and weeping matipo also provided a challenge for many present. This was the first locality we have visited where the shrubby, needle-leaved totara has been present, although it is quite common in the upper Buller River area.

The summer trip was to D'Urville Island. On arrival on the island our gear was transported to our quarters at Kupe Bay while we chose to walk via a "short cut" up a pylon line through mineral belt scrub to the crest

of the range and then down the road to the bay. The mineral belt provided a wealth of interesting plants including rewarewa (*Knightsia excelsa*) a plant many had not seen in the wild before, and here near its southern limit. Another interesting find was an abundance of the parasite *Korthalsella salicornioides* on the manuka.

Near the crest of the range at 500 m altitude the regenerating manuka/kanuka shrubland gave way to hard beech forest and this in turn gave way to red beech within a short distance along the road as we passed off the serpentine soils. The descent into the bay was largely through grassland but did pass through kohekohe forest surrounded by mature shrublands. In these shrublands we had our first encounter with an abundance of the parasite *Tupeia antarctica* on five finger which we were to find frequently over the following days.

On each day the walks provided many grand views of the many islands and deep coves. The vegetation provides a great diversity of plants familiar and less familiar, such as the numerous large trees of raukawa which are rare on the mainland because of possums. Coastal gully areas of almost pure kohekohe contained dense supplejack, kiekie, a few nikau and occasional tawa. In a few places the jointed fern (*Arthropteris tenella*), pukatea and a huge puka were also found. Five finger was generally heavily parasitised by *Tupeia antarctica* and akeake as well as tree lucerne and even pine trees (*Pinus radiata*) were parasitised by *Ileostylis micranthus*. The abundance of all the parasites both on the coast and in the mineral belt was attributed to the lack of possums on the island.

The wetter forest along the main ridge yielded a great diversity of filmy ferns with particularly outstanding broad carpets of kidney fern. The road edge to these places was often swathed with the strongly perfumed *Cordyline banksii* in full flower. At the highest points scattered plants of the large forest tussock, *Chionochloa cheesemanii*, were present on rocky outcrops within the forest and we even glimpsed the broad-leaved alpine cabbage tree (*Coryline indivisa*) on one walk.

On the way home on the last day we completed the loop from the power line summit back down the road to the ferry landing. In one area large areas of beech forest had been killed, apparently by salty storm winds, and elsewhere the roadsides contained abundant hutu and provided good views of the forest interior. The descent on the landing side of the ridge continued through beech forest that contained many large rimu and pockets of kohekohe providing quite a grand finale to the trip which was perhaps only surpassed at a brief stop to watch the surging tide in the Pass.

The first Sunday trip of the new year was to Courthouse Flat. In the forest patches on the first walk up Nuggety Creek there was quite a wide range of ferns and, in scrubby areas along the track, also orchids, including the closely similar *Prasophyllum colensoi* and *Microtis unifolia*, several *Thelymitra* species and *Chiloglottis cornuta*. On the later walk up Blue Creek we recorded over 30 species of ferns.

Coming field trips:

March 17: Mt Murchison

March 28 - April 1: Cobb

April 21: Rush Pools/Dew Lakes

May 19: Rabbit Island.

Graeme Jane, 136 Cleveland Terrace, Nelson

■ Canterbury Botanical Society, Summer Camp, 5-11 January 1991

The Summer Camp this year was held at Karamaea in North-west Nelson. We used the premises of the Area School as a base which had an excellent domestic science block as well as a general-purpose laboratory. The weather constituted the mix of heavy rain and warm sunshine responsible for the luxuriant, almost subtropical flora of that coastal area, where banana passionfruit vines run rampant by the roadside. The first days were spent under the guidance of David Norton trying to find a particular scurvy grass (*Lepidium flexicaule*), tanekaha (*Phyllocladus trichomanoides*) and titoki (*Alectryon excelsus*), believed to be at its southern limit on the West Coast. Only the latter was found, but the searches gave us an opportunity to explore the southern tip of the Heaphy Track as well as a cave-riddled area of virgin beech and rimu. For the latter part of the camp, Ross Lake and Neil O'Brien acted as leaders, although we declined to follow Neil into the swollen Karamaea River. We explored estuarine habitats, notable for the native sedge pingao (*Desmoschoenus spiralis*) and large patches of the sea primrose (*Samolus repens*), kahikatea swamp forests for the gumboot brigade and the limestone cave systems of the Oparara Basin, the site of the old Forest Service's experiments in planting eucalyptus to provide a sheltering canopy for

regenerating native species in cutover forest. In particular, we visited the Honeycomb Hill Cave with its collection of subfossil ratite bones, glowworms and limestone formations. Each of us learned something new, from trying to distinguish *Nothofagus fusca* from its close relative *N. truncata*, to puzzling over a *Solanum* sp. plant, very thorny with large fruits, found growing by a coastal bluff. Geraldine Ward crafted an excellent menu for meals, while John Ward acted as camp butler. Ross looked after our finances. Many thanks to all those who made the camp the success it was.

Roger Keey, P.O. Box 8212, Riccarton, Christchurch

Obituary

■ Greta B Stevenson Cone

New Zealand lost an outstanding botanist and teacher when Greta B Stevenson Cone died in England on 18 December, 1990. Greta was born and brought up in Dunedin, graduating from Otago University with an MSc in Botany. The subject of her thesis was the life history of *Korthalsella*. She later went on to obtain her PhD from London University.

This was the beginning of a long career as a teacher and as a research fellow in different parts of New Zealand and in Great Britain. Greta had considerable artistic talent and a great breadth of general scientific knowledge. These combined with her love of plants and enthusiasm for the outdoors made her an inspiring teacher and led to her writing and illustrating several educational books on biological topics. In 1954, there was "A book of ferns"; and in 1967-1970, "The biology of bacteria fungi and viruses" was a popular volume in the Arnold educational series, running to two editions. All this was in addition to bringing up her family.

She was a keen and observant tramp, and held membership and office in several New Zealand botanical societies and nature conservation groups. On field trips she would share points of interest with others, and was always kind and encouraging to beginners. She conducted a number of workshops and study courses, particularly on the larger fungi, and from this arose her 1982 "Field guide to the fungi" which satisfied a need for inexpensive popular information on mushrooms and other fungi for New Zealand readers. In it she left a distillation of her knowledge and enthusiasm for fungi, from the joy of the hunt to the detailed microscopical study and preservation of the quarry. The book provides keys to genera, concise descriptions with her own illustrations, and an entry into the literature with the references necessary for detailed identification. Her characteristic acerbic comment leaves us in no doubt of her position on controversial topics.

It is as one of the pioneers in the study of New Zealand agarics that Greta will be remembered. She made collections with detailed observations and paintings over many years. These studies resulted in a series of taxonomic papers, "Agaricales of New Zealand I-V" in the Kew Bulletin in the early 1960s. Her descriptions, illustrated with her own watercolours, provide the Latin epithet for many species of New Zealand mushrooms.

Marie Taylor, Botany Department, University of Auckland, Private Bag, Auckland

Congratulations!

■ Hector Memorial Medal

Congratulations to Peter Wardle who was recently awarded the Hector medal for plant sciences. The medal is awarded annually (in rotation - to plant sciences, chemical sciences, human sciences, solid earth sciences, mathematical, physical and engineering sciences, and animal sciences) to the investigator who has contributed most toward the advancement of that particular branch of science. Peter received the prestigious medal for his long term ecological research on the flora and vegetation of New Zealand.

■ New Years Honours

Congratulations to Dr Elizabeth Flint who has been awarded an OBE for her services to botany. Dr Flint

has co-authored two volumes of the desmid (unicellular freshwater algae) flora in the Flora of New Zealand series and continues to work on a third volume although she officially retired in 1974. She won the Prince and Princess of Wales Science Award in 1989, is an honorary life member of the New Zealand Limnological Society and a fellow of the Linnean Society of London.

■ H.H. Bloomer Award - Linnean Society of London

Hugh Wilson of Christchurch is the 1991 recipient of the H.H. Bloomer Award from the Linnean Society of London. The H.H. Bloomer Award was established in 1963 as an award to an amateur naturalist who has made an important contribution to biological knowledge, the recipients being alternatively a Botanist and Zoologist. A silver medal, with a donation provided out of the Fund, is presented to the recipient of each award. Previous recipients of the award include: C.E. Raven, Miriam Rothschild, Ursula K. Duncan, Blanche Henrey, David E. Allen and O.V. Polunin.

Hugh Wilson is the first Southern Hemisphere biologist to receive this award. The Awards Committee and the Linnean Society Council were impressed with Hugh Wilson's long-standing commitment to New Zealand Botany and to the conservation of the New Zealand flora as evidenced by his extensive field surveys and meticulously produced vegetation maps, the variety and extent of his scientific writing, his beautifully illustrated field guides to major botanical regions in New Zealand, and his achievements as a natural history commentator and communicator.

■ 1990 Commemorative Medals

Congratulations to Nancy Adams, Ian Atkinson, Elizabeth Edgar and Elizabeth Flint who have all received 1990 Commemorative Medals. These well deserved medals were awarded for their substantial contributions to various aspects of New Zealand botany.

■ Sir Victor Davies Award

Congratulations to Peter Heenan (Technical Officer at DSIR Land Resources at Lincoln) who received the inaugural Sir Victor Davies Award from the Royal New Zealand Institute of Horticulture. This award is to be awarded annually to a person under thirty years who has demonstrated an outstanding plant knowledge in New Zealand. Peter has made a speciality of native plants, particularly the survival *ex-situ* of rare and endangered species.

■ Jubilee Award - Wellington Botanical Society

The inaugural Jubilee Award of the Wellington Botanical Society has been made jointly to Rotorua Botanical Society towards the cost of their publication the "Botany of Rotorua", and to Hugh Wilson towards the cost of the Canterbury Botanical Society book "Field guide to New Zealand's small leaved shrubs". The recipients were awarded \$500 each. Congratulations to both.

■ Artiste FIAP

Congratulations to David Given who has been awarded the qualification of Artiste FIAP (AFIAP) by the International Federation of Photographic Art, chiefly for photographic work in natural history.

■ Doctorates of Science - Melbourne University

Congratulations to bryologists George Scott and Ilma Stone on each being awarded a Doctorate of Science from the University of Melbourne - fitting rewards for many years of fruitful research.

Other News

■ 200,000th specimen added to AK Herbarium

On the 12th December 1990, the 200,000th specimen was formally accessioned into the Auckland Institute and Museum Herbarium (AK). The herbarium is the largest departmental collection within the Museum, holding perhaps a quarter of the estimated 1 million objects in the Museum.

Jack Mackinder, Botany Technician, produced the specimen's label using the AKILLES computerised herbarium management system he developed for the Museum. The specimen itself is an example of the native titoki, *Alectryon excelsus*, collected near Lake Whangape in the Waikato by the Department of Conservation's Rare Plant Botanist, Peter de Lange.

Museum staff were invited to the brief accessioning ceremony before a special morning tea catered for by the Botany Department. The Botany staff, however, avoided the jam in the staffroom and enjoyed a celebratory "artillery morning tea" on the Museum roof with its spectacular views of Auckland. A Royal Artillery tradition dating back to the British campaigns in India, artillery morning teas are characterised by white linen, fine china, crystal and silverware; madeira wine and fruitcake; and strong black filtered coffee. This tradition has a lot going for it, and we eagerly await the quarter-millionth specimen!

Anthony Wright, Curator of Botany, Auckland Institute & Museum, Private Bag, Auckland 1

NOTES AND REPORTS

Herbarium Reports

■ Botany Department, University of Auckland (AKU)

At the end of 1990 the herbarium held some 52145 specimens. The breakdown of accessions is as follows:

	1990 accessions	totals
vascular plants	711	22565
algae	57	15425*
bryophytes	35	12180
lichens	32	1679
seeds	7	181
wood samples	-	115
totals	842	52145

*estimated as only about 12% have been accessioned

The main accessions during 1990 were native and exotic vascular plants (including many grasses) from the northern half of the North Island, including many inshore islands. An exception to this were 50 specimens from the Stockton Plateau collected by G.A. Taylor.

Unfortunately with increasing demands on my time there has been less time for herbarium work. Consequently the backlog of unprocessed specimens has grown. Most of the mounting and filing of specimens was carried out by the regular voluntary assistance of Vic May and Wendy Patterson.

1990 work also included:

Exchanges	in	29 sheets from 2 institutions
	out	46 sheets from 3 institutions
Loans	in	13 sheets from 3 institutions
	out	669 sheets to 15 institutions
Gifts	out	116 sheets to 2 institutions
Total loans	out	1414 sheets to 13 institutions on 31 December 1990

Ewen Cameron, Herbarium Curator, Botany Department, University of Auckland, Private Bag, Auckland

■ Auckland Institute and Museum Herbarium (AK) Annual Report 1989-1990

The final bank of mobile shelving was installed in the herbarium, completing the storage development in the vault carried out over the past few years. The computerised herbarium management system (named AKILLES) developed by Jack Mackinder is now fully operational, although a number of minor enhancements could be usefully implemented if staff time were available. The system has allowed processing of a greatly increased number of specimens. As well as labelling and registering all incoming specimens and building up a fully accessible data base, all loans of specimens are administered by the

system, and a complete review of overdue loans was speedily and efficiently carried out during the year.

Through the kindness and generosity of an Auckland family the Museum was able to mount a special exhibition of examples of the NZ plates from the recently published Banks' Florilegium. Early black and white proofs from some of the plates and original Banks and Solander specimens from the Museum's collections were used to complement the exquisite hand-coloured and individually pressed Florilegium prints loaned to us. The continuous screening of a video produced to mark the Florilegium publication greatly enhanced the exhibition.

The generous donation of herbarium specimens and books by the following is acknowledged: R.E. and J.E. Beever, P.D. Champion, L.J. Forester, R.O. Gardner, B.W. and G.C. Hayward, P.J. de Lange, D.P. McCrae, J. Smith Dodsworth and Dr Lucy Cranwell Smith. Mr A.E. Esler kindly presented his substantial personal herbarium, largely built up during his time as DSIR regional botanist in Auckland. Amongst incoming exchange specimens were 67 further collections made by Banks and Solander during Cook's first voyage 1769-1770. Receipt of these priceless specimens from the British Museum (Natural History) prompted us to inventory our entire Banks and Solander holdings - now over 400 specimens - and house them in a specially fire-proofed cabinet with our type specimens.

Justin Harrington, Anne Hume, Wei Loo and Marcel Smits were employed for varying periods as student assistants working on curatorial projects, mostly associated with the Bartlett Herbarium. Receipt of two Lottery Science Research grants of \$15,000 and \$5,000 enabled the employment of Marcel Smits for a period of one year from December 1989 to continue with curation of the Bartlett Herbarium and preparation of the NZ Fern Atlas. At year's end (31 March 1990), all the Bartlett bryophytes had been registered and incorporated in the existing Museum collections, and significant progress had been made with the much larger lichen collection. Chris Mackinder joined Joan Dow and Meryl Wright as volunteer specimen mounters, and Rhys Gardner continued to undertake the bulk of specimen incorporation as well as identifying numerous difficult plant specimens. Ted Bangerter maintained geographic, biogeographic and taxonomic card files from his home base, as well as cataloguing the departmental reprint collection. Jack Mackinder attended a week long herbarium technician's workshop in Adelaide, and discussed computer management systems with staff at most of the major eastern Australian herbaria. Without this large group of staff and volunteers the department's work programme would be severely curtailed.

Statistics for the year to 31 March 1990 (with 1988-89 figures in parentheses) include: accessions of numbered herbarium sheets 7728 (4027); outwards exchange 735 specimens to 8 herbaria (37 to 2); inwards exchange 1349 specimens from 12 herbaria (332 from 5); outward loans 36 [974 specimens] to 13 herbaria (26[1005] to 12); inwards loans 6 [376 specimens] from 4 herbaria (2[56] from 20).

Enquiries and correspondence from all manner of public and private bodies and individuals have risen to an alarming level - alarming in that no regular working hours are left for heavy curatorial (collection management) requirements, let alone research. Additional curatorial assistance is urgently needed in a department which houses a major collection (in excess of 200,000 specimens) spanning almost the entire range of plants from cryptogams through to the flowering plants.

Anthony Wright, Curator of Botany, Auckland Institute and Museum, Private Bag, Auckland 1

■ DSIR Plant Protection (PDD)

Approximately 2,200 specimens were accessioned during 1989-90, to give a total of about 58,000. Details of all specimens are on a VISOR database. There were 24 outgoing loans, involving 305 specimens. Two fire resistant herbarium cabinets were purchased, through the New Zealand Lottery Grants Board. These now house all our type specimens. A register of approximately 1,000 type specimens of New Zealand fungi held in herb PDD is to be published in the journal *Mycotaxon*.

Peter Buchanan spent 3.5 months at Fujian Agricultural College, Fuzhou, Fujian Province, China lecturing to postgraduate students, investigating mushroom cultivation, and studying taxonomy of *Ganoderma* and other wood decay fungi. Peter Johnston and Eric McKenzie attended and presented posters at the 4th International Mycological Congress in Regensburg, Germany.

Extensive collecting of New Zealand smut fungi was carried out in conjunction with Dr Kalman Vánky from Germany, the world authority on this group of plant pathogens. As a result, 3 new species, and several new records for the country were found. Preparation and publication of systematic work on New Zealand species of basidiomycetes, ascomycetes and deuteromycetes has continued. Major accounts of the plant

pathogenic fungi and bacteria of the Federated States of Micronesia and of the Republic of Palau have been published.

The database containing details on published records of plant diseases recorded in New Zealand has been maintained and updated.

Eric McKenzie, DSIR Plant Protection, Private Bag, Auckland

■ Warkworth and District Museum

Early in 1989 the curator of the Warkworth & District Museum suggested that the Museum should have an herbarium to record the indigenous flora of the northern Rodney District. Grants to buy materials to set up the herbarium were received from the ASB Charitable Trust, and the Environmental Grants Scheme. Valuable advice and encouragement was given by Anthony Wright of the Auckland Institute and Museum. By the end of 1990 375 vascular plants had been curated.

Maureen Young, 36 Alnwick St., Warkworth

■ Herbarium of the National Museum of New Zealand (WELT), Annual Report 1989-1990

Background

As was the case last year, progress in the herbarium has been influenced by the administrative changes taking place within the whole National Museum. Three major reorganisations are taking place at once: (i) an amalgamation of the National Museum and National Art Gallery into a single institution; (ii) increasing autonomy for this new institution leading eventually to a complete severance from the Department of Internal Affairs; and (iii) transference of all the staff and collections of this institution to the new Museum of New Zealand which will be established with its own Act of Parliament as from 1 July 1991.

These changes have necessitated a huge internal restructuring involving:

- (i) the centralisation of most of the service departments (including display, conservation, finance, photography, typing etc) which were previously conducted separately within the Art Gallery and Museum;
- (ii) the creation of many new administrative posts in finance and personnel which were previously handled by Internal Affairs;
- (iii) a new management system with financial and administrative responsibilities devolved to lower levels within the organisation.

Patrick Brownsey is now Manager of the whole Natural History Division as well as theoretically remaining Curator of Botany. In practice the vast majority of his time is now taken up with management of the Natural History Division, and some additional assistance is urgently required in the Botany Department.

Planning for the new Museum of New Zealand occupies an increasing amount of everyone's time. Jasmax have been awarded the contract to design the new waterfront building and preliminary sketches are beginning to appear. An exhibitions Conceptual Plan has been prepared by Ralph Applebaum Associates from the USA, and planning for computing and storage needs is underway. However the result of the October election is crucial to the further development of this project, and the extent of National's commitment remains uncertain.

Staff

One positive outcome of the Museum of New Zealand project has been additional funding for staff training. We have been fortunate to acquire two trainees in the Natural History area who have been employed since January 1990.

Jeff Fox is now working on a 2 year contract in the Botany Department during which he will continue his University studies and carry out general herbarium duties. He is also developing his interests in ethnobotany, investigating the requirements for better conservation of herbarium material, and researching our early holdings of Australian collections including those of Robert Brown and Ferdinand von Mueller.

The other trainee is Mike Dickison who has been working in all the Natural History departments as a science technician learning basic techniques. His initial 10-month contract was extended for a further 2 year period from December during which he will concentrate on computer registration, and public relations. He intends to prepare popular articles relating to the research work of the Natural History Division, and

establish a regular column in one of the Wellington papers, in order to raise the public profile of our biological work.

Other staff remain unchanged with Wendy Nelson as our marine botanist and Fiona Pitt the senior herbarium technician.

Collection Management

Databasing of the Sainsbury moss herbarium has continued this year. The entire collection has been entered, and the data are now being checked and edited. Label design is now being finalised and with further financial assistance from the Lottery Board we will begin the printing of labels and repackaging of specimens later in the year.

Almost 14000 specimens were registered last year but this total includes about 11000 Sainsbury mosses. The balance of just over 3000 new accessions comprised mostly ferns, mosses and marine algae which are our major areas of interest. Total holdings amount to about 224000 sheets.

Thirty-seven new loans totalling 2072 sheets were sent out during the year. Ninety-three loans, comprising 4430 sheets, are outstanding at present.

Ninety hours of class contact time were spent on a wide range of educational activities from research lectures to tours by school groups.

One hundred and eight-five hours of consultancy work were carried out for the Museum of New Zealand Project Development Team.

Research Projects

P.J. Brownsey: Fern families Dennstaedtiaceae and Aspleniaceae for *Flora of Australia*; atlas of distributions of new Zealand pteridophytes; taxonomic studies on *Pellaea*, *Ophioglossum* and *Tmesipteris* in New Zealand.

W.A. Nelson: Synonymic list of marine macroalgae in New Zealand; regional seaweed floras of Chatham Islands, Fiordland and Marlborough Sounds; revision of *Porphyra* in New Zealand.; anatomy and ultrastructure of spermatogenesis and carposporogenesis in *Gracilaria*.

J. Fox: Identification and cataloguing of c. 220 of Robert Brown collections held at WELT.

N.M. Adams (Research Associate): Handbook of New Zealand seaweeds; biography of John Buchanan F.L.S.

R.W. Shepherd (Research Associate): Introduction of *Pinus radiata* to New Zealand.

R. Lewington & B. Polly (Research Associates): Mosses of Wellington region.

Patrick J. Brownsey, National Museum, P.O. Box 467, Wellington

■ **Herbarium (CHR), Botany Institute, DSIR Land Resources**

Identification Service: This year our taxonomists determined 301 specimens. This is a slight increase since the policy of charging for identifications ceased in August 1989. Now plant identification is free except for forensic purposes and when clients profit commercially from the determination.

Fees: Visitors who gain commercially from the information obtained from the Herbarium collections, particularly environmental consultants, are now charged \$20 for each half day for the use of the Herbarium.

Displays: The room with the ferns and gymnosperms is still being used as a useful display area. Posters used at conferences are later displayed there and an ethnobotanical display using herbarium sheets and craft objects is usually present. Visiting groups are encouraged.

Cabinet purchases: Using Lottery and DSIR money for more cabinets, the Algae and the remaining Lichens were moved upstairs leaving space for expansion in the Angiosperm areas. Further cabinets for the Angiosperms will allow the herbarium to be turned around and returned to a systematic order.

Friends of the Herbarium: The Friends have contributed 2312 voluntary hours to the general curation of the herbarium.

Herbarium Electronic Data Processing (CHIRP): As of 27.9.90 there are 18028 records on CHIRP (Christchurch Herbarium Information storage and Retrieval Project) database. All new accessions are added to the database and a backlog of specimens (25,000 of which were prepared by temporary workers)

waits to be processed. A Lottery Grant of \$42,000 will make some headway on the backlog. Donations to the Herbarium Collections: We are grateful to the following donors of specimens: C.C. Ogle, Wanganui district; P. de Lange, northern North Island; A.P. Druce; A.J. Healy; R.D. Seppelt, cryptogams; W. and D. Harris, roadside flora from Angers, France; Mrs Frances Duguid, personal herbarium from the Horowhenua district; Mrs Iris Coulter, Fiji; Canterbury Botanical Society, small-leaved shrub vouchers; W. Nelson, *Porphyra* isotype; J.A. Elix, *Collema* holotype and Fascicle 8 of Lichenes Australasici Exsiccati.

Loans: Thirty six outward loans were made to 23 institutions. Fifty five inward loans were received from 21 institutions. The majority of incoming loans were concerned with the revision of grasses for the Flora of New Zealand series by Dr E. Edgar and Dr H.E. Connor.

Exchange between Herbaria: A total of 2321 specimens was received in exchange from 20 herbaria. More than 100 were received from AK, WAIK, CANB, CBG, KOBE, MICH, and TI. Large consignments of mosses were very welcome from MICH (H. Crum) and CBG (H. Streiman) to assist work on the Flora of New Zealand series by Dr A.J. Fife. Our staff and resources did not allow us to send as many duplicates out as in previous years, however 710 sheets were sent to 12 institutions.

Visitors: Forty eight visitors have worked in the herbarium this year. The overseas visitors are: P.J. Dalton, Jen Johnston and H.R. Toelken from Australia; J. Florence from Tahiti; D.J. Galloway and P. Thompson from England; Susan Aiken and D. Pinter from Canada; L.F. Tibell from Sweden, and K. Vansky from Germany.

Annotated Checklists of New Zealand Plants: Considerable progress has been made on the most important Dicotyledon checklist which is nearly complete to first draft.

A Lichen Checklist has been received from David Galloway (BM) and Allan Fife is editing this. It is believed that these checklists will be an appropriate way of communicating accepted name changes to the botanical public of New Zealand. Information from these checklists is available on request.

Murray Parsons, Herbarium Keeper, Botany Institute, DSIR Land Resources, Private Bag, Christchurch

Current Research

■ A mucilaginous microbial mat from rewarewa (*Knightia excelsa*) bark, South Range Road, Tararua Range, New Zealand

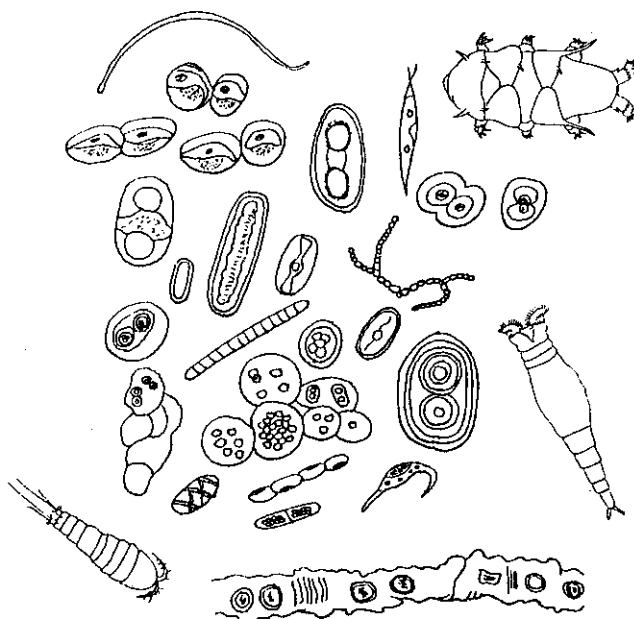
Microbial mats are communities of microorganisms comprising bacteria, cyanobacteria, diatoms, unicellular and filamentous green algae and grazing protists and metazoa. Physical coherence is maintained by the intertwining of filaments and secretion of extracellular slimes. Studies on microbial mats have concentrated mainly upon those in terrestrial hot springs and in coastal ecosystems but microbial mats have also been reported in soils and have been commented on often from the point of view of their role in soil enrichment, and there is one report of a mucilaginous mat on a stone wall in Scotland. The mats can tolerate environmental extremes such as temperature and availability of water, nutrients and energy, and are commonly layered with diatoms or desmids overlying bacteria and cyanobacteria and animals moving through all the layers. As far as I am aware, no such communities have been reported on bark. Lists of species isolated in culture have been published but without comments on possible or observed interactions between the organisms present. In New Zealand there is very little published work on the flora on terrestrial angiosperms. Work on lower plants growing epiphytically has been even more sparse although some early research lists epiphyllic (leaf perching) algae, lichens and bryophytes.

Observations on a microbial mat were made in early May, 1990. An isolated rewarewa tree growing on a wet, windy, cold ridge at the edge of a depauperate bush remnant near Palmerston North was noticed to have the lower trunk and branches almost completely covered in a mass of green-brown mucilage which was absent from adjacent native plants. On examination it was found to contain a microcosm of prokaryotic and eukaryotic organisms among which the following were identified: bacteria, non-heterocystous filamentous and unicellular cyanobacteria (e.g. *Asterococcus*, *Gloeocapsa*), fungal hyphae (including nematode-trapping fungi), gel-producing saccoderm desmids (mainly *Maesotaenium chlamydosporum*, but also *Cylindrocystis crassa* and *Spirotaenia obscura*), placoderm desmids (*Pleurotaenium* sp), flagellated green algae (*Chlamydomonas* sp) and their palmelloid stages, filamentous green algae (*Stictococcus* sp and *Trentepohlia* sp, *Ulothrix crenulata* forming hypnozooids) and a rich

collection of grazing and browsing animals - rotifers feeding on particulate organic matter, tardigrades (sap-sucking arthropod-like animals), omnivorous harpacticoid copepods, and nematodes (carnivorous on tardigrades). The mucilage also contained fragments of the moss *Sematophyllum amoenum* (syn. *Rhaphidorrhynchium*) and the liverwort *Siphonoleujeuna nudipes*.

This community persisted until mid October when, even after a period of heavy rain, most of it had dried to a crust, in places flaking off the bark. On rehydration in the laboratory the gel form reconstituted and presumably became functional again. The animals resumed their grazing activities, nematodes within 30 minutes, followed by rotifers (2 hours) and tardigrades (4 hours).

It is suggested that the mucilage exuded by the desmids may provide substrates for the pioneer growth of bacteria and small coccoid green algae. The established community would be enriched by leachates from the bark and by stem flow from the vigorous growth of bryophytes on the upper part of the tree trunk. There is likely to be tight recycling of organic and inorganic substrates amongst members of the community. It is known that gelatinous algal colonies may break up as they pass through the gut of small animals absorbing nutrients from the gut fluid and on release showing enhanced growth, photosynthesis and division rate. Mucilage may provide a low oxygen environment for non-heterocystous nitrogen-fixing cyanobacteria. Oxygen-consuming bacteria very likely use the products of cyanobacterial carbon dioxide fixation and promote nitrogen fixation. Bacteria and fungi would also break down faecal pellets and dead bodies, releasing inorganic nutrients for algal growth.



A selection of organisms found in the mucilage.

All four major animal types present have the capacity to resist desiccation and to enter a state of diminished metabolism. Some, such as the tardigrades may survive for many years. Eggs of copepods will not hatch except after a period of desiccation.

Such a corticolous community may be worthy of further study.

Heather Outred, Department of Botany and Zoology, Massey University, Palmerston North

Plant Records

■ *Crassula hunua*

Crassula hunua has been recorded from only a handful of localities and seems to be nowhere abundant - it has not been rediscovered north of Auckland, for example, while the Chatham Island record is a recent one and therefore unlikely to indicate the species' head-quarters.

It does persist near Auckland at its type locality, the Wairoa Falls in the Hunua Ranges, where it grows among the rocks at the edge of the plunge pool, restricted somewhat by adventive herbs and grasses; rapids downstream also have a small number of plants.

It is remarkable then that *C. hunua* turns out to be one of the most common weeds in those Auckland bowling greens which have a "cotula" turf (*C. dioica* and *C. maniototo* - now *Leptinella dioica* and *L. maniototo* cf. Lloyd & Webb 1987, NZJBot 25(1):99-105). Known here as "tilly-ya", it is found on the playing surface and in the surrounding "ditches" but never in the adjacent paths and verges; obviously it can stand some trampling but requires water and is intolerant of taller plants, particularly grasses.

The desired uniform playing speed of the turf is spoilt by the patch-forming character of *C. hunua*, so green-keepers are at pains to eliminate it (and also *Pratia angulata*, "hydracotyl" - *Hydrocotyle microphylla*, and "starweed" - *Plantago triandra*).

I have been told that *C. hunua* has been known as a weed here for at least 10 years (hence the common name), but whether it came in on ducks' feet (bowling greens may flood in winter to become private lakes, away from humans, dogs and cats), or simply as a hitchhiker in commercially-supplied turf I have no idea. Cotula greens are renovated each winter, often using turf fragments supplied by other clubs, and for all I know *C. hunua* may in fact be one of our most widespread and best looked-after "rare" plants.

Rhys Gardner, 5 Ward Terrace, Sandringham, Auckland 4

Fieldwork

■ A vegetation resource compiled by Massey University students

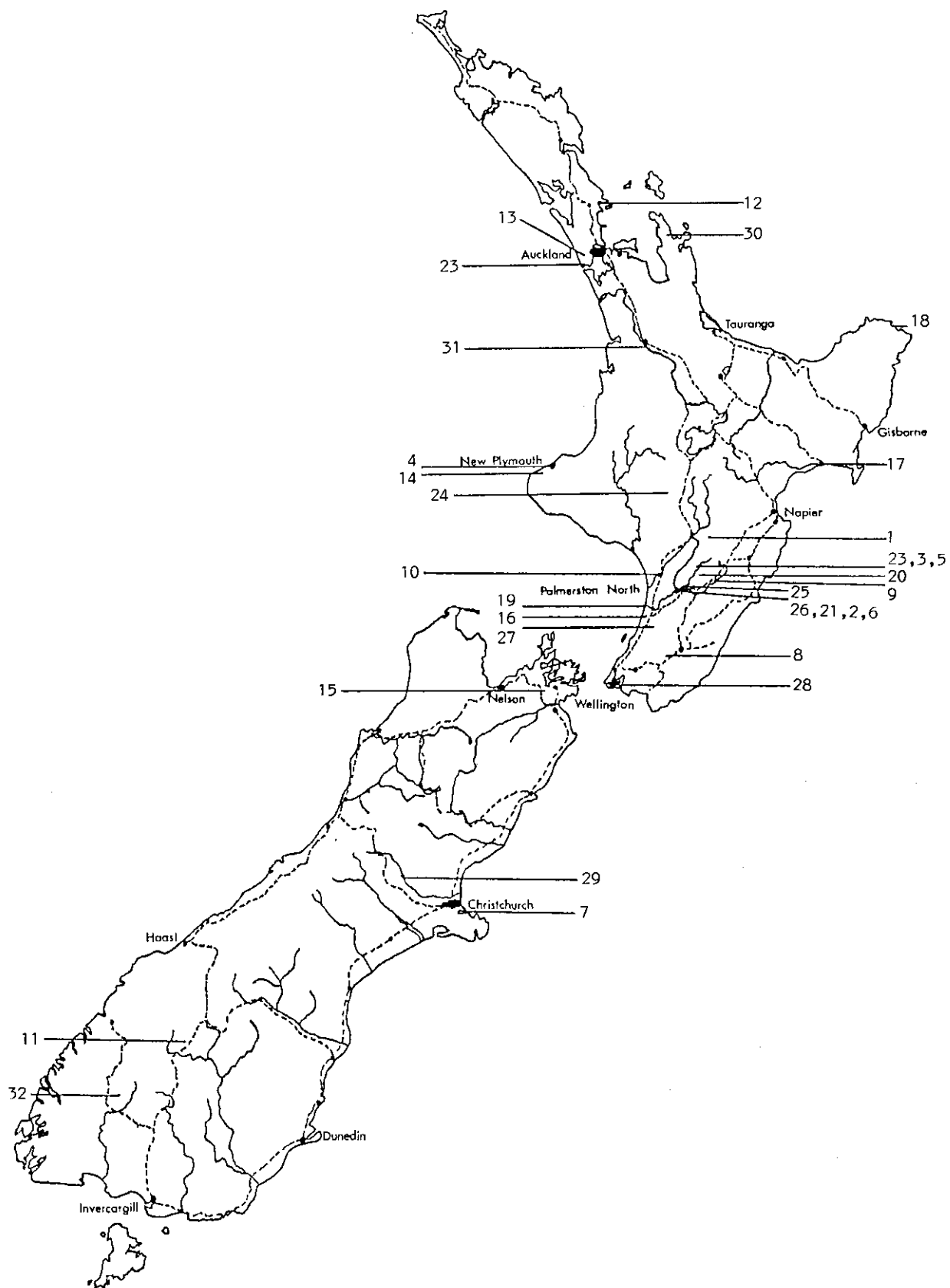
Third year students in Botany at Massey University have the opportunity to take a paper studying the Flora of New Zealand. As part of this course, they undertake a study of a small patch of vegetation. These studies provide a resource of information for future reference. They are especially valuable in that many of the records are for small, often privately-owned remnants, for which no other formal information is available. This arises because the students often complete their project work in their home district, using local knowledge and often local influence to gain access to sites. This, of course, gives excellent coverage to the central North Island, but since the course is also offered to extramural students, many interesting sites throughout the country are also investigated (refer map).

Each study is, of course, restricted by the nature of the project, which aims to give the student some experience in identifying the flora, describing plant communities in a qualitative way, and recording their discoveries. Work involves identification of an interesting patch of vegetation, particularly one containing a diversity of plant communities, researching its tenure, and history since Polynesian times or earlier, and mapping its major physical features. The major plant communities are identified, their characteristic species listed, and their distributions mapped. In addition a full species list of higher plants is compiled, and herbarium collections of the major species made. Projects conclude with identification of the major conservation problems of the area, and suggestions as to future management strategies.

Students often chose to commit large amounts of time to the investigation and description of their chosen patch of vegetation, and many end by developing long-term interests in the future management of their area. Though their information is often preliminary, and some, despite assistance, have defects in plant identification, the scope of the information gathered, and the personal points of view and interests developed provide a useful database for future investigations.

To date, the projects completed, their topics, and the students who have compiled them are listed below:

1. ABRAHAM, E.W. Vegetation of the Kawhatau River.
2. BULL, D. Vegetation Study of the Massey Bush.
3. BUSH, R. Pohangina Bush - Regeneration Study.
4. CURD, K. Vegetation of Lagoon Bush, in Barret Domain, New Plymouth.
5. DAVIS, G. A vegetation survey of the camping ground at Pohangina Valley Domain.
6. DE NYS, A. Vegetation study of Keebles Bush.
7. DOWLING, R. Vegetation study of an area in the Port Hills, Canterbury
8. FALLOON, M. Allens Bush, Wairarapa.
9. FINDLAY, J. The flora and vegetation of Forks Creek, Dannevirke.
10. FRASER, B. Bruce Park, Bulls.
11. GRAINGER, K. The vegetation of an area at Cardrona ski field, Central Otago.
12. HALKYARD, D. Vegetation study at Warkworth, Matakana.
13. HAYWARD, S. Vegetation of the lower levels of Mt Taupaki, in the Waitakere Ranges.
14. HOLMAN, S. The vegetation of Te Koru Pa historic reserve, New Plymouth.
15. JANE, C. Vegetation of the Mahakipawa Arm, Pelorus Sound.
16. KNIGHT, G. Papaitonga Scenic Reserve, Levin.
17. LIGHTBAND, M. Whakamahi Lagoon, Wairoa



18. McCONNELL, A. Pukeamaru Scenic Reserve, East Cape.
19. MILLS, T. Foxton salt marsh.
20. MITCHELL, I. Vegetation study of a site in the Ruahine Ranges.
21. O'HARA, P. Vegetation study of the area by the old Fitzherbert bridge, Palmerston North.
22. PATERSON, R. Mid-altitude exposed mixed forest in the Ruahine Ranges.
23. PEGMAN, A. Karamatura Valley, Waitakere Ranges.
24. SIMCOCK, R. Rail Line revegetation, Ohakune
25. SMITH, H. Beech Hill, Aokautere.
26. SPEEDY, D. Tiritea, Palmerston North.
27. TOWNSEND, A. Otaki Forks.
28. VINK, I. Banks of the Wainuiomata River.
29. WARDLE, R. West side of the Kowhai River, Canterbury.
30. WATSON, L. Matarangi Peninsula, Coromandel.
31. WHALEY, K. Claudelands Bush, Waikato.
32. WHITEHEAD, S. Vegetation near the summit of Mt Prospect.

Jill Rapson and Lynda Dixon, Department of Botany and Zoology, Massey University, Palmerston North

BIOGRAPHY/BIBLIOGRAPHY

■ Biographical Notes (1): John William Hall (1830-1915)

Hall was born on 26 January, 1830, at Peatling Magna, Leicestershire; and in Leicestershire he was educated and served his apprenticeship in pharmacy. He arrived in Auckland on the *Egmont* in 1858 and began farming at Otahuhu; but soon after the opening of the Thames goldfield in 1867 he established a chemist and druggist business in Owen Street, Thames (1,2).

Hall's hobby was arboriculture, and in 1901, after deploring the destruction of the native bush he wrote: "And, unfortunately, the planting of our beautiful New Zealand trees has not generally been adopted, perhaps from the mistaken idea that they are difficult of culture. Partly to disprove this, but principally because I had a great liking for the occupation, I some thirty years ago began a plantation on a piece of land at Parawai, Thames.". Hall also hoped that these 3 acres, lying just to the south of Thames, would "induce the visits of our rapidly disappearing native birds". Both aims were achieved. The trees flourished (except for tawa, taraire and pukatea) and so did the birds, as Hall's list shows. He also demonstrated that puriri and totara can be grown from cuttings (3,4). And he exchanged seeds "with friends in England, including the Dorrien-Smith family of Tresco in Cornwall [Scilly Is.] where many New Zealand plants flourish" (5).

However, as well as promoting the cultivation of our indigenous trees and shrubs, Hall was probably the first in New Zealand to undertake experimental taxonomy. That there were two kinds of totara had long been suspected, and by 1889 Thomas Kirk could write: "But, in order to determine the question Mr J.W. Hall obtained a few plants of each form from the ranges, and cultivated them in his shrubbery: neither species has produced flowers, but owing to the peculiar habit of the larger leaves, the present species presents a very different appearance from the true *Podocarpus totara*. Mr Hall has contended for its specific distinction for the last ten or twelve years, and as the characters derived from the fruit support his contention, I have great pleasure in attaching his name to the species" (6). Hence *Podocarpus hallii*.

Hall's wife Mary died at Thames on 18 September, 1898, aged 67, and Hall at Thames on 24 May, 1915. Both are buried in the Shortland Cemetery (1). Hall's daughter married the eldest son of his botanist friend James Adams (1839-1906), first headmaster of Thames High School; and in 1972 parts of Hall's arboretum could still be identified in a housing estate at Parawai (5). This area is now is a reserve.

(1) The N.Z. Society of Genealogists Inc.: Shortland Cemetery, Thames, 1977; (2) Cyclopedia of N.Z. Vol.2, 1902; (3) Hall, *Trans.N.Z.Inst.*, 1902; (4) Haszard, *Trans.N.Z.Inst.*, 1902; (5) Adams, *Tuatara*, 1972; (6) Kirk, *Forest Flora of New Zealand*, 1889.

Eric Godley, Research Associate, Botany Institute, DSIR Land Resources, Private Bag, Christchurch

PUBLICATIONS

■ Tane

Tane, the Journal of the Auckland University Field Club, is once more in print. Volume 32 was published on 10 December 1990, and contains a variety of interesting articles including:

Changes in the vegetation, and vascular flora of Motuhora (Whale Island), 1970-1986 by C C Ogle
Mosses of Whale Island (Motuhora), Bay of Plenty, New Zealand by J E Beever and P J Brownsey
Lichens of Whale Island (Motuhora), and Rurima Islands, Bay of Plenty, New Zealand by Bruce W Hayward and Glenys C Hayward

Vascular plants of the main northern Mokohinau Islands, northeast New Zealand by E K Cameron
Additional vascular plant records for Fanal Island, Mokohinau Islands by E K Cameron and A E Wright
Comparison of plant micro- and macro fossils, Kariotahi, Awhitu Peninsula by Rewi Newnham and Chris Lusk

and Obituaries for Lucy B Moore, 1906-1987 by Frank Newhook and
Sir Charles Fleming, 1916-1987 by John Morton.

The volume is available at the following prices:

Student subscribers	\$10.00
Other subscribers	\$14.00
School libraries	\$12.00
Other libraries and institutions	\$16.00
(postage free within New Zealand)	

Please send your order, with payment made out to "Tane, AUFC Journal", to:

The Editor, Tane, C/- Botany Department, University of Auckland, Private Bag, Auckland 1

DESIDERATA

■ Kowhai Ngutukaka Seed Wanted

Kowhai Ngutukaka or Kaka beak (*Clianthus puniceus*) is an endangered plant in the wild.

In conjunction with DSIR we have been analyzing seed proteins to investigate genetic variation and relationships in cultivated and wild plants. I would appreciate samples of 10-20 seeds from as wide a range of cultivated plants as possible. Please send to:

W.B. Shaw, Department of Conservation, P.O. Box 1146, Rotorua

■ *Microseris scapigera*

An overseas contact has requested living seed of *Microseris scapigera* with information on the collection site. If you are able to assist please contact:

Jill Rapson, Department of Botany and Zoology, Massey University, Palmerston North

■ Wild Ginger

I am a Geography MSc student at Auckland University and am currently beginning thesis research on the invasion of wild ginger (*Hedychium gardenerianum* and *H. flavescens*) in the Waitakere Ranges. I would appreciate any information on these species, their invasiveness in native forests, and effective control measures. It appears that very little has been written internationally on the subject of wild ginger.

Jenny Byrne, 47a Maskell St, St Heliers, Auckland 5 (0-9-558 102)

CONFERENCE/WORKSHOP REVIEWS

■ Second Lichen Workshop at Cass

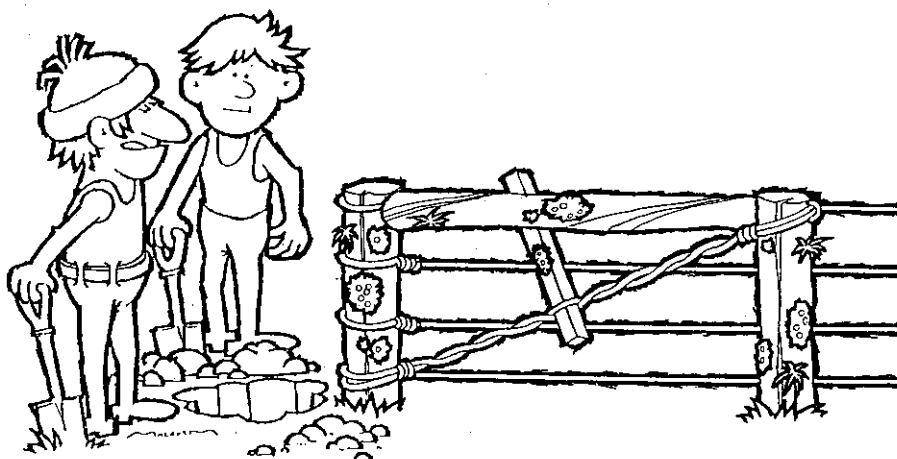
More than twenty lichenologists gathered from the 15 to 19 February at the University of Canterbury Field Station at Cass for the Second N.Z. Lichen Workshop. David Galloway from the British Museum was again the leader, with Jack Elix from the A.N.U. in Canberra giving expert help, particularly with the Parmeliaceae. Colin Meurk and Alan Fife from Lincoln, and Anthony Wright from Auckland, also gave much help in the field and laboratory. As most of those attending had participated in the previous workshop progress was rapid and enthusiastic. Like the "Lichen Lot" of Wellington, the Christchurch group intend to follow the workshop with regular meetings to increase their knowledge by working on the lichens of Banks Peninsula. Before the workshop began David Galloway, with Colin Burrows and Colin Meurk, spent two weeks surveying the lichens of Arthur's Pass, and compiled a list of approximately 260 species. As this list includes all those species found during the workshop and is to be issued shortly lichens encountered on excursions are mentioned only in the most general way.

The first outing was to the wide gravel riverbed where the Hawdon enters the Waimakariri. To most of us this looked a most unlikely site but we were soon enlightened by finding species of *Placopsis*, *Neofuscelia*, *Xanthoparmelia*, *Caloplaca*, *Cladonia*, *Collema*, *Stereocaulon*, *Lecanora*, and many others encrusting stones or growing on the sand or logs. The importance of the lichens as primary colonisers breaking down rocks and binding sand so that plants are able to move in was pointed out, which was rather salutary to one who has taken hundreds of students to study riverbed succession without mentioning the fact. From the gravel riverbed we moved to the *Discaria* covered flats where another rich assemblage of lichens, dominated by *Usnea*, *Menegazzia* and *Hypogymnia* species was seen. In the afternoon collections of several species of *Pseudocyphellaria* were made on the terraces near the Andrews River, and a careful search found the tiny red apothecia of *Lecidea laeta* on the spines of *Discaria*.



*He's a basket-case, but reckons it was all worth it - he crashed through ten hectares of matagouri to find the rare lichen *Lecidea laeta* that grows on the tips of the spines.*

On the second day we crossed Arthur's Pass to Kelly's Creek beyond Otira to study the lichens of a high rainfall area. The weather was kind insofar as there was only a light misty drizzle instead of the usual deluge. Here the lichens were much larger and more prolific with large foliose *Sticta* and *Pseudocyphellaria* spp. festooning the trees and rocks. Many of these were blackish or dark coloured due to the presence of blue-green cyanobacterial photobionts. Gelatinous blackish-green *Collemas* were also very common. On the brick-red *Trentepohlia* covered rocks of Kelly's Creek crustose species of *Placopsis* made colourful mosaics and the grey-white branches of *Stereocaulon* sprouted from every



When the wool price collapsed, Falloon told us to come up with "imaginative new farming ideas", so we're gonna' hire out to the Government all the lichens on our fence posts as "pollution canaries" to measure the ozone-wreaking methane that our stock belch up.

crevice. Surprisingly there were far fewer large lichens seen on the Cockayne Memorial walk than expected. Probably this was due to low light but some wondered about dyers removing them.

Monday's expedition was supposed to be a short jaunt up through a patch of beech forest close to the field station, to an open scrub-covered saddle. Most of the party missed the track and the fitter members finished by climbing Mt. Sugarloaf and collecting such interesting lichens as *Alectoria nigricans* and *Neuropogon* spp. before returning in the evening.

In the evenings Bill Malcolm showed us his superb colour slides of lichens, which we all wanted published immediately, and Jack Elix gave an entertaining illustrated talk on a lichenological trip to Norfolk Island. Jack also gave a very understandable talk on his reasons for breaking the genus *Parmelia* into a number of smaller genera. *Parmelia* is a genus with only a few dozen species in the northern hemisphere but with many hundreds in the southern hemisphere. Australia alone has nearly 500. Needless to say Jack has met considerable opposition from Europeans, but fortunately his ideas are now being generally accepted. David and Bill continued to entertain us with anecdotes ranging from opera to homeopathy.

Plans for the next lichen workshop have not been finalised but it is hoped to have it in Nelson. Many of those present showed interest in attending the next meeting of the Association of Australasian Lichenologists in Tasmania in 1991.

Phillipa Horn and her helpers went to much trouble to ensure that the workshop ran smoothly and Edith Shaw provided the excellent meals.

Liz and Howard Lintott, 22 Ocean View Terrace, Christchurch 8

THESES IN BOTANICAL SCIENCE

■ University of Auckland - Botany Department

Chin, S.M. The dispersal pattern of some bird-dispersed species on Tiritiri Matangi Island. (MSc)

Lusk, C.H. Age structure and development of Podocarp Angiosperm forest of Ohakune. (PhD)

McKenzie, R.J. A Comparative Study of the Senescence and Abscission of Corollas and Perianths. (MSc)

Pringle, G.J. Cytogenetic studies of *Cyphomandra* (PhD).

Standring, L.S. Induction and assessment of ploidy change in the pepino (*Solanum muricatum* Ait). (MSc)

■ **Victoria University of Wellington - School of Biological Sciences**

Brett, J.L. Studies on fungal allergies in relation to asthma with special emphasis on IgE and antigenic determinants. (MSc)

Brown, K.D. The weed status and ecology of *Buddleia davidii* in the Orongorongo Valley. (BSc Hons)

Burton, E.A. An anatomical survey of the leaves of the New Zealand species of *Clematis* (BSc Hons)

Cherry, P.L. An ultrastructural study of the Pollen of the New Zealand Lauraceae. (BSc Hons)

Intasuwan, Sompop. Sporulation, pilot-scale farming, agar quality and ecotypic variation of the agar seaweed *Gracilaria sordida*. (PhD)

Pickering, T.D. Growth, phenology, agar quality, and food quality for Abalone of the red seaweed *Gracilaria sordida*. (PhD)

Walker, N.K. Post-harvest physiology of Asparagus. (MSc)

University of Otago - Botany Department

Colhoun, C.M. Frost resistance of *Pittosporum* (BSc Hons)

Hyndman, P. The effects of growth conditions of the donor tissue on the ease of extraction of protoplasts from *Solanum tuberosum* variety Rua. (Dip. Biotechnology)

Keogh, J.A. The ecology and seed biology of Wild Irishman, *Discaria toumatou* Raoul, an endemic woody weed. (PhD)

Lamare, M. Effect of diet on growth of juvenile paua (*Haliotis iris* Martyn) (BSc Hons)

CORRESPONDENCE

FORST - Foundation for Research Science and Technology

In the first issue of the newsletter of the Foundation for Research, Science and Technology (FORST) in April 1990, Mr Ron Arbuckle (Chairman - FORST) offered to contribute to newsletters of scientific societies to answer questions about FORST and to "explain what we are striving to achieve for the benefit of New Zealand". I wrote to Mr Arbuckle in May 1990 asking for his comments on the potential benefits the Foundation will bring to botanical research in New Zealand, with several specific areas of concern highlighted:

1. will the current age structure of the workforce engaged in systematics be addressed by recruitment of younger scientists who can be trained by retiring staff before the knowledge and skills are lost;
2. will government scientists be able to obtain funding outside their existing channels if they put up meritorious proposals, or will their work continue to be filtered through bureaucratic layers;
3. will there be a recognition for the need in botanical and ecological research for long term studies with security of funding and organisation support.

I received the following statement in February 1991 after sending a reminder in November 1990.

Wendy Nelson, Editor

Dear Dr Nelson,

I do apologise for not responding sooner but with the heavy demand on our resources pre-Christmas to finalise and dispatch bidding forms for the 1991/92 public good R&D pool meant that your request was put on hold.

I attach a brief statement which I hope covers the points raised in your earlier letter. Perhaps one advantage of the delay in responding is that events of the last six months or so have made the future situation somewhat clearer and I hope as you will see from the statement that there should be no reason for a loss of confidence by those you represent.

The maintenance of a viable and dynamic scientific workforce is accepted by the Foundation as a major strategic goal. The Foundation, along with the Ministry of Research, Science and Technology and other agencies will be watching closely developments in this area.

The opportunity to take such a strategic approach has been reinforced by developments in the science reforms commenced by the previous Government and by the manifesto which is now being put into place by the new Government. This includes the separation into a specific output area, the development of information and databases allowing better isolation of the current resources being allocated to these areas and a future review of how adequate, or inadequate these might be.

As an increasing amount of public R&D funds are transferred to the Foundation then it will be much clearer as to where the various scientific skills lie in New Zealand and the extent to which they are being adequately funded or marginalised. Individuals in the private or public sector or organisations can apply to the Foundation for funds although some criteria do apply and these would have to be understood by the applicants. The Foundation Act requires it to award contracts for research to the best provider.

The new Government has announced that it will be establishing a number of Crown Research Institutes. It is important therefore for those involved in the New Zealand Botanical Society to make sure that their views are made clear to the Ministerial Task Force which is currently moving around the country talking to scientists, community and other interest groups. This is one way of firmly reinforcing the need for activities such as national database and information series and national collections of fauna and flora as part of the scientific effort.

The emphasis in future of total costing of research projects will mean that organisations who have a need to establish databases and information series will need to include the costs of these in their research proposals to the Foundation.

The Foundation has no control over the so-called "bureaucracy" through which organisations may see fit to submit their proposals. That is a corporate responsibility of the individual or the organisation involved and it is not the role of the Foundation to interfere in this process. Having said that it is our view that the process must be as simple and user friendly as possible and should not deny the rights of individuals or groups of scientists access to the Foundation.

It is the Foundation's own aim to progress towards a process of long term funding. The Foundation will be looking at committing an increasing amount of its resources to 3-5 year periods on an indicative basis and acknowledging that much research will need to be planned within much longer time horizons than this. Eventually in any one year we would envisage perhaps only 20-30% of our funding being allocated to shorter term projects. This will allow for considerable flexibility, given that the Foundation has the responsibility of maximising public investment in science and technology on behalf of Government. Although our primary role is an allocative one the Foundation, through its independent advisory role to the Minister and Government, can comment on the priority setting process. The Foundation has already indicated to the Minister that it regards the priority setting process as a vital part of the new science and technology scene but that this must be dynamic and flexible, be set in a longer term timeframe and not be subject to short term vision or political pressures.

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