NEW ZEALAND BOTANICAL SOCIETY

NEWSLETTER

NUMBER 17 SEPTEMBER 1989



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Cover illustration

Echinochloa crus-galli (L.) Beauv. - Barnyard grass (drawing by Alan Esler). See p. 8 for a report on progress with preparation of the grass volume of the Flora of New Zealand.

New Zealand Botanical Society

President: Dr Eric Godley

Secretary/Treasurer: Anthony Wright

Committee: Sarah Beadel, Alison Evans, Cathy Jones
Colin Webb, Carol West

Subscriptions

The 1989 ordinary and institutional subs are $12. The 1989 student sub, available to full-time students, is $6.

Back issues of the Newsletter are avaialbale at $2.50 each - from Number 1 (August 1985) to Number 16 (June 1989). 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 Editor (address below).

Invitation to contribute

Contributions from all sources are most welcome. A list of possible column headings can be found on p.2 of Number 1 of the Newsletter. Feel free to suggest new headings and provide content for the,. Contributions need not be typed, though this helps especially for longer items. Legible hand-writing is acceptable.

Unless specifically indicated otherwise, views expressed in this Newsletter are not necessarily those of the New Zealand Botanical Society Incorporated.

Deadline for next issue

The deadline for the December 1989 issue (Number 18) is 30 **November 1989.** Please forward contributions to:

Anthony Wright, Editor
NZ Botanical Society Newsletter
C/- Auckland Institute & Museum
Private Bag
Auckland 1
NEW ZEALAND

NEWS

New Zealand Botanical Society

■ Call for nominations

Nominations are called for the following positions of Officers and Committee for 1990:

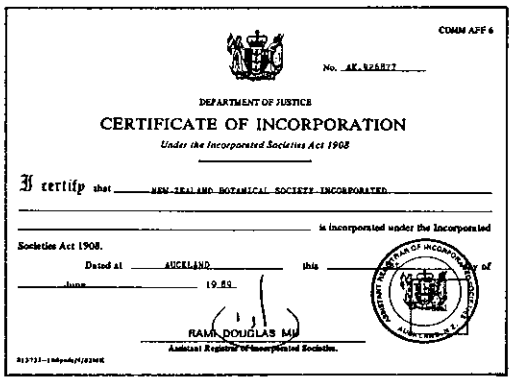
President
Secretary/Treasurer
3 Committee Members

Nominations opened 1 September 1989 and close on 20 November 1989. Nominations shall be made in writing to the Secretary, and shall be signed by the Proposer, the Seconder, and by the Nominee to indicate their acceptance of nomination.

If necessary, ballot papers for a postal election will be circulated with your December Newsletter.

Anthony Wright, Secretary, New Zealand Botanical Society, c/- Auckland Institute & Museum, Private Bag, Auckland 1

■ From the Secretary



COMM APP 6

No. AK 326877

DEPARTMENT OF JUSTICE

CERTIFICATE OF INCORPORATION

Under the Incorporated Societies Act 1908

I certify that NEW ZEALAND BOTANICAL SOCIETY INCORPORATED

is incorporated under the Incorporated Societies Act 1908.

Dated at AUCKLAND this day of June 19 89

RAMA DOUGLAS MA

Assistant Registrar of Incorporated Societies.

Incorporation

As you can see from the heavily reduced certificate we are finally incorporated. The Rules of the New Zealand Botanical Society Incorporated are published later in this Newsletter.

Affiliations

Thank you to the 3 members who wrote with views on this matter. The Committee has decided that NZBS will join ECO as a Class B member, but that we will not join Forest & Bird or Maruia Societies, rather encouraging individual members to join those societies if they wish. No decision was made regarding affiliation to the Royal Society as that body has not responded to repeated requests for information.

Poster

The Committee is to coordinate production of a poster promoting the Society for display at the Science & Natural Heritage Conference in Palmerston North early next year, and at subsequent national meetings.

Newsletter Editor 1990

I wish to hand over the editorship of the Newsletter at the end of 1989. The Committee invites both offers from, and suggestions of people who might fill the Editor's position in 1990.

As an inducement to potential candidates, I make a firm offer of my advice and experience, and float the possibility that I might be able to continue in a "Technical Editor" role overseeing layout, printing and mailout, which would leave the new Editor to concentrate on receiving, soliciting, collating and possibly entering the copy onto floppy disk. Please write in with offers/ suggestions for 1990 Editor, or contact me if you would like to discuss what

is involved.

Anthony Wright, Secretary/Treasurer, New Zealand Botanical Society, c/- Auckland Institute & Museum, Private Bag, Auckland 1

Regional Bot Soc news

■ Auckland Botanical Society

Volume 44, No. 2 of the ABS Journal was published in July 1989. Contents include:

Report on Waima-Waipoua-Mataraua Forests field trip January 1989	Jessica E. & Ross E. Beever
Field trip - 18 March [Kennedy Bay]	Maureen Young
Vascular plants of private forest Waiwera-Hatfields	A. E. Wright
Kaipara Flat Field Trip - 20 May	David Baker & Maureen Young
Te Henga - coastal vegetation	J. A. Rattenbury
Picconia excelsa (Oleaceae)	R. O. Gardner
Eucalypts in Auckland II	R. O. Gardner
Lilium formosanum II	E. K. Cameron
The indigenous vegetation of the McGregor Road kahikatea forests, Ngahinapouri, Hamilton Basin	P. J. de Lange
Orchid extracts from the Matthews correspondence	E. D. Hatch
Myoporum laetum var. decumbens	Maureen Young
Rules of Auckland Botanical Society	

Bulletin No. 18 "Native Vascular Flora of the Hunua Ranges, Auckland" by R. O. Gardner and A. J. Dakin was published in July 1989. It comprises a species list with accompanying notes and reference list. It is available from the Secretary for $2.80 incl. p. & p.

Dr Ian Atkinson has accepted an invitation to deliver the Society's 1989 Lucy Cranwell Lecture. Entitled "Looking at plants with the eyes of a moa", it will be held on Wednesday 4 October in the University of Auckland Conference Centre at 8 pm.

Sandra Jones, Secretary, Auckland Botanical Society, 14 Park Road, Titirangi, Auckland 7 (phone 817-6102 evenings)

■ Waikato Botanical Society

Newsletter No. 7 (June 1989) includes accounts of field trips to Waiterimu-Ohinewai by Bev Woolley and John Small, and to the McKenzie fernery by Cathy Jones.

For further information on the current programme write to:

Murray Boase, Secretary, Waikato Botanical Society, c/- Biological Sciences Department, Waikato University, Private Bag, Hamilton

■ Wanganui Museum Botanical Group

At the Annual General Meeting on July 4 the following officers were elected: Chairman: Alf King. Secretary: Joan Liddell. Treasurer: Betty Andrews. Committee: Jocelyn Bell, Vonnie Cave, Helen Clapham, Mary Craig, Beulah Tate,

Randal Springer.
Our subscription remains at $5 single and $7 family.

All evening meetings are held in the classroom at the Museum, starting at 8 pm. Working parties at the Museum garden of native shrubs and trees are held on the second Saturday of each month.
Our programme to the end of the year is:-

Sunday 3 September:	Junction Road; Rangitatau East Road
Tuesday 5 September:	John Barkla: Department of Conservation on his recent trip to South America.
Sunday 30 September:	Corballis's Bush, Marangai: a recently fenced-in area.
Tuesday 3 October:	Ian Moore: Logging forest in Northwest Canada.
Sunday 5 November:	Tokomaru East Rd: A special bush area near Thomson's farm.
Tuesday 7 November:	Dr Heather Outred: Plants of the Bible.
Saturday 2 December:	Waitotara River Mouth.
Tuesday 5 December:	Our Botanical Christmas Party.
Mid-January:	We plan to take another trip to the Tongariro National Park.

For further information contact:

Alf King, 180 No. 2 Line, R. D. 2, Wanganui, or **Joan Liddell**, 15 Moore Ave, Wanganui

■ **Manawatu Botanical Group**

A new member of New Zealand's wideranging collection of Botanical Societies was formed on Thursday 20 July 1989, at Manawatu. A large group attended an inaugural meeting, and an informal group was established with about 60 members. A committee to run the group was also formed:

Contact Person and Meetings Coordinator	Jill Rapson
Activities Coordinator	Dave Speedy
Treasurer	Peter van Essen
Memberships lists	Barbara Latch
Newsletters	Alicia Scott and Ian Henderson
Minute Secretary	Andrew Townsend
Mail person	Alison Stevens

Currently the group is meeting at the Department of Botany and Zoology, Massey University, but members from all over the Manawatu are welcome to join, as are those who live outside the area, but retain interests there. Potential new members are invited to contact Mrs B. Latch, at 42 Batt St, Palmerston North, or Jill Rapson at the address below. Members are requested to make a small donation to cover costs of distributing the newsletter. Guests or casual visitors are also welcome at all meetings and events.

The first meeting concluded with a talk by Mr P. van Essen on "Forest dieback and vegetation change in the Ruahine Range". The talk gave an overview of the vegetation change and forest deterioration that has occurred in the Ruahine Range this century and looked at the explanations (particularly those of the 1980s) which have been put forward to account for dieback phenomena both in the Ruahine and in other parts of New Zealand.

The group plans to run a number of trips and excursions of varying natures and durations, and establish a programme of workshops and talks. The next three months of meetings and trips are already largely timetabled (Meetings venue:

Seminar Room, Botany and Zoology Dept, Ring Road, Massey, at 7.30 pm):

Sunday 27 August: Excursion to Ngapaeruru Reserve, near Dannevirke (Bush with totaras). Trip leader: Ian Henderson (ph. 86271). Departure time: noon.
Thursday 7 September: Fern workshop. Meet at the normal meetings venue.
Saturday 30 September: Trip to Pohangina Saddle from the Dannevirke side. Trip leader: Peter van Essen (ph. 81793). Departure time: 8.30 am.
Thursday 5 October: Talk by Dr Kath Dickinson, Victoria University on "The natural values of the Waikaia Ecological region, southern South Island".
Saturday 7 October: Excursion round the gardens of Massey Campus. Trip organiser: Jill Rapson (ph. 89088). Departure Time: 10 am.
Saturday 28 October: Trip. See David Speedy (ph. 61253)!
Thursday 2 November: Hayfever sufferers will have the timing of their afflictions explained by Dr Clive Cornford who is working on pollen rain.
Saturday 25 November: Trip to Otaki forks. Trip organiser: Andrew Townsend. Departure time: 8.30 am.

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

■ Wellington Botanical Society

In celebration of our 50th Jubilee this year the Wellington Botanical Society is holding a weekend of activities on Saturday 11 and Sunday 12 November 1989. The Jubilee programme will include a one day seminar and a celebration dinner at the Victoria University of Wellington, plus a range of one day field trips. Members of the NZBS, be they past or present members of WBS or not, are most welcome to attend all or part of the festivities.

We are keen to make contact with as many ex-members of the Wellington Botanical Society as possible to tell them of this forthcoming event, and invite interested people to contact the Jubilee organisers:

Bev and Len Bruce, 116 Korokoro Road, Petone (phone (04) 691-817)

■ Nelson Botanical Society

During the past few months I have been trying to establish a local Botanical Society with the help and support of Shannel Courtney, Peter Williams and Bill Malcolm.

An initial field trip in beautiful weather on 2 April to Delaware Bay drew 28 people most of whom expressed a strong interest in more of the same. Subsequently one trip has been run each month on the third Sunday and has attracted between 12 and 20 people often in quite mediocre weather. The list of names has grown to 46 and after setting the sub at $12 the society can now claim 30 fully paid members.

The Nelson area is a particularly stimulating one for botanising because of the large number of endemics and other plants with very local distributions brought about by the strong contrasts in geology and climate. On one field trip, up the Hacket Valley, it was possible to see plants growing on sandstones, limestones (travertine) and ultramafics all within a short distance. This same trip yielded a new locality for Pseudopanax macintyeri formerly thought to be confined to west Nelson. This locality was only half an hour's drive from Nelson and brings out one of the other characters of the locality - interesting places are very close at hand.

Other places visited to date include Pelorus Bridge (June), Ngaio Bay (July), lowland Waimea remnants (August, Falkners, Snowdens, and Baigents Bush). With the longer warmer days of summer we look forward to alpine areas a little further afield such as Mt Arthur (2 hours drive) and the Cobb (2½ hours). Our first field camp is planned for Labour Weekend - to Farewell Spit and Puponga farm park.

Coming trips are:
August: Wakefield
September: Boulderbank
October: Eves Valley
Labour Weekend: Puponga farm park
November: Takaka Hill
December: Mt Arthur

Anyone interested in further information please contact:

G. T. Jane, 136 Cleveland Terrace, Nelson

■ Canterbury Botanical Society

The Canterbury Botanical Society has a project underway to produce a guide to the small-leaved shrubs of Canterbury. Work on this is progressing well, with drawings and data collection nearing completion. We look forward to its publication.

We have a full programme organised to take us through to the beginning of 1990:

6 October R. Duncan: Ecology of Ohinemaka Forest, South Westland
7 October Middle Waipara Gorge
3 November Evening arranged by Botany Division. Speaker D. Given
November Camp Raincliff
1 December G. Wilson: Africa
December Camp - Hamner Springs
January Summer Camp

Visitors are welcome to all meetings (8 pm Lecture Theatre A6, University of Canterbury), field trips and camps. Enquiries contact:

Philippa Horn, Plant Science Dept, Lincoln College, Canterbury (phone (03) 252-811 ext. 846)

■ Botanical Society of Otago

Newsletter No. 10 (1989 June) contains an article by Mike Pole "A fossil Banksia from New Zealand". Newsletter No. 11 (1989 September) contains several news items and an article "Moas, moa turds, and seeds" by J. A. Keogh.

The programme of forthcoming meetings is:
Tuesday 12 September: Dr Bruce Smallfield "New Crops for Otago and Southland".
Sunday 22 October: Ray Tangney leads a Bryophyte Field Trip to Morrisons Creek.
Thursday 9 November: Dr Trevor Partiridge leads a Grass Identification Workshop.
Saturday 18 November: Alison Evans and Brent McKenzie lead a guided tour of "Rare and endangered plants, native and exotic" in the Dunedin Botanic Gardens.

For venues, times and further information, contact:

Alison Evans, P. O. Box 6261, Dunedin (phone (024) 741-987 work, (024) 737-038 home)

NOTES & REPORTS

Current Research

■ Progress on Flora of New Zealand Vol. 5 Grasses

There has not been a comprehensive treatment of the New Zealand grass flora since the second edition of Cheeseman's Manual (1925). It is therefore not too surprising that Botany Division is frequently asked about progress toward completion of Vol. 5 in the Flora of New Zealand Series, that covers the naturalised and indigenous grasses.

The Grass Flora is being written by Drs Elizabeth Edgar and Henry Connor, and a draft manuscript is about 80% completed. The final treatment will comprise some 180 indigenous species and about 250 naturalised species. Both Elizabeth and Henry are now retired but continue to work on the Flora with technical and other logistic support from Botany Division.

For many indigenous genera a comprehensive revision has been required and this has been completed for several important genera. These revisions are being published as a numbered series on grasses in the New Zealand Journal of Botany; those completed to date are: 1, Rytidosperma (Connor and Edgar, N.Z.J.Bot. 17: 311-337), 2, Elymus (Love and Connor, N.Z.J.Bot. 20: 169-186), 3, Dichelachne (Edgar and Connor, N.Z.J.Bot. 20: 303-309), 4, Poa (Edgar, N.Z.J.Bot 24: 425-503), 5, Stipa (Jacobs, Everett, Connor and Edgar, N.Z.J.Bot. in press. Revisions of Chionochloa, Agrostis and Festuca are in progress.

Draft manuscript descriptions for all naturalised species, except those in Festuca, have been prepared. A checklist to naturalised Panicoid grasses with keys to indigenous and naturalised genera and species, has been published (N.Z.J.Bot. 25: 343-353), and checklists to naturalised Pooid and Chloridoid grasses are in preparation.

The Flora will be illustrated with both line drawings and colour photographs. Line drawings will include plates showing all the parts for representative species for each tribe, and others illustrating diagnostic features for particular species or genera. Colour plates will include grass habitats as well as individual species.

This Flora will be the first fully integrated Flora in the current series.

Colin J. Webb, Botany Division, DSIR, Private Bag, Christchurch

■ Barks as an aid to identifying native trees

Folk familiar with lowland native bush appreciate that tall trees, often 12 m or more to the first branch, do not readily provide the foliage, flowers or fruits normally used for identification. Foresters will generally be concerned with what are valuable for commercial purposes in production forests, which narrows down the number of species to be identified and makes the task a lot easier. Barks become one of their principal aids. In tropical forests it is customary for keys to identification based on barks to include features revealed by cutting through to the inner bark; no such procedure is suggested

here and in fact care must be taken to avoid any damage to the bark. The following key attempts to cover tree species that grow to a large size at maturity and others that are still small when mature. "Large size" species are likely to be present in the youthful, adolescent, mature and even overmature stages, which means that bark sheaths in adapting to increasing trunk diameters will change with age. Visible changes in outer bark vary enormously among tree genera and species, as do certain other external features mentioned under "Additional Notes".

Some genera, like Nothofagus (beeches), Dacrycarpus (kahikatea), Dacrydium (rimu) and Agathis (kauri) have smooth bark at the small tree stage but develop roughness at maturity to the extent that bark keys should provide for more than one entry for the species concerned. A further stage may be manifest in very large trees of a given species. It should be emphasised that the key relates to visual features of outer bark only. Colour, always a contentious issue, becomes a basis for distinction of many species in this key; it is hoped that users of the key will set about its improvement by pointing out some other means available to earth-bound man for relegating colour to a minimum role. Bleaching by bright sunlight of outermost bark has to be mentioned in the key as one of the awkward variables.

KEY TO NATIVE NEW ZEALAND TREE BARKS

1. Outer bark scales off the continuous inner bark sheath and falls to the ground. Detachment is singly in a dispersed pattern
    2. Rounded biscuit-type scales 25 to 50 mm diameter whose fall leaves the under bark with hammermark pattern
        3. Scars left by recently-fallen scales are red on a dark brown-grey trunk usually cylindrical with minimal taper **matai**
        3. Scars where scales have fallen are slightly darker than the dark brown-grey trunk; many scars show small white resin deposits. Trunk form like the preceding species **miro**
        3. Rounded dispersed scales with others of irregular shape, some of them partly detached giving slightly roughened surface. Trunk colour mid- to dark-grey, cylindrical except at buttressed base **Mature kahikatea**
    2. Scales irregular in shape, generally longer that 50 mm. Partial detachment of scales gives roughened surface to cylindrical trunks
        3. Light to mid-grey trunks heavily-buttressed at base **Overmature, very large kahikatea**
        3. Warm brown trunk with grey tint shows "wave" pattern where large scales have fallen. Very large trees have mounds built up from fallen scales round partly-buttressed base **Mature rimu**
        3. Light-grey columnar trunks which may grow to very large diameter. Large irregular bark sheets composed of several scales held at overlapping edges. Large bark mounds at trunk bases **Mature kauri**
1. Outer bark develops narrow vertical splits along which long fibrous strips of bark loosen and become partly detached
    2. Beneath the bleached surface, bark is pinkish in colour and compressible
        3. Bark thick; cylindrical trunk **totara**
        3. Bark thin; cylindrical trunk **Hall's totara**
        3. Bark thin, somtimes almost papery, trunk tapers quickly to conical crown. Tree usually short **kaikawaka (Libocedrus bidwillii)**

1. Surface bark layers peel back in papery strips leaving smooth under-surface.
   2. On forest canopy trees
      3. Pink-brown under bleached skin — **kawaka (L. plumosa) & some kaikawaka**
      3. Surface whitish, "birch-like" with prominent spaced horizontal markings — **Young silver beech**
   2. On small, usually under-story, marginal or sub-alpine trees
      3. Bright chestnut beneath irregular peel — **kotukutuku**
      3. Light pink; bushy marginal tree — **akeake**
      3. Light whitish-brown over naked "gum-bark" surface — **rohutu (Neomytrus pedunculata)**
      3. Dull brown papery strips — **manuka**
      3. Light brown papery strips — **Some Oleariae**

1. Surface bark flaking off, neither papery nor thick fibrous
   2. Large or medium size trees
      3. Bark dull reddish-brown; tending to flake off in small rectangular pieces. Tree usually large, irregular, several stems coalescing — **northern rata**
      3. Bark reddish-brown tending to peel as well as flake and may produce a "gum-bark" effect. Tree often irregular habit — **southern rata**
   2. Usually a branchy, short trunked, marginal small tree. Bark brown, thinnish flakes — **kanuka**

1. Bark surface does not shed scales, fibrous strips, papery peel nor defined flakes, but in mature and old trees especially, tends to crumble off
   2. Outer bark layers adjust to diameter growth by development of vertical fissures, becoming deep and wide
      3. Bark warm brown, rough surface, vertical fissures range from slight to heavy open in young to old trees — **hinau**
      3. Brown-grey; developing heavy fissures with aging, surface rough crumbly — **red and hard beech, old ngaio**
      3. Blackish-brown surface — **black beech**
   2. Outer bark develops reticulate pattern due to narrow vertical and horizontal fissures. Very hard, harsh to touch. Grey colour usually bleached — **maire (Nestegis spp.)**
   2. Bark with spaced, upraised, horizontal lines encircling the circumference, partially or wholly
      3. Bark brown without prominent vertical fissures except in large, old trees — **rewarewa**
      3. Bark with remnants of papery whitish outer skin, otherwise brown with open vertical fissures tending to disguise the horizontal upraised markings; rough — **Old silver beech**
   2. Bark without prominent fissures; superficially smooth in appearance but faint vertical fissures visible in old trees
      3. Black colour. Trees large — **tawa and karaka**
      3. Black colour. Small marginal tree — **kohuhu**
      3. Mid to dark grey — **Young hard, black, mountain beech**
      3. Dark brown-grey — **Young red beech, titoki, kohekohe**
      3. Light yellowish tint over brown, usually disguised by green moss — **pukatea, mahoe and tarata**
      3. Light grey. Old trees exposed to the weather may show very fine vertical fissures. Twigs at base of crown may carry juvenile leaves — **pokaka**
      3. Smooth brownish-grey barks are also found on several young native conifers already dealt with in this key at the mature

stage when outer bark scales off. At the "pole" stage it is generally practicable to reach foliage with which to identify the species **rimu, matai, miro, kahikatea**

3. Finally, there is a group of small trees with barks even less distinctive than those broad-leaved species already dealt with. The superficially smooth barks are sorted:
   4. Dark grey pustular surface becoming much rougher with age **five-finger**
   4. Mid-grey with smooth, dispersed protuberances on the trunk **kaikomako**
   4. Brown with slight red tint **pigeonwood**
   4. Grey-brown **mapou**

Additional Notes

A. Liane and epiphyte ("stems") barks
   (I) Whitish-grey, longitudinally grooved — *Griselinia lucida*
   (II) Reddish-brown, dull, flaking — *Metrosideros fulgens*
   (III) Grey-brown, rough bark — *Rubus cissoides*

B. Other Features of trees to be observed are:
   (I) Trunk size, shape, single or multi-stem, buttresses, taper, height to first limb, total height of tree?
   (II) Crown shape, size, carrying epiphytes?
   (III) Material on ground: foliage, flowers, fruits?
   (IV) Creepers, Epiphytes present?

J. S. Reid, 160 Wadestown Road, Wellington

Plant Records

■ Oriental *Clematis*

The yellow-flowered oriental *Clematis* was first recorded from New Zealand by Arthur Healy (1958, *Trans.Roy.Soc.N.Z. 85*: 531-549) under the name *Clematis orientalis*, a name which was widely applied to all the oriental clematis group at that time. In "Flora of New Zealand" Vol. 4 (Webb et al. 1988), I treated the oriental clematis as *C. tangutica* (Maxim.) Korsch. Since then Dr Christopher Grey-Wilson (Kew) has published a revision of the group, which is properly called *Clematis* sect. *Meclatis* (Grey-Wilson, 1989, *Kew Bull. 44*: 33-60). This has prompted a re-examination of the New Zealand specimens, with the following result:

Clematis tangutica is known in New Zealand from only one specimen, from near Lauder, C. Otago, (Healy 58/323, CHR 121337). All other specimens, including those cited with the first record of the section in New Zealand (as *C. orientalis*), are referable to *Clematis tibetana* O. Kuntze subsp. *vernayi* (C.E.C. Fischer) Grey-Wilson. The two species in New Zealand may be distinguished as follows:

	C. tibetana	*C. tangutica*
leaves	glaucous, dentate	green, serrate
sepals	spreading glabrous outside pubescent inside	barely spreading pubescent outside glabrous inside

The leaves of New Zealand specimens of *C. tibetana* subsp. *vernayi* are sharply dentate and most match either var. *dentata* or var. *laciniifolia*.

Only three species of the section are widely cultivated (Grey-Wilson, 1986,

Plantsman 7: 193-204); these are C. serratifolia, C. tangutica, and C. tibetana subsp. vernayi. All are frequently referred to as C. orientalis, but the true C. orientalis is rare in cultivation. Wild material in New Zealand has almost certainly arisen from cultivation escapes. Hybridisation in gardens, and cultivation of plants of wild hybrid origin, has blurred the species limits of plants in cultivation and garden escapes. New Zealand material of C. tibetana subsp. vernayi, for example, apparently has shorter anther filaments than material from its native range.
Clematis tibetana subsp. vernayi is native to Nepal and W. China; C. tangutica to W. India and W. China.

Phil Garnock-Jones, Botany Division, DSIR, Private Bag, Christchurch

Field Work

■ Bloomin' lupin ag'in

My original request for information on tree lupin die back (NZ Bot.Soc.Newsl. 12) produced a good response from several folk, e.g., Cameron and Wright (ibid. 15) and some conflicting views on the value of lupins (Gadgill, ibid. 16). Readers will be interested to know that lupin die back is very widespread throughout New Zealand and that the organism doing the damage has been reported by Derrick Rooney (The Press, 23 June 1989) (I presume from MoF sources) as a fungal pathogen Colletrotrichum gloeosporoides. It causes lesions and cankers which girdle the stems, killing the infected plants quickly. Little is known about its origin, but it is being studied by the Forest Research Institute because of the importance of tree lupin to the forestry industry. The conflicting attitudes shown to tree lupin by readers of the Newsletter reflect very nicely the truism that what is a blessing to one person may be a weed to another.

Meanwhile, in the McKenzie Basin, another lupin conflict is gathering momentum. Russell lupin has been discovered to be a splendid sheep grazing crop by Grasslands Division and there are plans to increase its distribution within the basin. This plant poses serious threats to the riverbeds and other open habitats of the basin. In the mere two decades I have known it, the Ahuriri riverbed has become completely swamped in Russell lupin. Populations are scattered over much of the McKenzie basin but at least those growing in selected river systems could be controlled with effort. However, if the plant takes off as an aid to agriculture it will surely spangle every riverbed as it does the Ahuriri. Mount Cook will look great across a sea of colour ... if one can see through the gathering swarms of pine trees that is ... and so on and so forth.

Peter A. Williams, Botany Division Substation, DSIR, Private Bag, Nelson

■ Pine forest flora : Opoutere re-visited

Derrick Rooney's article "Pine barrens - or boons?" in the June Newsletter (No.16: 13-15) noted that the presence of indigenous plants in coniferous plantations is "underrated". Perhaps it is fairer to say that it has been sparsely documented, although it certainly has been noted in print before. In Native Orchids of New Zealand, John and Molloy (1983; pp 88-91, 105) even go so far as to state that pine forests are better habitat than native forests for some native orchids and must be "seriously considered" for the conservation of some threatened orchid species. Further examples can be found in most issues of the newsletter of the New Zealand Native Orchid Group. My observations in a pine (Pinus pinaster) plantation at Opoutere Beach on the east side of

Coromandel Peninsula are discussed below.

Opoutere Pines : First Visit

In January 1975 I listed the species of indigenous vascular plants under mature pines at Opoutere. This was published with a short discussion "The effect of pines on the diversity of indigenous species" in Wgtn.Bot.Soc.Bull. 39: 22-29 (Ogle 1976). The dunes supported more indigenous species (67) among pines than equivalent ajoining areas of dune vegetation (13 species) which lacked pines. This I attributed to the greater range of habitats among the pines - areas of light and shade, shallow and deep litter, the presence of fallen logs, and standing trees suitable for epiphytes. I stressed that the Opoutere plantation might be considered atypical, in that the trees were at quite variable densities. As such, it provided a greater range of opportunities for other plants than occurs among uniformly planted pines.

It was noted that increasing the distance from sources of seed or spores reduced the number and variety of indigenous plants under the pines. More species ocurred in the northern end of the plantation, near a rocky hill covered in indigenous scrub and forest, than under the pines further south.

I have re-stated some of the observations and ideas to expand them with notes on some changes found in Opoutere plantation almost 7 years after the first visit.

Opoutere Pines : Second Visit

In December 1981 the northern end of the pine block was found to have been clear-felled, probably 6 - 10 months earlier. This was part of the area I had termed "Area B", communities "A" and "D" (op.cit.). Pine branches and tree heads had been left scattered over the site. There had been no stockpiling of material, nor any attempt to burn it, and the area was not grazed by live-stock. A tangled mass of plants, mostly adventive species, had colonised much of the cleared site. Tall herbs including fireweeds, nightshades, thistle and inkweed, soft shrubs such as tree lupin, and vines such as blackberry were common. Shorter stature herbs and grasses grew in some areas of dry sand, especially around tracks used by occasional vehicles and for horse-riding. As with the adventive plants, most of the indigenous species in the logged area would have established among the cut pine material. These include annual grasses and 3 species of Senecio, but several are presumed to have survived logging, including Schoenus tendo and a shrub of Carmichaelia arborea. Neither species was recorded here, however, in 1975. The logged area contained none of the shade-requiring indigenous species recorded under pines in 1975.

A list was compiled of all vascular species of the logged area and all adventive species among the standing pines (see below). The following 10 indigenous species found among standing pines only are additional to those recorded in 1975 (op.cit.): Dodonaea viscosa, Gnaphalium audax, Kunzea ericoides, Lagenifera stipitata (CHR 404570), Pittosporum crassifolium, Carex dissita, Cyperus ustulatus, Deyeuxia billardieri, Poa pusilla (CHR 404562), Cyathea dealbata, Lycopodium deuterodensum. Lachnagrostis filiformis s.s. and Dichelachne crinita are additions to the 1975 list, and were found among both standing pines and felled material. Rytidosperma penicillata, recorded in 1975, is now regarded as an adventive species.

Although considered to be possibly adventive to New Zealand by Drury (1974: N.Z.J.Bot. 12: 383-4), Lagenifera stipitata is now regarded as indigenous (B H Macmillan, C J Webb pers. comm.). In addition to my 1981 collection from Opoutere, the herbarium at Botany Division, DSIR, has only 4 other collections of this daisy.

These changes bring to 79 the number of indigenous vascular plant species found under standing pines at Opoutere dunes. Seven additional species were found only in the recently cleared site in 1981. Adventive species total 80, of which 56 were confined to the cleared site, and 11 were confined to unlogged areas of pine.

Discussion

Because pine forests are grown for production and hence are normally removed when trees are mature, or even earlier, they have a restricted role in native plant conservation. After logging, the suddenly exposed native plants usually dessicate, or disappear in site preparation for the next pine crop. If, however, there is a management regime under which adjoining blocks of pines are planted, thinned, and harvested on a staggered rotation, then a range of indigenous plants might be maintained indefinitely in a pine forest, being found in whichever block offers appropriate conditions for each species at a given time. Tree fern trunks are harvested rotationally from pine forests in some parts of the country.

The keys to the success of this strategy are the retention of seed or spore sourcesin the forest as a whole, and the maintenance of habitat diversity, especially by having blocks of different ages.

These management principles have been stated before by a variety of authors for fauna conservation in pine forests. Examples include Reid (1983, Forest & Bird 14(5): 15-20) for the retention of kiwi in Waitangi Forest in the Bay of Islands, and Clout (1984, N.Z.J.For. 29(2): 193-200) for maintaining a range of indigenous birds in pine forests near Nelson.

The principles should apply also to indigenous plant species which are capable of using pine forest at some stage of its establishment or subsequent growth. Orchids, ferns, herbaceous daisies, and grasses are some groups which contain a number of suitable candidates. The species need to be fast-maturing to occur among young pines or in sites exposed by logging, and to reach a succession of pine blocks they need to produce abundant and readily dispersed seeds or spores. At Opoutere, it seems that many more members of the adventive flora have these characteristics than the indigenous species (see list below). Longer-lived species need to be able to establish and survive under a pine canopy. Conditions are most favourable after the pine canopy opens up through natural or artificial thinning.

Apart from maintaining portions of the indigenous flora in districts where much has been lost through land development, pine forests which are suitably managed may have a role in the conservation of plants with a threatened or local status. In addition to the orchids listed by Johns and Molloy (op.cit.) the list of potential species is probably quite small, although Opoutere has Lagenifera stipitata and Pomaderris rugosa, at least.

A supplementary list of vascular plants for pine plantation on dunes at Opoutere Beach (see main list of indigenous species in Ogle 1976, op.cit., and others named in the text above) follows. Voucher numbers are to specimens collected for Botany Division, DSIR, Lincoln (CHR).

* = adventive species
Column U = unlogged Pinus pinaster forest
Column C = clear-felled P. pinaster forest

Dicotyledons	U	C		U	C
*Anagallis arvensis subsp. arvensis var. arvensis		x	*Berberis glaucocarpa	x	x
*A.a. subsp. a. var. coerula		x	Carmichaelia arborea var. (C. aligera)		x

*Centaurium erythraea		x
*Cerastium glomeratum		x
*Cirsium arvense		x
*C. vulgare		x
*Conyza sp.		x
*Crepis capillaris		x
*Erica lusitanica	x	
*Galium aparine		x
Geranium homeanum 404475		x
*Gnaphalium coarctatum 404479		x
*G. purpureum (probably var. ustulatum, C J Webb, pers. comm.) 404477		x
*Gomphocarpus fruticosus 404564		x
*Hypochoeris radicata		x
*Lactuca virosa 404467		x
*Leontodon taraxacoides		x
*Leucanthemum vulgare		x
*Linum bienne	x	
*Lotus angustissimus 404565	x	x
*L. pedunculatus		x
*L. suaveolens		x
*Lupinus arboreus		x
*Mycelis muralis 404468		x
*Ornithopus perpusillus 404469		x
Oxalis rubens 404566		x
*Parentucellia viscosa		x
*Paraserianthes lophantha	x	
*Pelargonium inodorum		x
*Phytolacca octandra		x
*Plantago lanceolata		x
*P. major	x	x
*Polycarpon tetraphyllum		x
*Prunella vulgaris		x
*Prunus sp (P. persica?)	x	x
*Rosa rubiginosa	x	
*Rubus fruticosus agg.		x
*Rumex acetosella		x
*R. conglomeratus (?)		x
*Senecio bipinnatisectus 494474		x
S. glomeratus 404477		x
*S. diaschides 404472		x
S. hispidulus 404473		x
*S. jacobaea		x
S. minimus		x
*Silene gallica		x
*Solanum americanum		x
*S. nigrum		x
*Soliva sessilis		x
*Teline monspessulana 404464	x	x
*Trifolium arvense		x
*T. dubium		x
*T. repens		x
*Veronica plebeia	x	x
*V. serpyllifolia		x
*Wahlenbergia marginata		x
Monocotyledons		
*Agrostis capillaris		x
*Aira caryophyllea		x
*Ammophila arenaria	x	
*Anthoxanthum odoratum	x	x
*Axonopus affinis	x	
*Briza minor		x
*Bromus hordeaceum	x	
*B. willdenowii		x
*Cortaderia selloana		x
*Cynodon dactylon	x	x
*Cyperus brevifolius		x
*C. congestus 404568		x
*Dactylis glomerata	x	x
Dichelachne crinita	x	x
*Eragrostis brownii		x
*Holcus lanatus	x	x
*Juncus articulatus		x
*J. bufonius var. bufonius		x
*J. tenuis var. tenuis		x
Lachnagrostis filiformis s.s.	x	x
*Lagurus ovatus	x	x
*Lolium perenne	x	x
*Paspalum dilatatum		x
*Poa pratensis 404561	x	
*Polypogon monspeliensis	x	
*Rytidosperma penicillatum 404560, 404563	x	x
*R. racemosum	x	
Schoenus tendo		x
*Sporobolus africanus		x
*Vulpia bromoides		x
Fern		
* Nephrolepis cordifolia	x	

SUMMARY	Unlogged pines only	Clear-felled pines only	Common to both pine areas	TOTALS
Total indigenous spp.	77	7	2	86
Total adventive spp.	11	56	13	80
				166

Colin C. Ogle, Department of Conservation, Private Bag, Wanganui

ANNOUNCEMENTS

■ **Plant Collections Workshop**

The Royal New Zealand Institute of Horticulture and the Horticultural Education Centre of the Waikato Polytechnic are convening a workshop to investigate the establishment of a National Plant Collections Scheme. Such a scheme would cover both public and private plant collections and would set national standards for the development and maintenance of collections, along with a database of all collections and their contents.

Guest speaker at the workshop will be Tony Lowe, the General Secretary for the National Council for the Conservation of Plants and Gardens (NCCPG) based in Britain. The NCCPG is an independent charity based at the RHS Wisley, and is involved with the conservation of species, hybrids and cultivars grown in British and Irish Gardens. The NCCPG co-ordinates a National Collections Scheme with over 400 single genera collections currently registered. Tony Lowe's visit has been made possible through the generous assistance of the British Council.

The workshop is aimed at those people in the horticulture and botanical fields with an interest and/or involvement in plant conservation, be it garden plants or threatened New Zealand plants. It will be very much a working session with opportunities for full participation from the group.

It will run from 9 am - 5 pm on 13 October 1989 at the Horticulture Education Centre, Hamilton Gardens. The number of participants will be limited so early registration will be essential. For a programme and registration form, write to:

The Registration Secretary, Horticulture Education Centre, The Waikato Polytechnic, Private Bag 3036, Hamilton

■ **New Zealand College for Seniors**

The College is a network of universities and polytechnics which provide educational programmes for the "not so young".

Courses are offered to those 55 years of age and over. The courses are informal, low-cost, and are conducted by experts in their field. Mental stimulation, an enjoyable social programme with one or two afternoons to follow your own interests are included in the 6 day courses. There is no study or examination.

A number of interesting courses are being offered in 1990. Members wanting a copy of the full programme should write to:

The Secretary, NZ College for Seniors, Centre for Continuing Education, University of Auckland, Private Bag, Auckland 1

DESIDERATA

■ **Live material of Mentha cunninghamii wanted**

Dr Henrietta Chambers of USDA in Oregon would like seed of Mentha cunninghamii for the Mentha collection of the National Clonal Germplasm Repository. If anyone can collect seed for her in the field or from cultivated plants they should send it to:

Dr Henrietta L. Chambers
Curator of Mentha Collection
National Clonal Germplasm Repository - Corvallis
33447 Peoria Rd
Corvallis, OR 97333
UNITED STATES OF AMERICA

Phil Garnock-Jones, Botany Division, DSIR, Private Bag, Christchurch

FORTHCOMING MEETINGS/CONFERENCES

■ **Lichen Workshop - Preliminary Notice**

A field workshop for those interested in lichens is being organised for the first weekend in November 1989. Tentatively, we intend that the workshop will run from 3 November (Friday evening) to 6 November (late Monday). The workshop will be held at the University of Canterbury Field Station at Cass. The objective of the workshop will be to provide experience in techniques for determining lichens, including the use of David Galloway's Lichen Flora. Field trips will be made to localities near Cass, probably including areas in Arthur's Pass National Park, and considerable emphasis will be given to field recognition skills. Participation will be limited to 30 people on a first come basis (this notice has previously appeared in regional newsletters).

The workshop will be led by Dr David Galloway of the British Museum with assistance from Allan Fife and Colin Meurk. Detailed costs have (at time of writing) yet to be worked out, although we will endeavour to keep these low. We intend to have transport available to take people from Christchurch on the Friday. those interested in participating should contact me at their earliest convenience:

Allan Fife, Botany Division, DSIR, Private Bag, Christchurch

QUOTE

■ **On the Natural History Collections in the Otago Museum**

I believe that there are still a great many persons who look upon the pursuit of any department of natural history which does not directly serve industrial purposes, as a frivolous occupation for adults. From my own observation, I should be disposed to say that this feeling is even more prevalent in the colonies than at home. I make this remark as specially applicable to the working men, amongst whom I was accustomed in my native town to meet many ardent students of nature. But it is true, I believe, of all classes, and I think that the fact is much to be regretted, in view of the large number of young people who are growing up around us, for whom the pursuit of natural history would furnish one of the most improving and delightful occupations for their leisure hours which can be devised. I hope that the formation of this Society will have considerable effect in promoting the study of nature amongst us. Those who are indifferent to it, are so from want of information, both as to itself and as to its tendencies.

Extract (to be continued) from a paper read before the Otago Institute by **J S Webb**, January 11, 1870, and published in T.N.Z.I. 3: 203 (sent in by Phil Garnock-Jones)

RULES OF NEW ZEALAND BOTANICAL SOCIETY INCORPORATED

1. Name

The name of the society shall be the New Zealand Botanical Society Incorporated.

2. Interpretation

In these rules, unless a contrary intention appears, 'Society' means New Zealand Botanical Society Incorporated; 'Committee' means the Committee for the time being appointed under these Rules; 'Year' means the financial year of the Society which extends from the 1st January to 31st December in any year; 'Regional Botanical Societies' means any Botanical Society existing for the time being in a region of New Zealand; 'Newsletter' means the New Zealand Botanical Society Newsletter; 'Resolution' means a resolution passed by a majority of those present or voting at a General or Committee meeting; 'Ballot' means a postal ballot conducted according to these rules; 'Act' means The Incorporated Societies Act 1908.

3. Objects

(a) To encourage the study of botany, particularly that of New Zealand.
(b) To disseminate knowledge about, and encourage interest in, the flora of New Zealand.
(c) To publish a regular Newsletter available to all members.
(d) To organise occasional meetings to foster the objects of the Society.
(e) To make statements on matters of national botanical interest and concern.
(f) To provide an organisation through which regional botanical societies can comment on botanical issues.
(g) To encourage the conservation of the indigenous New Zealand flora and vegetation.
(h) To publish and issue such publications as may from time to time further the objects of the Society.
(i) To own, lease as lessee or lessor, or administer such land or other property as the Society thinks fit.
(j) To affiliate with any other society or organisation having botanical interests if it is considered to assist in carrying out any of the above objects.

4. Membership

(a) Any interested person or organisation may join the Society. There shall be three classes of membership:
(i) Ordinary: any person may become an ordinary member on payment of the annual subscription for an ordinary member.
(ii) Institutional: any organisation wishing to receive the Newsletter may become an institutional member on payment of the annual subscription for an institutional member.
(iii) Student: any full-time student at a recognised educational institution may become a student member on payment of the annual subscription for a student member.
(b) Any member may resign their membership by giving to the Secretary written notice to that effect provided that it shall be a condition precedent of such resignations that all subscriptions and levies owing up to the date of their resignation shall have been paid by the member unless otherwise decided by resolution of the Committee.

ASSISTANT REGISTRAR OF INCORPORATED SOCIETIES AUCKLAND, N.Z.

(c) The Committee shall have the power to refuse or cancel membership.
(d) The Secretary shall keep a register of members in accordance with Section 22 of the Act.

5. Subscriptions

The annual subscription for all classes of membership shall be set by the Committee from time to time.

6. Officers and Committee

(a) The Officers of the Society shall consist of
a President
a Secretary
a Treasurer but the offices of Secretary and Treasurer may be combined.
(b) The Committee of the Society shall consist of the Officers, 3 elected members, and a Newsletter Editor who shall be appointed by the Committee.
(c) The Committee shall have the power to coopt additional members to achieve regional representation.
(d) Vacancies arising in any Office or in the Committee shall be filled by the Committee and members so appointed shall remain in office until the first election thereafter.
(e) Meetings shall be held from time to time as called by the President or Secretary, or when requested by any two members of the Committee. Meetings may be by conference telephone. A quorum for Committee meetings shall consist of three members.
(f) Statements on behalf of the Society can only be made with the Committee's authorisation.
(g) The Common Seal of the Society shall be kept by the Secretary and used only on the resolution of the Committee.

7. Election of Officers and Committee

(a) Elections shall be held annually by postal ballot.
(b) Nominations shall open on 1 September in any year and close on 20 November in that same year, and shall be made in writing to the Secretary. Nominations shall be signed by the Proposer and the Seconder, and by the Nominee to indicate their acceptance of nomination.
(c) The Secretary shall circulate ballot papers to all members for a postal ballot allowing 14 clear days for return of all ballot papers to the Secretary.
(d) The Committee shall appoint two independent scrutineers to count the ballot.

8. Control and use of funds

(a) The financial year of the Society shall be from 1 January to 31 December.
(b) The Committee shall control and invest all funds at its discretion and shall provide an annual financial statement to be published in the Newsletter.
(c) The Society may borrow money only on the resolution of the membership.

9. General Meetings and Postal Ballots

(a) General Meetings or Postal Ballots of the Society may be called by the Committee giving 14 clear days written notice to all members.
(b) A Special Postal Ballot shall be called by the Secretary within 3 months after the receipt by the Secretary of a request in writing signed by at least 15 financial members requesting the calling of a Special Postal Ballot.

REGISTRAR OF INCORPORATED SOCIETIES NEW ZEALAND

10. Voting

(a) At all General Meetings every financial member present shall have one vote and in the case of equality the Chair shall have a second or casting vote. A quorum at any General Meeting shall be 15 financial members.
(b) The mode of voting on all questions at General Meetings shall be by voice or show of hands, or if the Chair or any three members so require, by ballot. A simple majority is required to pass a resolution, excepting the Alteration of the Rules of the Society which requires a two-thirds majority.
(c) In all Postal Ballots every financial member shall have one vote and in the case of equality the President shall have a second or casting vote.
(d) In all Postal Ballots a simple majority is required to pass a resolution, excepting the Alteration of the Rules of the Society which require a two-thirds majority.
(e) The Committee shall appoint two independent scrutineers to count all Postal Ballots.

11. Alteration of Rules

These Rules may be altered, added to, rescinded or otherwise amended by a resolution passed by a majority of not less than two-thirds of those present, entitled to vote and voting at a General Meeting of the Society called in accordance with these Rules, or by a resolution passed by a majority of not less than two-thirds of those members responding to a postal ballot conducted in accordance with these Rules. In either case, 14 clear days notice of any proposal to alter, add to, rescind or amend must be given to all members.

12. Winding up

If a resolution to wind up the Society is passed in a Postal Ballot the Society shall cease to exist and its affairs be wound up pursuant to Section 24 of the Act or any Sections or Acts amending it or passed in substitution of it. After payment of all the Society's liabilities its property shall be divided amongst such associations, societies, institutions or organisations as have similar objects to this Society in such a manner and in such proportions as shall be determined by the Committee.

Incorporated at Auckland, this 1st day of June 1989
R. D. MU
Auckland Registrar of Incorporated Societies

ASSISTANT REGISTRAR OF INCORPORATED SOCIETIES N.Z.

Acknowledgement:
This Newsletter was typed by Marcel Smits

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