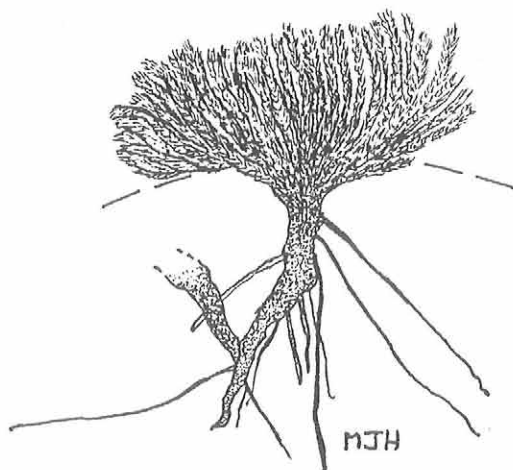


Botanical Society
of Otago
Newsletter.
No. 11,
1989 September.



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Botanical Society of Otago meetings

Tuesday September 12:

Dr Bruce Smallfield Of MAF Tech, Invermay

NEW CROPS FOR OTAGO AND SOUTHLAND

Dr Smallfield will describe the evaluation of some new species of herbs and shrubs for horticulture in the southern South Island. Botanic Gardens Visitor Centre, Lovelock Ave, 7:30 pm.

Sunday, October 22 (postponed from March)

Ray Tangney

of the Botany Department, Otago University, leads:

BRYOPHYTE FIELD TRIP TO MORRISONS CREEK

Leaving from Union Street, outside the back gate of the Univ. Botany Dept., 1:30pm. Bring a car if you can, there should be spaces for those who have no transport. Bring a hand lens and warm clothes.

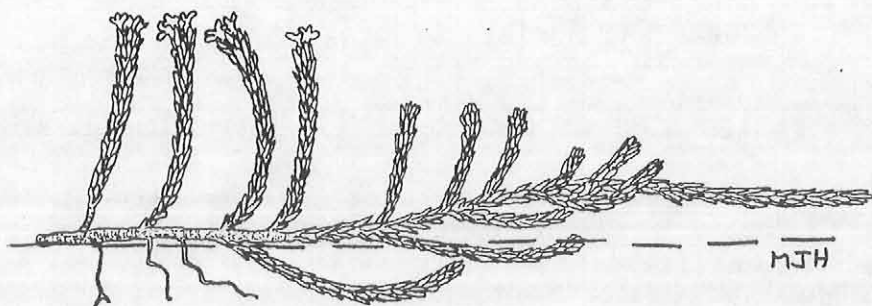
Thursday, November 9:

Dr Trevor Partridge
of Botany Division, DSIR, Lincoln
GRASS IDENTIFICATION WORKSHOP

Emphasising exotic grasses. You are welcome to bring grasses along. University Botany Dept. (enter from Cumberland St, down the drive at back of the Otago Museum), 7:30 pm.

Saturday, November 18:

Alison Evans and Brent McKenzie
of the Dunedin Botanic Gardens
RARE AND ENDANGERED PLANTS, NATIVE AND EXOTIC
A guided trip round the Botanic Gardens. Meet at the gates at the Gardens Corner (Gt King St / Opoho Rd), 9:00 am. The trip will last until about 12 noon.



Time of meetings

It has been suggested that we should try meetings at 5:15 pm instead of 7:30 pm. Any views for or against to Peter Johnson please.

Book offers

New Zealand Ferns and Allied Plants

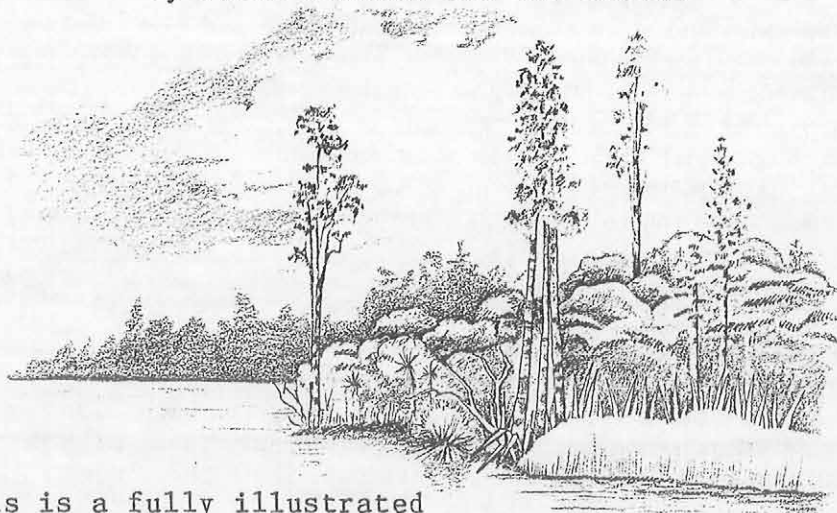
by Patrick Brownsey and
John Smith-Dodsworth

This book describes 206 species. It has 216 colour photographs and 198 line drawings and B&W photographs. It is available through the Bot. Soc of Otago for \$59.95 (normally \$89.95). Orders to Peter Johnson, Botany Division, DSIR by the end of September.



Wetland Plants in New Zealand

by Peter Johnson and Pat Brooke



This is a fully illustrated guide to more than 500 species, native and adventive. It covers the plants of bogs, swamps, flushes, saltmarshes, ponds, puddles, lakes and rivers, from the coast to alpine areas.

It will be published in October. It will be available to Botanical Society members at the discounted price of \$ 39.95 (normally \$ 49.95). Contact Peter Johnson after publication.

"Moas, moa turds, and seeds"

Exploration of a hypothesis and its implications for the structure, germination biology and seedling ecology of native species in New Zealand

by J.A. Keogh,

Botany Department, University of Otago, Dunedin

Striking parallels exist between "The Island" of Mauritius and the archipelago of New Zealand. Mauritius' biota is characterised, inter alia, by a high degree of endemism, a lack of mammals and a former existence of flightless birds - the most notable of which is undoubtedly the now extinct dodo Raphus cucullatus (Vaughan and Wiche, 1937). Furthermore it is thought to have been isolated from continental land masses for a very long time (Vaughan and Wiche, 1937). New Zealand shares all these features with Mauritius although its former flightless birds were moas rather than dodos and solitaires.

Clout & Hay (1989) pointed to the work of Temple (1977), who postulated an unusual fossil/extinct commensalism on Mauritius between the tambalocque, Calvaria major (Sapotaceae) a tall tree species (Vaughan and Wiche, 1937) and the extinct dodo. All trees of this species are over three hundred years old and it would seem that, even though the trees produce well-formed apparently fertile seeds annually, no seeds have germinated for this length of time. Fossil evidence further suggests that the fruit (rather like a plum in size and structure) was eaten by the dodo and thus it seems possible that passage through the gizzard and the alimentary system of the dodo would have softened the fruit stone sufficiently to enable it to germinate on egestion. With the extinction of the dodo, there was no mechanism to bring

about germination in Calvaria. To test his hypothesis, Temple (1977) fed Calvaria pits (= endocarps / stones) to turkeys. Some of the seeds, when recovered, germinated under nursery conditions, effecting what are suggested to be the first seedlings for over three hundred years. This intriguing hypothesis and supporting empirical evidence led me to speculate on its relevance and possible applicability to New Zealand.

Burrows et al. (1981) provide an analysis of the complete fossil contents of a moa gizzard from Pyramid Valley, and identified at least twenty three species of plant, almost all of which were represented by seed/fruit as well as vegetative material. A brief survey of the species identified shows a considerable number having fleshy fruits and/or bony/stony endocarps/testas. Some 60% of New Zealand native woody genera have fleshy, often brightly coloured, fruits, or fruits with sticky seeds (McGlone, 1989). Published information on their fruit/seed structure, germination biology and seedling ecology is scant. This may be partly due to a lack of success by workers in getting seeds to germinate.

The purpose of this communication is to suggest that, quite apart from the role of both extant and extinct birds in the fruit dispersal of native plants, which Clout & Hay (1989) have pointed to, passage through their alimentary tract has significant implications for fruit structure, germination and seedling ecology. Thus, in attempting to germinate native N.Z. species and understanding something of their structure and seedling ecology, we might justifiably bear in mind that they will frequently have been subject to conditions in the gizzard and alimentary tract and faeces of moas and other birds. The implications for the regenerative capacity of N.Z. native species are considerable.

References

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- tents samples from Pyramid Valley, North Canterbury, and Scaifes Lagoon, Lake Wanaka, Otago. Records of the Canterbury Museum, 9(6), 309-336.
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- Vaughan, R.E. and Wiehe, P.O. (1937). Studies on the vegetation of Mauritius. I. A preliminary survey of the plant communities. Journal of Ecology, 25, 289-343.

Proposed FM transmitter

Currently, both Radio Otago (4X0) and Radio New Zealand (4ZB) propose to place an FM transmitter building and tower on Swampy Spur, with an access road from Swampy Summit. This strategic and highly visible landscape feature is above Leith Saddle, and stands at 666 m.

The road would follow (but enlarge) the walkway from Swampy Summit to Swampy Spur. The applicants intend to provide shelter for trampers as part of the proposed building. The tower will be 30 metres high, and of a relatively 'thin' profile.

Some question why they could not share an existing installation site, such as the student Radio One (FM) does on Mt Cargill. Swampy Summit is DCC freehold land, so contact the Council if you wish to object.

Lichens workshop at Cass

A field workshop for those interested in lichens is being organised for the first weekend in November 1989. The workshop will probably run from November 3 (Friday evening) to November 6 (late Monday). It 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. Fieldtrips 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 of lichens.

Participation will be limited to 30 people on a first-come basis. The workshop will be led by Dr David Galloway of the British Museum, with assistance from Allan Fife and Colin Meurk. Detailed costs have yet to be worked out, although they will endeavour to keep these low. It is intended to have transport available to take people from Christchurch on the Friday.

Anyone interested, contact Allan Fife (Botany Division, DSIR, Private Bag, Christchurch); a circular providing more details and a registration form will be posted to those expressing interest.

Wellington jubilee

The Wellington society is holding a weekend of activities on November 11-12. This is to celebrate the 50th jubilee of the Society. It will include a one-day seminar, a celebration dinner, and field trips.

Any BSO member is welcome, but the Wellington Society is especially keen to contact its own ex-members. Contact:

Bev & Len Bruce, 116 Korokoro Rd, Petone, 691-817.

Entomological Society trips

B.S.O. members are welcome on Entomological Society field trips. Contact Brian Patrick (home: 34 002) if you are interested in going along. Upcoming trips are:

Saturday September 30: to Chrystall Beach (near Milton).

Saturday November 11: to Sutton Salt Meadow (near Middlemarch).

Weekend December 9-10: Mt Kyeburn (near Naseby).

Weekend January 26-28: Coronet Peak.

Botanical Society Library

The Botanical Society receives newsletters, journals etc. from the Waikato, Waikato, Rotorua, Manawatu, Wellington and Canterbury Botanical Societies. These will now be housed in the library in the DSIR Building, Cumberland St. Any member of B.S.O. is welcome to see them (but there's not much to see yet!); ask at the office, or ask one of the botanists.

Donations time?

Since we do not have formal membership, the Society needs donations to cover running costs (newsletter production and posting, Weekender adverts, refreshments, etc.). We would like to have funds to be able to invite speakers from out of town. If you think it's time you made a contribution, you are welcome to use the enclosed form.

Botanical Society of Otago

Membership: Dr J. Bastow Wilson, Botany Dept. Otago Univ PO Box 56 Dunedin. Work 797572, Home 739-300.

Ideas: Dr Peter N. Johnson, Botany Division, D.S.I.R., Dunedin. Phone: Work 774-050; home 780-376.

Donations: Mr H. Ian West, PO Box 115, Watati, Dn.

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