



Dear Member,

Firstly let me apologise for the lateness of this newsletter, things have rather caught up on me and there just hasn't been enough hours in the day! I hope it won't happen again. a recent article in the Christchurch 'Press' resulted in over 20 new members for our group, and we have also received articles, enquiries and information from secondary schools, from the Tasmanian Native Orchid Group, from Rhode Island USA, and from the Western Australian Native Orchid Study and Conservation Group who want to swap newsletters. They list the objectives of their group as:

- to promote interest in and preserve indigenous orchids in their natural environment;
- to learn the best means of cultivation and to do all things possible for the conservation of orchids in their natural environment;
- to learn their habitats and keep records;
- to have field days and learn to recognise the different genera and species
- to hold meetings for the exchanging of knowledge and furthering of interest in western Australian orchids;
- to affiliate with kindred organisations;
- to make rules for the governing of the Group's domestic affairs;
- to do all such other lawful things as are incidental to or conducive to the attainment of the above objects or any of them:

I think this really puts things in a nutshell!

Many thanks to those generous people who sent donations with their subs, it's nice to know that there's a lot of very keen members out there. Lastly, the Marlborough Orchid Society has asked me to add a notice of their meeting to be held at the Wesley Centre, Blenheim, at 8 pm, on the 3rd Thursday in October, the 18th, at which Mrs lean Jenks will talk on native orchids; a field trip will be held, on Sunday Nov. 4th taking a bus to the head of Kenepuru Sound and Titirangi. Those who can make it, please contact the Secretary, b. Webster, 16 North St., Blenheim.

Dorothy Cooper,
14 Avalon Crescent;
Lower Hutt.



An Evening with Warren Stoutamire (Taken from NOS-SA Journal)

Dr Warren Stoutamire of Akron, Chic, is the foremost expert on pollination both Australian and American, terrestrial orchids. Dr Stoutamire has made many extended visits to Australia, studying, capturing and identifying pollinators, particularly where pseudo-copulation is involved, i.e. of many Caladenia, Chiloglottis, Drakea, Spiculea, Cryptostylis and Arthrochilus. On his latest trip he arrived in Western Australia in September 1983 and will leave this February. We were fortunate to meet Warren during his brief stay in Adelaide.

Warren pointed out that it could take several weeks of concentrated field work just to locate and photograph the pollinator of one orchid species (this is probably the reason why we do not have many Australians working in this field!) but his photographs make it all seem worthwhile. He showed us slides of male wasps on species of Drakea and Caladenia which are so rare and little known themselves that they have not yet been named and probably neither have the wasps! How many Australians have seen even one wasp on a Caladenia? One of Warren's slides showed several wasps flying against a strong wind trying to enter a Caladenia dilatata. Warren's work with American orchids revealed a Platanthera which has the column twisted either to the right or left so that the pollinia will be positioned on either eye of the pollinating moths and he had the slides to prove it!

Warren's interests also extend to breeding and hybridising those fantastic Disas of South Africa and his slides show that he has had outstanding success in this field also.

(Dr Stoutamire is interested in corresponding with anyone in New Zealand who knows anything about pseudo-copulation by wasps of any of our species)

2.

Mark Clements triumphs at Kew

From Australian Orchid Review March 1984

Mr Mark Clements of the Canberra Botanic Gardens is working at Kew on a grant from the Sainsbury Trust.

Much of his work has been devoted to the symbiotic raising of rare European terrestrial orchids. This follows his success with similar work on Australian terrestrials.

The English journal 'New Scientist' thinks so highly of the results achieved by Mr Clements at Kew that they devoted nearly a page to reporting them in the issue of May 26, 1983.

'The New Scientist' points out: "In the wild, the tiny seeds of terrestrial orchids refuse to sprout until they are invaded by the right fungus; they extract essential nutrients from the fungus, apparently by digesting the filamentous hyphae of the fungus. Thereafter the young orchid and fungus live in a mutually-beneficial association (symbiosis). Clements has found just the right way of introducing the seed to the appropriate fungus.

"In general only one species of fungus will suit a particular species of orchid; so Clements begins by extracting the fungus from the roots of an established orchid and isolating a pure culture of this fungus in a petrie dish. Then using a low-nutrient medium - a mixture of oats and water, rather like a thin porridge - set in agar (a gelatine-like substance extracted from seaweed), he sows the orchid seed and infects it with its fungus. The seed sits on top of the agar, in easy reach of the growing fungus. Conditions have to be just right for the orchid but not too good for the fungus, otherwise the fungus will grow so fast that it swamps the orchids. Clements has found that the weak porridge coupled with a coolish temperature, 20°C in the daytime and 15°C at night, is ideal for the growth of the orchid even though the fungus grows best, at 23°C. Many orchids take a year or two to germinate in the test tube in the absence of the fungus, but in Clement's laboratory they may sprout in a mere twenty days. In nine months they are ready to plant out in soil...'

"So far Clements has isolated many different species of fungus, mainly basidiomycetes from terrestrial orchids. He suspects that there may be as many as 100 different species of fungus, and many strains of each, associated with orchids all told.... Clements has found that related species tend to share the same fungus...

"Clearly this technique is a great boon to the conservation of wild terrestrial orchids. Each orchid flower produces thousands of tiny seeds which could now be germinated in the laboratory. Britain's population of monkey orchids, Orchis simia, down to a few specimens, could thus be rejuvenated'

"Clement's technique may also take some of the pressure off wild orchids which are sometimes illegally dug up and sold... When this technique is adopted by commercial growers a whole range of wild orchids will become available to the public...

"...we at least have the technology to coax the endangered orchid out of its seed."

In addition to his work on the micropropagation of endangered European species, Clements has undertaken an examination and description of the Australian orchids in John Lindley's herbarium collections at Kew. Also the describing of fourteen new taxa in the genus Pterostylis. A second edition of "Checklist of Australian Orchidaceae" is also in progress. With D.L. Jones and P.S. Lavarack he is collaborating on work for the orchid volume of "Flora of Australia" They will cover the genera Pterostylis, Calochilus and Dipodium.

And from Mark himself in a note in "The Orchadian" March 1984
The significance of using the "symbiotic" method of germinating orchid seeds goes far beyond the immediate goal of growing any one orchid species from seed for the first time. Since the symbiotically grown seeds are infected with the appropriate mycorrhizal fungus when potted up they stand a greater chance of survival than aseptically produced seedlings. Symbiotically grown seedlings are in fact easily established when transferred to the field. I believe we now have the technology to reintroduce large populations of orchids to their natural environment



PTEROSTYLIS PLUMOSA (BARBATA) IN THE CORNWALLIS AREA

E.D. Hatch

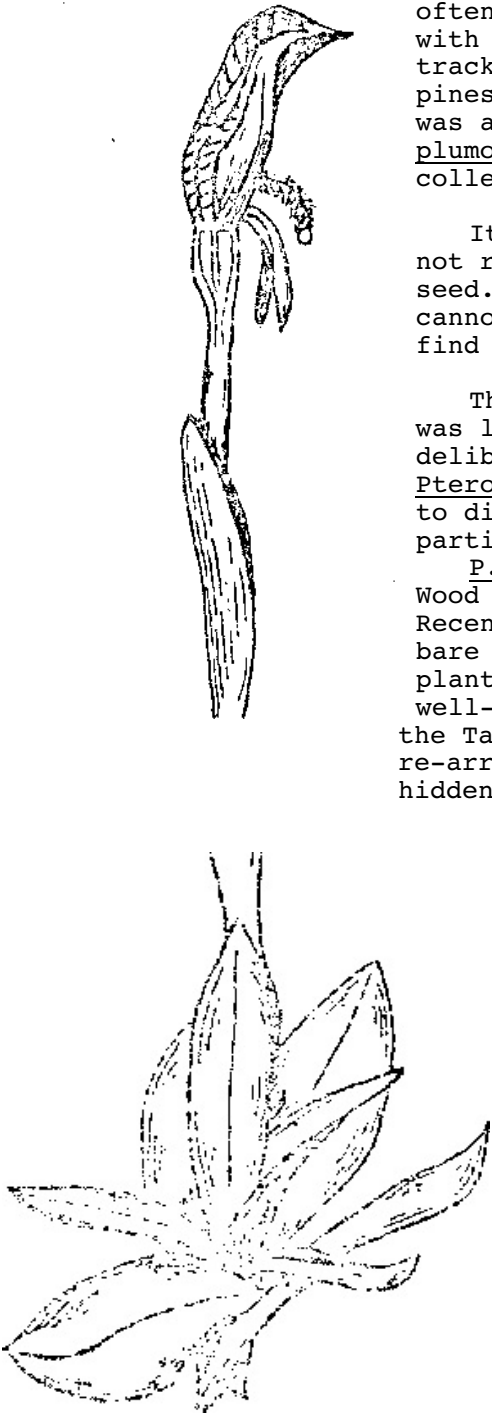
Fifty years ago the manuka scrub on the Cornwallis, gum land was very much shorter than it is at present., often no more than knee-high, and was scattered through with quite large bare patches of yellow clay. The tracks were kept open and the firebreaks between the pines systematically ploughed. This freshly turned soil was a favourite germinating place for Pterostylis plumosa, and there is in AK a specimen which I collected from Hill Bay in October 1932.

It is worth mentioning here that this species does not reproduce, by multiple tubers and spreads only by seed. It is also very dependent on mycorrhiza and cannot be cultivated with any success. If you should find it - leave it be.

The Kaitarakihi peninsula was another area which was largely bare clay, and was often burnt over, deliberately or by accident I cannot now remember. Pterostylis plumosa was frequent here too, but tended to disappear as the scrub grew taller, and was particularly choked out by the fern Gleichenia dicarpa.

P. plumosa was last recorded here by Mrs. Katie Wood (Auck. Bot. Soc. News letter Sept. 1951, p.,3). Recent clearing by the AKA has produced some suitably bare soil and I was pleased a few weeks back to find 2 plants of plumosa about 3 seasons old, with well-developed seed capsules. The peninsula is open to the Tasman and the south-west wind and the seed may have re-arrived from Australia, or may have come from some hidden local source.

Four days after I made this discovery someone had dug up the larger plant, leaving a neat trowel-hole, and trampled the second plant (apparently not noticed) into the ground. So much for conservation in public parks. Since clearing began on Kaitarakihi there has been a noticeable increases in the number of plants of Thelymitra carnea and Caldenia catenata var. calliniger. Prasophyllum pumilum on the other hand, appears to be increasing. In 1958 I recorded 26 flowering plants, in 1983 only 1.





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10 June 1984

An open letter to all those
interested in New Zealand Botany

A NATIONAL BOTANICAL SOCIETY FOR NEW ZEALAND

For many years now there has been intermittent talk amongst New Zealand botanists on the formation of a "New Zealand Botanical Society". At the recent Symposium honouring Dr Eric Godley on his retirement from DSIR, a little more focus was given to these informal discussions, and there was a fairly widespread feeling that the matter should be investigated further. In fact, in his closing address to the Symposium, Dr Hamish Thompson suggested that the formation of a national botanical society ought to be one of the direct developments out of the Symposium.

Towards this end I have prepared a questionnaire (copy enclosed) to obtain an initial indication of people's thoughts on the formation and possible functions of such a society. This questionnaire has been circulated to all registrants at the Godley Gaudeamus, to members of the four regional botanical societies, and to other interested parties known to me. Obviously there will be others whom I have been unable to reach, and I would appreciate it if you could provide any such people known to you with a copy of the questionnaire, or alternatively let me know their names and addresses on the bottom of your completed form. It has been suggested that if initial indications warrant it, a general meeting of botanists attending the Ecological Society Conference in Nelson later this year be convened to set up a working committee to take further action.

I would therefore greatly appreciate your completion and return of the questionnaire as soon as possible, and in any case no later than 31 July 1984.

Yours sincerely

A.E. Wright
Curator of Botany

QUESTIONNAIRE

PROPOSED NATIONAL BOTANICAL SOCIETY FOR NEW ZEALAND

Name:
Address:
.....
.....

Replies to this questionnaire imply no obligations whatever:
Please tick appropriate boxes

Botanical Interests (plant groups):

Seed plants Ferns Lower plants

Other:

Approach to these interests through:

Ecology Genetics History Morphology

Reproductive Biology Palynology/Plant history

Taxonomy Other:

1. Do you see the need for a national botanical society?

Yes No

2. Would you join such a society? Yes No

3. Please tick those of the following functions you would like to see such a society perform:

- (a) publication of a regular, informal, botanical newsletter
- (b) organisation of annual meetings/conferences
- (c) organisation of occasional meetings/conferences (such as the Godley Gaudeamus)
- (d) organisation of occasional fieldtrips
- (e) organisation of occasional social events
- (f) functions (c), (d) and (e) above combined
- (g) presenting submissions on legislation/issues affecting New Zealand botany
- (h) coordination of national projects, e.g. an atlas of the NZ flora; list of NZ plant collectors; etc.

Further comments:

Names & Addresses of others to whom the questionnaire should be sent:

RETURN TO Anthony Wright
 Auckland Institute & Museum
 Private Bag
 Auckland 1
 NEW ZEALAND

BY 31 JULY 1984