

NATIVE ORCHID SOCIETY

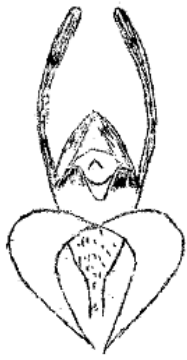
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Pterostylis unnamed



NATIVE ORCHID SOCIETY OF SOUTH AUSTRALIA

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NEXT MEETING

When: Tuesday, 26 June, at 8.00 p.m.

Where: St Matthews Hall, Bridge Street
Kensington.

Sub: Mr Les Nesbitt will give an
illustrated address on native
orchids.

COMPETITION PLANTS

Would all members who bought a competition
D. Sardo Rose please bring them for comparison.

N.E.D.O.S. WINTER SHOW

Northern and Eastern Districts Orchid Society
will be putting on their Winter Show from

July 20 to 21

at

St Philips Hall
Galway Avenue, Broadview.

NOSSA will be putting in a display as usual.
Setting up is on July 19. Collect plants at
the end of the Show, Saturday 21, after 8.30
p.m.

LAST MEETING

Mr John Scarvelis, who is the State Manager of the Horticultural Branch, Woods and Forests Department, spoke on the native plants of the Mallee. John began by saying when he is out in the field with forresters that they look up at the trees and horticulturalists, such as himself, look down. He then proceeded to show us some plants about the size of orchids and some bigger that we do not always notice when out in the bush. He mentioned how they are promoting the use of South Australian plants in gardens. The Woods and Forests Department collects plants from the wild and propagates them in their nurseries for eventual distribution to the public and general use in horticulture. Among the many plants he showed us were *Boronia coerulescens* and *Cheiranthra linearis* (the latter a twiggy plant that goes unnoticed unless in flower). He mentioned that small plants are links in the chain of ecosystems and evolution just like larger shrubs and trees, however, many people only see trees in the bush. It was an absorbing evening and maybe he has opened our eyes a little regards our native flora so next time we rush past that dry looking shrub during our holiday trips we should stop to look around a little and savour what nature has to offer us. Many thanks to John.

P.S. Many of us do not perhaps realise that John was one of the people instrumental in the conception of NOSSA in 1977.

TERRESTRIAL STUDY GROUP

Final meeting this series.

The meeting will be at the home of the President,
Mr G. Nieuwenhoven
15 Robin Terrace, HOPE VALLEY

on 10 July, 1984

Meeting starts 7:30 p.m.

All NOSSA members are welcome. Please take slides of Prasophyllum species, orchid plants, etc., and a plate of supper.

FIELD TRIP REMINDER

Combined NOSSA/South Australian Field Naturalists Botany Club, Taillem Bend area.

Meet water tower Taillem Bend, 10.00 a.m., Sunday, 24 June.

CULTURE NOTES (Terrestrial) G. Nieuwenhoven

This time of the year you could be excused for thinking that all your plants have gone on strike, nothing much seems to be happening. But . . . there is life in the shade house after all. If you are the proud possessor of *P. cucullata* then they, or it, should be up and away after a long dormancy; ditto *P. foliata* and *scabrida* syn. *alpina*. Plants still to show could be *Chiloglottis gunnii* and *C. cornuta*, and if by now you have other pots of plants that should be up but are not you are of course convinced they are dead and the pot should be thrown out. But hang on a minute: let me tell you of my experience last weekend.

Seven pots stood out in my collection as obvious duds - tubers dead - so they were duly emptied into a sieve one by one.

- Pot 1 *P. plumosa*. Soil used is a special type which drains easily. When tipped out after a good rainy day the soil was almost bone dry but the plant was growing and just about to come through the surface - a crust had formed on top which prevented the rain from penetrating.
- Pot 2 *Caladenia* from Victoria (rare). Same soil with mossy growth on top. One species I did not want to lose. Result - identical to the first pot. Crust and moss prevented rain from penetrating and plants growing. The tubers were healthy and plants near the surface. A little prayer was in order here. A broad smile creased my face.
- Pot 3 *Diuris tricolor*. As I brushed the pine needles from the soil a small green tip evident and this pot was quickly put back on the bench.
- Pot 4 *Prasophyllum nigricans*. My only specimen. No sign of tuber anywhere despite lovely looking soil. If I was an orchid I would have been pleased to grow in it but it did not suit *P. nigricans*. Oh well, can't win them all.
- Pot 5 *P. baptistii*. Large form, one tuber it says on the label. When tipped out only a long weedy root was present, very thin, a weed of course, but when the bottom was reached 100 mm down a very small tuber dangled from the end - *P. baptistii*. The tuber promptly fell off . . . rats.
- Pot 6 *Thelymitra venosa*. Two tubers supposedly in the pot. Nothing to see. When it was cast from the pot a lovely healthy tuber with small new tuber already evident, one large fat shoot growing out horizontally and near the surface 35 mm away with vertical root going down from it. Just impatience I guess on my part. The soil, by the way, is 2 parts swamp mud, 1 part gum tree filings from a chain saw and 1 part stringy supposedly peat moss (New Zealand).
- Pot 7 The last pot, *Lyperanthus nigricans*, went the same way as its name sake to orchid heaven. Soil used - grey fine sand similar to the type where they often grow in the bush, the pot plastic, this was a soggy wet mess, yuck, no wonder it died.

Well some valuable lessons learnt: more patience with some plants, better soil for others and most of all I am going to have some control pots with nothing in them except potting mixes. These will be tipped out at intervals to see how they behave during different weather conditions. I hope to report on these later.

ON THE BENCH

The most notable feature of the epiphytes was the contrast between the miniature species and the large flowered hybrids. One really needed a microscope to see the spray of flowers of a plant of *Phreatia baileyana*: the rich burgundy coloured flowers of *Bulbophyllum macphersonii* were most attractive seen through a hand lens and *Dendrobium toressae* was the smallest of the *Dendrobiums*. All three are grown in a heated glasshouse in a moist spot and are misted twice a day. A single flower of the New Guinea hybrid *Dendrobium* Kipps Special was many times larger than a whole plant of any of the previously mentioned species.

A highlight of the terrestrials lay in the quality of the culture of most pots; many were "cultural certificate" standard. In most cases the growers had obtained their first tuber only 3-4 years ago and now we are able to see specimen pots of *Pterostylis augusta*, *P. reflexa*, *P. affln. decurva* and green *Acianthus exsertus*, etc.

Commentaries:

Epiphytes - Barry Bailey
Terrestrials - G. Nieuwenhoven

Popular Vote:

Epiphytes - *Dendrobium bigibbum* (L. Nesbitt), *D. Kipps Special* (R. Shooter), and *D. Hilda Poxon* (R. Shooter).

Terrestrials - *Pterostylis augusta* (L. Nesbitt).

Epiphytes:

Bulbophyllum macphersonii, *Dendrobium bigibbum* (2), *D. Hilda Poxon*, *D. Kipps Special*, *D. monophyllum*, *D. Star of Gold*, *D. tetragonum*, *D. toressae* and *Phreatia baileyana*.

Terrestrials:

Acianthus exsertus (green: 9 plants with an average of 10 flowers on each), *Caladenia alba*, *Eriochilus cucullatus*, *Pterostylis augusta*, *P. alata*, *P. affin. Alata* (S.A.), *P. decurva*, *P. grandiflora*, *P. nana*, *P. scabra* (2), *P. x toveyana* (3), *P. truncata*, *P. vittata* (2, one with seedlings).

*It was interesting to compare the differences in labellum shape and length of *P. robusta* and *P. scabra*.

The *P. robusta* labellum was very short, not curved, and did not protrude from the flower.



P. robusta
labellum

P. scabra labellum long, curved and protruding from the flower.



P. scabra
labellum

It was also easy to separate the two species from their leaf rosette alone.

Introduction:

Historical - *Thelymitra macmillanii* was named by Ferdinand von Mueller in 1865 from a single plant collected in Victoria between Mounts Martha and Eliza on Port Philip Bay by a Thomas Macmillan. Mueller noted that it was growing with *T. antennifera* and '*T. carnea*' (which in those days included *T. rubra* and *T. luteocilium*). Bentham (1873) wrote that it was ". . . possibly a hybrid" and he was supported by French (1884) who noted that he took several years to locate a few well separated plants. Herbarium specimens indicate that *T. rubra*, *T. luteocilium* and *T. carnea* all occurred around Port Philip Bay at that time.

Local Knowledge - In South Australia the plants referred to *T. x macmillanii* are certainly hybrids between *T. antennifera* and *T. luteocilium*. They are usually found as single plants or small groups in the company of the parent species. I have located an actual hybrid swarm between the two species near Vivonne Bay on Kangaroo Island. Here there were intermediates between the hybrid and both the parent species. Elsewhere the hybrids are fairly constant. The tall "antenna"-like column lobes (Fig. 1) of *T. antennifera* are dominant in the hybrids although their colour varies from yellow to red; the red colour of *T. luteocilium* flowers is also dominant in the hybrids but there is a brightness factor taken from *T. antennifera* which apparently intensifies this colour in the hybrid flowers. The self-pollinating nature of *T. luteocilium* never appears in the hybrids °

An early experiment - In the early seventies I placed pollen from *T. luteocilium* onto a potted plant of *T. antennifera*. Seed was collected and sown in an old quarry in the Adelaide Hills in an area where *T. macmillanii* did not occur. A few years later three plants which flowered in the quarry perfectly matched the *T. x macmillanii* previously seen. I was puzzled then when D.L. Jones told me that *T. x macmillanii* often occurred in large populations in the Victorian goldfields without *T. luteocilium* and that he did not believe it was a hybrid. To further confuse the issue several A.N.O.S. members in South Australia and Victoria told me they had formed *T. x macmillanii* in company with *T. rubra* and *T. antennifera* without *T. luteocilium*. I now begun to wonder if the original *T. x macmillanii* was perhaps a *T. antennifera* crossed with *T. rubra* or *T. carnea*. (On a visit to Melbourne Herbarium in 1979 I was unable to locate the type specimen of *T. x macmillanii* as the Mueller collections were being incorporated.)

Fortunately several people who were cultivating *T. x macmillanii* told me that it increased vegetatively at a rapid rate. This indicated the reason why large populations could exist. Observations of *T. luteocilium* populations in many areas however showed that they were decreasing due to grazing by rabbits and sheep! As hybrids most often occur in disturbed ground it also seemed logical that there would be more of them around old goldfields than anywhere else. I no longer doubted that all populations were of hybrid origin.

Further light was thrown on the matter with the discovery of large numbers of apparent hybrids between *T. rubra* and *T. antennifera* near Kuitpo in the Adelaide Hills. Although these vaguely resembled the *T. luteocilium* x *T. antennifera* closer examination showed that they were distinct. The same bright red colour predominated in both hybrids but the column arms of the Kuitpo plants were more brushlike (Fig. 2), and the leaves more linear.

Even before the discovery of the Kuitpo plants I had begun several crosses to investigate the problem.

Experiments with *Thelymitra* X *Macmillanii* (contd.)

Methods:

As I had trouble germinating *Thelymitra* seed in pots but had previously succeeded on bare ground I chose a gravel scrape of about one hectare at Mylor in the Adelaide Hills to sow seeds on. A potted plant of *T. x macmillanii* from Victoria was selfed and pollen from *T. luteocilium*, *T. rubra* and *T. carnea* placed onto separate potted plants of *T. antennifera*. The seed was collected and sown in April 1979 on metre square plots marked on the disused gravel scrape (which was also planted with native shrubs). Seed was covered with 1 mm of soil.

Results:

It, was not until September 1980 that seedlings were obvious in three of the plots and plants in all three flowered in October 1983. The *T. x Macmillanii* selfed plants (F2) were similar to the F1 generation except that one plant had petals and sepals edged with yellow. The instability of colour certainly indicated it was a hybrid although like many orchid hybrids quite fertile.

The *T. luteocilium* x *T. antennifera* seedlings were all red-flowered and similar to the natural hybrids and the *T. rubra* x *T. antennifera* flowers showed similar variation to the natural hybrids from Kuitpo.

Conclusion:

There is little doubt that *T. macmillanii* is a hybrid. Its parentage could be gauged by comparing the type plant with actual hybrids of *T. luteocilium* x *T. antennifera* and *T. rubra* x *T. antennifera*. There is always the chance of course that the original *T. x macmillanii* is a *T. carnea* x *T. antennifera* but I have now attempted to make this cross on three occasions and although seed is produced plants have not appeared.

Clements, in his 1982 "Checklist of Australian Orchids", does not list *T. macmillanii* as a hybrid but other botanists, i.e. Beardsell and Bernhardt (1982) do refer to it as *T. x macmillanii* which I think must become accepted.

I would like to hear from any Victorian readers who can tell me which pink-flowered *Thelymitras* occur near Mt Martha and Mt Eliza.

Morrison (1980) notes that the pink colour of sun orchids is caused by water soluble anthocyanins, while the yellow of *T. antennifera* is given by insoluble carotenes. In a hybrid between the two apparently occur separately and "undiluted" to give the brilliance of colour.

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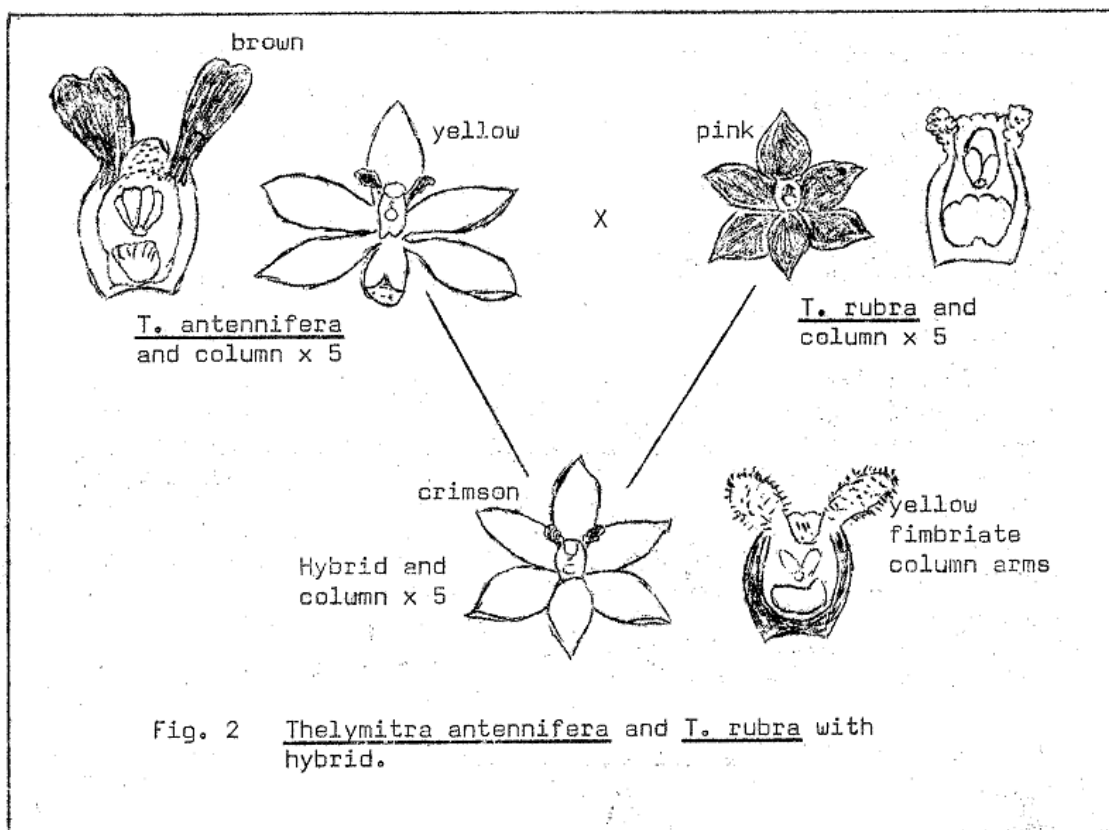
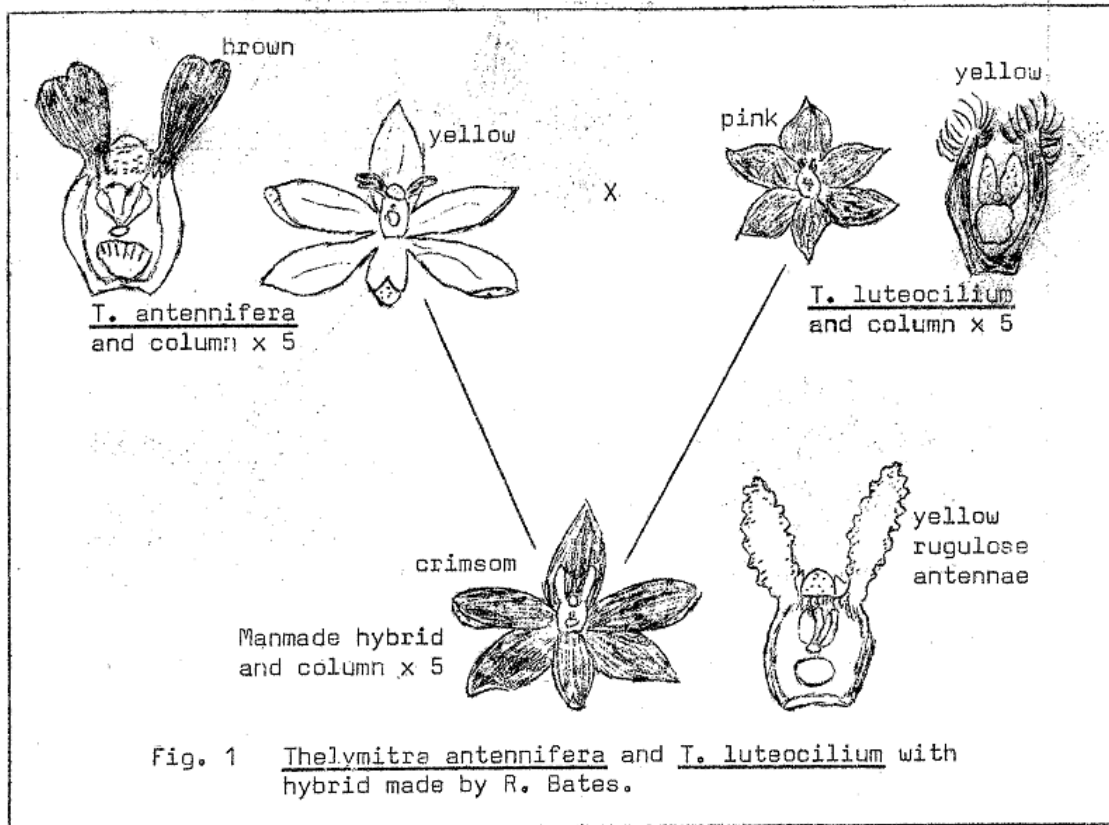
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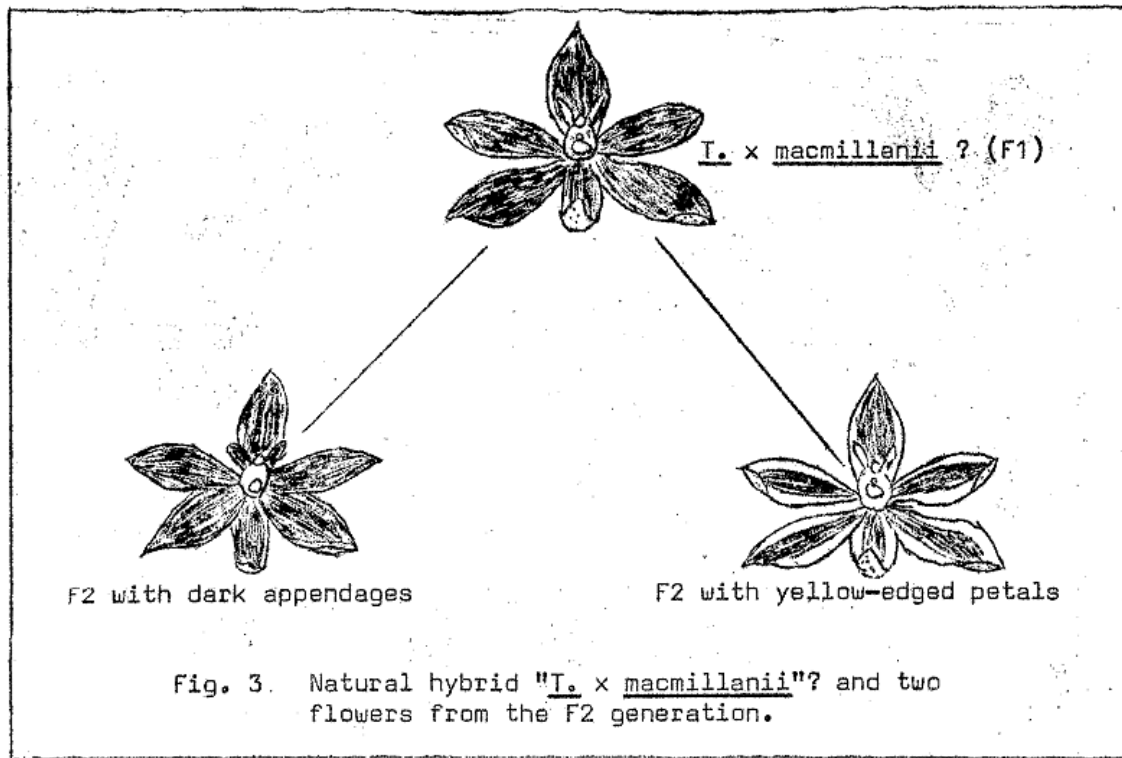
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AN EVENING WITH STEVEN HOPPER

Dr Steven Hopper, of the Department of Fisheries and Wildlife (Western Australia), is the Secretary of the Western Australian Native Orchid Study and Conservation Group (the western counterpart of NOSSA) and is well known for his articles on Western Australian plants in a variety of journals and magazines. His main work in the past was a revision of *Angiosanthus*, the "kangaroo paws". Steve is currently engaged in revisions of the western "spider orchids" and *Drakeas*. He is particularly interested in their taxonomy, ecology and pollination and worked with Warren Stoutamire in 1983 on the latter.

We were fortunate to have Steve talk to a group of NOSSA members during his recent (March 1-8) trip to South Australia. He showed slides of various unnamed "spiders" of the *Caladenia filamentosa - hueglingii - patersonii* complex which he intends to name and also showed us how *Drakea*, at present with 3 named species actually has 7 species. His slides also showed the pollinating wasps of each species (in each case a different wasp for each *Drakea*). Nevertheless hybrid *Drakeas* do occur and we saw a slide of one such hybrid - it looks like the wasps do occasionally get confused - I know I was as the seven species are all basically similar in flower structure. Steve pointed out that the different *Drakeas* can be recognised from their leaves alone - something not mentioned in any book on Australian orchids.

Steve also noted that *Caladenia patersonii* as we know it in South Australia is probably a group of several closely related species and sub-species!

First I wish to apologise for the long break in this series, afraid nothing can be expected to be done over summer, just not enough time available. Also more pressing projects have made heavy calls upon my time ~ So with that over let's get on with it, starting with some odds and ends.

Way back in the November 1982 issue of this journal I mentioned a couple of experiments that I was running on two *Pterostylis*, well now it is 1984 and I think it is time to make a report on the outcome of this work.

The first experiment concerned *P. nana*. As we all know 1982 and until early 1983 this land was in the grip of one of our worst recorded droughts. Fearing that plants would be lost due to the heat and dryness many pots were placed in the cellar, while others were left out in the plant house. Included in the cellar group was the terra-cotta pot of *P. nana*, the plastic pots were left in the plant house.

How did they fare? The terra-cotta returned three plants out of five the previous year, the larger normal plastic pot returned six with three flowering out of fifteen and the smaller squat plastic pot only one plant. Not an impressive result after the 1981/82 return. Now it is May 1984 and so far none of these plants have shown, while most other *Pterostylis* are up and doing very well, some *P. nana* already have flowered (but the numbers are down on last year). About the middle of May I de-potted the three above pots, the result nothing, all tubers had vanished.

The second experiment concerned *P. laxa* (not *P. laxiflora* as published, could be my error) were given the some treatment in 1982/83, e.g. one pot was placed in the cellar, the other stayed insitu. The pot that had the dark heavy loam in it had this replaced with the lighter material and at first the plants came up and grew well, but not quite as many as the previous year. The pot that had been in the cellar soon had trouble once the rain started, most plants rotted out. Shortly after the second pot also suffered from this complaint. Over the summer 1983/84 both pots were repotted and the first pot had one tuber, the second had three. The one-tubered pot produced the one plant, the three-tubered pot produced one plant which came up as a flower spike and did well till the end of April when the spike became stationary; two weeks later it fell over, rotted out at the base.

From the above I would say the experiments are all but over with these plants.

Speaking of putting pots down the cellar, this idea came from George Nieuwenhoven who told me of his (and other growers) experiments of putting pots of the autumn-flowered *Pterostylis* species under the house over summer to see if it improved the flowering of these plants. In my first experiment of putting the dormant orchids down the cellar I learnt a few things. One you have to check them carefully every day or two from early February on, for once the plants start to grow they move very quickly and head for the small amount of light coming through the small window at the end of the cellar. I ended up with some spring-flowering rosetted *Pterostylis* on long stalks below the rosette of leaves. The rufa-type plants did not look the best on long stems either - these plants are best left outside. The cellar did not save that many plants and the few extra blooms gained amongst the autumn-flowering *Pterostylis* pleased me.

I lost all my *P. obtusa* in 1983, those stored in the cellar, on the shelves in the plant house and those placed under the bottom shelf in the plant house, the effects of the drought I expect. Besides this species many other plants were missing including about 50 *P. cucullata*.

Methods and Madness of an Orchidologist (contd.)

During the summer of 1983/84 I again put a few pots down the cellar and bought some 75% shade cloth and put this over both plant houses. On hot days I sprayed water lightly over the pots and made the walls and floors very damp. Thankfully the summer was cool and during April and May I have had more *P. truncata* flower than any previous year. All the other autumn-flowering *Pterostylis* have performed well and *P. robusta* has many flower spikes. I think the cool summer had more to do with the improved flowering than spraying the water around: the shade cloth probably helped a little too. While those plants placed in the cellar appear to be performing equal to those not so stored

I do have trouble with two species, one is *P. x toveyana* which has made the usual number of flowers but the stems were not as long and the flowers did not open fully, with lately a few plants rotting out. Funny enough, one plant growing out of the bottom of the pot is vigorous and strong as one would normally expect this hybrid to be. This pot had a small amount of loam from a gully south of Happy Valley mixed into the top layer of the mix. A second pot of this hybrid was potted up with the sandy mix and so far 611 looks well.

The other problem concerns a pot of the plant known as the Mallee form of *P. alata* (or *P. primulata* as I once hoped to publish it as). Of two crowded pots one was repotted over the summer into two pots. All the larger tubers were put into one pot and the smaller into the other pot. The pot of larger tubers had about half of the plants show, half of these were flowering spikes, later reduced by a snail. The pot of smaller tubers only produced about one third of the plants it should have had. Now that the weather has become cooler and wetter both of these pots have rot-out rather badly, the flowering plants in one pot are falling like trees before the bulldozer. The untouched pot of this species flourished despite the unwanted attention of slugs and snails. I blame my trouble on the mixture I used on repotting, this contained much normal potting mixture, whereas the original mixture was almost pure sand.

I know the above may seem trivial to many but we all do have our problems and to be successful in growing these plants one must talk of troubles. There is a saying "A trouble shared is a trouble halved" and there is a lot of truth in this, especially in growing any native plant. My troubles may help you to solve some of your own, then again you may be able to help me.

One more thing I discovered over the past year concerns urea and other folia sprays: DO NOT, repeat DO NOT, apply these fertilisers to your plants at anything like the recommended strengths, especially the rosetted *Pterostylis* species and for the eastern Australian plants more so. For the latter plants I found the folia sprays really make the leaves and stems rot out, often quite fast. It is best to apply a very weak solution often than an occasional one in strength.

Now a note on my old problem with *P. curta* and a few other species which is the mottled and distorted leaf disfigurement of plants. Every two to three weeks I have been dusting my plants down with Derris dust and have had little trouble with the above. Some plants did suffer from this complaint early but this has not manifested itself since the dusting got underway.