Coordinator

ASGAP INDIGENOUS ORCHID STUDY GROUP ISSN 1036-9651

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Newsletter 48 September 2004

We have sent complimentary copies of the last two newsletters to Kate Vlcek to show her how we have used her art work. She enjoyed reading them and we are now pleased to welcome Kate as a member of our study group. She wrote:

"Firstly, I'd like to let everyone know that my drawings are not intended to be scientifically correct – if they are, it's just an unintentional bonus. While I usually try to draw what I see, my intention is really just to record their beauty. Many of the drawings I have sent are only studies/research for other artworks.

"As to the identification of the Dipodium that I drew, that is interesting, as I had originally labelled it *D roseum.* I changed my mind after seeing some photos of *D roseum* that showed the flower to be much pinker than my specimen. I also noticed that there is *D pardalinum* which also looks similar. Confused?

"On our property, there are two different forms of the Dipodium I illustrated – one with a green stem and one with the dark purplish-red stem, which is more common around here. I noticed in W H Nicholls *Orchids of Australia* a green stemmed variety is shown, from Creswick, which is not too far from here.

"Lastly, I feel I should apologise for my lack of scientific knowledge; I'm afraid I'm a bit of a hack, as the artist part of me is usually relatively unconcerned about such things."

Kate now knows that some of the rest of us are lacking in scientific knowledge too. She and her partner, Simon, were recently in the north for a couple of weeks and we were able to take them to a spot near Tinaroo Dam for a morning's scramble over and around some fabulous granite rocks festooned with orchids. We contacted all the Study Group members in the area and, on very short notice, five of us enjoyed the trip. Although we missed seeing two species seen on an earlier trip, we still managed to find 18 species and added two new ones.

It is interesting to see how different some species appear in different conditions. It is now pretty dry and though I previously confidently identified plants as *Plectorrhiza brevilabris* now I was not so sure. We did not follow exactly the same route this time and definitely saw many more plants of *P tridentata*. Also *Eria queenslandica* turned out to be *E eriaoides*, the one with several obvious veins in the leaves. (Nada tells me if there are two confusing species, don't try to learn the differences; just remember the features of one – if it's not that one, it must be the other. All I have to do is remember her advice. Simple.)

The party split up with the youngest and fittest climbing higher and ranging further afield only to come back with the old you-should-have-seen-what-we-saw routine – and they had the digital photograph to prove it! My speedy diagnosis of the flower was – you guessed it –

incorrect, but I only had the tiny review panel in the back of the camera to go on! I really did not believe the leaves of that particular species could be so variable. When it was correctly diagnosed I found that hard to believe too.

The plant in question is a *Bulbophyllum gadgarrense*. My lack of conviction was due to the fact that I have had a plant of this species for about nine years, and in spite of my ministrations it still has leaves at the very bottom of the range, while the one found has leaves longer than the top of the range quoted in the books, and more than twice the length of those on my plant. It is always exciting to imagine a rare find, but one cannot argue with a computer screen size full colour photograph including flowers! Thanks for that, Mark.

FIRE

Many thanks too to Margaret who wrote in early July:

"Not much news on the orchid front here at present. The continued dry weather, while giving us a lovely sunny winter, is making it hard for many plants and I am noticing that the orchids are suffering. They are either not coming up this year or are producing poor plants and fewer flowers. A deliberately lit fire swept through some of the Botany South National Park at Kurnell a few months ago threatening the Caltex Refinery. It has burnt through some of the *Pterostylis sp. aff. plumosa* sites and left others intact. This orchid is on the Threatened and Endangered Species List and each year we assess the orchids, count them etc. So this fire has provided a good 'control' opportunity to see how they react after fire. An added bonus is that much of the impenetrable Allocasuarina shrubbery has been burnt in the area and that might make it easier to look for new sites and other orchids next season."

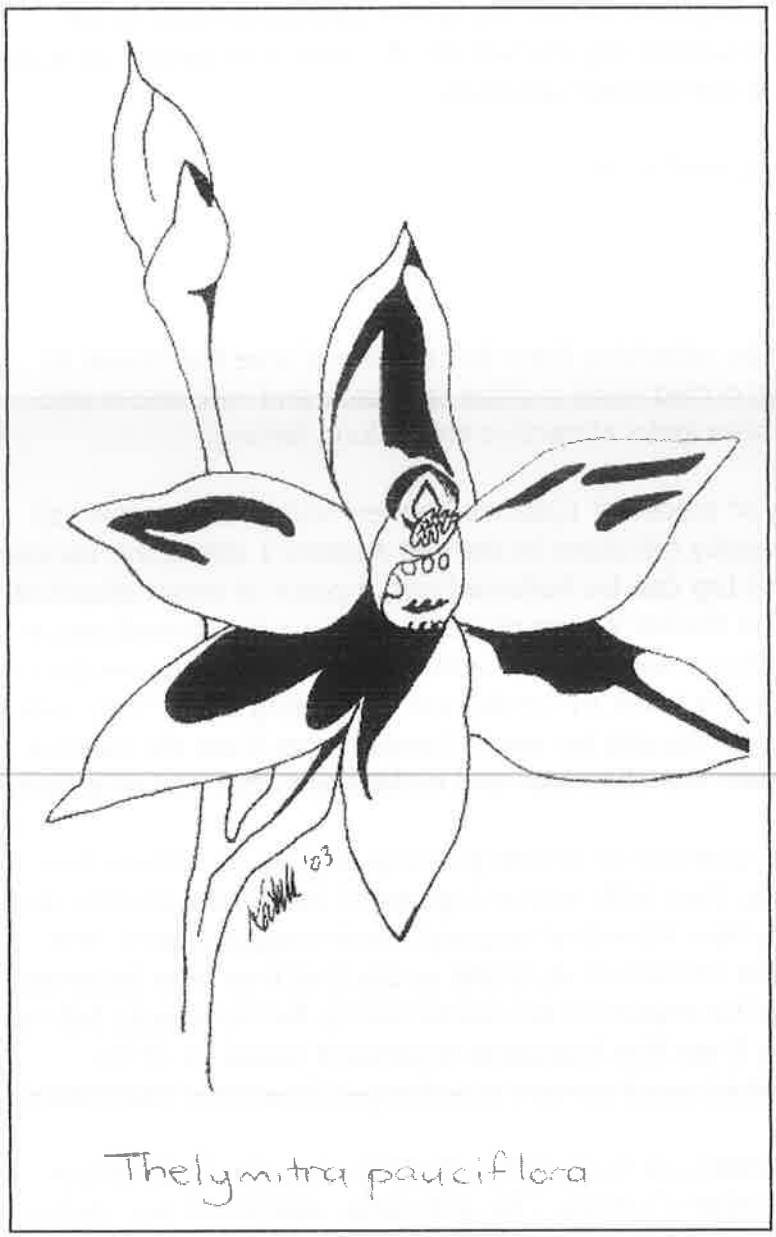
I am much encouraged that someone with Margaret's dedication will monitor the immediate, as well as the long-term, effect of fire on this orchid population.

Here in the super wet belt almost all fires are deliberately lit, mostly by cane farmers and National Parks staff, and though I don't have the benefit of proper research, I am convinced that fire is not the best tool in either case. It is therefore pleasing to read a report which confirms my theories. The latest Wildflower Society of WA Newsletter contains an article entitled "Fire and Biodiversity" by Margaret Pieroni. I quote a brief extract: "I have observed the effects of fire, clearing for firebreaks, tracks and drains and die-back (*Phytophthora cinnamomi* and other fungal diseases) on particular plant populations over many years and the devastation is most distressing". Margaret concludes "that so-called 'management' by fire is not viable and is usually destructive of the natural balance and thus of biodiversity." Here! Here!

THELYMITRA PAUCIFLORA: Family: Orchidaceae

DERIVATION: Thelymitra: from the Greek 'thelys' meaning female, and 'mitra' a headband or hat, referring to the sometimes plumed or decorated wings of the column of the flower, which is usually produced behind and over the anther into a hood-like appendage. 'pauciflora' : from the Latin 'paucus' meaning few, and 'florus' flowered.

COMMON NAME: Wallum Sun Orchid or Slender Sun Orchid.



We were in the process of selecting one of Kate Vlcek's beautiful orchid illustrations to feature in this issue when the latest SGAP Qld State Bulletin arrived. The Bulletin cover features a line drawing by Jeanette Martin of Thelymitra pauciflora and Bulletin Editor, (and ASGAP Study Group Co-ordinator), Jan Sked, describes the orchid on page ten. We have Kate's illustration of Thelymitra pauciflora, and we're sure that Jan will not mind if we copy her description, since this orchid does not occur in our area and so we have never seen it.

This Sun Orchid belongs to one of the most attractive groups of ground orchids. It is perhaps one of the most widely distributed of the genus in Australia, and occurs in all the Australian states (except the Northern Territory) and New Zealand. It is widespread in coastal heathlands and woodlands, but can also be found in open forests inland and on hilly slopes and tablelands.

It is a slender plant, growing 10-30 cm high, with a fine stem and a solitary leaf that is narrow-linear or lanceolate, channelled and thickish, and variable in length. Sometimes it can be taller and more robust.

The flowers are smallish and vary in colour from pale to deep blue, mauve, or even creamy yellow. They can be reluctant to open and sometimes will only open fully in very hot weather. Flowering takes place in spring, but because of the tendency of the flowers to remain closed, it can easily be overlooked. These orchids are seldom seen in cultivation other than in specialists' collections. However, they have been grown successfully from seed in pots in a mix of 50% washed river sand, 30% coir peat and 20% decayed leaf mould.

Thank you Jan, for that description. We prefer to print first-hand material rather than just make extracts from the books. Dockrill mentions that *Thelymitra pauciflora* occurs in the Queensland Tropics as far north as the Herbert River (Ingham area), which is still a bit south of us. Jones in *Native Orchids of Australia* says that pauciflora "is probably the most widespread of the sun orchids in Australia and possibly the commonest. It is also one of the most variable and perplexing species in our flora".

We have seen Thelymitra nuda, which is closely related to T. pauciflora, growing in the Herberton area on the upper part of the Atherton Tabelands, south-west of Cairns. We can vouch for its quality of perplexity - Chris and Ian Evans took us especially to view an extensive

colony of flowering Thelymitra nuda that they had found only a few days previously in full flower, but when we arrived there was no sign of any orchids at all. Their brief period of beauty had come and gone, ruled by a change in the weather perhaps.

We'll feature another of Kate's illustrations next issue.

USING TREE FERN TO GROW ORCHIDS

Epiphytic orchids are often grown by attaching them to sections of tree fern trunk or slabs. The rough surface of the fern gives orchid roots a place to attach and run, and it also catches any passing moisture. Tree fern also looks attractive and is long lasting.

We usually have a plentiful supply of pieces of *Cyathea cooperi* trunk. They grow tall and slender along the roadside and frequently fall down in the wet season. I utilise the various parts of the trunk: narrow pieces from the top can be hollowed out, a piece of mesh attached and they become handy natural 'pots'. The thicker pieces of trunk can be cut into sections, a wire hook attached for hanging, and epiphytes such as the Golden Orchid, Dendrobium discolor, which keikis profusely, can be attached to the trunk by pantyhose or grafting tape. They soon grow their roots into the fern fibre and grow happily for years. Large pieces from the base of a large *Cyathea cooperi* are cut into slabs with the chainsaw and orchids are attached as above.

We have noticed that after several years of an orchid growing happily on its tree fern slab the plant can suddenly sicken and die. Very little notice is given of the plant's distress and their roots are usually so enmeshed in the fern fibre that removal would severely stress the already sickly orchid. David Jones in *Native Orchids of Australia* warns that tree fern becomes acidic with age and very old pieces should be soaked in limewater for up to four weeks before use. Since our pieces of fern are relatively fresh the limewater treatment would be of no prophylactic use and I doubt that any orchid could survive a prolonged limewater inundation.

It has been suggested that the problem we have encountered is peculiar to *Cyathea cooperi*, but we don't have access to any other *Cyathea*. The only other species in our area is *rebeccae* which grows lush and a beautiful shining green but the trunks are very thin and insubstantial and would be unsatisfactory even if they were available.

I put odd bits of tree fern through the mulcher to make a useful long grain, long lasting, potting mix ingredient. This is combined with such things as coarse perlite, 5mm Quinkan (volcanic scoria) - both of which require triple washing before use to remove dust - decomposed leaf mould which is bursting with hidden life, and old pine bark. The pine bark, from a dead, old, Caribbean Pine, is also put through the mulcher and produces very acceptable fragments which can be divided by sieving for various mixes. I use variations of this mix for terrestrial orchids and also for rainforest seedlings. It keeps well and plants do well in it. Rainforest soils are usually acidic and so the acid component of the tree fern fibre would not be detrimental, although these plants are put in the ground before much time has elapsed.

We would like to hear from any readers who have comments on the above: do you use different tree fern species; do you have the same or different problems; do you have any solution to our sudden death syndrome?

MORE ORCHID SURVIVAL TECHNIQUES

The Orchidaceae plant family comprises perhaps 10% of all of the world's flowering plants. Orchids have managed to survive and thrive in almost every climatic and geographic area in the world. (None has as yet been found in Antarctica, but a tiny orchid does live in the frozen wastes of Macquarie island, not far short of the Antarctic Circle.) For a family of plants to survive across the globe, individual members must make adaptations to local conditions and orchids have done this. They have also managed by their adaptations to live in areas which are unsatisfactory to many other plant types, so they can grow without competition from their neighbours. For example, epiphytic orchids learned to grow on tree trunks or branches, or even on rocks, and whilst their roots do anchor them, they are very efficient at extracting nutrients from any passing moisture or run-off from the host and, unlike parasites, do not interfere with the host plant's metabolism.

In Australia epiphytic orchids grow principally in the tropics. In the southern part of the continent the majority of orchids have developed roots to anchor them in the ground and to absorb nutrients from the soil strata. These terrestrials comprise about 75% of all Australian native orchids.

Terrestrials in Australia have colonised a very wide range of climates and habitats. They can be found on coastal dunes, peaty swamps, and heavy clay areas, and are particularly numerous in open Eucalypt forests and grasslands. In tropical areas in dense rainforests they grow as evergreen plants, but in areas which experience distinct seasonal climatic conditions - wet/dry, hot/cold - the terrestrials have evolved a survival technique that works very well.

Readers of this Newsletter in the southern half of the Continent would have had the pleasure of being able to walk in fields of many hundreds of flowering Pterostylis orchids in recent months. We have about 120 different species of the genus Pterostylis in Australia, and they exhibit a growth habit that typifies the survival techniques of terrestrial orchids. By now, in early spring, their life cycle will be drawing to a temporary close. Earlier in the year, in response to the summer rains, the stored energy of the plants was activated; a bud on the end of each tuberoid began to grow and became a stem which reached above ground. Then, dependent on the species, it either elongated into a flowering spike to bloom, attract pollinators, set fruit, then cast the seed to the air, or, if a more cautious species, it settled for a rosette of leaves first, to ensure that the plant was vigorous and nourished before flowering.

Many terrestrial orchids have developed most extraordinary flowering and pollination systems to achieve the aim of reproduction, but they also have a second line of survival. The energy and nutrition from their roots and from the photosysnthetic activity of the green leaves is used in the growth of the plant, in production of flowers, fruit and seed, and sometimes extra energy is stored away for the future - just as we humans like to put money in the Savings Bank for our later years!

As orchids belong to the great division of plants termed Monocotyledons, they do not have the long, tap-root system which is typical of the other division, Dicotyledons, but have roots that are generally small and fibrous. Such roots perform their primary functions of anchorage and nutrient gathering in an admirable fashion, but their narrow cross-section does not allow of any function of storing excess food or energy. This is solved by the terrestrial orchid by its production of special organs, termed "tuberoids", attached to the roots.

(A word of explanation here - tubers are underground storage organs which arise from the stems or rhizomes of various plants, the best known being the Potato. A tuber is a specialised stem and bears buds and vestigial leaves. A tuberoid, as found on orchid roots, is not a stem. It is a specialised organ, and has just one bud).

A terrestrial may produce just one tuberoid but some species, especially Pterostylis, may produce up to six in a good season. As summer begins to make itself felt in the next months, these plants will lose their vigour, transfer their life force to their tuberoid/s, and appear to "die". Indeed, by late summer all trace of stems, leaves and flowers is gone and the field where one could not but tread on a wonder of nature is now bare except for grass and fallen gum leaves. Underground the tuberoid conserves its forces and awaits its day of glory when it senses the new season, the rain that soaks the ground and causes the apical bud to elongate. The stored energy is released, leaves and flowers appear, new tuberoids are formed, and the cycle continues to repeat itself. Then we humans are privileged to be able to observe and admire the works of Nature.

FINANCIAL STATEMENT 2003-2004

BALANCE BROUGHT FORWARD 1/7/03			$641 18
INCOME: Subscriptions, grants, donations		247 00	
Bank Interest		35	247 35
			888 53
EXPENDITURE: Printing		51 35	
Postage	92 75		
Stationery		31 35	
Miscellaneous (Photocopying)		21 15	196 60
BALANCE AT BANK 30/6/03			$691 93

Bendigo Bank a/c No. 114 030 240 in the name of SGAP Indigenous Orchid Study Group with the signatures of Donald C Lawie and Pauline M Lawie, one to sign.

Note: The increased income for the year 03-04 is due to the number of memberships for next year paid before the end of the financial year.

Auditor's Comment:

"I, Mary Gandini, Life Member of Society For Growing Australian Plants (Cairns Branch), having examined the records of income and expenditure for the Indigenous Orchid Study Group, certify that the financial report for the period 1/07/03 to 30/6/04, as already submitted, is correct."

ASSETS: The assets of the Indigenous Orchid Study Group consist of $691 93 in the bank, four 50c stamps, a reasonable ballpoint pen, the current ream of A4 paper and some DL and C5 envelopes.

As well as having its affairs audited, the Study Group is obliged to declare its assets to the ASGAP Study Group Co-ordinator. Perhaps I should have included Kate's artwork. We are also required to provide a list of the names and addresses of all of our members. All of these requirements have been met.

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