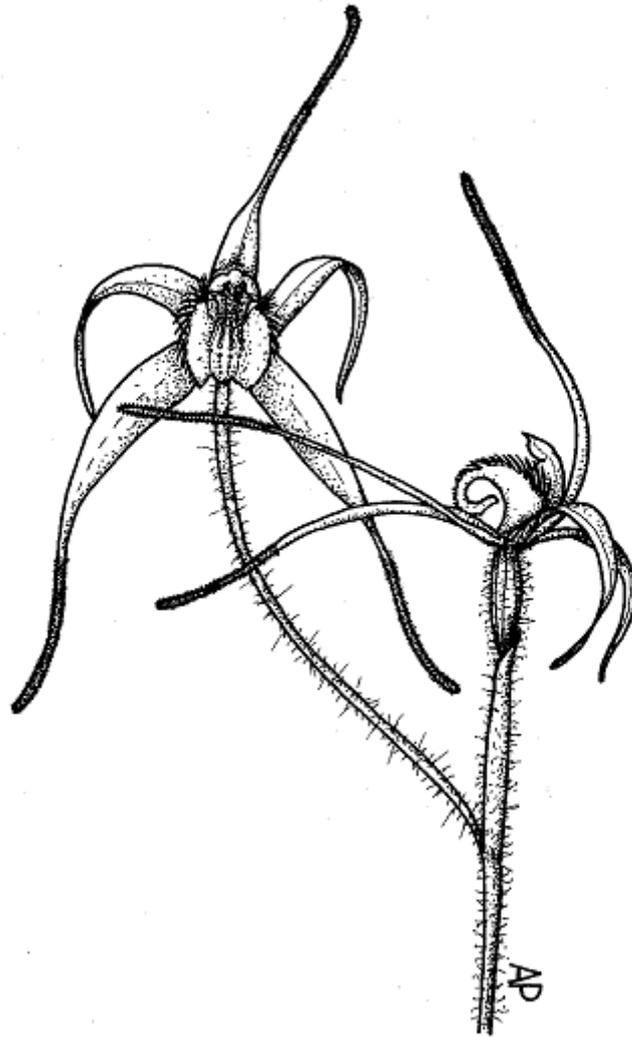
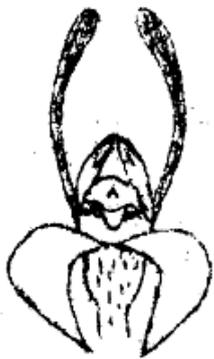


NATIVE ORCHID
SOCIETY
of
SOUTH AUSTRALIA



Caladenia rigida



NATIVE ORCHID SOCIETY OF SOUTH AUSTRALIA

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NEXT MEETING

WHEN: Tuesday 25th May, 1982 at 8.00 p.m.

WHERE: St. Matthews Hall, Bridge Street, Kensington.

SUBJECT: Dr. J. Warcup, Waite Agricultural Research Institute (Adelaide University) will speak on Mycorrhizal Fungi of Terrestrial Orchids.

HYBRID *PTEROSTYLIS* Les Nesbitt

I have received word from the R.H.S. that the first greenhood hybrid was registered on 5th March, 1982. It is *Pterostylis Cutie (baptistii x cucullata)*. Harold Goldsack is the originator of the cross. Anyone with plants of this crossing can now change their labels. The R.H.S. advise that *Pterostylis* is new to registration and that the abbreviation to be used is Ptst.

FIELD TRIP

There will be a field trip to Para Wirra Recreation Park on Saturday 19th June, 1982. Meet at the MAIN ENTRANCE at 2.00 p.m.

LAST MEETING Attendance 48

For those of us who grow *Epiphytes* last month's speaker turned out to be one of the most outstanding we have had. Tom Reeve is a man who not only knows his subject but also loves it, a fact which came through loud and clear. His main interest is the genus *Dendrobium*. New Guinea has 1500-2000 species of Orchids he told us, with the largest genus being *Bulbophyllum*. Orchids occur from sea level up to 12,000 feet. Many have a very wide distribution although some are very localised.

Laiagam, where Tom works, is located 7,200 feet a.s.l. He worked with Andre Millar and was asked in 1975 to set up a complete highland collection of both Epiphytic and Terrestrial Orchids. They are now setting up a flasking industry there, and export about 2,000 plants a year.

Tom showed us a mouth-watering collection of slides including several forms of *Den. cuthbertsonii* (formerly *D. sopronites*), one particularly beautiful plant having purple flowers tipped with white. The species is apparently fairly common - *D. subclausam* is, as he put it, everywhere.

For the Terrestrial enthusiast we saw some very pretty un-named *Corybas* species, some like jewel orchids with beautifully veined leaves. It seems New Guinea is a mecca for Orchid lovers and we would like to thank Tom for providing us with a guided pictorial tour.

Plant Commentary

Epiphytes: Peter Barnes

Terrestrials: Alwyn Clements

Terrestrials

Phaius tancarvilliae
 Eriochilus dilatatus - 3 pots
 Eriochilus cucullatus - 2 pots
 Pt. coccinea - 1 pot, large number f flowers
 Prasophyllum nigricans
 Pt. toveyana
 Pt. fischii - 6 flowers, very tall stems
 Pt. truncata - 4 pots
 Pt. obtusa - 2 large pots
 Pt. revoluta - Queensland and Victorian forms
 Pt. reflexa
 Prasophyllum rufum - N.S.W.
 Pt. vittata - mallee form
 Pt. ophioglossa
 Pt. decurva

Epiphytes

Liparis reflexa - 2
 Bulbophyllum aurantiacum
 Den. cucumerinum
 Den. tetragonum
 Den. bracteosum
 Den. mortii - on cork
 Den. wilkianum
 Den. schneiderae
 Den. johannis x bigibbum var. bigibbum
 Den. striolatum - on cork
 Den. Star of Gold
 Den. (d. albertisii) x discolor
 Den. speciosum x tetragonum
 Den. strebloceras x dicuphum

(Note: Den. d. albertisii = D. antennatum)

Popular Vote

Terrestrial: Pt. revoluta L. Nesbitt

Epiphytes: Den. bracteosum R. Shooter

For the next five months there is plenty of time to enjoy your terrestrials because most of the jobs have been done. Several local species are in bud or in flower at this time, such as *Acianthus exsertus* and *Pterostylis scabra* var. *robusta*.

When you grow terrestrials you find yourself looking forward to Winter, and then it is over before you know it. The last of the weeds will be germinating but be sure they are not last year's seedlings before you pull them up. If they have a single leaf let them grow until you are sure they are not orchids. Hurry and sow seed. Seed will start to germinate from the beginning of June. The growing season is short enough without the added delay of late sowing. You must try to sow seed of the non-colony species every year. These include *Caladenia*, *Thelymitra* and *Diuris*.

A few late species are not up yet. *Pterostylis cucullata* and *Pt. alpina* will show up anytime now. *Corybas* species come up in June or July at my place, whilst I usually have to wait until August before *Chiloglottis gunnii* makes an appearance. Leaf growth is rapid now, especially after rain such as we had on the Anzac Day week-end. Some greenhoods have fully developed rosettes already. They will not grow any bigger this year, but are putting their energy into flowers and next year's tubers.

Keep a sharp eye out for slugs and snails and any sign of leaf-rot. At the first sign of rot cut off, or burn out the affected parts with a hot wire. Move the pot under cover and keep the leaves dry. The fungicides which I have tried do not work if the leaves get wet in the rain. It is far easier to keep a collection healthy if you can eliminate the source of infection as soon as it appears.

EPIPHYTES

Most epiphytes don't really appreciate our cold damp winters. To help them get by give them good air movement so that they dry off quickly after rain. Don't crowd the pots, leave space for flower spikes to grow unhindered. If you have a glasshouse you can wash off all the paint so that every bit of sunlight penetrates into the house. No fertilizer is necessary for the next three months because plant growth is virtually at a standstill. The cool growing species will soak up the rain and you can almost see the canes fatten out.

Any old canes should be gently squeezed and if they are soft and rotten cut them off at the base before the infection spreads to healthy younger canes. Pots with soggy broken-down compost which do not drain freely should be put under cover and watered sparingly until Spring when they can be re-potted.

If you look closely at the eyes on the tops of *Dendrobium* canes you will see that some of them are starting to develop into flowering racemes. Flower spikes are also in evidence on *Sarcochilus falcatus*.

FIELD TRIP TO SCOTT CONSERVATION PARK - 24/4/82. R.J. Markwick

A less auspicious start for our first excursion for 1982 could hardly have been imagined. Most of the thirteen people who attended would have left home under very threatening skies. Indeed, some of us left in a torrential downpour. No doubt the inclement weather was sufficient to discourage some who would have otherwise come.

However, apart from a couple of minutes of misty drizzle at our initial rendezvous at Ashbourne, no further rain was experienced during the rest of the afternoon. On the contrary, the fine and mild conditions were perfect for orchid hunting, and the light ideal for photography.

It was a pleasure to have our President Jim Simmons and his wife Nan join us, and to welcome talented wild-flower painter Kath Alcock from Naracoorte in the South East. Kath's works have included native orchids.

From Ashbourne we convoyed to Scott conservation Park, where, only a few steps from the cars, the first of many flowers of *Eriochilus cucullatus* seen during the afternoon was discovered. This ubiquitous little plant seems to thrive in the sandy soil here. Seconds later, nice fresh flowers of *Leporella fimbriata* including double-headed specimens were found. It is, of course, well known that sandy soils in the Southern Mount Lofty Ranges are a favoured habitat for *Leporella fimbriata*, where it is often found growing in large numbers. The fresh flowers, with yellow-green labella displaying their rich purple markings were a delight to behold. We had found them in prime condition.

A short distance further on, specimens of *Prasophyllum rufum* were located, some in flower and some in seed. The pollinating fly was active around several plants, but since none were observed to carry any pollinia on their heads it appeared that all pollinia had been previously removed. It was of unusual interest to be able to observe the vigorous activity of these tiny insects forcing their way into the flowers, magnified by the close-up lens of a camera which had been set up to photograph a plant.

Later, *Pterostylis vittata* and *Acianthus exsertus* in bud, and leaves of *Pterostylis pedunculata*, *Lyperanthus nigricans*, *Glossodia major*, and *Thelymitra* sp. were found. A search along the banks of Deep Creek failed to positively turn up the leaves of *Pterostylis curta* which is known to grow there, although there was some discussion about the identity of some of the rosettes seen.

On the return walk Bob Bates discovered an unusual creamy-white flowered colour-form of the Brush Heath, *Brachyloma ericoides*, which was photographed for record purposes.

All in all, an interesting afternoon's orchid hunting was enjoyed by all who attended.

Orchids Seen

In Flower:	Basal Leaves
<i>Eriochilus cucullatus</i>	<i>Glossodia major</i>
<i>Leporella fimbriata</i>	<i>Lyperanthus nigricans</i>
<i>Prasophyllum rufum</i>	<i>Pterostylis pedunculata</i> .
<i>Thelymitra</i> sp.	

In Bud:
Acianthus exsertus
Pterostylis vittata

NATIVE ORCHIDS IN THE WILD D. Wells

We left Newcastle and drove to Maitland, then turned off to Paterson, onto Gresford, past the orchid nursery of V.F. & N.C. Jupp (who have been hybridizing native orchids for many years) onto the Barrington Tops, which is part of the Great Dividing Range. As there were several different areas to visit and time would permit only one for us, we

followed the track along the River Allyn for many kilometres over rolling hills, across fords, through farmlands until we finally came upon the Mt. Allyn Forestry Reserve. The vegetation became more dense as we followed the river and the large River Oaks suddenly became giants reaching high into the sky. The lichens, mosses, stags, elks and ribbon ferns, etc. were visible from the road. In the forks and on the branches of the River Oaks large clumps of *Dendrobium speciosum* could be seen. These appeared to have finished flowering.

Lower down nearer the water on the branches, *Dendrobium linguiforme* was visible, only because it was in flower. These appeared as circles of flowers around the branches. The plants would hardly be noticeable if no flowers were present. Maybe other species were on the trees but we were unable to get close enough. No Birdsnest ferns were evident here, but did appear higher in the denser rainforest area.

Just before entering the forestry reserve we passed the old sawmill village. This township is used these days by holiday makers. As it was a long week-end when we were there, camping was permitted anywhere. You could just pull up and set up camp if you were able to find a flat piece of ground large enough for a car and a tent.

Our next turn off was a drive up from the river to the summit of Mt. Allyn, to a height of 1,093 metres and a distance of approximately 12 kilometers. A spirit of adventure is needed to negotiate this rough, dusty, steep and narrow, dry weather road. No orchids were visible on the hardwood trees until about two-thirds of the way up the mountain, where the vegetation changed, resembling a rainforest, with creepers, ferns, nettle trees, Morton Bay figs, Beech trees, etc. In the shadow of the mountain *Sarcochilus falcatus* could be seen in flower from the road, a real surprise for us. It was on the trunk of a large hardwood tree, about 15 feet up the bole, with mosses covering the roots. There was nothing else growing on the tree above this patch of moss. Several other plants of this species were sighted in similar conditions in this area. The plants were growing individually and not in clumps.

On trees that were in more sun, different orchids were seen. *Den. teretifolium* (bridal veil) was growing in masses, not flowering, hanging in long tresses from under the branches, with some on the trunks of the trees. *Den. becklerii* occurred in a similar situation in the same area. *Den. pugioniforme* grew on the trunk of a large tree on the shaded side, again the roots covered by moss. The giant Beech trees reached skywards near the summit of the mountain - these are the home of *Den. falcorostrum*. The perfume in the air gave away their presence.

The view from the summit was a breath-taking experience. Being a clear sunny day such places as the sandhills near Newcastle, 93 kilometers away were visible. All the distant places of interest were clearly marked on the dial at the summit. The views, the magnificent birdlife, including many crimson Rosella Parrots, the orchids, the river, the ferns, all combined to make up a wonderfully interesting day, giving us a memorable trip.

RECOMMENDED NOMENCLATURE

J.T. Simmons

During the 10th World Orchid Conference at Durban in September 1981, the International Orchid Commission adopted a number of recommendations of its Taxonomy and Nomenclature Committee relating to the botanically correct and horticulturally recommended names of orchid species for future use.

Those of consequence to our own members are listed below and involve species of the genus *Dendrobium* of both Australian and Papuan origin.

Dendrobium lineale

In future to be treated botanically and horticulturally as specifically distinct from *D. gouldii* However, it is recommended the *D. veratrifolium* and *D. grantii* which had hitherto been treated horticulturally as specifically distinct should henceforth be treated horticulturally as within *D. lineale*.

Dendrobium macrophyllum

to continue in horticultural use as the botanically correct name.
Bot./hort synonyms: *D. gordonii*, *D. musciferum*.

Dendrobium mirbelianum

To continue in horticultural use as the botanically correct name.
Bot./hort synonym: *D. wilkianum*.

Dendrobium nindii

To be used in future horticulturally, as the botanically correct name.
Bot./hort. synonyms: *D. toftii*, *D. ionoglossum*.

Dendrobium robustum

To be used in future horticulturally as the botanically correct name.
Bot./hort. synonym: *D. warianum*.

Dendrobium macranthum

To be used in future horticulturally as the botanically correct name.
Bot./hort. synonyms: *D. arachnostachyum*, *P. pseudo-tokai*.
It was further recommended that the name *Dendrobium tokai* be confined to those plants originating from Fiji or Tonga.

Confirmation of a previous recommendation of the T.N.C. to the I.O.C. on work carried out by Dr. Phillip Cribb of Kew and which resulted in the description of two new species was also listed.

Dendrobium tangerinum

Bot./hort. synonym: *D. 'Tangerine'*.

Dendrobium helix

Bot./hort. synonyms : *D. talasea*, *D. 'Pomio Brown'*.

Members should also be aware of the work carried out by Cribb and Lavarack which resulted in raising one of the varieties of *D. johannis* to specific rank.

Dendrobium semifusum

Bot./hort. synonym: *D. johannis* var. *semifusum*.

Dendrobium johannis

This is the species which is often cultivated under the name *D. johannis* var. *nigrescens* and retains the name *D. johannis*.

References:

P.S. Lavarack and. P.J. Cribb (1980) *Orchadian* Vol. 6 No. 9 pp. 209-211.

OBSERVATION OF POLLEN VECTORS ON *CALADENIA CONGESTA* R.Br.

Abstract: The pollination of *Caladenia congesta* R.Br. by native bees, *Hylapus* sp. family Colletidae, is discussed.

Introduction: Orchid species of the genus *Caladenia* are pollinated principally by various hymenopterans (bees and wasps), each orchid species generally attracting a specific pollen vector (exceptions include the autogamous *C. bicalliata*, *C. graminea* and some small flowered forms of *C. catenata*).

Pollination of various *Caladenia* species is discussed by Sargent (1907) Rogers (1932), Coleman (1939) and Stoutamire (1974).

The author (1977) has previously discussed the pollination of *Caladenia* by introduced muscid flies (an exception rather than the rule) - an occurrence which has led to a probable increase in *Caladenia* hybrids as these flies are non specific in the orchids they visit.

Discussion: On November 4th 1981, the author observed a group of some eighty *C. congesta* plants flowering on a mown fire-break in Marshes Swamp Forest Reserve near Glencoe in South Australia. No insects were observed to visit between 8.00 a.m. and 11.00 a.m. when conditions were calm, with temperature increasing from 16° to 24°C but just after 11.00 a.m. a northerly wind arose and the temperature increased to about 28°C by 11.30 a.m. The labellum of each *C. congesta*, with its dense insect like mass of dark calli began to shake in the wind. At this time the first bee was observed and by noon an estimated twenty bees were on the flowers. No scent could be detected from any of the 3 cm diameter brilliant pink flowers.

The bees followed a similar behaviour pattern when visiting the flowers. They alighted directly onto the calli of the labellum mid lobe, and would shake it vigorously for 3-5 seconds before crawling into the space between labellum and column by depressing the labellum. Each bee would place its legs on either side of the dark calli which closely resembled the black body of the bee. It generally took from 30-120 seconds before the bees emerged from the flowers, withdrawing the pollinia intact upon their heads. The bees then spent up to 60 seconds on the flowers and could easily be caught by hand.

After a bee bearing pollinia had entered a second flower and moved on it could be observed that portion of the pollen massulae had been detached from the bee and smeared onto the stigma of the second flower; the bee now carried sections of two separate pollinia. Bees would collect up to four pollinia before attempting to remove them.

All the *Hylapus* caught were determined at Adelaide Museum as males indicating the possibility of some phero-hormone being emitted by the flowers, as no nectar is offered. The vibration of the black column mid lobe by the wind is probably of some importance as a visual attractant.

According to Riek (1970) the behaviour of bees is highly dependent on temperature. If, as indicated, the *Hylapus* bees do not become active below temperatures in the high 20's, this would explain why *C. congesta* flowers open in November-December after other *Caladenias* have finished blooming.

The author has in cultivation in Adelaide a pot of *C. congesta* which carries up to thirty flowers open at one time. Although this pot is kept in an

open shadehouse no pollen vectors have ever been observed on the flowers, nor has seed been set without hand pollination. This indicates that the 'preferred' pollen vectors do not occur in the Adelaide suburbs. Other closely related *Caladenias*, i.e. *C. cucullata* and *C. deformis* are commonly pollinated in my orchid house, the former by wasps, the latter by bees.

Collections of flowers of all three species of orchid mentioned, with their pollen vectors are housed at Adelaide Herbarium.

References:

Bates, R. (1978) Pollination of Orchids part 7 J.Nat.Orch.Soc.S.Aust. 2(3):7

Coleman, E. (1930) Pollination of some West Australian Orchids Vic. Nat. 52:137-43.

Erickson, R. (1965) Orchids of the West 2nd Edit. (Lamb-Paterson:Perth)

Riek, E.F. (1970) Hymenoptera, in the Insects of Australia (Univ. Press: Melb.)

Rogers, R.S. (1932) Contributions to the Orchids of Australia, Trans. R. Soc. S. Aust. 56:234.

Stoutamire, W. (1974) Aust. Terrestrial Orchids, Thynnid Wasps and Pseudo Copulation, Orchad. 6:110-111.



METHODS AND MADNESS OF AN ORCHIDOLOGIST R.C. Nash

In the cultivation of *Pt. nana* I have had little success. Yes, I have grown it for several years at different times, a few times this species even multiplied vegetatively for me. Once I even grew it from seed. Why have I failed so successfully with the plant? On reading back it appears that those times when the plants were doing well the potting mediums contained a low value of humus. As the organic material was increased either in the mixture or as the topping, so things went wrong.

All the above may seem irrelevant to many especially if you are successful with this species, then again one grower may be having trouble like I am and to this person these notes may be of assistance. If you, like myself, are having problems in growing *Pt. nana* more than five years, then try keeping the organic content of your mixture down to less than five parts in one hundred parts (5%) in the feeding zone above the tubers and nil below.

Pt. nana shows considerable variability between areas and even flowers in one colony can be quite different in form. In South Australia we have the more or less typical form in the Mt. Lofty Ranges (M.L.R.), while in the Murray Mallee there is to be found a slim form which can occur as

vegetative colonies. On one visit to an area south-west of Warooka, Yorke Peninsula, I found a small number of plants not unlike the large Western Australian form named *Pt. pyramidalis* by Lindley. I mention all these variations for if these plants are to be developed into horticultural forms, then all these 'varieties' will be of great importance.

This species grows in quite a range of habitats for on a visit to the Gawler Ranges I found this little Greenhood to be prevalent on granite, growing in the soil caught in the crevices. In Western Australia, large numbers of plants were observed growing amongst the rocks on stony hills to the east of Norseman, as well as crevices in granite domes further west. Near Albany in a swamp and growing with the Albany Pitcher plant (*Cephalotus follicularis*, Labill.) a small form of this orchid was observed very similar to our South Australian Mallee plant. About Katanning in *Casuarina* stands a very robust form is to be found with large stem bracts. You might say this species is quite a remarkable little plant.

I have tried to hybridize this species with other *Pterostylis* but so far have nothing to report upon.

Besides the above plants I have grown successfully *Pt. ophioglossa* in a cauline type potting method. These plants came from within a stones throw of the Pacific Ocean north of Newcastle, New South Wales. I have also seen them growing further from the sea, but still a coastal situation. This plant may prove to be useful in hybrid work if crossed with the cauline species then used as a parent with other hybrids of the larger flowered species.

Pt. pedoglossa is a plant that I have grown for a number of years and which has multiplied nicely but has never flowered. In growing this species I have tried to emulate the natural soil from the habitat near Ulladulla, New South Wales, where this species occurs in small, often tight colonies. The plants near Ulladulla are found in coastal sand dunes which, as you can imagine, is fine sand with a very low organic content. I have therefore used the fine fraction sand to plant the tubers in and filled the pot with this material. A very thin layer of topping material is spread over the surface.

I have been wondering, should I add a small amount of loam into the very top part of the potting. Would this help to make these plants flower? I mention the above to show you that soil structure could be very important in plant performance, and it is only by experiment that we will be able to find out.

Pt. foliata is another species like *Pt. nana* that I have not really succeeded with. It has grown for a number of years then slowly, but surely dies out. The last attempt was the best for I added a little loam into the mixture, which was of the *Pt. nana* type. I think the two plants that I had actually died of old age. Then again, it may have been too much experimenting with the topping that caused their demise.

This species is generally self-pollinating here in the M.L.R. I do not know if this is true of the plants in Eastern Australia. The mechanism for this self-pollination is simple; after the flower has been open from four to seven days, depending on air temperature, the pollen expands until it falls from its receptacle to have part of it caught upon the stigma as it passes this organ. If the pollen is removed from a freshly open flower, then it will last for ten days before closing.

No seed is developed in the ovary of this flower. The seed from self-pollinated flowers could very well have a low viability, and if good seed is required, then two plants of different clones must be used. Plants growing near each other could be the same clone as *Pt. foliata* does multiply vegetatively.

The first record of this plant in South Australia was made by Dr. R.S. Rogers with material gathered from Cherry Gardens. He obviously concluded that it was an un-named species, a little more about this later, and called it *Pt. vereenae* after the person who found the first plants.

During the time of my early adventures into hunting the orchids, I, with another interested person, spent much time hunting for this *Pt. vereenae* of Dr. Rogers at the "type" area at Cherry Gardens. We found no trace of this plant - lately several colonies of *Pt. foliata* have been found within one kilometre to the south of our search area. During the intervening years I have explored some of the country where these plants now exist, finding no trace of them.

After Black Sunday in 1955 when a large tract of scrub about Blewitt Springs was burnt out, many plants of *Pt. vereenae*, as they were then called, were found in this regenerating scrub during the following September. I was able to find only two plants after two years of searching, having learnt about the occurrence of this species at the above area a little late and just about all the plants found by other hunters had been removed.

Several years later I stumbled across a small colony of *Pt. foliata* in the Blewitt Springs scrub which contained a few flowering plants and many seedlings. During the following years, up to the time that notices of prohibition of entry were placed about the property, I spread quite an amount of seed about that land. This type of activity was not condoned by some people, but on visiting the area some eight years ago I was very pleased to find large numbers of this species growing widely throughout the bushland area.

During the past five years many areas in the above bushland, especially along the adjoining roadside, have had many plants removed with just a small crater as a reminder that one once occupied that spot. In one area this craterization was so bad that the area looked like it had been visited by pigs. One question did those removed plants survive long?

After the Blewitt Springs find, reports of other occurrences came in from Fleurieu Peninsula, near Mount Bold, the Torrens Gorge, etc. I found one plant in the north-western part of the Kuitpo Forest. This plant multiplied up to a small colony and as quickly disappeared over the following five years. All the plants were produced from vegetative multiplication, no new seedlings appeared anywhere about that area.

The next place that *Pt. foliata* made an appearance was in the south-east near Nangwarry along with *Pt. concinna* in an area of land that had been used as a pig farm, followed by a turkey run. At the time of the discovery the land was being used to graze cattle and consisted of scattered *Eucalyptus* trees with an under-story of scattered bushes. All of the above amounted to an amazing find.

Continued next month.

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