ISSN No. 1311419

A.S.G.A.P. CYCAD, ZAMIAD, PALM STUDY GROUP NEWSLETTER No.69 JAN/FEB 1996

LEADER: L.P. Butt ph. 38483515, 25 Ortive Street, Yeronga Qld 4104.

****

HAPPY NEW YEAR TO ALL - HOPING THIS WILL BE A REAL STUDY YEAR!!!!

****

Back in November I received a letter from an early member, Brien Bosworth, of Box 23, Victoria Estate, Ingham Qld, who was and is concerned at the lack of real study in our group. She also commends the few who do so now. To quote, she says:

> "I feel as a study group our main aim should be to study the cultivation of cycads and to share our experiences through the newsletter - under cultivation also climate, soil, water, fertiliser, pests and diseases. At present, this is neglected."

Brien suggests also map locations for those intrepid enough to go bush. (She also is wise enough to remark that directions be not too specific, to prevent plundering.)

If you will note, this was done in the case of the seven newer parazamias just discussed and actual localities evaded.

****

To help those newer group members, here are a few names and addresses of members who have been long-term participants. Hopefully, a closer association will further the cause of our study and lubricate a few pen-held fingers in the cause of the plants we study:

****

All these S.G.A.P. members are keen. I purposely omit the various club H.Q. as at present no written interest comes from them. Please let us hear from you also.

(Leader)

****

The Cycadale Enigma

The Australian continent and its immediate island surrounds are probably one of the richest fields where the living fossil form type family of cycadales still exist. Their antiquity alone should have made them a subject with great tourist potential, being the most ancient form of our flora still existing in large numbers.

However this is not the case and over the years it has constantly amazed me to see the varied methods now used to disregard their existence as a native plant except for the occasional mention in the media mostly in a maligning way. This is in no way a recent thing, indeed the attitude has existed ever since our colonist ancestors first discovered that the poison mechanism within the family could in certain circumstances cause them worries in the raising of cattle, and in certain areas, sheep.

Early botanists such as Salisbury, von Mueller, Moore and Bailey, etc. were commissioned by the governments of their day to study the genus, but primarily it was for their eradication not their botanical worth. To this day the same procedure is carried out, even though such really good cycadologists now have joined the study and this time the worth of the plant is foremost concern, still it appears to me at least, that authorities are working on another angle seeing that the arsenic poisoning, the very wide spread so termed wildfires (annually across the top end,) have not been thorough or complete enough, the campaign now seems to centre around an attitude of disregarding the family.

Because these plants growing in habitat, could have great tourist potential and to see a hillside or valley of them is to realise the truth in saying this, the ploy seems to be one of establishing their insignificance.

I have carefully read many tourist guides on the Australian holiday scene, watched just about all the documentaries on this country's outback, wilderness, and mountain places, and carefully perusing all scenery, even where various cycadales are known to be thickest in nature, the cameras never ever pick them up even though it is really nearly impossible to actually miss them in places like the King Leopold Ranges, the Argyle River gorge, the long road between Katherine and Darwin, many roadsides on our east coast, the slopes of hills around Petford/Chillagoe areas, etc.

On extremely rare and isolated occasions, there is a brief mention in a long documentary that indigenous people use Zamia palms in their food chain, with the briefest view of what is probably *Cycas angulata*. Is this blatant ignorance regarding the genus, or just another ploy to make them of little value?

To actually see them growing in areas not accessible to scrubber (wild) cattle is to realise how aesthetically unique they are, and what an interesting landscape they present. Unfortunately on overstocked cattle properties and across THE TOP END they are mostly fire blackened right up the caudex. So the scene for tourists is lost and they do not appear worth the saving.

Len Butt
25 Ortive Street, Yeronga, 4104, Queensland, Australia.

Transplanting *Cycas ophiolitica*

Tony and Carol Rowe
P.O. Box 445, Yeppoon 4703, Queensland, Australia

The possibility of future land clearing for pineapple production and the increasing frequency of bushfires caused by encroaching urbanisation suggested the need to relocate a "family" of very old *Cycas ophiolitica* to a site some 300 metres away. The plants were growing in a gravelly soil overlaying a gritty clay subsoil and drainage was excellent. Some of the plants were partially shaded but the degree of shading would have varied greatly over the life of the plants.

Discussions were held several years previously with David Jones at the Canberra Botanic Gardens, Lou Randall at the Rockhampton Botanic Gardens and with Charles Weatherall of Parkhurst as to what steps should be taken to ensure the highest possible success with the operation.

The method undertaken was as follows:-

1. Late in 1992, a large D35 Komatsu dozer was used to deep rip around the plants about one metre out from the trunks and about 600mm deep. It was not possible to rip on all sides/due to space constraints between the plants.

2. About 12 months later, a small tracked Kubota excavator was used to trench down between 600mm and one metre all around the plants. Figure 1 shows the trenching around the main group of plants. Figure 2 shows the metre deep trenching around the

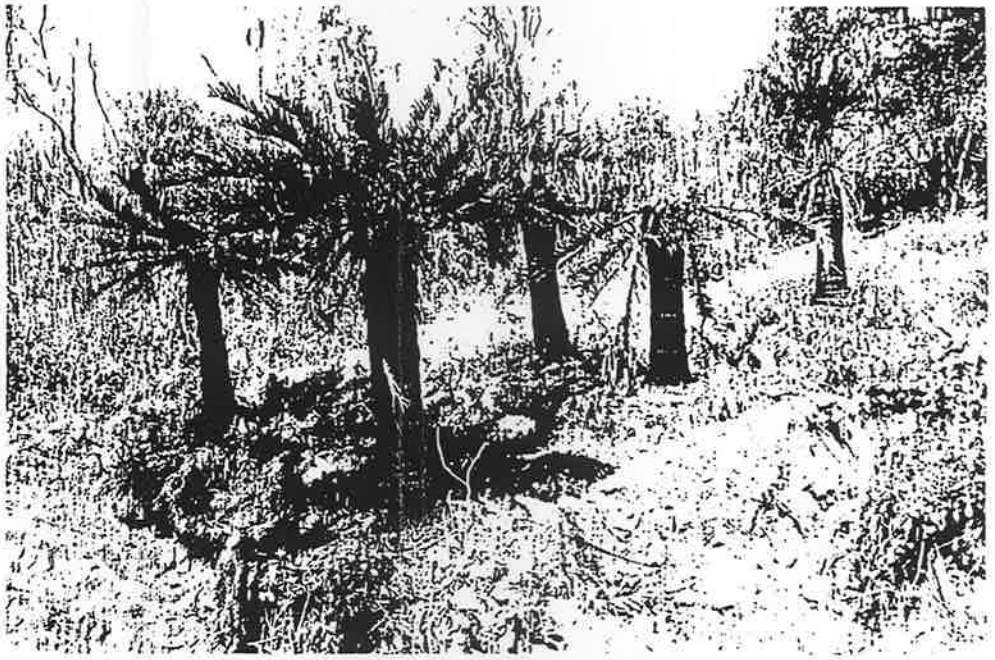

Figure 1. Trenching around the main group of plants

five trunked specimen. Figure 3 shows the distinct change of soil profile <500mm of dark gravelly soil overlaying yellow gravelly clay. The lateral roots, some as thick as a finger, were severed and later trimmed and treated with Fongarid™ systemic fungicide. No visual evidence of coralloid roots was seen.

3. The large front end loader was used to excavate the soil on the low side of the plants and then the bucket cutting edge was used to shear off any primary roots lower then one metre below ground surface level so that the plants could be raised for transport in the loader bucket after padding the trunks and tying the trunks back to the top of the loader bucket. It was found that the gravelly soil external to the bucket cutting edge fell away due to lack of support and the shock loadings imposed during transport. Should the exercise ever be repeated, it would be a significant advantage to extend the bucket cutting edge, perhaps in the shape of fork lift forks to better support the whole root ball. Figure 4 shows the soil loss external to the bucket and also the manner in which the lateral roots taper down from where they develop at the base of the trunk and not from the tap roots.

4. The plants were discharged from the loader bucket into prepared shallow holes, which did not extend down into the clay substrata, by gently tipping the loader bucket and reversing the machine. This caused disturbance and subsequent soil loss from around the base of the plants. Again, in the future, it is proposed that a "U" shaped frame be inserted in the loader bucket before lifting the plants and that this frame be used to drag the plant from the bucket rather than having to tip the bucket.

5. Damaged roots were trimmed where possible and treated with Fongarid™. Gravelly soil was used to backfill around the base of the plants and a reservoir was constructed to contain water. The soil around the plants was thoroughly saturated with repeated waterings at about two weeks and then monthly intervals. All existing fronds were removed and used as a surface mulch around the base of the plants. Some shrinkage around the base of some plants, whether soil shrinkage or shrinkage in the diameter of the trunks, was noticed and this was filled with pure fine dry sand that was then washed into the voids.

6. The first flush of leaves on the four trunked specimen was lost to damage by grubs that devoured the new growth before they were noticed. Subsequent spraying with Folimat® eliminated further damage and all nine plants now have complete new flushes of mature leaves.

7. The last plant to produce new leaves was the nine headed one. This plant has a single trunk at the base dividing into four and then one trunk divides further into five heads, a total of nine in all. Figure 5 shows the start of the new growth 14 months after transplanting together with a double trunked specimen that was already growing on the new site. Figure 6 showing the same plant with the new flushes about 300mm long and before the new leaflets have opened.

8. Figure 7 shows some of the transplanted plants as they were 18 months after the relocation.

Specific particulars of some of the transplanted *Cycas ophiolitica*:-

Trunk details	Base circumference (mm)	Trunk circumference 300mm above ground	Height to crown(m)
One trunk	2150mm	890mm	1.550m
One trunk M	2110mm	1010mm	2.250m
Four trunks M	1800mm	1400mm	2.360m
Five trunks	3400mm	multiple	0.9 / 2.2m
Nine heads	1750mm	1280mm	1.680m

Climate of the area is sub-tropical with hot humid summers and mild dry winters. Rainfall approximates 1500mm falling mainly in summer and autumn. Temperatures vary from about 5°C for minimum winter nights to 38°C maximum for summer days. Latitude is 23 degrees south, Longitude 150 degrees 43 minutes east.

Specific particulars of some of the transplanted *Cycas ophiolitica*:-

The three and five trunked specimens most probably developed by adventitious branching as a result of the development of bulbils or offsets on the above ground portion of the trunks from suckers on that part of the trunk that was below ground. The five trunked specimens has a further three small bulbils just above ground level.

The plants with two, four and nine trunks all have a single trunk at ground level indicating that the development of the multiple branching could have been the result of buds forming on damaged tissue at the apex of a decapitated stem or on a major wound. As the area is susceptible to cyclones and bush fires, and is surrounded by eucalypt trees, damage to the plants could easily have occurred in the past several centuries.

General observations:-

1. Good drainage around the base of the plants is essential.

2. Treatment of the damaged roots with a fungicide is essential.

3. Insect damage to new growth must be monitored and controlled.

4. Moisture applied varied due to rainfall but plants were kept on the dry side.

5. Damaged roots were not allowed to dry out before planting as is generally recommended. Subsequent shrinkage and/or subsidence of the ground around the bases of two plants between waterings was filled with fine dry sand and washed in. Voids may still exist below some of the plants due to difficulties encountered when backfilling.

6. Only three of the nine plants were given support after transplanting due mainly to the fact that soil loss around the bases occurred mainly on side Generally the plants without leaves were quite stable in strong winds.

7. The success rate 18 months after the operation is nine out of nine. (*Macrozamia miquellii* is a totally different ball game, but that's another story.)