

SOCIETY OF GROWING AUSTRALIAN PLANTS

CYCAD & ZAMIAD STUDY GROUP

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Dear friends,

I  
Pleased to advise that "Australian Plants" No. 101 has now been published and you should all have received your copies by now. The photos used were not mine although the quality was good, however some had previously appeared in the Horticultural Guide. I would be pleased to receive your comments on this cycad article.

Glad to hear from Mrs. Bosworth from North Qld., one of our more active members who has suggested a more nitty-gritty approach to this study group such as including a question and answer column in future newsletters. This is an excellent suggestion and should be of great benefit to all of us and especially the newer members. Send in your queries on the propagation, growing, identification, pest control etc. of our cycads and if I can't answer it then I'm sure one of our fellow members can.

Referring to native palms for a moment, the *Livistona* that Mrs. Bosworth sought identification of some time ago is not *L. rigida* as originally thought but would be a form of *L. mariae* that grows in Cape York.

## "LIVING FOSSIL SEED-FERNS"

### HAVE GARDEN POTENTIAL

Quite a number of articles have now been written about that most ancient and very primitive family of plants the cycadales. Cynthia Giddy's book "Cycads of South Africa" came at precisely the right time to arouse fresh interest among nurserymen regarding these plants. Until then the so-called "Sago-palm" *Cycas revoluta* was the only species available and then only in selected nurseries.

Further to this, Australian botanists like L.A.S. Johnson and J. Maconochie have been doing valuable work in classifying the Australian genera. Dr. Johnson's 1959 botanical papers opened a new door into our understanding of what valuable botanical plants we have here. The late John Maconochie's work on the little known genus *Cycas* was cut short by his untimely death in 1984.

Most literature published to date has been about the Australian *macrozamia*, *Lepidozamia* and *Bowenia* (zamiaceae). The cycadaceae however consists of one lone genus, the *Cycas*, and this is distributed throughout South-East Asia with a few in Madagascar. Australia however is richly endowed with this genus and where it was once listed that we had one species (*Cycas media*) it is now known there are eleven species with distinct possibilities of natural hybrids also. This genus is scattered in our tropic areas from north western Australia, right across the top of our northern territory to the eastern coastline of Queensland to about as far down as Gladstone. From Darwin, the *Cycas* occur also south into the centre of Australia.

Why, you may ask, are these plants so important when it is known that certain species have been declared noxious because of their poisonous seed properties (toxic to cattle). A good question, but the answers are very clear. Fossil records in our rocks show us that ancestors of the cycadales existed some 300 million years ago and were the primary vegetative life equally the forests of primitive ferns. What emerges is the fact that these plants known as cycadofilicales were probably an offshoot from certain fern families that learned to develop seeds not spores. The spores being carried separately by the male plant as they were dioceous.

These plants died out and there is a big gap of 100 million years before we find further evidence of them, as in the age of reptiles they appear again this time as two families the bennetitales and cycadales. The big important difference is that now nearly all the plants had developed cones to contain their seeds. The ancient forms were not cone-bearing. One of the genera of the cycadales group still retained the no cone characteristic and this has come down to us today in the genus cycadaceae.

This makes the maligned cycas the most primitive plant of a very primitive family, and further study is needed to link it positively with the first cycadofilicales.

Apart from the botanical interest, cycas, like all the palm-like members of that family have very good landscape potential and also make very fine tub or potted plant specimens in situations around pools, on patios, to augment palms and tree ferns on banks and terraces and also as front lawn decoration.

They have features in common with both the tree ferns and certain palms but this changes dramatically with this method of developing seed. Diamond or wedge shaped appendages known as megasporophylls develop in the crown of the female plant and the seeds are borne in marginal notches around this spear head spike. In some species the megasporophylls are augmented by hundreds of soft furry bracts which completely enclose the seed as in cycas revoluta (assam and china). Others either sit on the plant's crown or hand pendant from around the crown as in cycas media (north Qld.). Seeds are generally ovate or globular and about the size of a walnut or bunya nut. All seed is enclosed in a red to orange - yellow fleshy fruit casing which is poisonous to cattle and will cause gastric troubles in man. However this fruit is much sought after by marsupials and rodents with no apparent ill effect to the creature.

Study into this genus by Maconochie involved the species of the Northern Territory and West Australia mainly because they were more accessible to this botanist as he was stationed at Alice Springs.

Little has been done to date to clarify identification of species occurring in the lower Cape York territory or indeed far

northern coastal Queensland, where many undescribed versions are loosely still named as *Cycas media*.

Mention, and some clarification is given in the Australian Plants journal "Cycads of Australia" and in a book by Dr. Clifford, plus the latest volume of Encyclopedia of Aust. Plants by Elliot and Jones.

The work is commendable, but much more is needed until we see home garden cultivation of the cycas, at least on the scale given to the zamiaceae, (*Macrozamia*, *Lepidozamia* and *Bowenia*).

Around Rockhampton and the hill countries north to Bowen there occurs a species that has been long accepted as *Cycas media*, but it now emerges that this is more probably *Cycas kennedyana*. The cycad rarely grows more than three metres high, and has grey-green fronds which are blue grey on emerging. The seed heads hang pendant and the caudex (TRUNK) generally only 20 cm to 36 cm THICK.

This species is popular among collectors, has been grown from seed to some extent, and will grow in cultivation in areas of TROPIC - SUB-TROPIC and TEMPERATE habit.

*Cycas* species are very popular also among American collectors, where it is grown from sawn off head pieces much as we grow the tree-fern *DICKSONIA ANTARCTICA*.

*Cycas media*, the best known of the genus here, is generally accepted now to grow north of Sarina and up into the coastal open forests past Cairns. It grows in extensive colonies and can sometimes occur in rainforests. New fronds after fire are a beautiful irridescent green colour and although the caudex is listed as 3 - 4 metres high, very old specimens of at least 10 metres have been found. Some have branching caudex heads. This species also has been successfully grown from seed and can be found as potted plant material in certain nurseries as far south as Sydney. It is extremely hardy and frost resistant.

*Cycas cairnsiana* is a very fine species also it is often confused with *Cycas normanbyana* which I previously believed, grew near Proserpine. Latest information to hand is that specimens thought to have been *normanbyana* are probably *cairnsiana*.

Both species have thick strong arching fronds and bear orange central male cones. The stand of *Cycads normanbyana* in the area of Gloucester Park near Proserpine probably were planted there originally as the male cones are golden yellow not rusty orange as in *cairnsiana*. Both these species carry only 2 seeds per megasporophyll, held vertically for some time before arching over. According to some authorities the species *normanbyana* is only on the range country of central Queensland.

All the species described will grow in same conditions as *Cycas media*.

The northern Territory has two outstanding species, *cycas armstrongii* being the most prevalent, and probably the most picturesque. When in full frond, this narrow trunked cycad grows in close clusters and looks extremely palm-like. However in hot dry times it becomes deciduous, and defoliates. This species is synonymous with the west Australian *Cycas lane-polei*.

*Cycas calcicola* another resident of the top end of the northern territory grows mostly on limestone areas but has often been found growing with *Cycas armstrongii*. New fronds are silvery-fawn making this cycas most attractive. Grows thickly in the Fincke river districts.

A little known but very prominent species named *cycas angulata* occurs in the extreme top end of the western side of the Gulf of Carpentaria and also the islands around the coast from Darwin. This stout trunked species is quite distinct having a great crown of green fronds. The trunk can grow to 5 metres tall and is sometimes branched. Not known to be in cultivation for any length of time. Cultivation as for *armstrongii* and *calcicola*.

The Kimberley ranges area near the Ord river harbours a really fine cycas, having a stout trunk and crowns of blue-grey fronds. *Cycas pruinosa* grows on rocky slopes in the area and produces possibly as much seed as *C. media* or *C. kennedyana*.

Another species *cycas furfuracea* comes from the King Leopold Ranges of the Kimberleys, is rather smaller in height than *pruinosa* and holds its fronds more erect. The underside of pinnae is heavily clothed with soft woolly scales.

The ripe fruit of *C. pruinosa* is brown and of *C. furfuraceae*, yellow.

*Cycas* will soon become as popular as the zamiads in cultivation, the crown of graceful arching fronds is always eye catching. Most species are hardy and can withstand drought.

All the *cycas* genus will tolerate full sunlight, but if they have been previously growing in shade, put them into full sun gradually. Generally they will get used to most soil types as long as drainage is adequate. Black and brown scale seems to be the main pest to attack them so watch out for it and treat with white oil and Rogor. All seeds are large and woody and can be sown horizontally just beneath the soil surface or half way under as in coconut planting. They are notoriously slow in growth, but noway to the extent that is generally supposed.