

# The Livistonas of Australia. With Particular Reference to The Central Australian Cabbage Palm

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The genus *Livistona*, so far as palms are concerned, is a comparatively small one. In addition to perhaps up to half a dozen species in Australia, there are about another dozen or so outside that continent, where members of the genus are found through Java and Celebes, to the Malay Archipelago and then extending up through Burma and into South China. Palms are one of the principal inhabitants of rain forest and demand such conditions, or their equivalent, to thrive.

Of the species within Australia, two are of considerable interest, namely *Livistona australis*, cabbage palm, and *L. Mariae* Central Australian cabbage palm. In the distribution of these two species we find that while the former is limited to the east coast of Australia and then in rain forest country only, *L. Mariae* is limited entirely in its distribution to a few square miles of favourable territory (actually a sunken river bed) surrounded by very arid and inhospitable country in Central Australia.

The cabbage palm is a somewhat stocky but slender growing species with a massive head of foliage. After 10 or even up to 15 years, the plant elongates into a ringed robust but slender-stemmed palm usually reaching between 40 and 60 feet, but specimens exceeding

that have been measured. The leaves form a dense crown. The leaf stalk is somewhat spreading and pendulous or decurved. The fan-shaped leaves are from 6 to 8 feet in diameter, and the stalk is heavily armed along its two edges. The foliage has never been greatly used by the aborigines nor manufactured into articles of clothing, but sometimes crude shelters are constructed from the leaves.

Flowering is usually annual. The spathes vary from 6 to 12 inches long, while the spadix is often up to 4 feet long. The flowers are produced in tremendous numbers, but individually are small, greenish in colour and when the plant is in full flower often giving a yellow appearance. Fruit, under favourable conditions, is produced in quantity, globose in shape, and between  $\frac{1}{2}$  inch and  $\frac{3}{4}$  inch in diameter. The seed is slightly larger than that of the ordinary garden pea, brownish black in colour, and under artificial conditions it germinates readily when sown in bottom heat of between 75 and 80°F.

The Central Australian cabbage palm, *L. Mariae*, is undoubtedly a remnant of a probable long ago distribution through parts of Australia which then were moist and humid but are now arid. The Finke River which forms "Palm Valley" (Glen



Fig. 52. Palm Valley, Central Australia, looking along the floor of the Finke River bed, with pool in foreground. Aquatic and bog plants on the left, with Central Australian river red gum (*Eucalyptus camaldulensis*) and Central Australian cabbage palm (*Livistona Mariae*) growing together.

of Palms), the principal locality of this palm, commences away outside the Macdonald Ranges and flows through the Krischauff Ranges, finally to lose itself in the arid regions of Central Australia. In Palm Valley, richly coloured sandstone cliffs have been formed as the river has slowly etched its way through this one-time plateau. The cliffs in places are nearly 300 feet in height, and while basically of a rich brownish-orange in colour, a variety of shades and tones can be seen during the various periods of the day.

Compared with *L. australis*, the Central Australian species is more slender, apparently very much longer lived, and reaches a very much greater height. The leaves are slightly smaller, and an interesting characteristic is the reddish

colour which all the young leaves show. For this reason many have assumed that this is a distinct variety; I have seen it referred to in American catalogues as such. This red colouring of the young leaves never, to the best of my knowledge, occurs in *L. australis*. It is particularly noticeable on young plants, but as soon as the stem commences to elongate the red colouring in the leaves diminishes and in old palms it is very rare to find leaves tinged or coloured at all. The plant ultimately will reach 70 or 80 feet, and there have been notable examples in Palm Valley which have been estimated to reach almost 100 feet in height.

The Valley itself is comparatively short and narrow. Permanent rock pools are found, and following good rains,

fish very quickly breed in these pools. In addition to *Livistona Mariae*, other plants found in the area include the river red gum (*Eucalyptus camaldulensis*), the ghost gum (*E. papuana*), bullrushes (*Typha*), and other aquatic and semi-aquatic plants.

Another "palm" is found in this region, namely the Central Australian cycad, *Macrozamia Macdonnellii*. It is because of the presence of this cycad and the *Livistona* that the valley has received its name.

The cycad is a short stocky plant, extremely slow growing, with pinnate fronds 6 to 8 feet in length. Seed is copiously produced, and these, on an average, are the size of a hen's egg. Unfortunately it is one of the principal items "souvenired" by tourists visiting the Valley, and concern is now felt regarding the continuity of the species because of the lack of young plants.

Like all cycads, the Central Australian cycad is extremely slow growing. However the development of the young plant including the germination of the large seed, is somewhat spectacular, and it is for this reason that they are frequently cultivated as a curio. At one stage the seeds were known as "desert eggs." Following germination, growth is comparatively slow, and it is several years before the "fronds" are more than 2 feet in length. The seeds germinate freely in a warm site or under glass, with a minimum temperature of 70°F.

Following germination they can be potted singly into 5 or 6 inch pots, the compost being comparatively open and of a sandy nature. The young seedlings can remain in these pots for a great

number of years, and they form useful tub plants in a 15 or 18 inch tub.

However, outside they grow quite freely in the open ground, preferring a site (Adelaide and similar sub-tropical localities) which gives partial shade especially during the hottest part of the day.

Under cultivation (in Adelaide), *Livistona australis* grows rapidly, but must be kept away from limestone marl areas. As is to be expected, it does not have the same luxuriant appearance, nor does it produce the lush growth found with this species under natural conditions. Here rainfall is high and soils congenial to optimum development.

Very few plants of *L. Mariae* are under cultivation. Because it prefers slightly acid conditions and overall slightly higher temperatures than related species, cultivation in Adelaide is somewhat more difficult. In fact, because of hard water in addition to alkaline soils, it has not been easy to establish. Seed must be fresh if a high percentage of germination is expected, but with viable seed sown in temperatures between 70 and 80°F., germination occurs in a month or so. Seedlings must be potted on and held under glass for at least a year or 18 months to permit a solid crown to form.

It is not known when plants of *L. Mariae* commence to produce an elongated trunk. Under natural conditions, and because of considerable variation in annual rainfall, this activity may not take place for at least 10 or 15 years. However, records are being kept, and it is hoped that some idea will ultimately be gained from plants at present in cultivation.

Fig. 53. *Pelagodoxa Henryana* in flower (above) at Summit, Panama Canal Zone, photograph courtesy of Walter R. Lindsay; and in fruit (below), photograph courtesy of Toshihiko Satake.

