

Notes on the Palms of Northwestern Cape York Peninsula

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In a recent article by Covacevich and Covacevich (*Principes* 22: 88-93, 1978), mention was made of a general lack of published information regarding the palms of northern Cape York Peninsula. The following notes, based on ten months residence in Weipa and regular trips into various parts of the northwestern Cape York Peninsula, should help fill the void. Further travels will add to the present understanding in time.

Northwestern Cape York Peninsula (herein called the area) has three unnatural and one natural boundary but contains a fairly uniform vegetation and climate. The southern limit is represented by a line drawn from the coast just south of Weipa eastwards toward Iron Range. The boundary then turns north at about the geographical center of the peninsula, continuing to the Jardine River, then turns west until the coast is reached. The western boundary is the coast between Weipa and the Jardine. The small region north of the Jardine is somewhat distinct, having a higher rainfall, more hilly terrain, and has greater floristic links with the Torres Strait and the east coast.

Climate

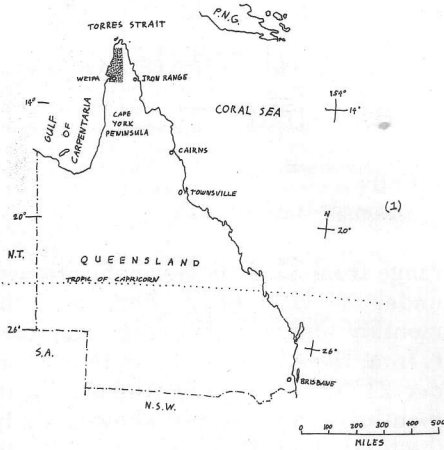
The rainfall inside the area is fairly uniform throughout, averaging 1700 mm per annum. Over 90 percent of this falls in the summer months between December and April. Temperatures are high and show little fluctuation. Maximum monthly temperatures

range from 35° C in November to just under 30° C in July, while minimum monthly temperatures range from 25° C from December to March to just under 21° C in July and August. Mean monthly temperatures show a daily fluctuation of 8-10° C from day to night throughout the year (Specht 1977). Tropical cyclones are a fairly regular climatic feature but apparently have little long-term effect.

Topography and Vegetation

Cape York Peninsula as a whole is relatively flat and the terrain inside the area is quite so, having no mountains or hills of any importance. The main watercourse system is the Wenlock River, which has its beginnings on the eastern side of the peninsula on the western slopes of the Great Dividing Range. The Mission and Embley/Hey rivers, on the confluence of which Weipa is situated, are large tidal estuaries with no major fresh water flow.

The vegetation of the area is predominantly open woodland consisting of *Eucalyptus tetradonta*, *E. nesophylla*, *E. confertiflora*, *Erythrophleum chlorostachys*, numerous species of *Acacia* and *Melaleuca*, with many deciduous elements. Broad-leaved gallery forests occur along all major seasonal watercourses and mangroves are widespread on the coast and in river estuaries. Soils have been dealt with in detail (Isbell, Webb, and Murtha 1968) and need not be mentioned here.



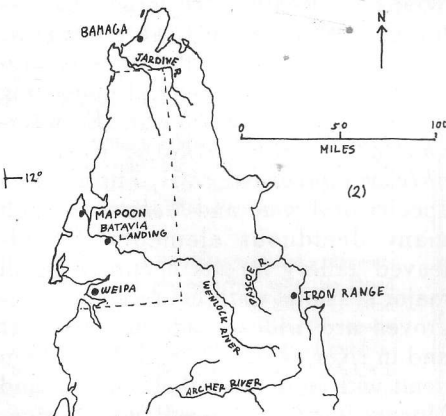
1. Queensland, showing area of northwestern Cape York Peninsula.

The Main Habitats

The monotony of the open woodlands is broken by numerous low areas where sedges and species of *Melaleuca* dominate. Such places are completely flooded during the rainy season, and although dry by the start of the next rains, retain sufficient ground moisture to maintain their semiaquatic communities. There is a high canopy in low moist areas near springs; these places support true rain forest ele-



3. *Licuala ramsayi* on mangrove margin along Wenlock River.



2. Northern Cape York Peninsula (detail).

ments and in some locations appear very lush. Vine scrubs also occur on slopes and sandy coastal formations are dominated by deciduous monsoon forest trees such as *Bombax ceiba* var. *leiocarpum*, *Ficus virens*, *Terminalia sericocarpa*, and *Pongamia* species. The interesting native mangosteens, *Garcinia warrenii* and *G. sp.*, although usually rain forest trees, occur in the dry vine scrubs. Giant lianes of *Entada phaseoloides* are a common feature and the drought-resistant epiphytic fern *Drynaria quercifolia* is abundant.

Vine scrubs occasionally border mangroves or freshwater rivers and form tall gallery forests with a high species composition. Ground moisture and humidity are often high in such places and many undershrubs and epiphytes not common in the area are present.



4. *Livistona muelleri* near Stone Crossing, Wenlock River.

Coastal sands can be flat or undulating. The latter situation obviously is caused by built up beaches deposited by a receding coastline and can be seen plainly from the air. The successful establishment of broad-leaved communities on such formations is apparently quite slow. Frequent fires halt the process completely. Lagoons in sand country are not rare and some become semiclosed with tall species of *Melaleuca*. These places can be seen from the air easily because of the crowns of *Livistona benthami* or occasionally *Licuala ramsayi* with their unmistakable foliage and generally yellowish color.

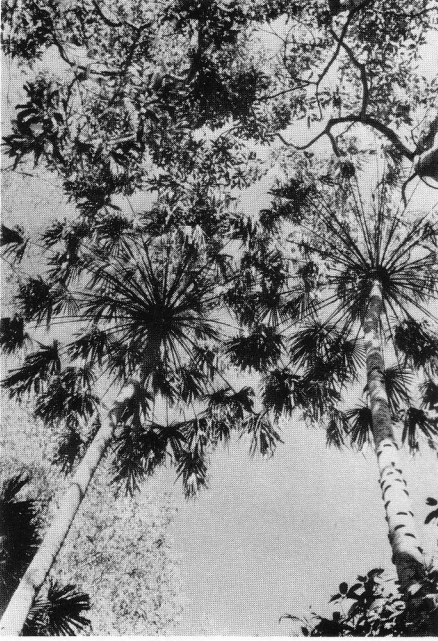
The Species and Their Habitats

Corypha elata Roxb. Although common in south-central Cape York Pen-

insula, it is apparently rare in the area, occurring only in the extreme south-eastern corner. Here it grows along seasonal watercourses in deciduous low vine thickets.

Livistona muelleri F. M. Bailey. Probably the most widespread and abundant palm in the area, occurring apparently throughout. It favors moist, open situations, either bordering creeks or swamps, and may occur locally in shady dry vine scrubs. Thousands of this palm are to be seen east of Weipa in open swamp forest and semiclosed gallery forest. It exhibits some noticeable variation within the population.

Livistona benthamii F. M. Bailey. Apparently confined to lagoon margins, moist gallery forests, and moister vine scrubs. It colonizes the mangrove-vine scrub ecotone with much



5. *Livistona benthamii* at Batavia Landing.



6. *Hydriastele wendlandiana* at Batavia Landing.

success and attains pure stand populations in several places. It extends inland where conditions permit.

Licuala ramsayi (Mueller) Domin. Widespread on the western part of the area favoring semiclosed to closed gallery forests and lagoon margins wherever ground water is available. Such habitats are not common, but the palm seems to establish itself in large numbers if it can survive at all.

Ptychosperma macarthurii (H. Wendland ex Veitch) H. Wendland ex J. D. Hooker. Very rare and restricted to moist gallery forests bordering mangroves. Only five adults and as many juveniles have been seen by the author; possibly larger numbers occur in unexplored vine scrubs.

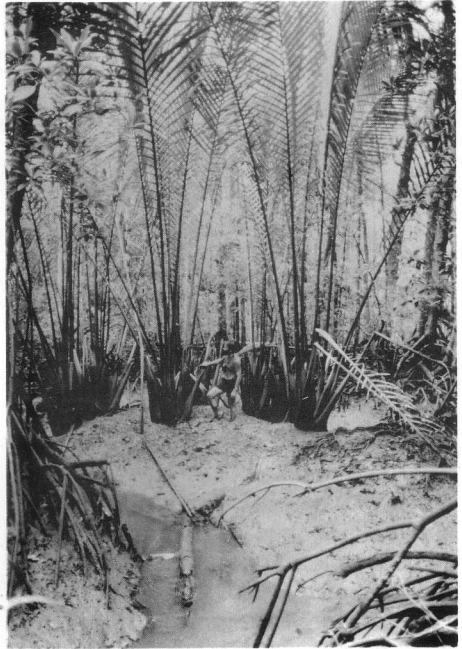
Hydriastele wendlandiana (Mueller) H. Wendland and Drude. A very widespread species successfully exploiting any permanently moist situation. It

can occur in open swamps with *Nepenthes* and sedges but is more often found in vine scrubs or gallery forests with moist soils. In the open it appears to be fairly resistant to fire and if well shaded is unusually resistant to drought.

Nypa fruticans Wurm. Very restricted on the west coast of the Peninsula but locally abundant along the Wenlock River. It grows as a clumping undershrub under tall *Rhizophora*, *Bruguiera*, *Avicennia*, and *Ceriops* species and rarely dominates. The fern *Acrostichum speciosum* is common among *Nypa* and the amaryllid *Crinum pedunculatum* is an occasional associate. Where sufficient fresh water flows into the *Nypa*, the vigorous climbing fern *Stenochlaena palustris* sometimes covers the older leaves.



7. Naturalized *Cocos nucifera* at Batavia Landing.



8. *Nypa fruticans* at Batavia Landing.

which attain lengths in excess of 10 meters.

Cocos nucifera L. The coconut has a brief history of cultivation in the area. Main plantations were established at Mapoon on Port Musgrave, the large sheltered estuary of the Wenlock River. Very few trees survive today and only one other coconut garden worth mentioning still exists at Small Batavia just upstream from Mapoon. At Small Batavia (also called Tungu by Islanders and Fungu by Aborigines) and Batavia landing, also on the Wenlock, the coconut has naturalized and small wild populations are to be found. Occasional coconuts occur along the shore of the Gulf of Carpentaria between Weipa and the Jardine River, but it is nowhere common and in most places is not reproducing adequately and may disappear altogether.

The most important single palm habitat in the area seems to be near Batavia Landing on the Wenlock River, where all the species mentioned can be found. An interesting fact is the lack of species that should grow quite successfully there—*Calamus* species, *Ptychosperma elegans*, and *Gulubia costata*. Whether the Wenlock palms are relictual or introduced by natural means remains to be seen.

All of the native palms in the area are better represented on the east coast, especially at Iron Range; some extend further south and others into the Northern Territory. *Licuala ramsayi*, *Livistona muelleri*, *Hydriastele wendlandiana*, and *Nypa fruticans* extend south to the north coast region between Cairns and Townsville; *Livistona muelleri* does not grow south of the Mulgrave River, while the others

extend at least as far south as the Herbert River. *Corypha elata* and *Livistona benthamii* have wide ranges over southern and central Cape York Peninsula and occur in the Northern Territory Top End, where *Hydriastele* may also occur.

Conservation

The palms of northwestern Cape York Peninsula are all well represented outside the area and the species are in no immediate danger of extinction. However, the small and isolated populations within the area are very delicate, and with the exception of the two *Livistona* species (which are robust and abundant) are suffering from an increasing menace. This is the feral pig. Because of the generally dry and open nature of the forests in the area, feral pigs (a recent introduction) are seeking moister places to dig and wallow during the dry season. A small group of pigs can cause extensive damage to large areas, rooting through the soft soil in search of edible roots and the like. Once-grassy *Melaleuca* swamps are turned into desolate bogs, the dominant trees often dying. The damage done to the broad-leaved communities in moist soil is just as drastic. Adult palms of the smaller species can be undermined, juveniles rooted out, and seed eaten. Such soil disturbance can lead to gross erosion during the rainy season.

Burning off the bush during the dry season has some detrimental effects.

Mostly the palms are immune to fire either through being physically resistant, as are *Livistona* and *Corypha*, or by growing in places that escape fires. However, regular burns do much to reduce potential broad-leaved communities to sclerophyll communities and can occasionally enter vine scrubs, often causing much damage.

Open-cut bauxite mining here at Weipa has claimed a few *Livistona muelleri* and more will disappear in the future. However, mining (supposedly) is not carried out in wetlands or close to watercourses so the bulk of the population is safe. Generally the area is relatively untouched and if managed properly can remain so as part of Australia's last wilderness.

LITERATURE CITED

- ISBELL, R. F., A. A. WEBB, AND G. G. MURTHA. 1968. Atlas of Australian Soils. Sheet 7. North Queensland. C.S.I.R.O., Melbourne University Press, Melbourne.
- SPECHT, R. L. 1977. Vegetation in the vicinity of Weipa, North Queensland. Proc. Roy. Soc. Queensland 88: 17-38.

Postscript

Since the above was written, the author has found a large population of *Corypha* along the Ducie River, a large tidal tributary of the Wenlock River, and he has observed *Livistona muelleri* occurring naturally near Cowley Beach, a location much further south than that previously indicated.