

Palms in Northeastern Australia I. Species from Iron Range, far Northeastern Queensland

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Little has been published on Australian palm species generally and there has been only one report on species from northeastern Australia in *PRINCIPES* (Moore, 1965). This account was based on visits to Darwin, Brisbane, and areas of southern Cape York Peninsula, so species confined to far northeastern Australia were not included. Results of a recent excursion (November, 1976) to Iron Range (Fig. 1), an area of lowland closed (= rain) forest and sclerophyll forest, on northeastern Cape York Peninsula are presented here.

Australia has a depauperate palm flora, supporting only 17 native genera of the 212 genera assigned to the *Palmae* by Moore (1973). Most of the genera occurring in Australia are found in Queensland and here many (13 genera) are represented in the moist closed forests of the tropical east coast. Four genera are endemic to Australia—*Archontophoenix*, *Laccospadix*, *Normanbya*, and *Carpentaria*. The last men-

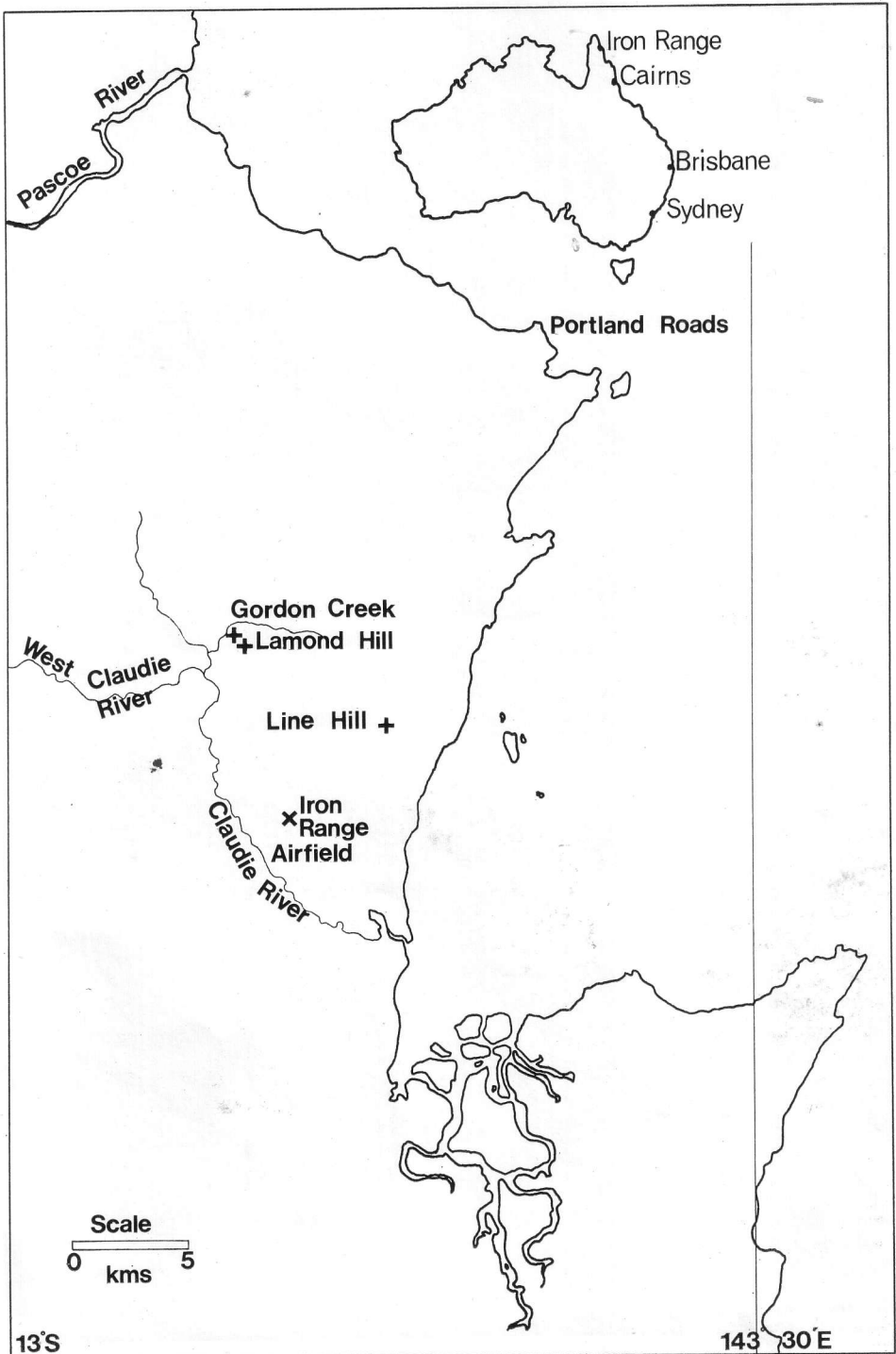
tioned occurs only in the Northern Territory and the other three genera are confined to eastern Australia.

Iron Range supports a diverse palm flora by Australian standards. Nine genera are represented, apparently because of the favorable combination of a moist, tropical environment and the strong Southeast Asia/New Guinea influence on the flora of northeastern Australia. Iron Range is a sparsely settled area well known to many American servicemen who were based there during World War II, when the area was a key base in the Battle of the Coral Sea. It has a moist, tropical climate with an average annual rainfall of 2086 mm (based on 20 years records) and an average annual temperature of 80°F+. Two major types of vegetation occur in the lowland area—closed (= rain) forest, and sclerophyll forest (including some highly acidic 'heath' lands). The closed forests (semideciduous mesophyll vine forest, after Webb, 1959) occur in

1. Localities mentioned in the text and Iron Range area in detail.

2. *Nypa fruticans* at Iron Range N. Queensland. A, stand of *Nypa fruticans* on banks of estuary, Claudie River, Iron Range, NE. Queensland showing sandy situation in which palms occur and their total domination of this section of the river bank; B, base of *Nypa fruticans* showing submerged trunk and position of inflorescence; C, inflorescence of *Nypa fruticans*; D, mature fruits of *Nypa fruticans*.

3. Stand of *Nypa fruticans* on banks of estuary of Claudie River, Iron Range, NE. Queensland showing dominance of the area by this species, extremely dark conditions, sandy habitat, and long ascending pinnate leaves from the submerged trunk.







narrow strips along the Claudie River and its tributaries, in patches along the coast, and on low hills and ranges near the coast. The remainder of the area supports rather sparse, open sclerophyll forest. Large sections of both major vegetation types have been cleared for cattle grazing.

Close to forty species of native palms are known from Queensland. At least 11 species (approximately 27%) are known from Iron Range. More species probably occur in the area, particularly in the closed forests of higher altitudes in the ranges, which lie west and south of the area examined for this brief report. *Nypa fruticans* is undoubtedly the most interesting species encountered (see Figs. 2, 3). In Australia it occurs in dense stands in tidal flats along the estuaries of some streams from the Herbert River, near Cairns in the south to the tip of Cape York Peninsula. *Nypa fruticans* does not flower seasonally. Residents of Iron Range report the presence of flowers and fruit throughout the year. We collected approximately 40 mature fruit. Of these, eight young plants are thriving in large pots in a rich black soil/sand mix which is watered frequently with fresh water only. *Nypa fruticans* is obviously highly tolerant of saline conditions but salt may not be essential for its survival, possibly like *Cocos nucifera* which grows well in either saline or nonsaline conditions. *Nypa fruticans* is known surrounding freshwater lakes in New Guinea (A. Irvine, pers. comm.). The lower survival rate of the seeds collected is probably due to attack by insects or their larvae rather than a poor germination rate, because all seeds that either failed to germinate or died soon after germination, bore signs of insect attack when examined. No data are available on germination time for the seeds.

Palms encountered at Iron Range

Table 1. Systematic list of palms encountered at Iron Range, northeastern Queensland, Australia, with notes on their occurrence.

Coryphoid palms

Livistona benthamii F. M. Bailey: one stand only observed in swampy open forests.

Livistona muelleri F. M. Bailey: common; throughout open forest.

Licuala ramsayi (Mueller) Domin: two stands observed in closed forest.

Lepidocaryoid palms

Calamus spp.: common in understory of most closed forest areas. "Four species definitely known from Iron Range—*C. australis* Martius, *C. caryotoides* Martius, 2 *C.* spp., possibly New Guinea species" (A. Irvine, in litt.).

Nypoid palm

Nypa fruticans Wurmbr.: common along swampy estuary banks in dense stands.

Caryotoid palm

Caryota rumphiana Martius: common; confined to riverine closed forests.

Arecoid palms

Archontophoenix alexandrae H. Wendland and Drude: common; found in creeks and in riverine closed forests.

Ptychosperma elegans Blume and *Ptychosperma macarthurii* (H. Wendland) Nicholson: both species common throughout closed forests.

Hydriastele wendlandiana (F. Mueller) H. Wendland and Drude: common throughout closed forests.

Gulubia costata (Beccari) Beccari: one stand observed in very moist riverine closed forest.

are listed in Table 1. Most of the species are confined to the closed forests as expected and some (e.g., *Caryota rumphiana*, *Gulubia costata*) are confined to very moist areas along the creeks. *Livistona* species are common in the sclerophyll forests, often near or in seasonally dry swamps and occasionally just inside the closed forests. All genera known from Iron Range (except *Archontophoenix*) are represented in New Guinea and/or Southeast Asia. This is not surprising because the strong New Guinea influence in both the flora and fauna of Cape York Peninsula is well documented (e.g., Walker, 1972). In recent geological times (during the Pleistocene) New Guinea and Australia have been linked through the Torres Strait several times by land bridges, and the Torres Strait separating them is barren. The late tertiary history of these connections has been summarized by Tate (1951).

Acknowledgments

Mr. & Mrs. J. Hennig of Iron Range provided us with information on the location of palm species in their area. Mr. A. Irvine, Division of Forest Research, C.S.I.R.O. has constructively criticised the manuscript.

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NEWS OF THE SOCIETY

April 1, 1978 saw a large group of members from the South Florida area meet at the home of Paul Drummond to visit again his delightful garden and to learn something as well.

After eating our picnic lunches, we followed Paul through his plantings to watch him pick male inflorescences of various chamaedoreas and demonstrate how the pollen is shed in clouds when the flowers are shaken. He then took the male blooms and shook them over blooms on female plants. Many questions were asked and helpful answers given. We all learned something, and even though not all of us could readily distinguish the male from the female flowers, despite using a hand lens, the type of growth of a bloom spike often discloses which sex it is. No doubt many

more members will try their hand at producing their own seeds as a result of the lessons learned.

On April 29, 1978 a group of members of the Miami-Ft. Lauderdale area drove to Naples on Florida's West Coast to visit members' gardens there. Fred Shick has a lovely garden with many large specimens, all planted since the hurricane of 1961 flooded his property with three feet of salt water. His soil is none too good, but for some years he has been getting truckloads of shredded tree trimmings available when power lines and streets are cleared. He runs this coarsely shredded material through his own grinder and puts the resultant mulch about one foot deep on all planted areas except grass. He says it decomposes in a year, leaving a crumbly black layer that has cut down on his weeds, on

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