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Rhopalostylis sapida on Great Barrier Island, New Zealand

DICK ENDT
108 Parker Road, Oratia, Auckland 7, New Zealand

New Zealand native forests give an immediate impression of being like tropical rainforest, yet the New Zealand climate, can only be classified as warm temperate at best. This impression is no doubt enhanced by the frequent and luxurient presence of New Zealand's only palm referred to by the Maori people as "*nikau*," *Rhopalostylis sapida*. The "*nikau*" palm occurs throughout the North Island and extends into the South Island as far south as the Banks peninsula; a notable presence of the *nikau* is on the Chatham Islands about 600 miles east off the South Island. This southernmost limit is halfway between the Equator and the South Pole near the northern limits of the drift ice of the Antarctic continent, surely the most southern limit of any palm species. The closely related species, *Rhopalostylis cheesemanii* occurs on the Kermadec Islands. *Rhopalostylis baueri* is native to Norfolk Island. These last two species show close resemblance to the New Zealand *R. sapida*.

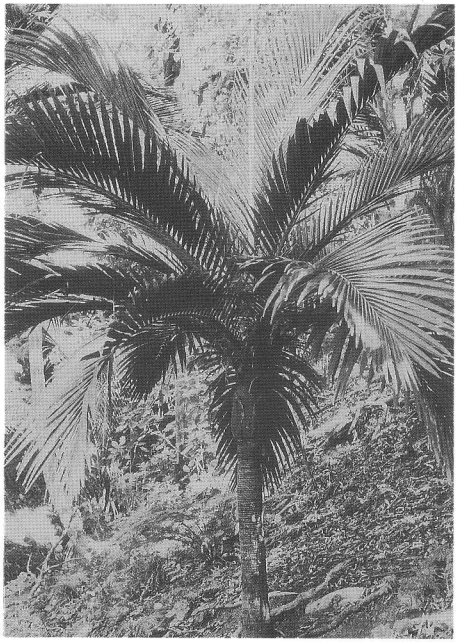
Nikau is commonly known as the "feather duster palm," because of the rigid upright leaves which form its characteristic crown. Although the *nikau* palm of New Zealand is recognized as one species there is considerable variation in form in different parts of the country. Generally, those growing in the more southern regions are more robust and taller in stature. Those growing in the northern part of the North Island are less tall, finer leaved, and more upright in form. In contrast those growing on the offshore Islands of the North Island are very different. They grow more vigorously, have thicker trunks and generally have a more open crown. They seem to be more allied to the Kermadec Island *nikau*, *R. cheesemanii*.

In order to collect the best form of *Rhopalostylis sapida* I decided to visit Great Barrier Island in search of seed most suited for growing in nursery and for distribution to the International Palm Society.

My visit to Great Barrier Island was planned to coincide with the ripening of seed which normally commences during the month of August. The only regular means of reaching the Island is to fly from Auckland City in a small single engined aircraft which takes only 40 minutes to reach one of the airstrips on the "Barrier." The flight itself is a delight as one crosses the island studded Hauraki Gulf until the well named Great Barrier Island is reached. This rugged mountainous island is approximately 30 miles long by about 8 miles wide and shelters the entrance of the Hauraki Gulf from the fierce gales which periodically sweep in from the northeast. Most of the island is clad in dense forest, much of it secondary bush, cut over during the last century to extract its valuable Kauri timber. Flying over the island forest canopy one can see the many star shaped heads of the *nikau* palms which have reached the upper canopy of the forest, the color of the leaves being a lighter green in contrast to the generally somber hues of the general vegetation. The Island is sparsely populated, hence a trip needs to be well planned to allow for an extended

1. *Nikau* palms, *Rhopalostylis sapida* (Great Barrier Island form): group of *Nikaus* at the outlet of a stream at Wreck Bay, Great Barrier Island. Note the upright growth of the leaf canopy in this exposed site.

stay in case the weather closes in, effectively blocking all communication with the mainland. My object was to hike to Wreck Bay, so named after a schooner wrecked there last century. This secluded inlet is situated along the northeastern part of the Island in a totally uninhabited region, forest covered to the water's edge. It is here that



2. Splendid form of *nikau*, *Rhopalostylis sapida*, growing in the shade of the forest, Great Barrier Island.

3. *Nikau* palms, *Rhopalostylis sapida*, lend a tropical appearance of the New Zealand bush on Great Barrier Island.

some magnificent stands of *nikau* occur. From the airfield the road leads north for about six miles until the last farmhouse is reached. From here we proceeded to walk along the beach until a suitable track was found which turned inland, up a steep ridge reaching an altitude of about 1,000 feet.

All along the ridge *nikaus* were present scattered here and there, never in solid stands. Most palms exposed to the open hillside were windlashed and tattered on the outer leaves. In spite of these severe conditions the palms survived and grew. Observing the leaf structure and the manner in which they are held on the trunk it is perhaps easy to understand why the *nikau* succeeds where other palms would fail. The crown is shaped like an inverted cone, the old outer leaves held in place on the trunk by a sturdy bulbous crownshaft attached to the trunk. The upright leaves in turn protect the inner leaves hence enabling the palm to function. The *nikau* palm is generally recognized by this peculiar feather duster appearance.

These same palms growing in the protected environment of the bush display a totally different growth pattern. Here the leaves grow much larger, arch out and appear much less upright. Very often palms growing under shady conditions fail to flower and seed.

Following a series of high ridges and peaks one reaches Wreck Bay after a three hour hike; here one steeply descends into a narrow inlet or cove headed by a stoney beach through which a stream emerges. Generally, the *nikau* does not grow in pure stands, the only exception perhaps being along damp gullies and streams. Around the stream running into the Bay there is a large area of *nikau* growing in swamp conditions. Here the *nikaus* have the more upright growth pattern as the palms are in full light. It was here also that most of my seed collection took place.

In order to compare the various forms of the *nikau* we have planted the different forms on our farm. The extra vigor displayed by the Great Barrier Island form is showing in our climatic conditions, hence the differences are genetic rather than environmental. Seed of the Great Barrier Island form was sent to the Seed Bank of the International Palm Society.

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