

simply the first record of the general confusion of the tall and superficially similar *Rooseveltia Frankliniana* [*Euterpe macrospadix* — H.E.M.] which covers the hillsides and which looks like the less frequent coconuts of the beaches when viewed from the sea. The fact that Oviedo illustrated a *Bactris* would seem to me to indicate that he may have regarded them (and probably *Astrocaryum* as well) as being simply somewhat aberrant and inferior coconuts. His description of the quantity of liquid contained in a fruit being enough to fill the shell of an egg, more or less, depending on the size of the nut, would certainly seem to indicate this. Immature fruits of *Astrocaryum alatum* for example, have almost precisely this quantity of liquid, which is sweet and good, and the meaty part tastes much like coconut. It is difficult to under-

stand how he could have ignored the formidable spines of *Bactris*, particularly since he illustrates the typically aculeate rachis, but it is to be presumed that what we have is a compilation of unrelated things done in Spain after his return. The presence of the mango seed would seem to bear this out. We must, I think, remember his own statement: "Todas estas cosas escribi yo, segun lo que tenia alcancado y entendido y en parte visto destes cocos." He does say however that he took a load of them aboard at Burica for the trip to Nicaragua, and that he got pretty tired of them after a few days. If they were *Bactris* fruits, this would be all the more understandable.

So much for Oviedo & Cocos. . . .

Sincerely yours,
PAUL H. ALLEN

Miscellaneous Notes

Coyol Wine

Acrocomia vinifera, a Middle American palm commonly called *coyol*, has long been utilized as a source of wine. This use is alluded to in the specific name *vinifera*, meaning "wine-bearing." Production in Danli, Honduras is managed by felling *coyol* trees in the late dry season, after which they are hauled by oxen to a central yard in town. As many as 40-60 trunks are often assembled side-by-side, usually in lines of pairs. The large leaves are removed in the field in order to facilitate handling. A trough is opened in the crown of each trunk to a depth of 6-8 inches and a cut made on the lower side each day in the form of a thin shaving which opens the pores so that the cavity fills with liquid. The tapping cut is covered with a mat of Spanish moss (*Tillandsia usneoides*)

and held down with a broad woody frond base, the slender part shaved down to form a handle. Cuts are made in the morning and the liquid is collected each afternoon. Each tree generally yields a quantity of one or two pints. This is then fermented for about two days and then used as wine. Each trunk can be tapped and will produce for about a month. The wine will spoil if it is not used within two or three days, but about one-half pound per gallon of sugar can be added and with this the wine will last for about eight days. *Coyol* wine is somewhat milky, rather cidery in taste, and refreshing, but of relatively low alcoholic content.

P.H.A.

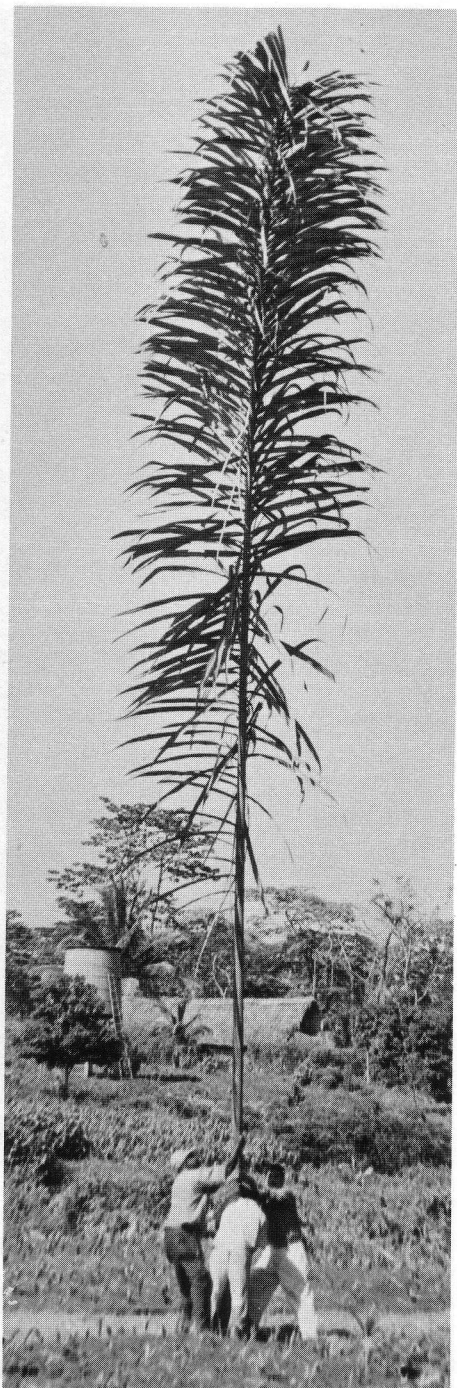
Raphia in the Western World

I am struck by the statement of L. H. Bailey that "there are suspicions that

the occidental *Raphias* are naturalized from Africa." Separately, in the *Gentes Herbarum* series, "Quaedam Palmae Panamenses" (Vol. III, Fasc. II, March, 1933), he cites Beccari's monograph of 1910 as the origin of the idea that Oersted's *Raphia nicaraguensis* might have been taken from a cultivated specimen, in Nicaragua, of the African *Raphia farinifera* (*Raphia Ruffia*).

This palm was believed by Oersted to be limited to Nicaragua, and to be distinguished principally by the lack of thorns on the margins of the leaves and its smaller size. That the former statement is not strictly true is apparent from examination of a photograph of the type, which shows the characteristic spines to be present, but largely confined to the lower margins of the pinnae. Dahlgren (in his *Index of American Palms*, page 240) reduces this concept to *R. taedigera*, but with a "?".

I have personally seen *Raphia taedigera* in the Mojinga swamp near the mouth of the Chagres River in Panama, visited by Bailey, and in the regions of Limon and Golfo Dulce in Costa Rica, and again on the Atlantic seaboard of Nicaragua from the lower reaches of the Rio Grande de Matagalpa, near Karawala, through the Pearl Lagoon estuaries, Cukra Hill, and the Rio Escondido to the mouth of the Rio Punta Gorda, below Monkey Point. Antonio Molina, Honduran botanist, has seen the species in the Rio San Juan on the border between Nicaragua and Costa Rica, and Alexander Skutch describes great tracts near Almirante, in Bocas del Toro Province, Panama. Isolated, unconfirmed reports also place it as far north as the Caratasca Lagoon, in Mosquitia. Stands in many of these places, particularly near Limon, Costa Rica and Almirante, Panama, as well



50. Leaf of *Raphia taedigera* (Allen 6489)
Cukra Hill, Nicaragua. Photo P. Allen.



51. *Raphia taedigera* (Allen 6276). Photo P. Allen.

as the unique tracts on the Pacific coast of Central America between Golfito and Palmar in the Golfo Dulce region, are extremely extensive, often as pure concentrations hundreds or even thousands of acres in extent. To say that most of them have had little contact, either now or in former times, with introduction-

minded outsiders would be almost the understatement of the year. There cannot be the slightest doubt, in the mind of anyone who has seen these stands, that we are dealing with an exclusively American plant.

There is, however, a considerable degree of variation in individual speci-



52. *Raphia taedigera* inflorescence (Allen 6519), Photo P. Allen.

mens from place to place, in regard to number of trunks, maximum length of frond, degree of development of armature on the margins of the pinnae, length and number of inflorescences and size of fruit.

The Rio Escondido, in eastern Nica-

ragua, is lined for miles with this stately species, and provides the interested observer with a very good cross section of the total range of variation. Where soil is poor, and/or salinity high, the plants have a yellowish appearance, and seldom exceed 25 feet in height, count-

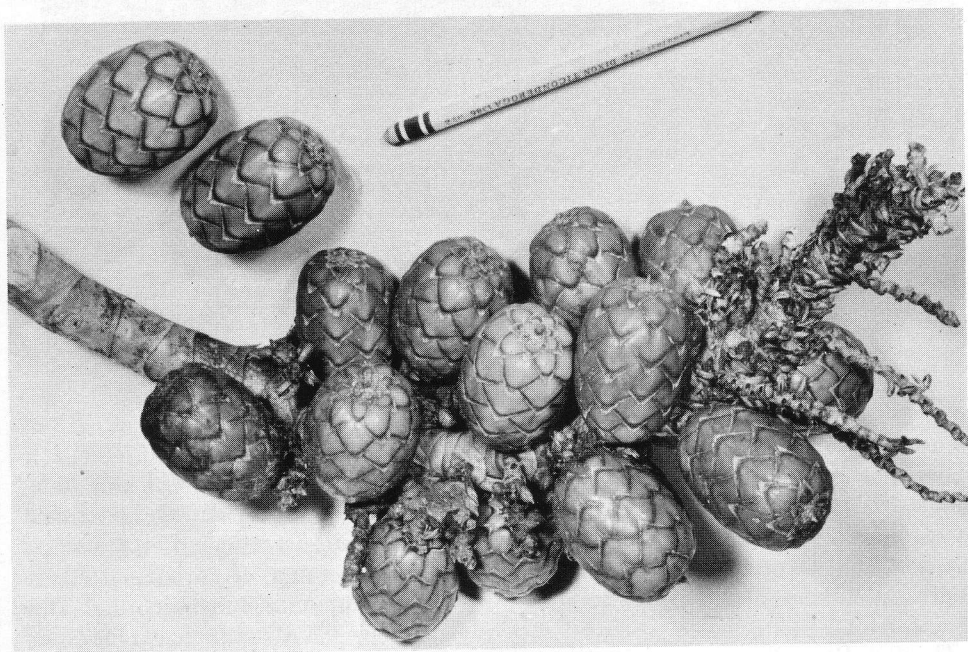
ing to the tips of the ultimate fronds. This upper level rises in a gradual curve, and the color varies to a deeper green wherever local growing conditions are more favorable. Maximum size seems to be reached on deep soils on the margins of land-locked ponds, where salinity must be at a minimum. Actual specimens collected and photographed in such a situation near Cukra Hill, north of Bluefields, in eastern Nicaragua, had individual fronds which measured 56 feet in length.

As would be expected, in the case of any plant having a considerable geographic range, and particularly in the instance of species whose sheer bulk discourages frequent collection, chance variants will unavoidably take their place in the literature as good species until adequate observation makes their true nature apparent. Comparison of the many specimens seen in Nicaragua, Costa Rica and Panama would make it

seem obvious that *Raphia nicaraguensis* may safely be relegated to the ranks of synonymy. P.H.A.

Palms of Quebrada Lopez

The Quebrada Lopez is one of the small streams heading on Santa Rita mountain, in the area north of Colon, Panama, on the line of the trans-isthmian highway. It is an area of heavy rainfall, and much virgin timber of the finest sort. Palms abound, the most conspicuous species being *Scheelea zonensis*, *Corozo oleifera*, *Astrocaryum Standleyanum*, *Astrocaryum alatum* (very common), *Oenocarpus panamanus*, *Iriartea exorrhiza?* (very common), [this perhaps *Socratea durissima*—Ed.] *Euterpe macrospadix* (infrequent), *Bactris* sp., *Geonoma* (probably *binervia*), *Welfia Georgii* (a common, handsome species), and *Phytelephas Seemannii*. The last named species occurs sparingly as seedling trees throughout the area, but the larger fruiting specimens, much



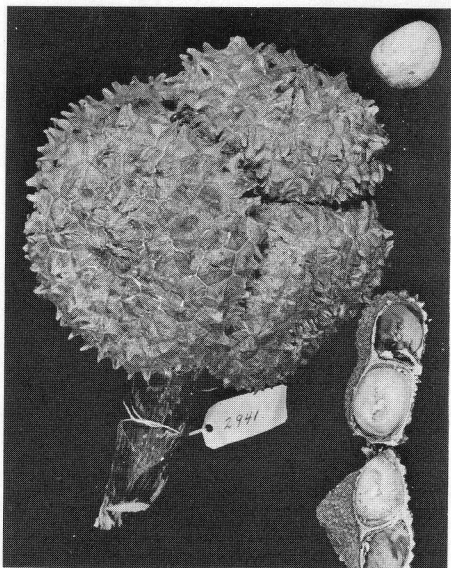
53. *Raphia taedigera* fruits (Allen 6276). Photo P. Allen.

resembling *Corozo* in superficial appearance, are limited to small groups of a few individuals, aptly termed "Islas" by the natives. Mature trees bear about twenty live leaves, of about the dimensions of a *Corozo* frond. Fruiting trees have short, massive trunks, covered by the persistent leaf bases, the axils of which bear an ample accumulation of dirt and trash. Among these decayed bases the fruit clusters mature, two to four in number in the specimens seen, of a most curious nature, being composed of from three to five flattened, armour-plated discs, attached to a short stout peduncle. These curious structures, whose surface much resembles alligator hide, contain from three to five seeds, which are the "Ivory Nuts" of commerce. So much do these fruits differ from those of most palm species, that they were long placed in a separate family together with *Nypa frutescens*, another aberrant species native to the Asiatic tropics.

P.H.A.

Some Musings on Old- and New World Palms

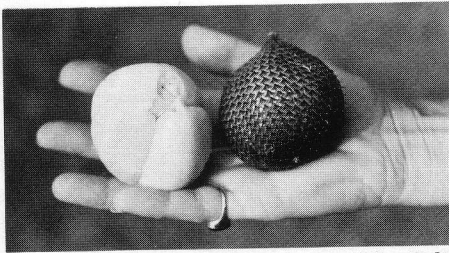
After some twenty years residence in the neotropics, an extended field trip to the paleotropics has brought on these brief musings about the palms of these separate regions. Both areas have extremely aberrant genera as exemplified by *Phytelephas* (American) and *Nypa* (Asiatic). Spiny *Bactris* in the New World (NW) occupies habitat niches similar to spiny *Daemonorops* and *Calamus* in the Old World (OW). *Cryosophila* (NW) and *Livistona* (OW) might be similarly compared. *Eugeissona* (OW) is the nearest approach to fantastic stilt-rooted *Iriartea* and *Socratea* (NW),—whose habit is assumed by *Pandanus*, the Old World screwpine. *Acrocomia* spp. and *Bactris Gasipaes*



54. *Phytelephas Seemannii* fruits. Photo P. Allen.

(NW) and *Arenga* spp. and *Cocos nucifera* (OW) are palms spread by man; and in the peach palm (*Bactris*) and coconut each area has a palm not positively known in the wild state. Actually there are more differences than similarities in the palms of these two great tropical areas.

Nothing in the Americas is comparable in usefulness to *Metroxylon* or the rattans; nothing is quite like the talipot palm (*Corypha*) for visual impact—except perhaps the wax palms (*Ceroxylon*) of the northern Andes and *Mauritia* and various Cuban fan palms. Nothing resembles *Calamus* in the understory of neotropical forests, with the local exception of *Desmoncus*, which is mostly upper Amazonian. On the other hand there is nothing quite like *Chamaedorea* and *Geonoma* in the Orient. Nor, in the Orient, is there anything that quite corresponds to the dense stands of *Orbignya* in northern Honduras, eastern Guatemala and British Honduras, or to the nearly pure stands of *Acoelorrhaphe*,



55. Fruit and contents, *Salacca edulis*, Bali. Photo P. Allen.

Corozo, *Raphia* and *Manicaria* of the coastal swamps; nor on the other hand is there in America anything quite like the great stands of *Nypa* of the Far East.

P.H.A.

Balinese Salak

Miguel Covarrubias in his fascinating book, *Island of Bali*, has this to say of *salak* (*Salacca edulis*). "*Salak*—a pear-shaped fruit that grows on a palm, tastes like pineapple, and is covered by the most perfect imitation snakeskin." I disagree with him on the taste, as did Paul. The texture and taste are more like that of an unripe but edible pear—hard, crisp, juicy and very refreshing. There are three unequal segments—the largest one contains the only seed. The covering of the fruit is snake-skin-like though not smooth like that of a snake. As can be seen in the accompanying illustrations the tip of each scale protrudes and the feel is prickly. According to my Bali diary, we drove along the east coast road of Bali as far as Karangasem then turned inland and be-



56. *Salacca edulis* fruit cluster, Bali. Photo P. Allen.

gan the ascent of the lower slopes of the volcano Gunung Agung. Looking up the side of the mountain, ahead of us, we could see extensive pure stands of this palm. About 1500 feet elevation we began entering plantations of *salak*. This is a straggly, terribly spiny, silvery palm with no trunk. After a while we stopped along a small, very steep dirt road in a sea of *salak* palms and the little old toothless owner of the planting reluctantly agreed to pose for us with his fruits, even though most of his neighbors looked on and giggled. We saw these palms the last day we were in Bali but strangely enough, in spite of our covering the Island, highlands and lowlands looking for bananas, this was the only place we saw *salaks* growing. The palms may be grown in other countries but we had not seen any of these fruits in the markets until Bali. Our native Bali hotel always served a plate of fresh *salaks* with every meal.

DOROTHY O. ALLEN

Prestoea Allenii —

A New Palm from Panama

HAROLD E. MOORE, JR.

The distinctions between *Euterpe* and *Prestoea* have recently been clarified by the writer (*Gentes Herbarum* 9: 256-262, 1963) and it seems particularly ap-

propriate, now that the proper genus has been determined, to describe a species of *Prestoea* collected in 1946 by Paul H. Allen and to provide for the species an