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Trachycarpus oreophilus—The Thailand Trachycarpus

MARTIN GIBBONS AND TOBIAS W. SPANNER

The Palm Centre, Ham Central Nursery, Ham Street, Ham, Richmond, Surrey, TW10 7HA, UK and Tizianstr.44, D-80638 München, Germany

When Dr. John Dransfield of Kew told us that there was “a *Trachycarpus*” growing in northern Thailand that “needed investigating” it seemed a heaven-sent way to fill the four spare days at the end of the trip to China that we were planning to try to find *Trachycarpus nanus* (Gibbons and Spanner 1993). John told us that the palm had originally been “discovered” in the 1920s by A. G. F. Kerr, renowned British botanist (of *Kerriodoxa* fame) and was well known to the Thai Royal Forestry Department. Originally it had been mistakenly identified as a *Livistona*, and its herbarium specimens (though lacking fruit or seeds) together with a black-and-white photograph, had languished in the herbarium at Kew until the 1970s when John spotted the mistake. It was certainly a *Trachycarpus*, and in the absence of seed material that might indicate which one, it had been identified as *T. martianus*, which it certainly resembled. This assumption was proven wrong when, in the mid-1980s, some fruits were collected by the Royal Forestry Department and were shown to John in Bangkok. They were reniform (kidney-shaped) as opposed to oval-and-grooved, typical of *T. martianus*, and a question mark has hung over its true identity ever since. This puzzle could have been invented for us, and we gladly took up the challenge to throw some more light on the subject.

John kindly suggested the names of two botanists in Bangkok who might be able to help us, and a visit to one of them, Weerachai Nanakorn, on our arrival in Thailand, led to us meeting Rachun Pooma of the Royal Forestry Department in Chiang Mai, who knew of this palm and was as excited as we by the prospect of a trip to see it.

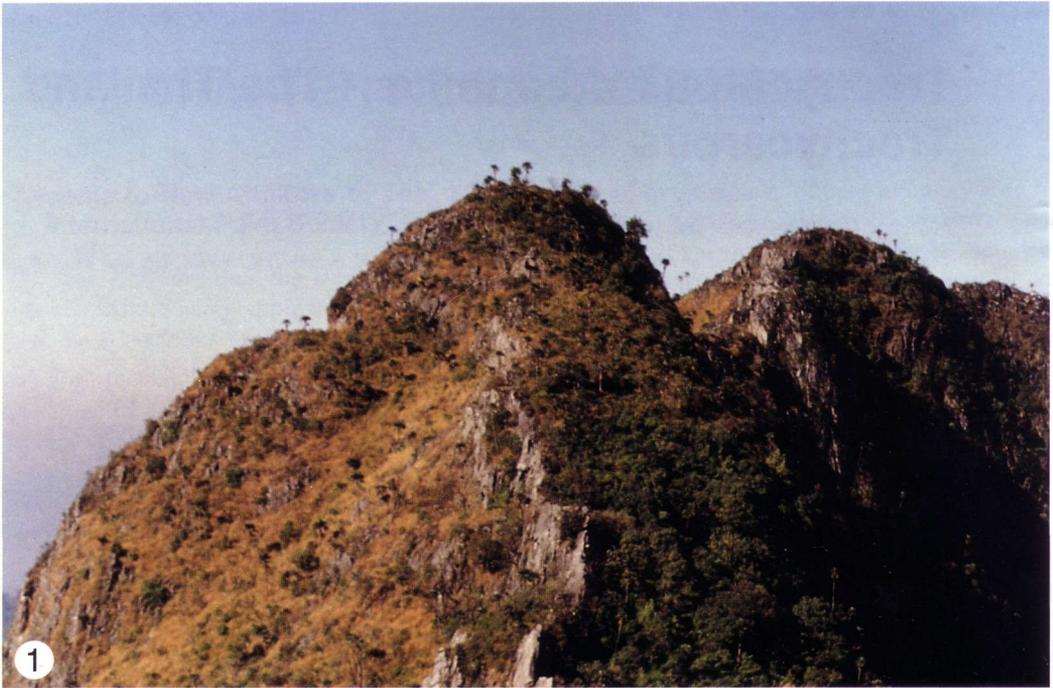
He was extremely helpful, meeting us at Chiang Mai airport, accommodating us at his residence at the Huey Kaew Arboretum, and taking us out that first evening for a wonderful Thai meal. The following day, he arranged a 4-wheel drive jeep,

complete with driver, and we picked up a couple of guides en route. We set off at 10 am, stopping on the way to get supplies for the two days we would be away. We then drove out of Chiang Mai and after a couple of hours turned into a side road, heading for the mountain range, where grew our quarry.

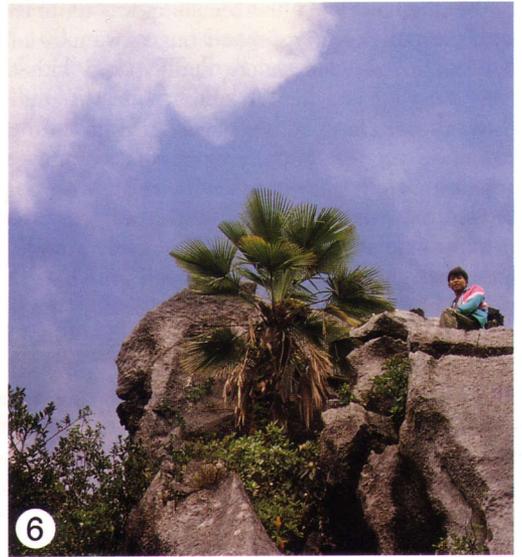
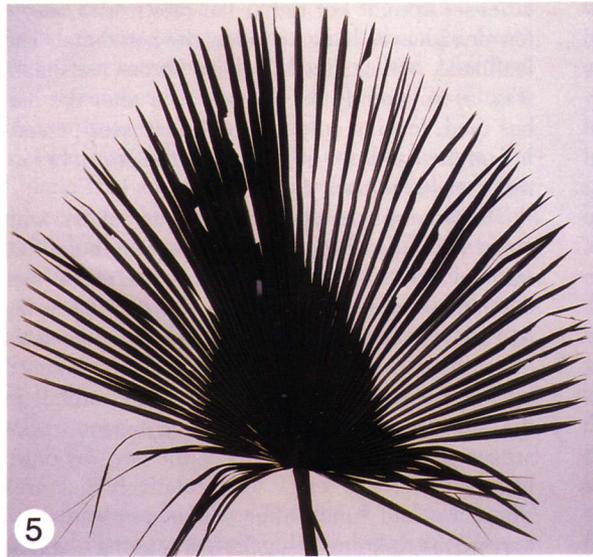
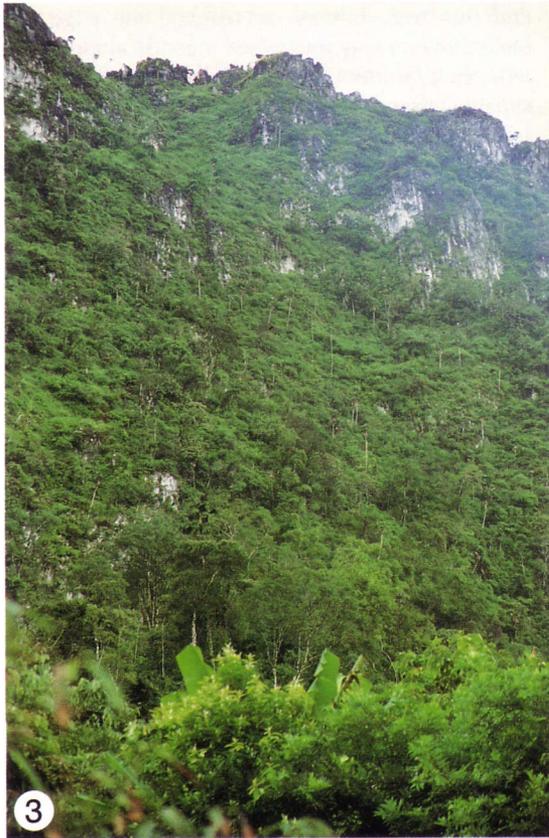
The jeep was very powerful. Rachun sat in the front with the driver, we in the open back, a plank having been fixed athwart to serve as a seat. However, as we began to climb, the road became so rough and bumpy that we were obliged to stand, from which position we had an excellent view of the changing scenery and vegetation. The temperature fell slowly as we went up, and coconut palms gave way to huge *Livistona speciosa*, wonderful and noble trees, growing wild in the forest. This species also grows in north Burma and south China and, apart from some minor differences in the fruit and inflorescence bracts, it is hardly distinguishable from *Livistona jenkinsiana* from northeast India and should perhaps be considered synonymous with it. There were also hundreds of bamboos of all shapes and sizes arching across the road, sometimes forming a tunnel. Other interesting palms we saw were the trunkless *Wallichia caryotoides*, and various rattans, all growing in deep shade.

The road became atrocious with deep muddy ruts and areas where the road had been washed away. The 4-wheel drive was quite indispensable as the road was so steep as well as muddy. Sometimes the rear of the vehicle seemed in danger of overtaking the front, and sometimes we slipped dangerously close to the edge of the road and a sheer drop.

We continued in this way for some two hours, upward and ever upward. From time to time we saw our destination through the trees: Doi Chiang Dao—a mysterious and extremely steep, relict



1-2. 1. *Trachycarpus oreophilus*: hundreds of trees could be seen silhouetted on the mountain crest. 2. View from mountain crest.



3-6. 3. (Top left) *Trachycarpus oreophilus*, growing by the hundreds on the steep face of Doi Chiang Dao. 4. (Top right) *Trachycarpus oreophilus*: note the leaf base and distinctive, short fibers. 5. (Bottom left) *Trachycarpus oreophilus*: the distinctive silhouette, showing regular leaf splits. 6. (Bottom right) *Trachycarpus oreophilus* growing among limestone boulders on the ridge crest.

limestone mountain, separated by time and distance from the vegetation of the surrounding countryside. After this difficult journey we arrived at "base camp," an outpost of the Forestry Department, where lived and worked the forest rangers with wives and children, some 10–15 people in all. It was now about 2 pm, not enough time for the climb up so we would stay the night here and set off in the morning.

There was not much to do though we did walk for half an hour to a vantage point to have a closer look at "our" mountain. My goodness it looked awfully steep! With binoculars we could make out hundreds of palm trees silhouetted on its crest (Fig. 1). They looked far too exotic to be humble *Trachycarpus*, but that's indeed what they were. On the way we came across some very large *Cycas pectinata*. Some of them must have been hundreds of years old, and were forked and branched. Back at the camp we had some food and the time passed quickly enough. At about 8 pm we retired and slept surprisingly well on the hard and thin mattresses.

We rose at 7 am. The weather was quite cool as the sun was only just rising. There were six of us in the party: Rachun, his assistant, two forest ranger guides who knew the way up to the top, and the two of us. We set off taking the same path as the day before. At first the going was quite easy with the path clearly defined but as we ascended it became less clear, more muddy, and with the vegetation closing in. We climbed up the muddy path, slipping and sliding, and hanging on to the plants for support, tantalizing glimpses of our goal appearing from time to time. Up and up we went, around the side of the mountain. It was very steep in parts and very heavy going. After a couple of hours' tough climb, we departed from what little path there was, to make a direct assault. At this point the going became even more difficult and we were drenched by the wet vegetation.

What appeared from a distance to be short grass turned out to be 6 feet high, and studded with huge limestone boulders the size of cars, and always the dilemma was to go around or to go over them. The palms got closer and closer, but they were absolutely on the ridge crest and demanded a high price for access (Fig. 6). We aimed for one particular palm whose leaves we could see arising from the far side, and slowly inched our way towards it. The last few meters was over the bare rock itself where sharp ridges had been formed by erosion. We slowly made our way towards the crest

and this tree, but as we reached the edge and looked over, expecting to see a gentle slope on the other face, we saw that the far side was absolutely sheer; a dropped stone would have been in free fall for several hundred feet.

The palm tree that we had chosen was growing from the sheer face of the far side and quite inaccessible. We worked our way with great difficulty along the ridge in an effort to reach some others, and there were many to choose from, but each required an individual expedition of perhaps 20 minutes, and a slow climb up, over, or around the huge limestone boulders to reach it. Not all these rocks were secure, some moved, some had eroded into huge stones balanced on others. A push would have sent them crashing down.

Well, what of the trees themselves? It must be said that they were quite stunning. They were all growing in the most inaccessible locations on the cliffs and ridges of weathered limestone. We assumed that all the more reachable trees had been cut down for some purpose, and this was later confirmed by one of the guides.

Firstly, the striking thing about them was that they had bare trunks, some up to 30 feet tall and rather slender, closely ringed with leaf scars that were faintly visible under a cover of moss and lichens. All the leaves were stiff and erect forming a dense, upright but rather flat crown with only a few dead leaves hanging below the horizontal. The leafblade, petiole, and the short, fibrous leafsheath (Fig. 4) apparently decompose soon after the leaf has died, leaving only the thick leafbases persisting on the trunk for 50 cm below the crown before they, too, eventually fall.

The atmosphere up here was very moist, with cloud regularly obscuring the view—an incredible sight with the mountain, the palms, and sometimes the hot, steaming lowlands far below, appearing and disappearing in the mist (Fig. 2). Like most of southeast Asia, northern Thailand is influenced by the monsoon and receives copious rainfall in the summer while experiencing a moderate dry season during the winter. We made our way down from this terrible crest to a relatively flat area where we had lunch after which we decided to explore another crest—again heavy going—and as we reached the palms saw that one of them was in full fruit. The tree had five infructescences, which did not hang down in the manner of *T. fortunei* but projected out stiffly at only slightly below the horizontal.

It was growing, predictably, on the edge of a

precipice that we hardly dared look over. With some difficulty we collected samples of leaves and leaf sheaths as well as several hundred green but ripe kidney-shaped seeds. The fibrous leaf sheaths were quite notable in that they are short, the upper margin being rather furry and lacking any appendages, and of a fine, rather soft texture, rapidly breaking down. The leaf blade was split to a very regular depth (Fig. 5) and was carried on a robust petiole, separated from the blade by a long and prominent hastula.

Seeing these characteristics, our earlier suspicions were certainly confirmed: what we were looking at was a new, undescribed species, clearly distinct and easily separated from all other members of the genus. With our collections adding to our load, we began the return trip which we had been dreading, made considerably worse by heavy rain.

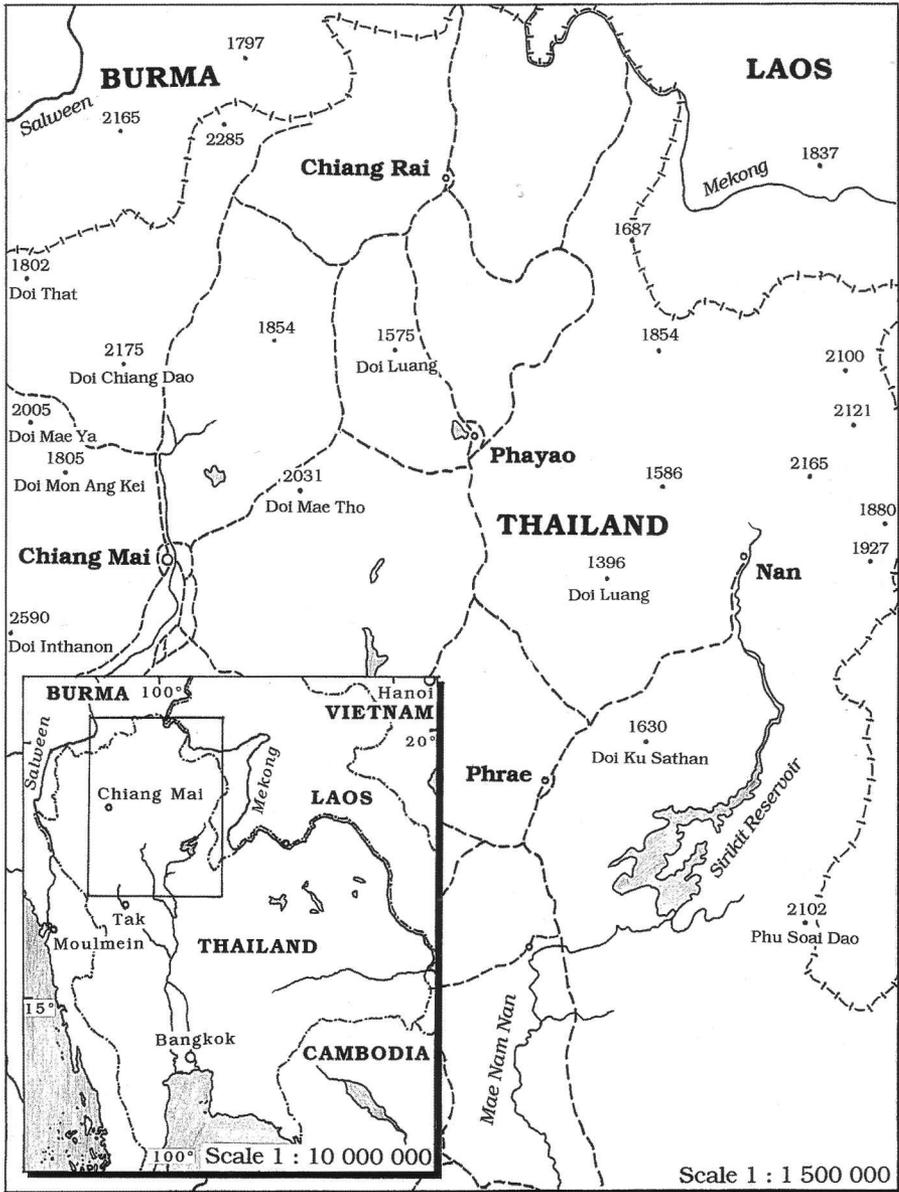
After an exhausting journey slipping and sliding down the muddy path, we were on the original track and heading for home, triumphantly bearing the spoils of our expedition. When we finally reached the base camp, we had a welcome cup of coffee and climbed aboard the jeep for the two-hour drive down the mountain. What had been mud on the way up, had with the rain, become a quagmire, sometimes axle-deep. The going was awful, there was no shelter on the back of the truck and we were again soaked through. Down and down we went, past bamboo and *Livistona*, and miraculously made it safely back to Chiang Mai, with no major problems.

Two years later, in 1994, we returned to Doi Chiang Dao and its *Trachycarpus* to explore a few more remote and less accessible ridges and to collect additional material. Though the climb both up and down was exhausting and dangerous our excitement and pleasure at being able to describe a new species of *Trachycarpus* made the effort and risk well worth while.

***Trachycarpus oreophilus* Gibbons & Spanner
sp. nov.**

Habitu, forma fructu *T. fortunei*, *T. principis*, *T. takil* et *T. wagneriano* similis sed vaginis foliorum brevibus, celeriter fatiscientibus et caducis, sine appendiculo, base petioli crassa, hastula prominentissima, lamina regulariter divisa, infra glauca, pedunculo inflorescentiae pistillatae longa differt. Typus: Thailand, Doi Chiang Dao, *Gibbons & Spanner* s.n. (Holotypus K, isotypus BKF).

Solitary, very lightly armed, dioecious palm to about 9 m tall; trunk slender, erect, bare, brown, conspicuously ringed, 10–16 cm in diam., in young plants occasionally clothed in persistent, fibrous leaf sheaths. Leaves about 20, forming a dense upright, rather flat crown; marcescent leaves few, leafblade, petiole and leafsheath soon deciduous, the thick, almost bulbous leafbases persistent at first, covering the trunk for about 50 cm below the crown, eventually deciduous; leafsheath fibrous, about 30 cm long, brown, fine, soft, rapidly disintegrating, thinly tomentose below, separated into short single threads towards the apex, not forming an appendage; petiole about 50 cm long, stiff, robust, 2 cm wide near the middle, flat-tish above, depressedly triangular to rounded below, margins minutely toothed and thinly tomentose, base thick and robust; adaxial hastula prominent, to 3 cm long, triangular, acute; leafblade palmate, 3/4 to nearly 4/4 orbicular, about 70 cm long from the hastula and about 100 cm wide, leathery, green above, glaucous below, parted to a nearly even depth for more than 1/2 its length into about 60 stiff, deeply folded, linear segments, tapering towards the apex from their broadest point; central segments about 70 cm long, lateral segments gradually shorter to 40 cm, apex acute-notched, shortly bifid for a few centimeters. Inflorescences about 4, solitary, interfoliar, 90–100 cm long; staminate inflorescence erect, peduncle short; prophyll two-keeled, 25 cm long; peduncular and rachis bracts five, 15–25 cm long, base tubular, inflated distally, apex acute; rachillae short; flowers globose, very small; sepals very small, ovate, joined at the base for 1/4 to 1/5 of their length; petals rounded with a blunt tip, 2.5 times as long as the sepals; stamens 6; filaments ventricose; anthers broadly ovate-sagittate with nearly disjoint cells, not apiculate; pistillodes (2-) 3, half as long as the stamens; pistillate inflorescence stiff, slightly arching or nearly horizontal in fruit, densely branched to three orders; peduncle about 50 cm long oval in cross section, 3.5 × 2 cm; prophyll two-keeled, apex acute; peduncular bracts three, 35 cm long, long and tubular; rachis bracts two, the basal one 25 cm long, similar to peduncular bracts, the distal one small and much reduced; rachillae 3–10 cm long, greenish (in fruit); flowers not seen. Fruit on short stalks, reniform, wider than long, epicarp thin, green, not seen when fully mature; mesocarp thin, fibrous; seed reniform, wider than long, 6 mm long, 11 mm wide; endocarp very thin, with a crustaceous sand-



7. Map showing the location of habitat of *Trachycarpus oreophilus*.

like layer of small, irregular scales; endosperm homogenous. Germination remote-tubular, eophyll simple, plicate, papery, 1 cm wide. Seedling leaves narrow, erect and very finely divided.

Distribution. NW-THAILAND: Doi Chiang Dao, a large, isolated limestone mountain about 70 km N of Chiang Mai, forming large colonies on steep, rocky hillsides and exposed cliffs among lichen- and moss-covered shrubs and stunted trees on the mountain's several peaks, between 1700 and 2150 m.

Conservation Status. The population on Doi Chiang Dao is the only one known in Thailand and there is no evidence to suggest that it might occur in similar sites outside Thailand, in Burma for instance. The Doi Chiang Dao population consists of a few thousand trees and is protected in a forestry reserve. It appears to be in a good state though all the more accessible sites have long since been cleared of palms by tribes of people and there are no seedlings and few young plants

present at them. However, the vast majority of the palms grow in very steep, practically inaccessible sites (Fig. 3) and as pressure on these stands by man or beast is negligible, their future seems secure. We would categorize it as "rare." *Trachycarpus oreophilus* has only very recently been introduced into cultivation. There are no mature palms of this species outside its native habitat.

Specimens Examined. Thailand, Doi Chiang Dao, 5500–5900 ft (1680–1800 m) a.s.l., Jan. 25th 1913, A. F. G. Kerr 2872A (K); 1700–2100 m a.s.l., Jun. 4th 1921, A. F. G. Kerr 5600 (K); 1700–2100 m a.s.l., Jun. 4th 1921, A. F. G. Kerr 5600A (K); A. S. Barfod, R. Pooma, T. Burholt 45209 (AAU); 2000 m a.s.l., Oct. 1993, M. Gibbons, R. Pooma, T. W. Spanner s.n. The specific epithet (*L. oreophilus*, cloud-loving) relates to the fact that this palm and its habitat are often totally obscured by clouds. Note: As there is no recent taxonomic treatment of the genus *Trachycarpus* (but see Beccari 1931 and Kimmach 1977), relationships of *T. oreophilus* will be dealt with in a conspectus of the whole genus, which will appear in a later publication.

Acknowledgments

We would like to take this opportunity to thank Dr. John Dransfield of the Royal Botanic Gardens, Kew, for bringing this species to our attention, for his continued support and his help with the manuscript, and Weerachai Nanakorn and the Royal Thai Forestry Department—especially Rachun Pooma—for their indispensable help. Additionally, our thanks are due to Anders Barfod, University of Århus, Denmark, who supplied a herbarium sheet much needed to complete our description.

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CHAPTER NEWS AND EVENTS (Continued from p. 200)

Palm & Cycad Societies of Australia

The January–March 1997 issue (number 54) of *Palms & Cycads*, Magazine of the Palm & Cycad Societies of Australia, included a diverse collection of interesting articles. It opened with "The Rockhampton Botanic Gardens and Its Palm Collection" by John and Jeanne Price, followed by several articles on Cuba: "Copernicia in Sancti Spiritus, Cuba" by Celio E. Moya Lopez of Cuba, "Coccothrinax in Cuba" by Rolf Kyburz and an article of tribute to Carlos Moya Lopez, also by Rolf. Dennis Johnson provides an interesting photographic "Album of Handicraft Palm Products" and Roy Osborne provides a most interesting book review on "The Island of the Colour Blind", written by Oliver Sacks. The "Letters" section included "An Interesting Experiment in Cross Pollination between Cycads" by Shri Dhar in India and a beautiful photograph of *Allagoptera arenaria* (with another on the rear cover).

The next issue of *Palms & Cycads* was a com-

bined issue (numbers 55 and 56), featuring the palms and cycads of Papua New Guinea and Irian Jaya with articles by Michael Fererro, Tony Huntington, and others.

P.A.C.S.O.A. as a whole generally holds only one annual meeting during the first quarter of the year. However, the various individual branches meet on a regular basis throughout the year. The current branches of P.A.C.S.O.A. are South Queensland Group, Sydney Branch, Sunshine Coast Group, Gulf Coast Tweed Palm & Cycad Society, Palm & Cycad Society of South Australia, Northern Territory Palm & Cycad Society, North Queensland Palm Society, Palm & Cycad Society of Mackay, and Rockhampton Palm & Cycad Society. For further information, write P.A.C.S.O.A., Ltd., P. O. Box 1134 Milton, Queensland 4064, Australia or contact via email on pacsoa1@ozemail.com, pacsoa2@ozemail.com or pacsoa3@ozemail.com (see your Membership Roster for which email will best suit your needs).

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