

The Unexpected Rediscovery of *Carpoxylon macrospermum*

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In the late 19th century, a palm with large woody fruits was reported as occurring on Aneityum (also known as Anatom), an isolated island in the south of the Vanuatu chain (previously New Hebrides) about 400 km northeast of New Caledonia. The palm was subsequently named *Carpoxylon macrospermum* by Wendland and Drude in *Linnaea* 39 in 1875. Apart from meager but adequate illustrations of a single fruit and the seed in three views (Plate I in Wendland and Drude 1875) which was reprinted in A. C. Langlois' "Supplement to Palms of the World" (1976) no other record, description or material is presently known to exist.

For over one hundred years the palm has remained in obscurity and one was only able to speculate about its habitat, appearance, and relationships. At one time it was thought to be synonymous with *Kajewskia aneityensis* but this was disproved by Dr. H. E. Moore (1957) and *K. aneityensis* was placed in synonymy under *Veitchia spiralis*, an accepted but imperfectly known species definitely known to occur on Aneityum.

This uncertain situation prompted a search on Aneityum in 1982 by Ken Foster and Don Hodel, but *Carpoxylon* was not located. The failure to find the palm placed a very large question mark against its existence (Hodel 1982).

In all probability, *Carpoxylon* no longer occurs on Aneityum, if in fact it ever did. Aneityum is a small island of 160 km² with a maximum elevation of 852 m and since the turn of the century has been slowly

denuded of natural vegetation through human activity, especially the clearing of the land for cultivation and the burning of previously exhausted land in the false hope of rejuvenation. Extensive logging has also been responsible for the permanent alteration of the natural conditions. The island has experienced a rapid population increase in recent years due to repatriation of villagers from nearby islands affected by violent volcanic activity, particularly from Tanna, 90 km to the north.

The Sighting

In early 1987, a decision was made by the Publication Fund of the Palm and Cycad Societies of Australia to commence the gathering of material which was to be the basis of a book on the palms of the southwest Pacific, an ambitious project covering a vast area from Vanuatu in the north to New Zealand in the south, from Lord Howe Island in the west to Fiji in the east and to include New Caledonia, Norfolk, and Raoul Islands. This area contains about 83 palm species in 36 genera.

Some parts, such as Vanuatu, had been poorly studied as regards the palm flora, so the gathering of firsthand information was important and a study trip to the area was organized for November-December 1987. Vanuatu consists of some 80 islands, strung out through 800 km of ocean; a plan which would allow the inclusion of the most obviously important islands was formulated. Due to the unwieldy logistics of visiting Aneityum—lack of amenities and

infrequent transport to and from the island—a decision was made not to include it on the trip. Regrettably, with this decision also went the possibility of searching for *Carpoxyton*, which at that stage was still presumed to occur only on Aneityum.

The three islands chosen for the trip included Efate, on which is situated the capital city of Port Vila, approximately in the center of the island chain, Vanua Lava, a small but palm rich island in the Banks Group in the far north of the country, and Espiritu Santo, the country's largest island, situated about halfway between Efate and Vanua Lava.

Preliminary study had acquainted me with the palm flora of Vanuatu, consisting of about 19 species, most being closely related to species in the Solomon Islands to the north and Fiji to the east. Even though New Caledonia is the closest land mass and presumably of floristic influence, the relationship of its palm flora is tenuous, with only one genus (*Cyphosperma*) reported to have species elsewhere. A very distinct "botanical boundary" lies between New Caledonia and Vanuatu with species within the subtribes of Calaminae, Metroxylinae, Arecinae, and Ptychospermatinae not occurring further south than Vanuatu. The only subtribes which occur in both areas are Iguanurinae and Livistoninae.

The islands of Efate and Vanua Lava proved to be of immense interest with most indigenous species being located, studied, and photographed. Noteworthy was the sighting of *Metroxylon salomonense* on Vanua Lava, the first record of it in Vanuatu, as well as the finding of a *Licuala* sp. which displays an affinity with both *L. lauterbachii* and *L. grandis*. It possesses

symmetrically divided leaves, as in the former, but long pendulous inflorescences as in the latter.

The third and final part of the trip was a "tour" of Espiritu Santo to locate *Metroxylon warburgii*, *Veitchia macdanielsii*, *Licuala grandis* and undetermined species of *Clinostigma*, *Calamus*, *Cyphophoenix*, and *Cyphosperma*.

On one excursion, the day prior to my planned departure to Australia, I took the road west along the coast from Luganville (Santo Town) in the direction of Tasmalum. The road is a coral based structure suitable for all-weather driving and despite its rough appearance proved relatively comfortable. *Veitchia macdanielsii* is common throughout this area and two fruiting specimens were observed in a garden close to the road. Before entering a private property, a certain amount of protocol is to be observed, as is the Melanesian custom, so I had first to find the landowner who happened to be working with the copra dryer nearby. After explaining my request to collect the mature fruits of the *Veitchia*, he obligingly helped me fill my plastic bags. As the topic turned to palms in general, the farmer offered to take me to a palm "which is different from this one." My first reaction was to say to myself, "Oh no, not another *Veitchia*," as I had become blasé about the many hundreds which I had been so confused by in the previous weeks, but of course I agreed to his suggestion.

We proceeded along the road and after some time a turn-off was taken in the direction of the seashore. The vegetation in the area became predominantly moist habitat species—*Rhizophora*, swamp *Pandanus* and *Metroxylon warburgii*. We came

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1. *Carpoxyton macrospermum*. A. The youngest of the group of four, with the first inflorescence and another in bract. Note the epiphytic aroid on the trunk at left. B. Inflorescence with immature fruit and one in bract. C. The arch of the leaf can be seen, accentuated with the help of the native assistant. The angle at which the erect pinnae are inserted can also be appreciated from this photo. D. The fruits are produced in the extreme basal nodes of the rachillae. The infructescence being held by local villagers.



across a river. The farmer, now turned guide, urged me to wait in the car for him while he fetched some fruits of the mystery palm. He dashed off into the swampy undergrowth lining the river, reemerging some 10 minutes later displaying in his open hand a large green fruit. To my astonishment, I was looking at a three-dimensional version of the illustration in "Supplement to Palms of the World." "*Carpoxyton*?" I questioned aloud. I could scarcely contain my excitement and dashed off into the undergrowth amid shouts of "Don't go—mosquitoes, mud—" etc. Within a few minutes I was standing amidst the bases of four graceful palms growing in a close group, the tallest to about 18 meters and the smallest to about 6 meters (Fig. 1A). They had large pinnate leaves, gracefully arching with erect mid-leaf pinnae (Fig. 1C), a long glossy green crownshaft (Fig. 1B), and wide-spreading inflorescences below (Fig. 1D).

"*Carpoxyton*," I said aloud again, contemplating my wonderfully good fortune.

After composing my thoughts and actions, I arranged with the farmer guide to climb the palm to secure a sample of flowers, fruits, and leaves. Unfortunately flowers were not available, but an infructescence with immature fruits was removed along with a complete leaf and a small number of semi-mature fruits from another infructescence. These samples were later deposited at the herbarium in Port Vila (PVV—Dowe 030). A selection of photographs were also taken.

To maintain polite protocol, the local chief was contacted to gain permission to search the area for other specimens. Chief Molicosotamata, a venerable and jovial character from a nearby village situated on the opposite side of the river, and possessing a knowledge of every square inch of bush in the surrounding district, informed me that apart from this group of four palms, there was only one other individual some distance upstream. Unfortunately daylight was failing and as my return to Australia

was planned for the following day, I had to return to Santo Town without a thorough search of the area and many questions left unanswered.

The Second Collection

Upon returning to Australia, the announcement of the rediscovery of the elusive *Carpoxyton* filtered through the palm world (Dowe 1988). Forthwith, a second trip was planned to collect flowers and mature fruits to allow a complete description to be made.

The second trip was undertaken in April 1988 and an active involvement by the Department of Agriculture and Forestry was sought and obtained. I was accompanied to the site by Rodney Ambai, Forestry Officer stationed in Santo Town. We reached the site early in the morning, made contact with Chief Molicosotamata, and proceeded to arrange some tree climbers. This proved somewhat difficult as all men and boys were away working in the fields, but after some searching and prompting in nearby villages some volunteers were recruited.

The subsequent collection included flowers in bud, fully mature fruits, prophyll and peduncular bracts, and a number of leaf sections. These were promptly dispatched to Natalie Uhl at Cornell University, who had previously agreed to assist with the description of *Carpoxyton* (pp. 68–73). A bonus was the collection of a limited number of mature fruits which were distributed to appropriate persons and institutions in Fiji, Australia, and the United States in an attempt to introduce this handsome, elegant palm into cultivation.

Further discussion with Chief Molicosotamata also raised doubts as to whether this population of five individuals are of natural occurrence. Two specimens, one the tallest of the group of four and the other, the individual farther upstream, were largish trees when Molicosotamata was only a boy of around 10 and at that time were

pointed out as special trees to him by his father. The other three specimens are the natural progeny of the tallest within the group of four. Whether the two original trees were actually planted by his father is still open to debate, but it appears that it may be so. Two other reports of *Carpoxyton* have also been received by the author, both being single cultivated specimens, one on the island of Ambai to the east of Espiritu Santo, the other on Erromango, 150 km to the north of Aneityum. As yet, these reports have not been verified.

It appears possible that *Carpoxyton* is extinct in the wild, but a few cultivated and seminatural specimens are still surviving.

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Palms of Africa

A limited edition (500 sets) of prints of palm paintings by botanical artist Elsa Pooley—*Phoenix reclinata*, *Raphia australis*, *Hyphaene coriacea* and *Borassus aethiopum*. These finely detailed art prints (20 × 14 in.) come in a cover with line drawing to scale of the 4 palms, with detailed notes, and cost US \$230 including airmail postage. Orders to: Pooley Wildlife Productions, P.O. Box 295, Scottburgh 4180, South Africa 03231-31503.

(Note: Two sets of colored proofs of these paintings were sent here. I'll be glad to forward them for examination to any individual or Chapter. Natalie W. Uhl, 467 Mann Library, Cornell University, Ithaca, N.Y. 14853)