

New Light on *Areca langloisiana*

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Herbarium Bogoriense, Bogor, Indonesia

Areca langloisiana Potztl is a handsome *Areca* now quite widely dispersed in palm collections in the United States but more or less unknown in cultivation in South East Asia. It has been illustrated in PRINCIPES on two occasions and is usually high on palm enthusiasts' desiderata lists on account of its orange crownshaft.

The history of its discovery is now well known, having been described by David Fairchild in his *Garden Islands of the Great East*; a certain degree of confusion developed when the palm was first described by Potztl (1960) and H. E. Moore (1962) has summed up the discrepancies of the original description. In this article he describes how the palms in cultivation originating from seed collected on the Fairchild expedition differ in coloration and apparently also in habit from the palms illustrated in Edward P. Beckwith's photographs, two of which appear with the type description in Potztl (1960) and in Moore's article. The palms in Dominica and Mr. and Mrs. A. C. Langlois' estate, The Retreat, in the Bahamas, originating from the first collection, are described by Moore as being short in stature and, although producing some stilt roots, not producing roots of the magnitude of those photographed by Beckwith and also bearing crownshafts orange rather than lacquer-red. Beckwith also informed Moore that there was a second *Areca* nearby on Gunung Sapoetan (*sic*—Soputan, as it is now spelt) in Minahassa in North Celebes, which had taller, slender, clustered stems tipped with orange crownshafts. It was concluded

by Moore (*l.c.*) that the two palms, at least from the point of view of color of the leaf sheaths were distinct as seen in color transparencies. One problem then arose—what was *Areca langloisiana*? The type description was based on living plants from the Langlois' estate and on Beckwith's photographs—the photographs of a tall, stilt-rooted, only slightly clustered palm, and the living plant, densely clustered, scarcely stilt-rooted, and short. Had the seed been erroneously referred to the red-crownshafted *Areca* when it had really been collected from the orange-crownshafted plant, or was there one variable species present on G. Soputan? In the absence of herbarium material of the wild plants, no answer could be given.

In October 1973, I made an expedition to Minahassa with Mr. Johannis P. Mogeia of the Herbarium Bogoriense to collect palms, especially rattans. One other task I hoped to complete was that of clearing up the problem of *Areca langloisiana*. While we were in North Celebes we made several trips in the Minahassa region and covered a wide range of habitats. Throughout our expedition we never tired of admiring the glorious orange-red-crownshafted *Areca* which could be found in virtually any humid relatively undisturbed forest above 500 m. altitude and occasionally below. We observed the palm on Gunung Batuangus, G. Klabat, G. Lokon, Wiau Forest Reserve, G. Soputan, G. Kawatak, G. Ambang and Lolak. We made a special trip to G. Soputan in order to observe it at the type locality of *Areca langloisiana*.

Gunung Sopotan is a sprawling volcano with many summits. I fear it must have changed greatly since the Fairchild expedition in 1940 as the slopes above Noongan now consist of badly disturbed secondary forest and gardens of cassava and maize. However, in the secondary forest, palms are still abundant and towering above all the trees are many fine specimens of *Pigafetta filaris*. Near the gardens, rattans have largely disappeared—but higher up they are relatively common. The *Areca* is certainly abundant and, significantly, extremely variable in height, coloration, clumping characteristics, and development of stilt roots. There is even considerable variation in fruit size within the populations.

Variation of one character appears to be independent of other characters—large, stilt-rooted specimens may have lacquer-red or orange crownshafts, and populations do not appear to be particularly uniform—I have no hesitation in declaring that the plant photographed by Beckwith represents the same species as that growing throughout the Minahassa region and that described by Potzta from material in the Langlois' estate. We can now say that *Areca langloisiana* is a very widespread and variable palm of Minahassa and the eastern part of Bolaang Mongondow in the northern part of Celebes. What, however, is the relationship of this taxon with other species of the section *Mischophloeus* of *Areca*?

Miquel (1868) described *Ptychosperma paniculatum*, an apparently new species from Batjan and the Celebes collected by Teijsmann and de Vriese. Miquel indicated that there was distinct variation in the species, the plant from Celebes being smaller than that from Batjan. Later Scheffer (1873) renamed the same plant *Areca paniculata* rightly

assigning the plant to the genus *Areca*, and giving further details of the plant, based on dry material sent from Tonsea in the Minahassa region of Celebes, and on living material apparently from Ambon and from Ternate (near Halmaheira). Scheffer specifically mentions the bright orange color of the leaf sheaths and his description corresponds perfectly with the orange-crownshafted *Areca langloisiana*, except that Scheffer indicates that the palm is solitary. Then Scheffer (1876) reassigned the species to a new genus, *Mischophloeus*, separated from *Areca* on the basis of the arrangement of the male flowers. Furthermore, two excellent plates of the palm were published with the description, one of the whole palm, solitary, but with all other details including the stilt roots corresponding to the *Areca* of G. Sopotan, and the other a series of analytical drawings of the inflorescence and flowers which are unmistakably the same as those of the Sopotan *Areca*. Specimens in the Herbarium Bogoriense of palms cultivated at that time (now unfortunately lost in the living state) bear out this conclusion. In the description, one other discrepancy occurs—the stamens are described as being nine in number whereas in the plate and the specimens six only are found. There is apparently no doubt that Scheffer's plant, *Mischophloeus paniculatus*, is the same as *Areca langloisiana*, except in the solitary habit; however, in the wild, *Areca langloisiana* is occasionally solitary (cf. Fig. 3), so that this would seem therefore not to be an impediment to the merging of the two taxa.

Scheffer finishes his account by mentioning the possibility that *Mischophloeus paniculatus* is the same as *Areca communis* Zipp. (Blume, 1838–39), also known as *Seaforthia communis* and *S.*

vestiaria (Martius, 1838–53), *Areca vestiaria* (Giseke, 1792), *Ptychosperma vestiaria* (Miquel, 1855) and *Pinanga sylvestris e Buro*—*Pinanga saleyt* of Rumphius. In fact, not one but two Rumphian plants are involved here, as *Areca communis* is thought by Blume to be the same as *Areca punicea*, based on Rumphius *Pinanga sylvestris glandiformis II*. Scheffer himself (*l.c.*) concedes the possibility that his *Pinanga ternatensis* may be the same as *Areca punicea* and Merrill (1917) has apparently followed him and others in thinking this might be a species of *Pinanga* [*P. punicea* (Bl.) Merr.]. I feel certain, however, that this is not the whole story, and that Blume, who well knew the difference between *Pinanga* and *Areca* (it was he who first proposed the genus *Pinanga* more or less as we know it today), based his *Areca punicea* on perhaps a different interpretation of *Pinanga sylvestris glandiformis II* and on genuine Moluccan *Areca*, or on a complete misinterpretation of Rumphius—the left-hand palm, *Areca punicea*, in Blume's *Plate 121* bears more resemblance to an *Areca* than a *Pinanga*, fanciful though the plate may be. This problem of Blume's different interpretation of *Areca communis* and *A. punicea* does not, however, affect the interpretation of *Pinanga sylvestris e Buro*.

Pinanga saleyt was, according to Rumphius, absent from Ambon, but found on Buru. The palm is described as having a moderate-sized stem and stilt roots resembling those of a pandan. The leaf is described as having a petiole as thick as a finger, and acuminate, 7-costate leaflets 15–16 inches long, and 4 inches broad. The inflorescence is small and highly branched; the fruit is pointed at both ends and is bright red. All this fits *Mischophloeus paniculatus* except for the acuminate rather

than notched leaflets, and despite no mention of the orange crownshaft. Therefore I think that Merrill's interpretation of *Pinanga sylvestris e Buro* (*Pinanga saleyt*) as being *Mischophloeus paniculatus* is eminently reasonable, and I hence follow Merrill in recognizing the earliest post-Linnaean epithet based on Rumphius' description. This is *Areca vestiaria* Giseke. Further circumstantial evidence supporting Merrill's interpretation is that material of *Mischophloeus* in the Herbarium Bogoriense from North Celebes, Ternate, Talud and Buru, and cultivated plants supposedly originating from Ambon (but note well the discrepancy—Rumphius specifically states he does not know *Pinanga saleyt* in Ambon) are apparently conspecific—further borne out by Scheffer's descriptions of living plants and herbarium material. Furtado (1933) following Beccari has sunk the genus *Mischophloeus* into *Areca* as a section; hence the valid name of this plant is *Areca vestiaria* Giseke and not *Mischophloeus vestiarius* (Giseke) Merrill.

The merging of *Areca langloisiana* and *paniculata* with *A. vestiaria*, however, is not the only change to be made. I have examined an isotype of *Areca leptopetala* Burret represented in the Herbarium Bogoriense by *Kjellberg 2324* and also other specimens of this species quoted by Burret (1936) (*Kjellberg 2725*). I can see no difference in the inflorescence, flower and fruit features between these specimens and the variable *Areca vestiaria* in North Celebes; flower size and shape fit within the variation observed in populations of *Areca vestiaria* in North Celebes. Only the leaf shows slight differences. In the *Kjellberg* material, leaf representation is poor, there being mid-leaf leaflets, and one leaf apex from a full-size leaf and a small leaf apex, very diminutive

and suggestive of having been collected from a seedling or sucker leaf. The leaflets are 1-4-costate, generally narrower than leaflets of Minahassan plants. I do not regard leaflet width a sufficient difference for the separation of a species of *Areca*, and hence merge *Areca leptopetala* with *A. vestiaria*.

Areca leptopetala itself was separated from *A. henrici* Furtado (1933) on the basis of very slight differences in flower shape. The type of *A. henrici* is *Heinrich 210*, in the Berlin Herbarium now presumed lost and duplicate material, if any exists, has not been available for study. Furtado himself distinguished this species from *Areca paniculata* (*A. vestiaria*) on its narrower leaflets and smaller male flowers, and mentioned the possibility of the equivalence of this new species to the slender *Ptychosperma paniculatum* from North Celebes described by Miquel. Furtado's description can certainly fit within the range of variation of *A. vestiaria* but without authentic material, it is not possible to merge the two species.

It is possible that an intensive field study throughout the Moluccas might show variation in *Areca vestiaria* worthy of varietal rank, but on the basis of herbarium and field studies so far, the synonymy of *Areca vestiaria* may be indicated as follows:

Areca vestiaria Giseke, Prael. Ord. Nat. Pl. 78. 1792.

Type: *Pinanga sylvestris e Buro* Rumphius, Herb. Amboinense 1: 41. 1741.

Seaforthia vestiaria (Giseke) Martius, Hist. Nat. Palm. 3: 313. 1849.

Ptychosperma vestiarium (Giseke) Miquel, Fl. Ind. Bat. 3: 31. 1855 ('*vestiaria*').

Mischophloeus vestiarius (Giseke) Merrill, An Interpretation of Herb. Amboinense 121. 1917 ('*vestiaria*').

Ptychosperma paniculatum Miquel, Verh. Kon. Akad. Wetensch. 11: 3. 1868 ('*paniculata*').

Type: *Teysmann & de Vriese*, Batjan.

Areca paniculata (Miquel) Scheffer, Natuurk. Tijdschr. Ned. Ind. 32: 168. 1873.

Mischophloeus paniculatus (Miquel) Scheffer, Ann. Jard. Bot. Buitenzorg 1: 152. 1876 ('*paniculata*').

Areca leptopetala Burret, Notizbl. Bot. Gart. Mus. Berlin 13: 199. 1936. Type: *Kjellberg 2324* (once at B; isotype, BO).

Areca langloisiana Potztl, Willdenowia 2: 628. 1960.

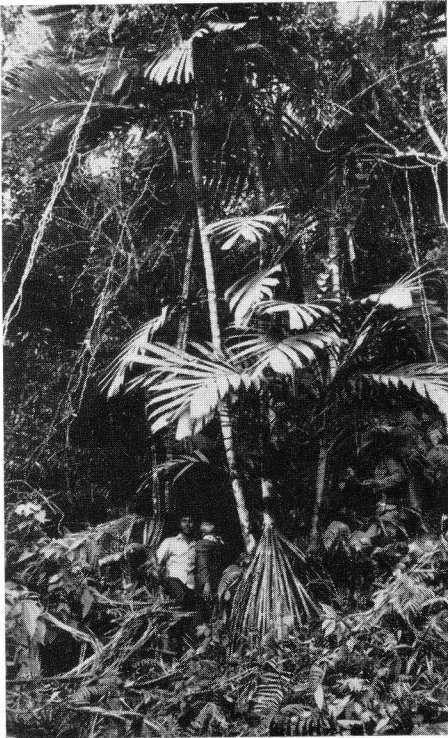
Type: *A. C. Langlois s. n.* (B).

?*Areca henrici* Furtado, Rep. Spec. Nov. Reg. Veg. 33: 237. 1933.

Type: *Heinrichs 210* (once at B).

Collections of *Areca vestiaria* in Herbarium Bogoriense. CELEBES: *Lam 2440*; *Alston 16236*; *Heyne s.n.* 14.9. 1907; *Koorders 18416B, 19734B, 18434B, 18415B*; *Teijsmann 12897*; without collector, possibly Heyne; *Kjellberg 2324, 2725*. TALAUD: *Lam 2792, 3779*. TERNATE AND HALMAHEIRA: *Beguain 1717, 2099, 699*; *Boerlage and Smith 618*; *Lam 3724*; without collector, 2 sheets. BURU: *Teijsmann s.n.* CULTIVATED IN BOGOR: specimens from XIIC, II, XD 84, VK 73 (from Ambon), without registration number from Cipanas (i.e. Cibodas mountain garden), 1 collection.

Some further notes concerning the natural history of *Areca vestiaria* in North Celebes may be of interest. In the Minahassa area, *pinang yaki* (monkey pinang) as it called locally, is certainly very common and apparently tolerant of a wide range of habitats, growing as it does in valley bottoms, hill slopes and ridge tops. It reaches its greatest abundance between 500 m. and 1,200 m.



1. A fine clump of *Areca vestiaria* on Gunung Soputan, Celebes.



2. Base of a clump of *Areca vestiaria* showing production of stilt roots.

altitude; near Lolak in Bolaang Mongondow we observed it at 100 m. altitude— at this low altitude coloration was rather muted. The palm is normally clumped though occasionally solitary plants are encountered. In a clump usually only one or two stems develop massive stilt roots; the group illustrated in Figure 1 shows such stilt roots more or less confined to one stem in a clump. Figure 2, however, illustrates another clump where there is slight development of stilt roots from all stems in the clump. Figure 3 illustrates great stilt root development in a solitary individual. At first it seemed that greatest stilt root development occurred in palms growing on steep unstable slopes, but on Gunung Soputan itself, this correlation broke down—giant stilt-rooted individuals

could be found next to individuals without stilt roots, with every conceivable intermediate.

Coloration of the leaf sheath was most intense in populations on Gunung Soputan and on the ridge of nearby Gunung Kawatak.

Flowering behavior is also very variable. Plants may come into flower when they are still only 1 m. or so in height (as is the case with cultivated plants from the original introduction), or in other instances may not flower until the trunk is 3 m. or more in height (as evidenced by inflorescence scars). Inflorescences on young stems are often smaller than on older stems and linked with this there appeared to be slight difference in the size of the flowers. Flowers open pale cream on slightly



3. Massive production of stilt roots from the base of a solitary individual of *Areca vestiaria*.



4. *Areca vestiaria* in ripe fruit, crown damaged by exposure.

yellower axes, bursting out of the brilliant orange or scarlet spathes. Rachillae and calyces deepen in color—at first palest yellow, then scarlet, then bright pillar-box red. Fruit color change lags behind, so that the combination of yellow-orange half mature fruits on bright red rachillae is very striking, especially when the whole inflorescence is contrasted with the scarlet sheaths and perhaps a ripe infructescence below—a great, almost crimson mass of fruit (Fig. 4). We found ripe fruit in large quantity and this has been distributed to The Palm Society Seed Bank under the collector's number *Dransfield and Moga 3755*.

I have no doubt that this palm has a great horticultural potential in the tropics. In some ways it produces an

even more spectacular array of colors than *Cyrtostachys lakka*. The palms I have seen in cultivation in the Foster Garden, Honolulu, and the Fairchild Garden, Florida are not nearly so exciting as some of the wild plants—this may be put down to the relatively young age of these cultivated specimens, to less favorable climatic conditions, or some other factor. Most surprisingly, *Areca vestiaria* is apparently nowhere in cultivation in the Minahassa region. It is hoped that it can be popularized in Indonesia as a garden plant.

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LETTERS

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The 24th National Arbor Day, the central event of the National Reforestation Campaign, was held in Hinamori-dai at the base of Mt. Kirishima, Miyazaki Prefecture, Japan, on April 8, 1973. Since 1950, the National Arbor Day has been presented jointly by the committee of the National Reforestation Campaign and the prefecture in charge. Such events as ceremonial tree planting and awards to the people who had devoted themselves to the campaign were watched by a crowd of 33,000 people as well as by the Empress.

On the previous day, a twenty-yen stamp, bearing a design of *Phoenix* printed in three colors by the gravure method, was issued to celebrate the campaign. *Phoenix* is the prefectural tree of Miyazaki and the stamp was designed by Mr. Otsuka, a member of the staff

of the Ministry of Postal Service. Along the coast of Miyazaki, particularly at Nichinan Beach, the *Phoenix* is common, the number estimated to total 50,000.

The first potted *Phoenix* is said to have arrived here early in the Meiji era (1868-1911). *Phoenix* was chosen as the prefectural tree by popular vote in 1966, reflecting the proper image as the symbol of Miyazaki, a land of everlasting spring.

TOSHIO KANAGAWA

