



Salacca acehensis (Arecaceae), A New Species from Sumatra, Indonesia

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Abstract

A new species of *Salacca* sect. *Salacca* from Sumatra is described and illustrated. It is characterized by dwarf habit, with leaves to 2.5 m long; erect and slender staminate inflorescences to 7 cm long; and small infructescences, to 10 cm long, with up to 3 branches. The most similar species, *S. rupicola* from Borneo, is different in having the apical leaflets composed ca. 8 united segments versus 2 in the new species, and in having larger inflorescences, the staminate to 15 cm long and the pistillate to 40 cm long.

Key words: Aceh, dwarf salak, Gunung Leuser National Park, section *Salacca*

Introduction

Salacca Reinwardt (1825: 3; Arecaceae, subfamily Calamoideae, tribe Calameae) comprises 22 species (Govaerts et al. 2013) distributed from Burma and Indochina south and eastwards to Borneo, Java and the southern most part of the Philippines (Dransfield et al. 2008) with the largest number of species and the greatest morphological diversity found in the Malay Peninsula and Borneo. Although there are widespread species, such as *S. affinis* Griffith (1845: 9) and *S. zalacca* Voss (1895: 1152), most of the species are restricted to very small areas (Dransfield 2009). The genus is neatly divisible into two sections (Beccari 1918; Dransfield et al. 2008): section *Salacca* with strigose ovary, hispid subspinous fruit, and pistillate rachillae bearing dyads of one fertile pistillate and one sterile staminate flower; and section *Leiosalacca* with ovaries and fruits covered in smooth scales, and pistillate rachillae bearing solitary pistillate flowers. Of the 22 species currently recognized, 20 belong to section *Salacca* and two to section *Leiosalacca* (Dransfield et al. 2008).

In this paper we describe a new species first collected by J. Dransfield and D. Saerudin at Gunung Kemiri, Southeast Aceh Regency, Aceh Province in 1971. The species was later recollected by one of the authors of this paper (JM) who annotated the specimens with the name *S. acehensis*. However, the name remained unpublished. In this paper we describe the new species and compare it to other small species of section *Salacca*.

Taxonomic treatment

Salacca acehensis Moge & Zumaidar *sp. nov.*

Type:—INDONESIA. Sumatra: Aceh Province, Southeast Aceh Regency, Gunung Kemiri, hillslope of dipterocarp forest, 900 m elevation, 18 November 1975, J.P. Moge 568 (holotype BO!, isotypes K!, L!).

Small palm, with stem to 15 cm tall and leaves 1–2.5 m long. Staminate inflorescences slender and erect, to 7 cm long, with up to 3 branches. Pistillate inflorescences to 10 cm long, with up to 2 branches. Most similar to *S. rupicola* J. Dransf. from Borneo, but different in having the apical leaflets composed of ca. 2 united segments (versus 8 in *S. rupicola*), and smaller inflorescences (the staminate inflorescence up to 15 cm long and the pistillate ones to 40 cm long in *S. rupicola*).



FIGURE 1. *Salacca acehensis* *sp. nov.* A. Stem with infructescence; B. Leaf tip. Drawn from holotype, *J.P. Moge* 568 (BO), by Anne Kusuma.

Small, pleonanthic, dioecious palm. Stems clustering, ca. 10–15 cm long, 3–5 cm in diameter, somewhat stilt rooted, obscured by persistent leaf bases. Leaves 5–12 per stem, 1–2.5 m long; sheath 5–6 cm wide at the base, densely covered abaxially with dark brown indumentum, armed in the middle part with comb-shaped groups of spines, each group consisting of 4–5 stout, triangular, yellowish spines, to 25 mm long and 2 mm wide at the base, smaller spines present between the groups; all spines covered in indumentum, especially on adaxial side; petiole slender, 75–125 cm long, ca. 9 mm in diameter at the base, 5 mm in diameter in the middle, triangular, covered in pale brown to dark brown indumentum, especially in abaxial side, armed with scattered groups of short horizontal and reflexed spines arranged in three longitudinal rows; rachis to 60 cm long. Leaflets 10–12 on each side of the blade, irregularly arranged in groups of 2–3 near the base, spreading in several planes, sigmoid to lanceolate, acuminate, margins armed with small curved spines ca. 0.5 mm long inserted at distances of 3–5 mm, pointing upwards, adaxial surface dark green with sparse brown indumentum, abaxial surface yellowish grey, with dark brown indumentum at the base and the margins; middle leaflets to 32 cm long and 6 cm wide, with 3 main longitudinal veins separated by 1–2 cm and 4–7 minor veins in between, adaxially with transverse veinlets conspicuous; apical leaflet 10 cm wide on each side, with ca. 2 main folds.

Inflorescences axillary, piercing the subtending leaf sheath. Staminate inflorescence to 7 cm long, slender and erect, simple or with up to 3 branches to 5 cm long, with flowers borne in dyads, each subtended by a short bracteole. Staminate flowers with sepals 3, membranous, ca. 3 mm long and 2 mm wide, basally united and with a dense indumentum; petals 3, connate in the basal half, pink outside, basally white inside, ca. 2 mm long and 1 mm wide; stamens 6, ca. 1 mm long, filament red, anther ca. 1 mm long with yellow pollen. Pistillate inflorescence and flowers not seen. Young infructescences to 10 cm long, simple or with up to 2 branches, closely sheathed by several peduncular bracts. Developing fruits globose, ca. 7 mm long and 8 mm wide (in dry condition), densely covered with ascendent scales, ca. 3.5 mm long and 1 mm wide.

Paratypes:—INDONESIA. Sumatra; Aceh Province, Southeast Aceh Regency, Gunung Kemiri, near junction of hill dipterocarp forest and lower montane forest, steep valley side, 1200 m elevation, 27 August 1971, *J. Dransfield and D. Saerudin* 1983 (K!, KYO); same locality, hillslope of dipterocarp forest, 900 m elevation, 18 November 1975, *J.P. Moge*a 569 (BO!), 570 (BO!), 572 (BO!), 573 (BO!), 574 (BO!); North Sumatra Province, Bukit Lawang Bahorok, Langkat, hill dipterocarp forest, 200 m elevation, 25 February 1973, *J. Dransfield* 3310 (BO!).

Discussion:—*Salacca acehensis* has the epicarp covered in spine-like scales and thus clearly belongs to section *Salacca*. Among the species of that section it mostly resembles *S. rupicola* Dransfield (1980: 36), with which it shares the small size, pinnate leaves and slender, erect, staminate inflorescences. However, *S. rupicola* has a narrow, bluish green leaves with flabellate apical leaflets composed of ca. 8 united segments while in *S. acehensis* they are composed of ca. 2. Furthermore, inflorescences of *S. rupicola* are larger: the staminate ones are up to 15 cm long (versus 7 cm in *S. acehensis*) and the pistillate up to 40 cm (versus 10 cm in *S. acehensis*). *Salacca rupicola* also occurs in limestone habitats in Borneo. Of the remaining species of section *Salacca* with leaves less than 2.5 m long, two species from Borneo, viz. *S. dransfieldiana* Moge(a) (1980: 463) and *S. sarawakensis* Moge(a) (1980:473), and three species from Peninsular Malaysia, viz. *S. flabellata* Furtado (1949: 387), *S. minuta* Moge(a) (1984: 11) and *S. multiflora* Moge(a) (1984: 13), have bifid, flabellate leaves. The remaining small species, *S. bakeriana* Dransfield (2009: 168) from Borneo, *S. graciliflora* Moge(a) (1984: 6) from Peninsular Malaysia and *S. stolonifera* Hodel (1997: 35) from Thailand, all have relatively long male inflorescences, up to 0.7–1.2 m long, depending on the species, that are held along the surface of the ground and sometimes produce new shoots at the tip—a character also found in *S. flabellata*). This has not been observed in *S. acehensis* where male inflorescences are small and erect.

A duplicate of the paratype collection *J. Dransfield and D. Saerudin* 1983 was distributed to BO (*J. Dransfield* pers. comm.) but was not found there in spite of thorough search.

Conservation status:—Gunung Kemiri, where this new species was first discovered, is part of the large, 1.09 mill. ha. Gunung Leuser National Park in northern Sumatra and hence protected area. The second known locality is located at the eastern edge of that park, some 65 km E of Gunung Kemiri. The habitat is hill dipterocarp forest up to an elevation of ca. 1200 m and *Salacca acehensis* may occur in large parts of the park. Data are insufficient to perform a proper evaluation of its conservation status according to the IUCN criteria, but given the apparently small total extent of the species' range, and the high rates of deforestation outside protected area, it may be vulnerable or even endangered.

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References

- Beccari, O. (1918) Asiatic palms—Lepidocaryeae. Part III. *Annals of the Royal Botanic Garden* 12(2). The Bengal Secretariat Book Depot, Calcutta. 231 pp.
- Dransfield, J. (1980) A new species of *Salacca* Reinw. from the limestone of the Gunung Mulu National Park. *Botanical Journal of Linnean Society* 81: 36–37.
- Dransfield, J. (2009). A new species of *Salacca* from Sarawak. *Palms* 53: 167–170.
- Dransfield, J., Uhl, N.W., Asmussen-Lange, C.B., Baker, W.J., Harley, M.M. & Lewis, C.E. (2008) *Genera Palmarum. The Evolution and Classification of Palms*. Royal Botanical Gardens, Kew, UK. 732 pp.
- Furtado, C. X., 1949. The Malayan species of *Salacca*. *Gardens Bulletin Singapore* 12: 378–403.
- Govaerts, R., Dransfield, J., Zona, S.F., Hodel, D.R. & Henderson, A. (2013) *World checklist of Areaceae*. Facilitated by the Royal Botanical Gardens, Kew. Published on the internet; <http://apps.keew.org/wcsp/> Retrieved 04 June 2013.
- Griffith, W. (1845) The palms of British East India. *Calcutta journal of natural history, and miscellany of the arts and sciences in India* 5: 1–103.
- Hodel, D.R. (1997) New species of palms from Thailand. *Palm Journal* 134: 28–37.
- Mogea, J.P. (1980) The flabellate-leaved species of *Salacca* (Palmae). *Reinwardtia* 9: 461–479.
- Mogea, J.P. (1984) Three new species of *Salacca* (Palmae) from the Malay Peninsula. *Federation Museums Journal (Kuala Lumpur)* 29: 1–19.
- Reinwardt, C.G.C. (1825) In C. F. Hornschuch, *Sylloge Plantarum Novarum Itemque Minus Cognitarum a Praestantissimis Botanicis adhuc Viventibus Collecta et a Societate Regia Botanica Ratisbonensi Edita*. Vol. 2. Societate Regia Botanica, Regensburg.
- Voss, A. (1895) *Vilmorin's Blumengärtnerei Beschreibung, Kultur und Verwendung des Gesamten Pflanzenmaterials für Deutsche Gärten*. Dritte, neubearbeitete Auflage. Part 1. Berlin.
<http://dx.doi.org/10.5962/bhl.title.67392>