
Taxonomic Identity of *Musa rosea* (Musaceae) in Southeast Asia

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ABSTRACT. Since the 19th century, the taxonomic identity of *Musa rosea* Baker has been uncertain to most botanists. Review of the history and descriptions of *M. rosea* based on the work of different scientists from 1893 to the present was done to establish its true identity. *Musa angcorensis* Gagnepain has been even more obscure since the early 20th century. The aim of this study was to clarify the taxonomic history, identity, and the synonymy of *M. angcorensis* and *M. rosea*, with *M. angcorensis* determined to be a synonym of *M. rosea*. A lectotype of *M. rosea* is designated here, and *M. angcorensis* is synonymized to *M. rosea*.

Key words: *Musa*, Musaceae, Southeast Asia, wild banana.

Musa rosea Baker (Musaceae, Häkkinen & Scarrock, 2002) has long been a “lost species.” The identity of *M. rosea* has been obscure since Baker’s description of it in 1893. It has been regarded as a distinct taxon (Lestiboudois, 1841, 1842; Schnizlein, 1849; Baker, 1893; De Wildeman, 1912; Fawcett, 1913) and incorrectly regarded as a synonym of *M. ornata* Roxburgh [syn. *M. rosacea* Jacquin (1804)]. Speculation has taken place since that time as to whether *M. rosea*, itself synonymized to *M. rosacea*, is an independent species or not (Cheesman, 1931, 1949). A similar situation has existed for *M. angcorensis* Gagnepain since 1907, almost a century (Simmonds, 1960; Champion, 1967).

The Kew botanist John Gilbert Baker described the species in 1893 from two sketches drawn from two sheets (a sketch and a plant specimen), dated June 1882, in the herbarium of the Botanic Garden of Calcutta. *Musa rosea*, however, had been known long before Baker’s publication, as evidenced by the letter from the assistant curator of the Botanic Garden of Calcutta, Robert Proudlock, to Kew curator William Watson. This letter, which was addressed to Baker and dated 10 July 1890, is in the Kew Garden archives. It reads:

“For Mr. Baker,

Musa rosea Proudlock writing from the Calcutta Bot. Gardens in reply to your question re’ *Musa rosea*.

Dr. King informs me that it is not *M. rosacea* but the true *M. rosea* Wallich. Dr. King thinks it is not in English gardens yet, and for many years he thought it was lost, but it has lately been found in the gardens here again.”

“W. Watson, 10 – VII – 90.”

(Sir George King was the Director of the Botanical Survey of India in 1878. Before that, he was the superintendent of the Botanic Garden of Calcutta.)

This letter demonstrates that the botanist Nathaniel Wallich (1786–1854), who worked at the Botanic Garden of Calcutta between 1814 and 1846, before Proudlock’s tenure, knew of *Musa rosea* and its distinction from *M. rosacea* much earlier than Baker. Wallich did not mention *M. rosea* in his description of *M. ornata* in Roxburgh’s (1824) *Flora Indica*; however, he made a footnote on page 489: “this is probably *M. rosacea* Jacq. which has been well figured in Edward’s Botanical Register 9: 706 A and B. – N. W.” The plate in the Botanical Register (1823) to which Wallich referred originated a mistake that has been maintained up to present. The plant depicted is certainly *M. ornata* Roxburgh, but the name *M. rosacea* Jacquin belongs to an entirely different plant, in *Musa* sect. *Musa* L. (Linnaeus, 1753). However, Baker omitted Wallich’s name and his observations when he described and named *M. rosea* three years later. Wallich did not describe this species, but did contribute to the description of *M. rubra* Wallich ex Kurz (1865–1866; Häkkinen, 2003). Most of the wild banana species and names from India and the southeastern Asian continent are still taxonomically confused after their treatments by 19th-century botanists (Cheesman, 1931, 1947, 1949; Simmonds, 1960; Champion, 1967).

Baker described *Musa rosea* (1893: 2) as:

“Habit of *M. coccinea*, but leaves much shorter and broader in proportion to length, thin, green, about a foot long by half as broad, deltoid at the base and apex; petiole deeply channelled, nearly as long as the blade. Panicle short, erect; rachis pubescent, not flexuose; bracts pale red; lower lanceolate, half a foot long; flowers 2–3 in a cluster. Calyx an inch



Figure 1. Lectotype specimen of *Musa rosea* (CAL 469271).

long; petal as long as the calyx. Fruit and seeds not seen.”

It seems clear to the author that Baker could not see the flower parts and bracts from the sketches done from the dried specimen, so he first reached the erroneous conclusion that the compound and free tepal lengths are equal. This is corrected later on the original voucher (CAL 469271 by R. S. Rao “(15.11.1957): Petals $2/5$ to $1/3$ length of the sepal”; Fig. 1).

Baker’s reference to the “habit of *M. coccinea*” should have been taken from his description of *Musa rubra*, in which he describes the habit of *M. coccinea*. *Musa rubra* has persistent bracts, and in that respect it could be compared to *M. coccinea* (Häkkinen, 2003).

Only one citation (Lestiboudois, 1841: 16, plate 13; Fig. 2) for *Musa rosea* is listed for an illustration from *Index Londinensis* (Stapf, 1929–1931). The Lestiboudois illustration clearly represented *M. ornata*, which has very distinctive morpho-taxonomic marks. *Musa ornata* has a long free tepal, to 4 cm, compared to *M. rosea*, which has a very short free tepal, only to 1.2 cm. These distinctions can be seen easily from living samples and herbarium specimens.

After Baker’s 1893 description, De Wildeman (1912: 353) says of *Musa rosea*:

“This species is described after documents that are in the Calcutta Herbarium. It is one of the oldest known in the Gardens of Europe. It was introduced in Europe by 1805, from the island of Mauritius.” (Translated from the French.)

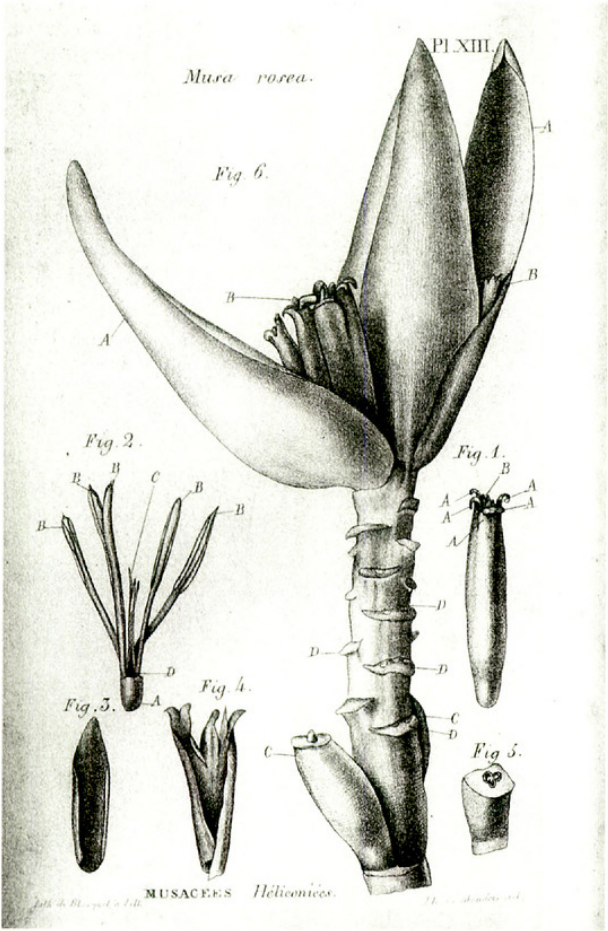


Figure 2. *Musa rosea* (*M. ornata*) drawing from *Mémoires de la Société Royale des Sciences, de l'Agriculture et des Arts de Lille* (Lestiboudois, 1841; plate 13).

De Wildeman, like many other botanists, confused *Musa rosea* with *M. ornata*, which had been introduced from Mauritius in 1805. With regard to earlier-mentioned *M. rubra*, *M. ornata* is clearly a distinct species with its robust form and persistent bracts (vs. the dehiscent bracts in *M. rosea*).

TYPEIFICATION

The author has studied herbarium samples of *Musa angcorensis* and *M. rosea* at CAL, K, and P. Living plants of *M. rosea* have been studied at Singapore Botanical Garden, Singapore; Rimba Ilmu Botanical Garden, Kuala Lumpur, Malaysia; and the Botanic Garden of the University of Helsinki, Finland.

MUSA ROSEA

Musa rosea Baker, Ann. Bot. 7: 221. 1893. TYPE: [India, Calcutta, Botanical Garden, June 1882]. Herb. Hort. Calcuttensis, s. coll. (lectotype, designated here, CAL 469271).

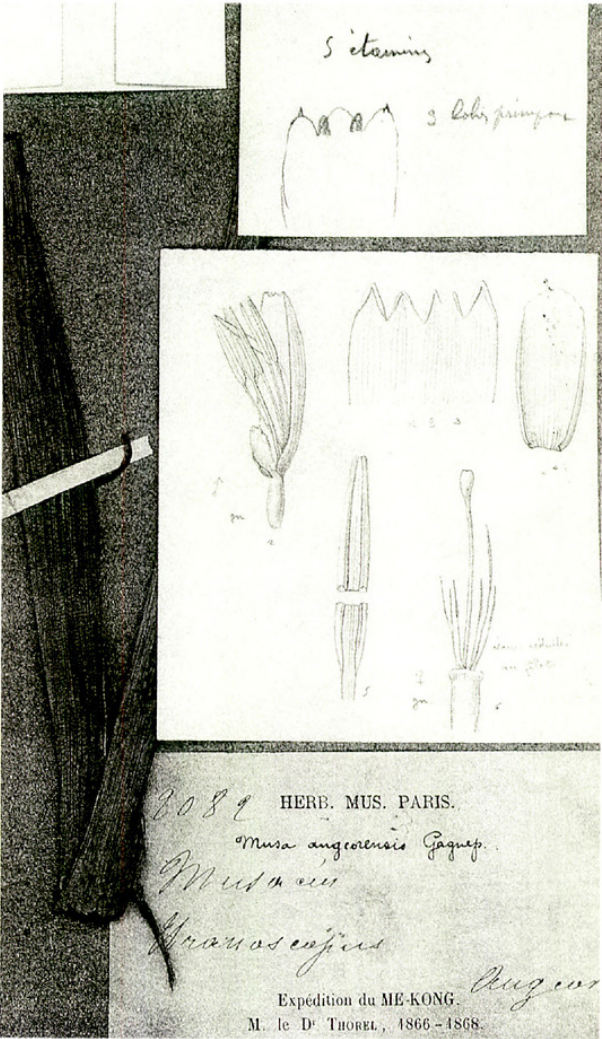


Figure 3. Lectotype specimen of *Musa angcorensis* (P 2082).

Musa angcorensis Gagnepain, Bull. Soc. Bot., France 54: 412. 1907. Syn. nov. TYPE: [Vietnam] Me-Kong expedition in 1866–1868, Thorel 2082 (lectotype, designated here, P).

The lectotype specimen for *Musa rosea* is quite old, and the label is distorted to the point that the date of collection as well as the name of the collector could not be read except for the words “Herb Hort Calcuttensis.” In his description, Baker (1893) referred to two specimens in the Calcutta herbarium and stated that the samples had been taken from the Botanical Garden in June 1882. In Kew there is a letter from W. Watson dated 10 July 1890, addressed to J. G. Baker, with two sketches of *M. rosea* made in Hort. Bot. Calcutta and dated June 1892. It is likely that these were drawn for Baker from a herbarium sample.

MUSA ANGCORENSIS

The lectotype collection of *Musa angcorensis* (Fig. 3) consists of three sheets at Paris and agrees with *M. rosea* Baker, with *M. angcorensis* being a new

synonym. The taxonomy of *M. angcorensis* has been confused (Gagnepain, 1907). It has tentatively been referred to *Callimusa* Cheesman (Cheesman, 1947; Simmonds, 1960; Champion, 1967).

Gagnepain (1907: 412) wrote:

"This species looks close to *M. rubra* which one finds not far from there in Siam. It differs: (1) in the leaves not being truncated at the base, but rather lengthily decurrent on the petiole, (2) in the nodes not being pressed at maturity, (3) in the bracts which are pale red rather than dark red, (4) in the internal piece of the perianth which is not only twice as short than the other one, but 4 times shorter, and not lanceolate but oval-obtuse." (Translated from the French.)

Chevalier (1934: 516–517) further comments (after *Musa coccinea*) that:

"A second species recently described in the *Flore d'Indochine* is the *M. angcorensis* Gagnep. with an equally erect inflorescence. It differs from the previous species in the linear bracts and the pubescent peduncle. It is known only from the site of the Angkor ruins in Cambodia. The two species belong to the *Musa* section *Rhodochlamys*." (Translated from the French.)

François Gagnepain earlier described *Musa angcorensis* (1907: 412):

"Robust herb of nearly 2 m. Rhizome rounded, but flattened from above. Stem of 50–60 cm. Leaves 6–8, lanceolate, pointed, reduced at both extremities and non-hairy on both sides. Leaves split along the secondary nerves, length 40–60 cm by 20 cm. Petiole of 20–30 cm, robust, with a canal, not hairy. Inflorescence length 20–30 cm, terminal, erect, not higher than the leaves, peduncle hairy, and the size of a finger, bracts in a spiral, erect, concave, sessile, pale red in color, very smooth. Basal flowers female, apical flowers male, around three under each bract. Perianth in two pieces—very unequal. The large part concave, smooth, tooth-edged, length 4 cm. 4 toothed and obtuse triangular in shape. The small part, oval, concave, rounded at the tip, 1/4 the size of the large part—10–11 mm. 5 stamens, equally the same size, small and aborted in the female. Filament threadlike, anther straight, linear-lanceolate, length 14 mm. Ovary smooth, three sided, nearly cylindrical, 3 locules, length 10 mm in the flower. Ovules numerous, biseriate, style threadlike, absent in male flower. Stigma smooth, small at opening." (Translated from the French.)

In *Musa angcorensis* and *M. rosea*, the perianths are divided into two pieces, namely the compound and free tepals.

CONCLUSION

Taking into consideration all of the facts, there is no doubt that *Musa rosea* and *M. angcorensis* are

synonymous. *Musa rosea* has naming priority (Greuter et al., 2000; cf. Art. 11.5). It is also notable that *M. rosea* is now introduced into cultivation in very limited areas in Peninsular Malaysia (M. Häkkinen, pers. obs.). It is totally missing from Thailand, for example, where ornamental bananas are quite commonly cultivated. It seems clear that *M. rosea* originated in the Cambodia–South Vietnam lowland areas, from which its natural populations have either partially or mostly disappeared due to human influence.

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