REINWARDTIA
Published by Herbarium Bogoriense, Bogor, Indonesia
Vol. 8, Part 2, pp. 323 — 327 (1972)

# A NEW SPECIES OiF MANGIFERA (ANACARDIACEAE)

DING HOU

*Rijksherbarium, Leyden, Netherlands*

There are only two species of *Mangifera, M. duperreana* Pierre from Indochina and *M. lagenifera* Griff, from Malay Peninsula and Sumatra, which were described to have flowers with 10 (—12) stamens, of which 5 (or 6) are fertile. In the latest monograph of the genus by Mukherji *(in* Lloydia 12,1949: 73 — 136), they were placed in two different sections (without naming the sections). According to him, the floral morphology of these two species shows that they "possess the most primitive feature in the genus (pentacyclic flowers)" (cf. J. Linn. Soc. Bot. 55, 1953: 75). In the course of revising this genus for the Flora Malesiana, a new species having flowers with also ten stamens was discovered, which has been named and described here as *Mangifera decandra* (= ten-stamened; in Gk: deca-, ten; andro-, male) ; its epithet alludes to the significant number of stamens.

The closest alliance of this new species is with *M. lagenifera* and both of them can be placed unquestionably in the same section. I shall discuss their similarities and differences later. They can be readily distinguished from *M. duperreana* of another section by the flowers without a papillate, cupular, lobed disc and petals without glandular ridges on the inner surface.

Dr. A. J. G. H. Kostermans' interest in *Mangifera* and his ample collections of it with detailed field notes have facilitated my work on this group. He has collected representative specimens for many Malesian species of this genus including one for the present new species. It is appropriate to describe this new species in a publication dedicated to him.

I am very grateful to the Directors and Curators of the following institutions for putting the material at my disposal: Herbarium Bogoriense, Bogor (BO), Rijksherbarium, Leyden (L), and Botanic Gardens, Singapore **(SING).**

**Mangifera decandra** Ding Hou, *sp. nov.* — Fig. 1

Arbor magna. Folia coriacea; lamina elliptico- vel obovato-oblonga, apice mucronata, basi cuneata vel attenuata, 29 — 38 1/2 cm longa,

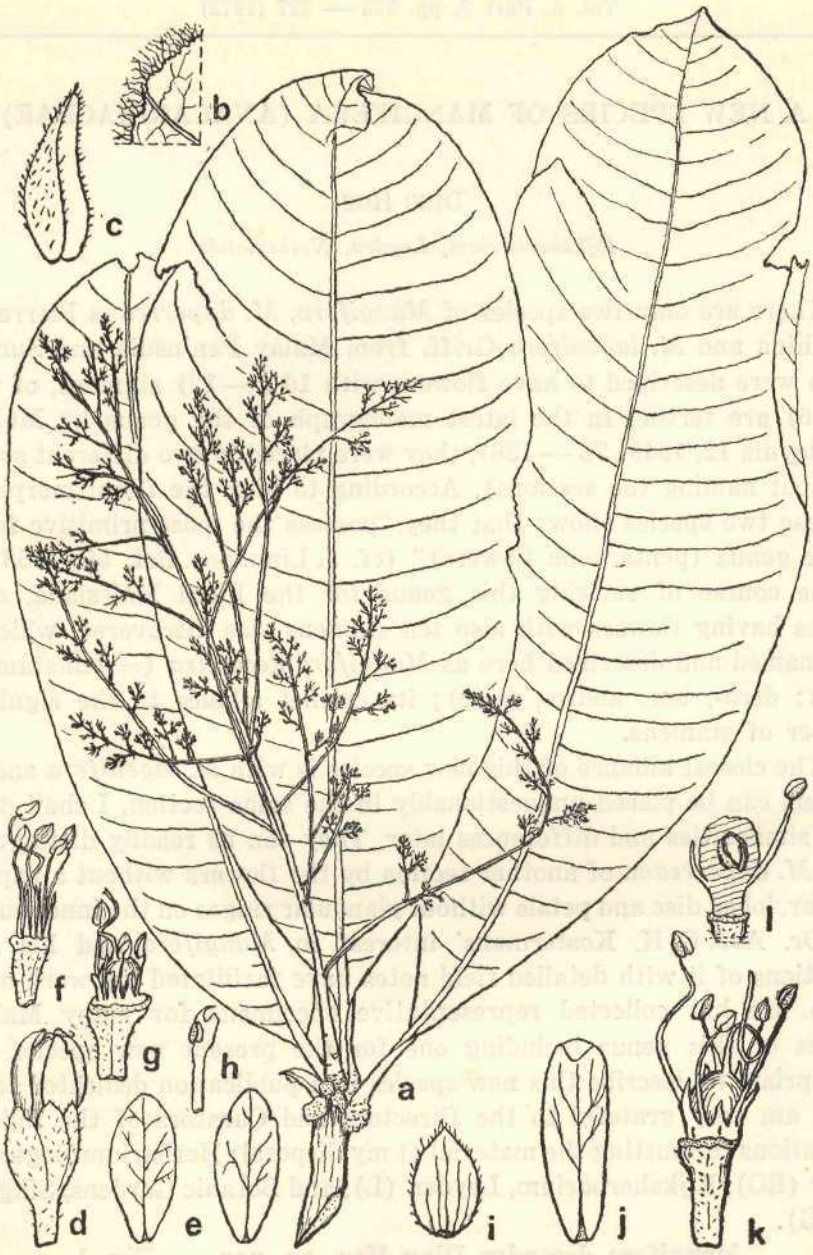


*Fig.* 1. *Mangifera decandra* Ding Hou:—a. habit, X 3/8; b. small piece of leaf with fibres appeared on the broken part; c. bract; d. young flower; e. petals; f. young male flower, with calyx and petals removed; g. young bisexual flower, with calyx and petals removed; h. abnormal stamen; i. calyx lobe; j. petal; k. bisexual flower, with calyx and petals removed; 1. ditto, longitudinal section, (b—1, al X 5; a--h, *SAN 60874;* i—1 *29.532).*

11½—15 cm lata, nervis 24— 27-paribus, patentibus, utrique prominentibus, venis parum conspicuis; petiolus (1 1/2—)3— 4 cm longus. Paniculae puberulae, 28 cm longae; pedicelli 1 1/2— 2 mm longi. Flores juveniles, roseoli. Calyx carnosus, 5-partitus, lobis late ovatis vel ellipticis, dorso puberulis, 21/2 mm longis. Petala 5, carnosula, elliptica vel obovato-oblonga, laevia, 4 mm longa, 2 mm lata. Discus obscurus. Stamina 5 fertilia, inaequilonga, 1 1/2— 41/2 mm longa; staminodia 5, subulata, 1 —1 1/2 mm longa. Ovarium subglobosum, 1 mm diam.; stylus 3 — 5 mm longus.

TYPUS: /. *Singh SAN 60874* (L).

Tree up to 30 m high and 90 cm in diam. Bark cracky, reddish brown, exudation reddish. Leaves coriaceous; lamina elliptic- or obovate-oblong, or oblanceolate, (17—)27 — 381/2 by (7—)12 — 15 cm; base cuneate or attenuate; apex mucronate; nerves (14—)21 — 36, patent, prominent on both surfaces, veins hardly visible; petiole stout, plane above, convex beneath, (1 1/2—*)3 1/2* — 6 cm. Panicles 16 — 57 cm long, puberulous, side branches up to 20 cm long, main peduncle 4 — 8 cm; bracts ovate, 3 — 6 mm long, puberulous outside; pedicels 1 1/2 — 21/2 mm. Flower-buds ± oblong, obtuse. Flowers reddish or pink. Calyx fleshy, 5-lobed; lobes broad-ovate or elliptic, 1 1/2 — 21/2 nim long, puberulous outside, ciliate on the margin. Petals 5, slightly fleshy, elliptic, elliptic- or obovate-oblong, or elliptic-lanceolate, 41/2 — 6 by 1 1/2— 2 mm, basal part united with the obscure disk or short gynandrophore, apex obtuse, sometimes notched, smooth or without thickened ridges on the inner surface, veins pinnately branched, sometimes obscure. Stamens 10: 5 fertile and 5 sterile (staminodes), inserted at the base of ovary, unequal; fertile stamens alternate with staminodes, always with a long one (3 — 6 mm) and 4 short ones (1 1/2 — 3 1/2 mm); anthers broad-ovoid or -ellipsoid, 1/2 — 3/4 mm; staminodes subulate, 1 — 2 mm. Ovary subglobose, 1 — 1 1/2 mm in diam.; style 3 — 5 mm. Sterile pistil in male small, ca 1 mm. Fruits (dried) ellipsoid, 9 — 91/2 by 41/2 cm; mesocarp transversed with fibres; stone ca 1 mm thick, round in cross-section, ca 4 cm in diam.; cotyledons broad-ellipsoid, 5 1/2 by 31/2 cm, smooth on outer surface.

DISTRIBUTION: Sumatra, Brunei, Sabah and Indonesian Borneo.

HABITAT : In lowland primary forest, sometimes in freshwater swamp forest, occasionally in secondary forest, alt. up to 100 m, once found at ca 340 m.

VERNACULAR NAMES: Sumatra: Biendjai (Malay) and komang bakad (Palembang). Sabah: Beluno (Dusum) and binjay (Tidong). Indonesian Borneo: Bindjai (Kutei & Bandjar) and Konjot (Benua-Dajak).

The collections of *M. decandra* cited below are rather homogeneous and most of them are in flower. There are three collections with good, detached, dried fruits. From the field notes, it appears to be found growing wild in Sabah, Brunei, Indonesian Borneo and Sumatra. Hoping before long, fresh or spirit preserved, ripe fruits will be available for describing their detailed characters.

*M. decandra* is closely allied to *M. lagenifera.* In the leaves they both possess the characteristic, elongated sclerenchyma cells (see further explanation below), but can be easily separated from each other at even first glance; the former has rather big leaves (usually 27 — 381/2 by 12 — 15 cm) with mucronate apex and prominent nerves, while the latter has small ones (8 — 16 by 3 — 41/2 cm) with obtuse or round apex and faint or obscure nerves. They have flowers with smooth petals and ten stamens—five fertile and five sterile; however, the former can be distinguished from the latter by the petals usually with distinct and pinnate venation (not usually obscure or longitudinal), one of the fertile stamens being always much longer than the others (not ± equal), and the subulate staminodes (not filamentous).

In addition to the differences between these two species as pointed out above, the fruits of *M. decandra* are ellipsoid (in dried state, ca 91/2 by **41/2** cm) and those of *M. lagenifera* are lageniform (10 — 12 by 5 — 6 cm).

In breaking (dried) leaves of *M. decandra,* there appear numerous, white, short, hair-like filaments, which can be easily observed with a hand lens. These, filaments are actually the elongated sclerenchymatous cells and the pericycle fibres surrounding the. vascular bundles of veins and nerves. On a cross-section of the leaf, one can observe that there are sclerenchymatous cells forming a layer of usually one-cell thick situated just beneath chiefly the. upper epidermis, and such cells are less in number **and** less regular beneath the lower epidermis. Some of those cells are more or less parallel to the surface and the others traverse either more or less perpendicularly, obliquely, or irregularly through the. mesophyll to the opposite epidermis. This phenomenon has been found in *M. caesia* Jack, *M. lagenifera,* and in the genus *Bouea* Meisn. (Anacardiaceae) by Goris (cf. Ann. Sci. Nat. Bot. IX, 11, 1910: pp. 15 — 16, 24 — 25, fig. 16 & 30). In addition, I can add two more species, *M. superba* Hook. f. and the present one.

The leaves of *M. decandra* and *M. pajang* Kosterm. *(in* Reinwardtia 7, 1965: 20, fig. la & b) are much alike in shape, size and texture, with the exception of hair-like filaments appeared on breaking in the former but not in the latter. In flowering and fruiting specimens, these two species can be separated from each other by some easily observed characters; for example, *M. decandra* has puberulous inflorescences, 10-stamened and reddish or pink flowers, and ellipsoid fruits (only known in dried state, ca 91/2 by 41/2 cm), while *M. pajang* has glabrous inflorescences, 5-stamened and purple flowers, and globose fruits (ca 15 cm or often more in diam.).

SUMATRA: Karimun, fr. in BO not seen, 66 *17339* (BO, L); Upper Riouw, Pakanbaru, Tenajam R., young fr., *Soepadmo 50* (L); Palembang, fl. & young fr., *Endert 15E. IP. 842* (L), sterile, *W. Gra&hoff 905 (L).* SABAH (NORTH BORNEO): Sandakan, Garinon, W. C. R. Labak Rd, fl., *J. Singh SAN 60874* (Holotype, L), Lungmanis R. F., fl., *J. Ahwing SAN 29532* (L), Kebun China, Sibuga F. R., young fr., *Jaswir SAN 30714* (L) ; Tawau, Mile *181/2*, Quoin Hill Rd, fl., *Aban Gibot SAN 35977* (L), Elphinstone Prov., fr., *Elmer 21602* (BO, L, SING); Kuala Belait, Andalau F. R., fl., *Wood, Smythies & Ashton SAN 17527* (L); Trusan Sapi R,, Beluran, fl. & pieces of fr., *Clements 4594* (L, SING). BRUNAI: Andulau F. R., fr., *P. S. Ashton 270* (BO, L); Kuala Belalong, fr., *P. S. Ashton 411* (BO, L). INDONESIAN BORNEO: Near Mahakam R., fr., *Kostermans 7101* (BO, L).