

First published on the Flora Mesoamericana Website, 7 Aug. 2009.

270. MUSACEAE

Family description and key to the genera by M.J.M. Christenhusz.

Treelike herbs with from large corms, true aerial stems absent. Leaves basal, in several ranks, differentiated into a basal sheath, a petiole, and a blade; sheaths open, overlapping, forming unbranched pseudostems; ligule absent; blades with parallel lateral veins, diverging from a prominent midrib, entire, but the large leaves often ripped until the midrib. Inflorescences 1 per shoot, projecting from the tips of pseudostems, pedunculate, with erect or pendent racemes, built up of 12-20-flowered monochasial cymes (cincinni); bracts of main axis enclosing cincinni, leaving prominent scars. Flowers bisexual or unisexual (the proximal flowers pistillate, the distal flowers staminate), bilaterally symmetric; sepals 3; petals 3, 2 of which fused with the 3 sepals (connate tepal) in a tubular structure, the third petal distinct; fertile stamens 5(-6), the anthers 2-locular, occasionally with an additional rudimentary staminode; ovary inferior, 3-carpellate, 3-locular, the placentation axile, the ovules many per locule; style terminal, filiform, the stigma 3-lobed. Fruits elongated berries. 3 gen. Tropical and warm-temperate regions of Africa, Asia, Australia, and Oceania.

Many species are commonly cultivated and often long-persisting around gardens and plantations, and the fertile species often naturalize in (sub-)tropical regions.

1. Plants monocarpic, 1-stemmed, the pseudostem often swollen at the base; leaf blades attenuate at the base; petioles and rachis always with a dark purple stripe on the abaxial side; bracts green, usually persistent, imbricate; seeds usually more than 10 mm in diameter. **1. Ensete**

1. Plants perennial, with suckering corms, the pseudostems clustered, not swollen at the base; leaf blades cordate at the base; petioles and rachis with or without purple or yellow abaxial stripes; bracts variously colored, caducous; seeds usually less than 7 mm in diameter, rarely larger. **2. Musa**

1. Ensete Horan. N.v.: Enset, snow banana, plátano del monte.

By M.J.M. Christenhusz.

Large monocarpic herbs. Stem (corm) 1, remaining short until flowering; pseudostem single, swollen at base. Leaves often crowded, large, the bases usually narrowed into a winged petiole; sheaths lax; blades oblong. Inflorescences rosulate when young, becoming elongate and pendulous with age; bracts green, usually persistent. Flowers in 2 rows per bract; flowers in proximal bracts pistillate, with reduced stamens, or bisexual; flowers in distal bracts staminate, with a reduced gynoecium; fused perianth linear, 3-lobed at the apex, without 2 accessory teeth between the lobes; free petal usually wider than the compound one, the apex often 3-cuspidate or entire; stamens 5. Berries elliptic, leathery, dry or with scant pulp; seeds few, often more than (0.5-)1 cm in diameter, globose or irregular, usually smooth. Approx. 13 spp. Africa, South Asia.

Bibliography: Baker, R.E.D. & Simmonds, N.W. *Kew Bull.* 8: 405-416 (1953). Bezuxeh, T. & Feleke, A. *Econ. Bot.* 20: 65-70 (1966). Cheesman, E.E. *Kew Bull.* 1947: 97-106 (1948).

1. *Ensete ventricosum* (Welw.) Cheesman, *Kew Bull.* 1947(2): 101 (1948).

Musa ventricosa Welw. *Apont.* 587 (1859). Holotype: Angola, *Welwitsch 4667* (BM!, 3 sheets). Illustr.: Lock, *Fl. Trop E. Africa Musaceae*: 4, t. 1 (1993).

Ensete arnoldianum (De Wild.) Cheesman, *E. bagshawei* (Rendle & Greves) Cheesman, *E. buchananii* (Baker) Cheesman, *E. davyae* (Stapf) Cheesman, *E. edule* Bruce ex Horan., *E. fecundum* (Stapf) Cheesman, *E. holstii* (K. Schum.) Cheesman, *E. laurentii* (De Wild.) Cheesman, *E. ruandense* (De Wild.) Cheesman, *E. rubronervatum* (De Wild.) Cheesman, *E. schweinfurthii* (K. Schum. & Warb.) Cheesman, *E. ulugurense* (Warb. & F. Moritz) Cheesman, *Musa arnoldiana* De Wild., *M. bagshawei* Rendle & Greves, *M. buchananii* Baker, *M. davyae* Stapf, *M. ensete* J.F. Gmel., *M. fecunda* Stapf, *M. holstii* K. Schum., *M. laurentii* De Wild., *M. ruandensis* De Wild., *M. rubronervata* De Wild., *M. schweinfurthii* K. Schum. & Warb., *M. ulugurense* Warb. & F. Moritz.

Large monocarpic herbs to 7 m; pseudostems swollen at base, sometimes to almost 1 m across, not suckering. Leaves to 3 × 0.5 m, withering when plants in fruit; petioles and rhachises with a continuous dark purple stripe abaxially; blade attenuate at the base, acute at the apex. Inflorescence massive, c. 2 × 0.5 m, pendent; bracts 15-

20 × 20-25 cm, ovate, acute to acuminate at the apex, yellowish green, tinged red on the outer side and margins, persistent. Staminate flowers c. 15 per bract in 2 rows; compound tepals 3.5-4 cm, yellowish-cream, the apex acute; free petal 1/4 as long as the compound tepals, the apex sharply acuminate; stamens c. 4 cm, exserted, curved. Bisexual flowers with a glabrous ovary; compound tepals 1.3-2 cm, cream-yellow, the apex acute-apiculate; stamens 3-4 cm, recurved; styles c. 4 cm. Berries 8-10 × 2-3 cm, orange-yellow, dry with almost no pulp; seeds 0.9-1.6 cm, globose, smooth, blackish brown. *Locally common along roadsides and streams, creeks, ditches and in fields, often cultivated in gardens and escaping.* Ch (pers. obs.); G (*Christenhusz 5640*, BM); H (Molina, 1975: 29); ES (Standley & Calderón, 1941: 74); CR (Grayum, 2003: 671). 700-3000 m. (Native in tropical Africa; commonly cultivated elsewhere, often naturalizing.)

In many cases this species is well established and spreading along roads and streams at the higher elevations of southern Mexico, Guatemala and Honduras.

Ensete ventricosum resembles banana plants of the genus *Musa*, but is easily recognizable by having a single stem that is swollen at the base and petioles that have a dark purple stripe on the lower side. The massive inflorescences retain their bracts and the plant dies while fruiting, leaving just the central stem and the pendent bracted infructescence. *Ensete ventricosum* easily naturalizes in a wide range of habitats, but most commonly at higher elevations along creeks and streams. The plants are found to be very tolerant to drought and cold (tolerating occasional temperatures down to 0°C), resulting in a broad ecological amplitude.

Ensete superbum (Roxb.) Cheesman has been recorded as cultivated in Honduras by Nelson (2008: 748). It has not been recorded to naturalize.

2. *Musa* L. N.v.: Banana, banano, guineo, mush, pisang, plantain, plátano, platanero. By M.J.M. Christenhusz.

Large perennial herbs. Underground stems (corms) rhizomatous, suckering; pseudostems clustered. Leaves normally large, the bases usually narrowed into a petiole or pseudosessile; sheaths lax or crowded; blades oblong or oblong-elliptic. Inflorescences erect or pendent; bracts green, yellowish, pinkish, reddish or purple, usually caducous. Flowers crowded, 1 to several rows per bract; proximal bracts with crowded, pistillate flowers; distal bracts with staminate flowers, often forming a bud-

like mass at the apex of the inflorescence. Berries cylindrical, usually \pm curved, weakly angled in cross section, soft, fleshy or starchy, often with abundant pulp; seeds numerous, often less than 0.7 cm in diameter, globose, usually rugose. Approx. 70 spp. and c. 500 cultivars. South and East Asia, Malesia, Pacific, Australia (Queensland); commonly naturalized or persisting around gardens and plantations in tropical and subtropical America, Africa, Asia and Oceania.

Species of *Musa* are very important economically throughout the wet tropics. The genus has long been of great importance to human societies. The fruits of several species are edible; they may be sweet (bananas) or starchy (plantains), and may be eaten raw or cooked. At present bananas and plantains are the fourth most important food crop in the world. Most bananas used in North America and Europe are almost always sweet-fruited ‘Cavendish’ cultivars, often imported from Mesomerica where vast plantations occur. Many cultivars are particularly susceptible to certain pests and diseases, making monocultures or even backyard banana plantings relatively challenging and requiring high labor inputs to maintain them in healthy, productive condition. The problem lies in the sterility of most cultivars, resulting in genetic uniformity throughout the plantation, making them especially vulnerable to diseases that may result in the loss of crops.

Prior to the classification of Cheesman (1948), the taxonomy of cultivated bananas was poorly understood. It has since become clear that most of the cultivated bananas are parthenocarpic diploids, triploids, and tetraploids ($2n = 22, 33, 44$) derived either from *Musa acuminata* (genotype A), or hybrids between that species and *M. balbisiana* Colla (genotype B) called *M. × paradisiaca*. Most seedless cultivars are triploid, and always are derived from *M. acuminata*, *M. balbisiana* Colla, and their subspecies, resulting in a vast diversity of forms. The most common bananas belong to the “Cavendish”-group (genotype AAA), and the most common plantains are triploid hybrids with genotype AAB. Both are sterile, and therefore, it has been very difficult to create new disease resistant cultivars. At present these are the most commonly grown dessert bananas, grown in vast monocultures, mostly meant for export. Other banana and plantain cultivars are grown at a more local scale, and are thus less vulnerable to diseases.

Other species, especially *M. basjoo* Siebold and *M. textilis* are important fiber sources, and some species are grown for their ornamental bracts and flowers.

The leaves are also used for wrapping food, and the corms, the pseudostems, and the buds of staminate flowers are eaten as vegetables. In addition, the plants have many minor economic and ritual uses in the tropics.

Many *Musa* species are grown as ornamentals for their colorful bracts and flowers, especially *M. acuminata*, *M. coccinea* Andrews, *M. ornata*, *M. laterita* Cheesman, *M. velutina* and their various cultivars. *Musa basjoo* and *M. yunnanensis* Häkkinen & H. Wang are cultivated as ornamentals in colder regions for their roots can survive severely cold temperatures (to at least -23°C).

Bibliography: Cheesman, E.E. *Kew Bull.* 1947: 106-117 (1948). Grayum, M.H. *Monogr. Syst. Bot. Missouri Bot. Gard.* 92: 670-674 (2003). Häkkinen, M. & Väre, H. *Adansonia* 30: 63-112 (2008). Lessard, W.O. *The Complete Book of Bananas* (1992). Simmonds, N.W. & Shepherd, K. *J. Linn. Soc., Bot.* 55: 302-312 (1955). Stover, R.H. & Simmonds, N.W. *Bananas*, ed. 3 (1987).

1. Inflorescence erect.

2. Ovaries and fruits glabrous, not opening when ripe.

3. *Musa ornata*

2. Ovaries and fruits hairy, splitting open when ripe.

5. *Musa velutina*

1. Inflorescence pendent or horizontal.

3. Pseudostems green or tinged purple, black towards the base, or slightly blotched; fruits with seeds.

4. Leaves with a purple midvein below; inflorescence pendent; fruits with seed in 4 irregular rows; pseudostems blotched or not.

2. *Musa balbisiana*

4. Leaves with a green midvein below; inflorescence subhorizontal; fruits with seed in 3 rows; pseudostems green or tinged purple, black towards the base, not blotched.

5. *Musa textilis*

3. Pseudostems blotched with brown or black; fruits (usually) seedless

5. Bracts of staminate flowers lanceolate or narrowly ovate, the apex acute, the abaxial surface yellow, red, or dull purple, the adaxial surface yellow proximally, often yellow or dull purple distally; perianth of staminate flowers white or cream.

1. *Musa acuminata*

5. Bracts of staminate flowers lanceolate to ovate, the apex acute or broadly acute, the abaxial surface purple, the adaxial surface reddish purple or crimson; perianth of staminate flowers white, cream, or pink.

4. *Musa* × *paradisiaca*

1. *Musa acuminata* Colla, *Mem. Reale Accad. Sci. Torino* 25: 394 (1820).

Lectotype (designated by Häkkinen & Väre, 2008b): “*Musa simiarum* Pissang Jacki.” Rumphius, *Herbarium Amboinense* 5: t. 61, f. 1 (1747). N.v.: banana, banano, plantain, plátano. Illustr.: Cheesman, *Kew Bull.* 3(1): t. 3-4 (1948).

Musa cavendishii Lamb. ex Paxton, *M. chinensis* Sweet, *M. nana* Lour.

Pseudostems (2-)4-5 m, heavily blotched with brown or black. Leaves with the petioles c. 80 cm, the margins erect or spreading and basally with scarious wings; blades 1.7-2.3 × 0.5- 0.7 m, oblong, the base cordate, asymmetric, the apex truncate, the midvein adaxially green, abaxially yellowish. Inflorescences pendent; peduncles usually downy or hairy; pedicels short; bracts of staminate flowers lanceolate or narrowly ovate, the apex acute, the abaxial surface yellow, red, or dull purple, the adaxial surface yellow proximally, often yellow or dull purple distally. Staminate flowers c. 20 per bract in 2 rows; compound tepal 3.5-4 cm, white or cream, light yellow at the apex, the apex of the outer lobes with hook-like, hairy appendages; free petal less than half as long as the compound tepal, the apex emarginate, shortly apiculate. Pistillate flowers with a glabrous ovary and deep yellow or orange stigmas. Infructescences c. 1.2 m. Berries c. 9 cm, glabrous, incurved, green to yellow-green, 5-angled when young, cylindric at maturity, the base curved and attenuate into a stalk, the apex contracted into a rostrum 6-10 mm; seeds numerous in wild plants but absent in cultivated triploid clones. *Cultivated often on a large scale, and persisting in abandoned gardens, plantations, roadsides and disturbed sites throughout Mesoamerica, but seldom collected.* G (Christenhusz, pers. obs.); H (Nelson 2008: 749); CR (*Aguilar 6702*, INB). 0-1200 m. (Native to India, Burma, Thailand, Vietnam, Malaysia, and Indonesia; cultivated and introduced elsewhere.)

2. *Musa balbisiana* Colla., *Mem. Accad. Sci. Torino* 25: 384 (1820), *nom.*

cons. prop. Lectotype (designated by Häkkinen & Väre, 2008b): India orientalis, *Anonymous* (TO). N.v.: wild banana, wild plantain. Illustr.: Cheesman, *Kew Bull.* 3(1): t. 1-2 (1948).

Musa brachycarpa Backer, *M. dechangensis* J.L. Liu & M.G. Liu, *M.*

lushanensis J.L. Liu, *M. luteola* J.L. Liu, *M. martinii* Van Geert, *M. rosacea* Jacq., *M. seminifera* Lour.

Pseudostems c. 4-5 m, blotching pale or absent. Leaves with the petioles c. 80 cm, the margins incurved, not winged; blades 1.7-2.3 × 0.5- 0.7 m, oblong, the base

cordate, asymmetric, the apex truncate, the midvein adaxially green, abaxially purple. Inflorescences pendent; peduncles glabrous; pedicels long; bracts of staminate flowers ovate, the apex obtuse, remaining straight when the bract spreads, the abaxial surface brownish purple, the adaxial surface uniformly bright crimson. Staminate flowers c. 20 per bract in 2 rows; compound tepal 3.5-4 cm, white or cream, often tinged pink at the apex, the apex of the outer lobes with hook-like, hairy appendages; free petal less than half as long as the compound tepal, the apex plane, shortly apiculate. Pistillate flowers with a glabrous ovary and deep yellow or orange stigmas. Infructescences c. 1.2 m. Berries c. 9 cm, glabrous, incurved, green to yellow-green, cylindrical-quadrangular, the base curved and attenuate into a stalk, the apex contracted into a rostrum 6-10 mm; seeds in 4 irregular rows, numerous. *Seldom cultivated and very rarely naturalizing, but may become more common in the future when naturalization proceeds.* H (Balick et al. 1705, K) 0-1000 m (Native in East Asia from Sikkim to New Guinea; sometimes cultivated.)

This species is one of the ancestors of *M. × paradisiaca*, and is especially expressed in various cultivars of plantains. *Musa balbisiana* is rarely cultivated.

Musa rosacea and *M. seminifera* have nomenclatural priority over *M. balbisiana*, but these names are seldom in use and all literature concerning this species uses *M. balbisiana*, which requires conservation, following a closer revision of the species.

3. *Musa ornata* Roxb., *Fl. Ind.* ed. 1820, 2: 488 (1824). Neotype (designated by Häkkinen & Väre, 2008b): unpublished illustration no. 1716 in *Icones Roxburghianae* (K). N.v.: Flowering banana. Illustr.: Cheesman, *Bull. Misc. Inform. Kew* 1931: 297-299, t. VI-VII (1931).

Musa mexicana Matuda.

Pseudostems c. 2.5-3 m, slender, green, not blotched. Leaves with the petioles c. 30-50 cm, the margins erect and basally winged; blades 1-1.8 × 0.2- 0.3 m, oblong, glaucous, the base rounded-attenuate, asymmetric, the apex truncate, the midvein green on both sides. Inflorescences erect; peduncles glabrous; pedicels short; bracts bright purple-pink, the apex obtuse. Staminate flowers 2-3 per bract in 1 row; compound tepal 2.7-3.5 cm, orange-yellow, yellow at the apex; free petal less than half as long as the compound tepal, the apex shortly apiculate. Pistillate flowers 2 per bract; ovary glabrous; stigmas deep orange. Infructescences c. 0.6 m. Berries c. 7.5

cm, glabrous, incurved, green, the base attenuate into a stalk, the apex contracted into a rostrum; seeds verrucose, black. *Commonly cultivated as an ornamental and locally naturalized, especially on banks and along brooks.* T (Conrad et al. 2820, MO); Ch (Matuda 18320, MEXU); G (Jiménez 1194, BM); H (Molina, 1975: 29); CR (Frances 444, FTG). 100-400 m. (Native to India; introduced elsewhere.)

The fruit is infrequently eaten; the plant is mostly grown as ornamental for its showy inflorescences. Matuda (1950) found this species growing along brooks in Chiapas and assumed it to be wild, describing it as new. He presented it as the first wild *Musa* species of the American continent, but his plants were naturalized from cultivation, so *Musa* remains an Old World genus.

4. *Musa* × *paradisiaca* L., *Sp. Pl.* 1043 (1753). Lectotype (designated by Argent, 1993): “*Musa cliffortiana*” in Linnaeus, *Musa Cliff.*, unnumbered plate (1736). N.v.: banana, banano, plantain, plátano. Illustr.: Ehret et al., *Plantae Selectae*, t. 18-20 (1751).

Musa acuminata × *M. balbisiana*, *M. paradisiaca* L. var. *sapientum* (L.) Kuntze, *M. sapientum* L., *M. sapientum* var. *champa* Baker, *M. sapientum* var. *rubra* Baker, *M. sinensis* Sagot.

Pseudostems c. 4-5 m, moderately blotched with brown or black. Leaves with the petioles c. 80 cm, the margins erect to incurved, winged proximally; blades 2-2.3 × 0.5- 0.7 m, oblong, the base cordate, asymmetric, the apex truncate, the midvein adaxially green, abaxially yellowish or purple. Inflorescences pendent; peduncle usually downy or hairy; pedicels rather long; bracts of staminate flowers lanceolate to ovate, the apex acute to broadly acute, the abaxial surface purple, the adaxial surface reddish purple or crimson. Staminate flowers c. 20 per bract in 2 rows; petals variously coloured, white, cream, or pink; compound tepal 4.5-6 cm, the apex of the outer lobes with a hook-like appendage; free petal c. 1/2 as long as the compound petal, the apex acuminate. Pistillate flowers with glabrous ovary and usually with yellow stigmas. Infructescences c. 1.5 m. Berries variable in length depending on the variety, but up to c. 20 cm, incurved, green to yellow, 5-angled when young, cylindrical at maturity, the base curved and attenuate into a stalk, the apex contracted into a rostrum; seeds absent, reproducing only vegetatively (clones). *Cultivated and persisting in abandoned gardens, plantations, roadsides and disturbed sites throughout Mesoamerica, but seldom collected.* T (Pérez et al., 2005: 106); Ch

(Breedlove, 1986: 217); Y (*Hopkins et al.* 07-32, MO); C (Martínez et al., 2001: 52); QR (Sousa & Cabrera, 1983: 94); B (*Balick et al.* 2398, MO); G (Standley & Steyermark, 1952: 186); H (Nelson, 2008: 749); ES (Standley & Calderón, 1941: 74); N (*Stevens et al.* 22883, MO); CR (*Frances* 351, FTG); P (*Schmalzel* 1004, MO). 0-800 m. (Mesoamerica.)

Plants of *Musa* × *paradisiaca* combine the characters of the two parents, *M. acuminata* (A) and *M. balbisiana* (B), in various hybrid crossings (AB, AAB, ABB groups). *Musa* × *paradisiaca* is economically by far the most important taxon of *Musa*, because it includes most cultivars of bananas and plantains, and it is the main source of starch for many people throughout the tropics.

This taxon was previously often referred to as *M. sapientum*, a name that was originally applied to the “silk figs” (AAB group). Interestingly, Linnaeus (1753) named the two banana species that were originally illustrated in Ehret et al. (1751 and 1752): 'paradisiaca' reminding of Eden and 'sapientum' meaning wisdom. It almost seems the Forbidden Fruit is described here.

The description of *M. × paradisiaca* is based on plants with the AAB genome, by far the commonest hybrid bananas in cultivation. For characteristics of various other strains of banana, see Simmonds & Shepherd (1955).

5. *Musa textilis* Née. *Anales Ci. Nat.* 4: 123 (1801). Neotype (designated by Christenhusz, 2009): Philippines, *A.D.E. Elmer* 17106 (BM! 2 sheets). N.v.: Abacá, Manila hemp. Illustr.: Cheesman, *Kew Bull.* 4(3): t. 2 (1949).

Musa abaca Perr., *M. troglodytarum* L. var. *textoria* Blanco.

Pseudostems (2-)3-8 m, in cultivation usually to 5 m, clumped, green or tinged purple, black towards the base, not blotched. Leaves with the petioles 40-70 cm, relatively stout and stiff, holding the leaves at a high angle, the margins distinctly developed, tightly incurved, almost covering the adaxial groove above, closely appressed to the pseudostem at the base; blades 1.2-2.4 × 0.2-0.5 m, oblong, the base rounded-cordate, asymmetric, the apex narrowly truncate, the midvein green on both sides. Inflorescences subhorizontal; peduncle green, glabrous or minutely pubescent; bracts ovate, the apex acute, green or greenish brown to purplish brown or reddish, the outer surface glossy, the inner surface pale, dull, almost white at the base, spreading 1 at a time. Staminate flowers 10-12 per bract in 2 rows; compound tepal 3-5 cm, white or cream, the lobes yellowish, with a dorsal filiform appendage; free petal

2-5 cm, translucent white, oblong, the apex acute, scarcely apiculate. Pistillate flowers basal, c. 10 per bract in 2 rows; compound tepal c. $4 \times 1-2$ cm, white with pale green lobes, the lateral lobes oblong-lanceolate, with filiform dorsal appendages; free petal $3-5 \times c. 2$ cm, white, boat-shaped, minutely apiculate at the apex; ovary c. 5 cm, green, glabrous. Infructescences horizontal, lax. Berries $5-9 \times 2-3$ cm, oblong-ovate or ellipsoidal, curved, obsoletely trigonous-angled at maturity, ripening yellow, narrowed at the base into a stout pedicel 1-1.5 cm, abruptly at apex into a broad truncate acumen about 7 mm; pulp scanty; seeds $2-3 \times 3-4$ mm, black, irregular in shape, subglobose-turbinate, smooth. *Cultivated and locally naturalizing.* G (Standley & Steyermark, 1952: 186); H (Molina, 1975: 29); N (*Rueda et al.* 2703, MO); CR (*Aguilar 5643*, INB). 0-700 m. (Native to Indonesia, Malaysia and the Philippines; introduced elsewhere.)

The species is grown for the fibre obtained from the leaf sheaths. It is also a popular garden ornamental. It produces copious seed and has therefore become an invasive, particularly along the Caribbean coast in Costa Rica.

6. *Musa velutina* H. Wendl. & Drude, *Gartenflora* 24: 65 (1875), nom. cons. prop. (Väre & Häkkinen, in review). Lectotype (designated by Häkkinen & Väre 2008a): Plate in Wendl. & Drude, *Gartenflora* 65, t. 823 (1875). Illustr.: Häkkinen & Väre, *J. Syst. Evol.* 46: 231, t. 4 (2008).

Musa dasycarpa Kurz.

Pseudostems c. 1.5 m, often smaller, slender, green, without blotches. Leaves with the petioles c. 30 cm, the margins erect, basally winged, not clasping the pseudostem; blades to 1×0.35 m, oblong, the lamina corrugated, the base acute, asymmetric, the apex truncate, the midvein adaxially green, abaxially red. Inflorescences erect; peduncle red, heavily clothed with white pubescence; pedicels very short; bracts of staminate flowers ovate, the apex acute, pink on both sides, spreading 2 at the same time. Staminate flowers c. 5 per bract in 1 row; compound tepal c. 3.8 cm, orange-yellow, with a pink flush on the back, with 5-toothed apex; free petal c. 3.7 cm, translucent white, oblong, with a short broad acumen. Basal flowers bisexual, 3-5 per bract in 1 row; compound tepal c. 3 cm, orange pink, the lobes orange; free petal as long as the compound tepal, yellowish, grooved; ovary c. 3 cm, pink, densely velvety pubescent; styles light green; stigmas orange. Infructescences c. 40 cm, compact; berries c. $7 \times 3-4$ cm, ovate-cylindric, bright pink,

densely pubescent, subsessile at the base, the apex broadly truncate, splitting at maturity, the pericarp peeling in irregular strips and exposing a central mass of white pulp and seeds; seeds numerous (up to 90 per fruit), 4-6 mm, black, tuberculate.

Cultivated and sometimes naturalized. ES (Knapp, pers. obs.); CR (*Croat 68391*, MO). 0-800 m. (Native in southeast Asia; introduced elsewhere.)

The plants produce fertile seeds in abundance, which is the reason why it is commonly cultivated and why it easily naturalizes. Its current popularity as a garden plant will most likely result in a more common occurrence in the wild in the near future.

Musa velutina is clearly circumscribed and illustrated in the original publication by Wendland & Drude (1875), resulting in a general acceptance and broad use in horticulture. On the contrary, *M. dasycarpa* was seldom used because of the vague definition of this species. Häkkinen & Väre (2008b) attempted to revive the usage of *M. dasycarpa* since this name has priority, but they soon realized that this would cause great confusion in the *Musa* trade and, therefore, have proposed to conserve the name *M. velutina*.

Bibliography:

- Argent, G.C.G. 1993. *Musa* L. in Jarvis et al., *Regnum Vegetabile* 127.
- Baker, R.E.D. & Simmonds, N.W. 1953. The genus *Ensete* in Africa. *Kew Bull.* 8: 405-416.
- Bezuxeh, T. & Feleke, A. 1966. The production and utilization of the genus *Ensete* in Ethiopia. *Economic Botany* 20: 65-70.
- Cheesman, E.E. 1931. A note on *Musa ornata*. *Bull. Misc. Inform. Kew* 1931: 297-299.
- Cheesman, E.E. 1948. Classification of the bananas I: The genus *Ensete* Horan. *Kew Bull.* 1947(2): 97-106.
- Cheesman, E.E. 1947 [1948]. Classification of the bananas II: The genus *Musa* L. *Kew Bull.* 1947(2): 106-117.
- Cheesman, E.E. 1948-1950. Classification of the bananas; Critical notes on species. *Kew Bull.* 3: 11-28, 145-157, 323-328; *Kew Bull.* 4: 23-28, 133-137, 265-272, 445-452; *Kew Bull.* 5: 27-31, 151-155.

- Daniells, J. 1995. Illustrated Guide to the Identification of Banana varieties in the South Pacific. ACIAR Monograph 33. Australian Centre for International Agricultural Research, Canberra, Australia.
- Ehret, G.D., Trew, C.J. & Haid, I.I. 1751. *Plantae Selectae*, tab. 18-20.
- Ehret, G.D., Trew, C.J. & Haid, I.I. 1752. *Plantae Selectae*, tab. 21-23.
- Gowan, S. 1995. *Bananas and Plantains*. Chapman and Hall, London.
- Grayum, M.H. 2003. Musaceae. In: *Manual de Plantas de Costa Rica*, B.E. Hammel, M.H. Grayum, C. Herrera & N. Zamora (eds.). *Monogr. Syst. Bot. Missouri Bot. Gard.* 92: 670–674.
- Häkkinen, M. 2005. Ornamental bananas: Notes on the section *Rhodochlamys* (Musaceae). *Folia Malaysiana* 6(1-2): 49-72.
- Häkkinen, M. & Väre, H. 2008a. Taxonomic history and identity of *Musa dasycarpa*, *M. velutina* and *M. assamica* (Musaceae). *J. Syst. Evol.* 46: 230-235.
- Häkkinen, M. & Väre, H. 2008b. Typification and check-list of *Musa* L. names (Musaceae) with nomenclatural notes. *Adansonia, sér. 3*, 30: 63-112.
- Lessard, W.O. 1992. *The Complete Book of Bananas*. Homestead, Florida.
- Matuda, E. 1950. Studies on the flora of Chiapas, Mexico –VI. *Madroño* 10: 167-169, f. 1.
- Molina R., A. 1975. Enumeración de las plantas de Honduras. *Ceiba* 19(1): 1–118.
- Nelson, S.C., Ploetz, R.C. & Kepler, A.K. 2006. *Musa* species (banana and plantain). Species profiles for Pacific Island Agroforestry.
<http://agroforestry.net/tti/Musa-banana-plantain.pdf>
- Nelson, S. (2008) *Cat. Pl. Vasc. Honduras* pp. 1-1576. Tegucigalpa, Honduras: Secretaría de Recursos Naturales y Ambiente
- Simmonds, N.W. & Shepherd, K. 1955. The taxonomy and origins of the cultivated bananas. *Bot. J. Linn. Soc.* 55: 302-312.
- Stover, R.H. & Simmonds, N.W. 1987. *Bananas*, ed. 3. London.
- Väre, H. & Häkkinen, M. in review. Proposal to conserve *Musa velutina* H.Wendl. & Drude and reject *M. dasycarpa* Kurz (Musaceae). *Taxon*.