

Combination of *Mascagnia* and *Triopterys* (Malpighiaceae)

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ANDERSON, WILLIAM R. (University of Michigan Herbarium, 3600 Varsity Drive, Ann Arbor, MI 48108-2228, U.S.A.; e-mail: wra@umich.edu), and CHARLES C. DAVIS (Department of Organismic and Evolutionary Biology, Harvard University Herbaria, 22 Divinity Avenue, Cambridge, MA 02138-2094, U.S.A.; e-mail: cdavis@oeb.harvard.edu). Combination of *Mascagnia* and *Triopterys* (Malpighiaceae). Mem. New York Bot. Garden **108**: 191–203. 2013. The most recent phylogenetic analysis of the Malpighiaceae shows the small Caribbean genus *Triopterys* to be nested within the larger continental genus *Mascagnia*. The morphology of *Triopterys* is consistent with that of *Mascagnia*, and the samara shape for which *Triopterys* was named is not found in all its species, so the two genera are combined under the name *Mascagnia*. A key to the triopteroid species of *Mascagnia* is provided, and each species is treated with its correct name, a full synonymy, and a diagnostic description. The new names or combinations *M. adamsii*, *M. lucida*, and *M. paniculata* are proposed, and lectotypes are designated for the names *Malpighia paniculata*, *Mascagnia buchii*, *T. ovata*, *T. ovata* f. *acuminata*, *T. ovata* f. *obtusata*, *T. ovata* var. *domingensis*, *T. parvifolia*, *T. rigida* f. *nana*, *T. rigida* f. *oblonga*, and *T. rigida* var. *ovatifolia*.

Key Words: Bahamas, Greater Antilles, Latin America, Malpighiaceae, *Mascagnia*, *Triopterys*

Mascagnia (Bertero ex DC.) Bertero in Colla is a genus of approximately 40 species of Malpighiaceae that occur from northern Mexico to northern Argentina and southeastern Brazil (Fig. 1). In Niedenzu's treatment of *Mascagnia* in *Das Pflanzenreich* (1928) the genus was considerably larger because it was a highly polyphyletic assemblage of genera with lateral-winged samaras (see discussion by Anderson, 2006). Over the last 25 years, the discordant elements in Niedenzu's *Mascagnia* have been removed by Johnson (1986), Anderson and Davis (2005, 2007), Anderson (2006), and Anderson and Corso (2007). All those excisions were supported by our revised phylogeny of the family (Davis & Anderson, 2010). The same phylogenetic tree, however, showed that *Mascagnia s.str.* is still not monophyletic because the Caribbean genus *Triopterys* L. is nested within *Mascagnia*. (The spelling *Triopterys* is conserved against the original spelling, which was *Triopteris*, and is used consistently in this paper.) Figure 2, which was extracted from the tree in Davis and Anderson (2010), shows a monophyletic *Mascagnia* with 86 bootstrap percentage support (BP),



Fig. 1. Distribution of *Mascagnia s.str.* and *Triopteris*.

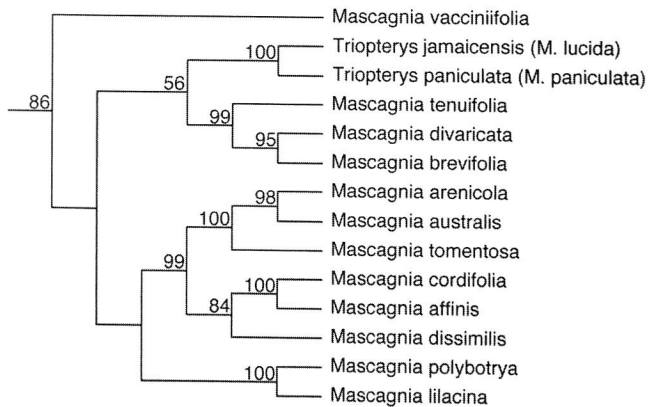


Fig. 2. Phylogenetic tree for 12 species representing *Mascagnia s.str.* and two species representing *Triopteris*. The tree shown here was extracted from Fig. 1 in Davis and Anderson (2010). Bootstrap values >50 are given above branches. For information on vouchers for the species sequenced, see Appendix 1 in Davis and Anderson (2010).

and nested within *Mascagnia* is a well-supported (100 BP) clade comprising the sampled species of *Triopterys*. Even though relationships between the five subclades of *Mascagnia*, including *Triopterys*, are poorly resolved, the strong support for a *Mascagnia* that includes *Triopterys* makes it very difficult to avoid combining these taxa. In this paper we describe the morphological similarities and differences between *Mascagnia s.str.* and *Triopterys*, after which we provide a taxonomic conspectus of the five triopteroid species of *Mascagnia*, including a key to the species, correct names, full synonymies, and brief descriptions of the species emphasizing diagnostic differences.

The species of *Mascagnia s.str.* share a number of characteristics that are plesiomorphic in the family or in the wing-fruited clades of Neotropical Malpighiaceae (Anderson, 2004): they are twining vines with woody stems varying from slender to stout, occasionally described as shrubby; their leaves are decussate, simple, and have an entire margin; the flowers are bilaterally symmetrical with the plane of symmetry passing through the anterior sepal and the posterior petal; of the five sepals, the anterior is eglandular and each of the lateral four bears paired abaxial glands; the five petals are clawed; the ten stamens are all fertile; the three carpels of the ovary, all fertile, are arranged with one anterior on the plane of symmetry and the other two posterior and lateral; the three styles are stigmatic on the internal angle of the apex; and the dry fruit breaks apart at maturity into three samaras. Like many other Neotropical genera of Malpighiaceae, *Mascagnia* does not have a large number of shared derived characters, but there is an adequate suite of distinguishing features. See Figure 3 for a drawing of *M. schunkei* W. R. Anderson, a typical species of *Mascagnia*. *Mascagnia* has distinct interpetiolar stipules, which may be plesiomorphic but are nonetheless of interest because some of the genera of *Mascagnia sensu* Niedenzu have stipules that have migrated onto the petioles (Anderson, 2006). Most species of *Mascagnia* bear glands embedded in the abaxial surface of the lamina; the glands are never on the margin, as in many other genera of Malpighiaceae. The flowers in *Mascagnia* are always borne in elongate or occasionally congested pseudoracemes, never in the four-flowered umbels of many genera. Each flower of *Mascagnia* has its pedicel raised on a well-developed peduncle, whereas in some genera the peduncle has been lost. The petals of *Mascagnia* are yellow, pink, white, or various shades of blue or lilac; the last colors are especially interesting because blue and lilac petals are otherwise rare in the family. The samara of *Mascagnia* bears a veiny, membranous lateral wing, 15–40 mm long and 13–45 mm wide, and sometimes (but not always) a dorsal crest or winglet. In the great majority of species the lateral wing of the samara is more or less elliptical or orbicular (occasionally triangular), entire at the base, and entire or notched at the apex (Figs. 3j; 4a–c), but there are significant differences in some species, mostly ones in which the lateral wing is divided all the way to the nut at the apex (Fig. 4d, e), and in *M. violacea* (Triana & Planch.) Nied. (Fig. 4f) the lateral wing is divided to the nut at both apex and base. The high pyramidal torus of *Mascagnia* is subtended by a fleshy three-lobed disc that is visible only after the samaras fall (Fig. 3k);

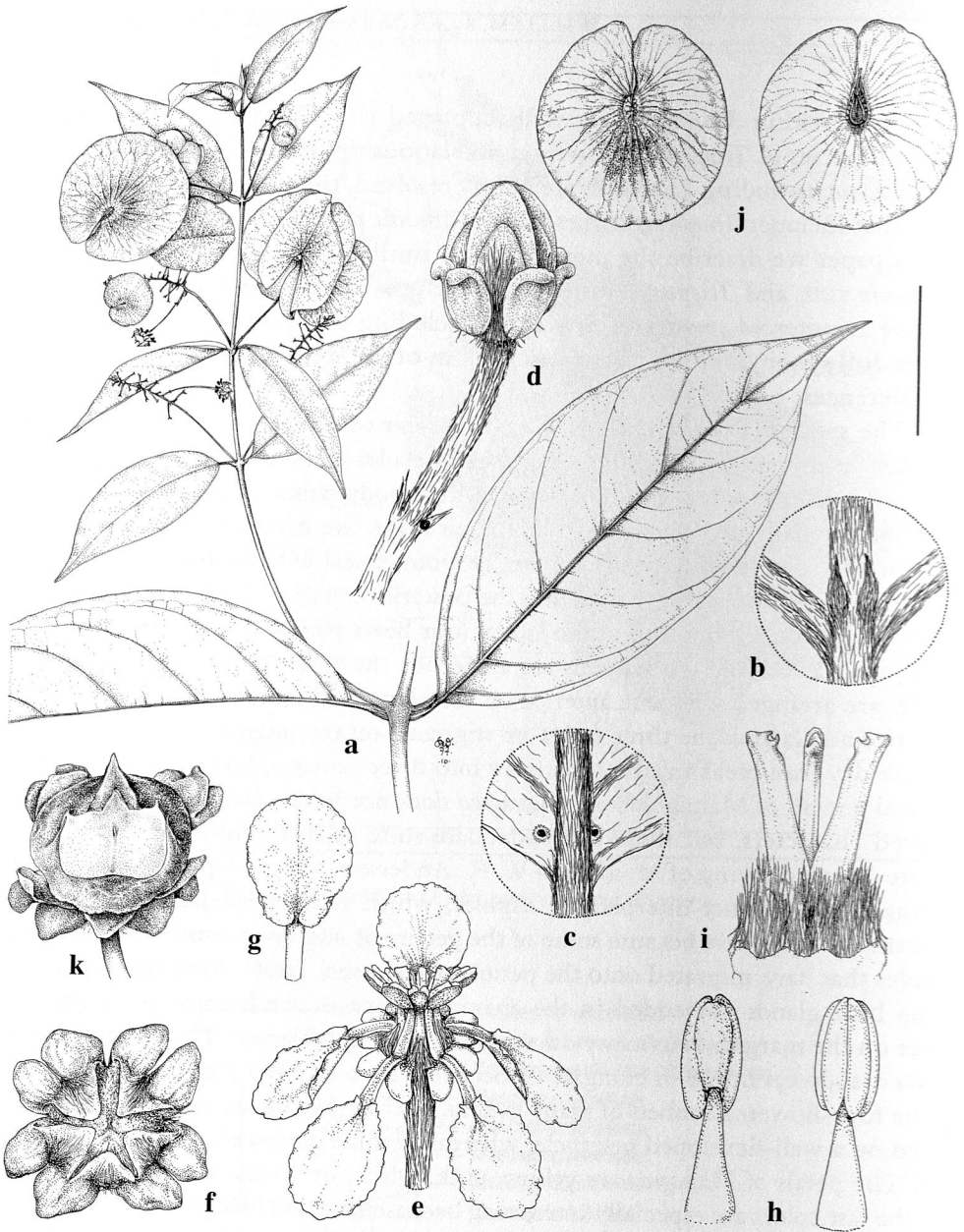


Fig. 3. *Mascagnia schunkei*. **a.** Fruiting branch. **b.** Node with interpetiolar stipules. **c.** Base of lamina, abaxial view. **d.** Flower bud. **e.** Flower, posterior petal uppermost. **f.** Calyx from above with eglanular anterior sepal at base. **g.** Detached posterior petal, adaxial view. **h.** Stamens, abaxial view (left) and adaxial view (right). **i.** Gynoecium, anterior style in center. **j.** Samaras, abaxial view (left) and adaxial view (right). **k.** Old fruit after fall of samaras, showing torus surrounded by lobed disc. Scale bar equivalents: a, 4 cm; b–d, f, g, k, 4 mm; e, 5 mm; h, i, 2 mm; j, 2.7 cm. (Drawn from: a, j, k, *Schunke 6195, F*; b–i, *Schunke 7877, MICH.*) Modified from a drawing first published in *Mem. New York Bot. Gard.* 32: 223. 1981.

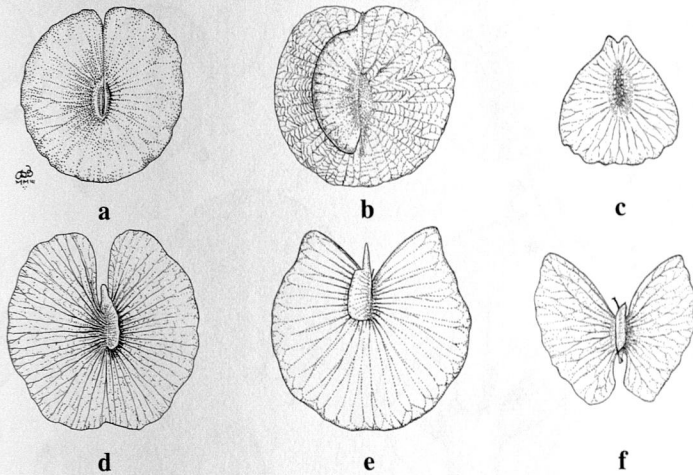


Fig. 4. Diversity of samaras in *Mascagnia s.str.* **a.** *M. strigulosa*. **b.** *M. lilacina*. **c.** *M. vaccitifolia*. **d.** *M. brevifolia*. **e.** *M. sp. nov.* **f.** *M. violacea*. All samaras are shown in abaxial view, and in all the scale bar equivalent is 2 cm. (Drawn from: a, Gentry 13318, MICH; b, Johnston 9001, GH; c, Lent 2521, F; d, Krapovickas & Cristóbal 44299, MICH; e, Nee 51096, MICH; f, Rusby & Pennell 103, US.)

that disc is known only in *Mascagnia* and in some of its closest phylogenetic relatives in the malpighioid clade (Davis & Anderson, 2010).

In *Triopteris* all morphological characters are consistent with those of *Mascagnia s.str.* The habit, leaf glands, inflorescence, pedunculate pedicels, flower morphology, veiny membranous samara wing, and high pyramidal torus are the same in both groups, and the fleshy disc subtending the fruit is present, although its lobes may be rudimentary (Fig. 5n). The stipules are interpetiolar and distinct as in *Mascagnia* (Fig. 5b) or sometimes connate in interpetiolar pairs. In *Triopteris* the flowers are only 7–10(–12) mm in diameter, smaller than those found in most species of *Mascagnia s.str.*, where they are 10–25 mm in diameter, but that distinction is not consistent, because the widespread species *M. divaricata* (Humb., Bonpl. & Kunth) Nied. has flowers 8–12 mm in diameter, the same size as those of *Triopteris*. The petals in *Triopteris* are usually described as lilac, blue, or purple, sometimes as pink, rarely as white, suggesting that the ancestor of *Triopteris* might fall among the extant species of *Mascagnia* with lilac/pink/white petals, not those with yellow petals. *Triopteris* (“three-wing”) was named for the Y-shaped samara found in most populations — the lateral wing is cleft to the nut at the apex, indented at the sides, and continuous at the base (Figs. 5l, m; 6f, i). That distinction breaks down in *T. buchii* (Urb. & Nied.) Urb. & Nied., one of the species of Hispaniola. Urban and Niedenzu (in Urban, 1901) originally described that species in *Mascagnia*, and its samara (Fig. 6c) is, in fact, a small version of the orbicular samara found in some species of *Mascagnia*, e.g., *M. brevifolia* Griseb. (Fig. 4d). Later,

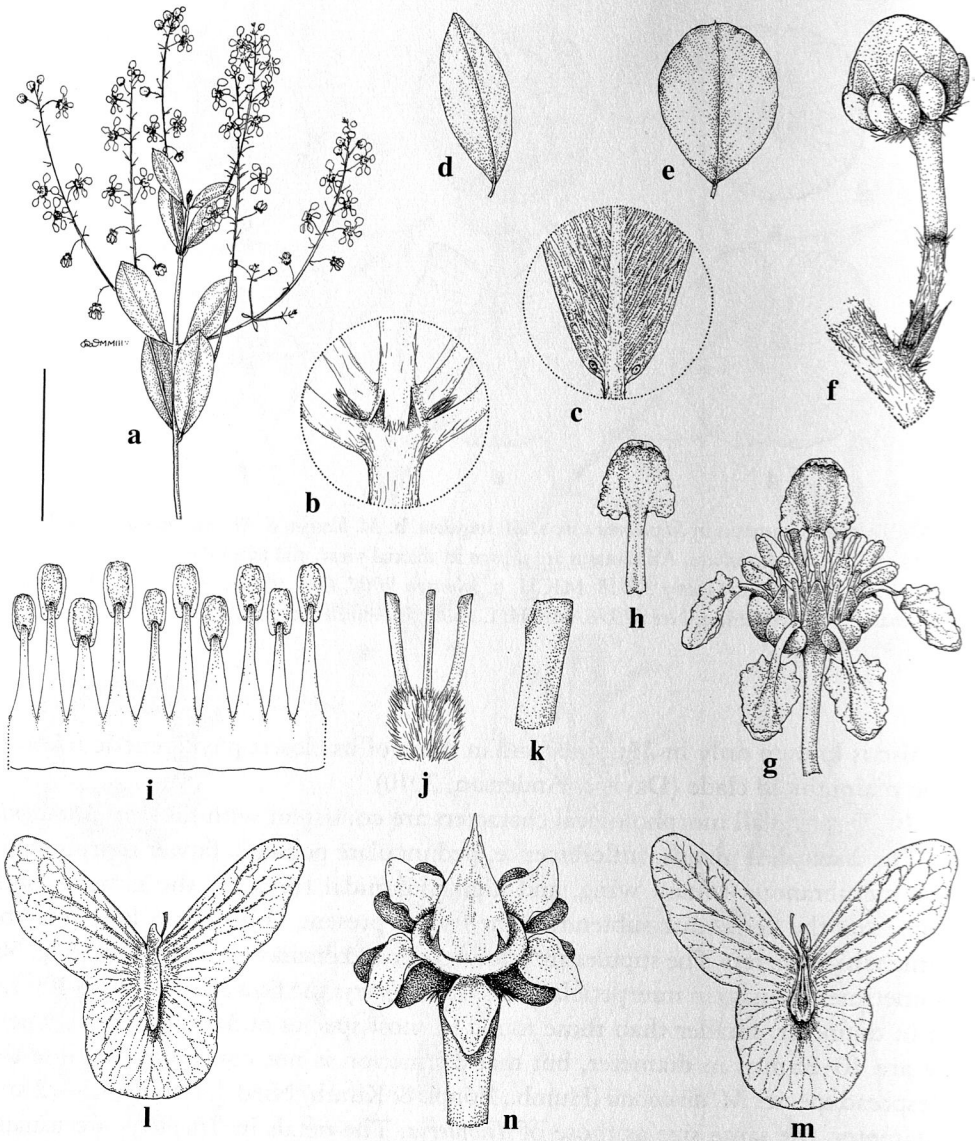


Fig. 5. *Mascagnia lucida* (*Triopteris jamaicensis*). **a**. Flowering branch. **b**. Node showing interpetiolar stipules. **c**. Abaxial base of lamina to show glands and lineate venation. **d**, **e**. Detached leaves, adaxial view, to show variation in shape. **f**. Flower bud and portion of inflorescence axis. **g**. Flower, posterior petal uppermost. **h**. Detached posterior petal, adaxial view. **i**. Androecium laid out, abaxial view, the stamen fifth from left opposite posterior petal. **j**. Gynoecium, anterior style in center. **k**. Distal portion of style. **l**. Samara, abaxial view. **m**. Samara, adaxial view. **n**. Old fruit after fall of samaras, showing torus surrounded by disc with rudimentary lobes. Scale bar equivalents: a, d, e, 4 cm; b, c, g, h, 4 mm; f, 2.7 mm; i, j, n, 2 mm; k, 0.7 mm; l, m, 8 mm. (Drawn from: a-c, f-k, Howard *et al.* 259 [Cuba], MICH; d, Gentry 51029 [Cuba], MICH; e, n, Hammel 17816 [Cuba], MICH; l, m, Correll 46218 [Bahamas], NY.)

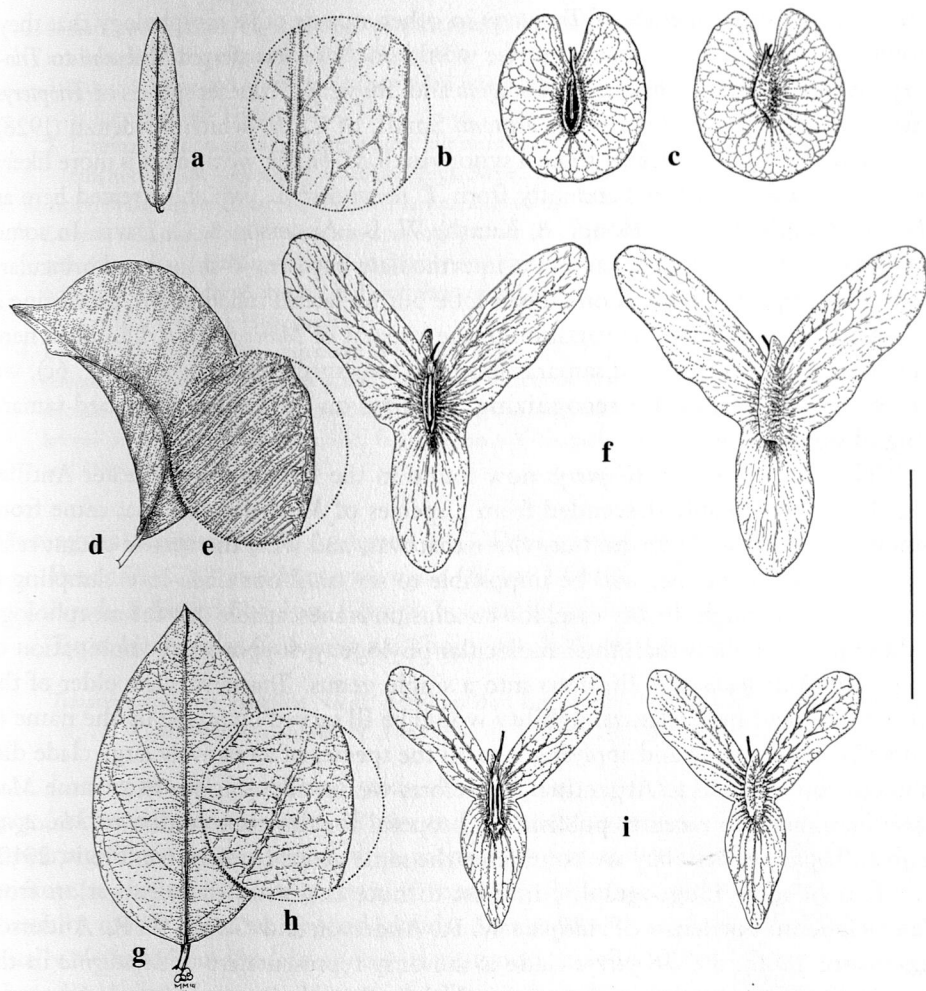


Fig. 6. *Mascagnia* (*Triopterys*) species. **a-c**, *M. buchii*. **a**. Leaf, adaxial view. **b**. Enlargement of lamina, adaxial surface, to show reticulate venation. **c**. Samaras, adaxial view (left) and abaxial view (right). **d-f**, *M. adamsii*. **d**. Leaf, adaxial view. **e**. Enlargement of lamina, adaxial surface, to show lineate venation. **f**. Samaras, adaxial view (left) and abaxial view (right). **g-i**, *M. paniculata*. **g**. Leaf, adaxial view. **h**. Enlargement of lamina, adaxial surface, to show reticulate venation. **i**. Samaras, adaxial view (left) and abaxial view (right). Scale bar equivalents: a, d, g, 2.7 cm; b, h, 8 mm; c, f, i, 1 cm; e, 4 mm. (Drawn from: a-c, Zanoni *et al.* 35016 [Haiti], MICH; d, e, Mejía & Zanoni 7756 [Dominican Republic], MICH; f, Pequero & Veloz 69 [Dominican Republic], MICH; g-i, Crosby *et al.* 331 [Jamaica], MICH.)

the same authors discovered that some populations of *M. buchii* have three-lobed samaras indistinguishable from those of *Triopterys*, so (in Urban, 1926) they transferred *M. buchii* Urb. & Nied. to *Triopterys*, recognizing two varieties, one with a mascagnioid samara and the other with a triopteroid samara. We agree that *M. buchii* is so

similar to the other species of *Triopterys* in other aspects of its morphology that they should all be in the same genus, but we would not have transferred *M. buchii* to *Triopterys*; we would have combined *Mascagnia* and *Triopterys*. Another species of *Triopterys* with a mascagnoid samara is *M. brittonii* Small, of Cuba, which Niedenzu (1928) never saw but supposed likely to be a synonym of *M. buchii*; we think it is more likely to have been derived independently from *T. jamaicensis* L., which is treated here as *Mascagnia lucida* (Humb., Bonpl. & Kunth) W. R. Anderson & C. Davis. In some populations of *Triopterys* the samara is intermediate between Y-shaped and orbicular, having two upper lobes and one lower lobe but no lateral indentations, producing a V-shaped samara. Given the variation in the samaras of *Mascagnia s.str.* illustrated here (Fig. 4) and the mascagnoid samaras found in two species of *Triopterys* (Fig. 6c), we can see no justification for recognizing *Triopterys* on the basis of the lobed samara wing of some species.

The five species of *Triopterys* now found in the Bahamas and Greater Antilles (Fig. 1) are presumably descended from a species of *Mascagnia s.str.* that came from somewhere in Latin America, but where that was, and what the nearest extant relative in *Mascagnia* may be, will be impossible to say until our clade-level sampling is much more thorough. In any case, the conclusion is inescapable that the morphology of these plants, no less than their molecular phylogeny, supports the combination of the genera *Mascagnia* and *Triopterys* into a single genus. *Triopterys* is the older of the two names, but nomenclatural stability would be ill served by taking up the name of a tiny Caribbean clade and applying it to all the species of a relatively large clade distributed from Mexico to Argentina. Therefore, we are adopting the later name *Mascagnia* here, and we recently published a proposal for the conservation of *Mascagnia* against *Triopterys* when they are considered the same genus (Anderson & Davis, 2012).

It is of some biogeographic interest to note that after the segregation from *Mascagnia* *sensu* Niedenzu of *Adelphia* W. R. Anderson and *Carolus* W. R. Anderson (Anderson, 2006), the *Triopterys* clade is the only representative of *Mascagnia* in the West Indies if one excludes Trinidad, which is floristically more South American than West Indian.

Mascagnia (Bertero *ex* DC.) Bertero in Colla, Hortus Ripul. 85. 1824. *Hiraea* sect. *Mascagnia* Bertero *ex* DC., Prodr. 1: 585. 1824. Type: *M. macradena* (DC.) Nied. (lectotype designated by Pfeiffer, Nom. 2: 238. 1872, under the name *M. americana* Bertero, *nom. superfl.*).

Triopterys L., Sp. Pl. 428. 1753. Type: *T. jamaicensis* L.

Key to the Triopteroid Species of *Mascagnia*

1. Venation of lamina lineate, with many fine and strongly parallel veins and veinlets (Figs. 5c; 6e).
2. Samara orbicular, smoothly rounded on sides without any constriction; Cuba *M. brittonii*

2. Samara usually Y-shaped, the lateral constrictions occasionally slight to none, resulting in a broadly V-shaped samara (Figs. 5l, m; 6f).
3. Lamina falcate and often appearing folded when pressed, abruptly short-acuminate at apex (Fig. 6d); Hispaniola *M. adamsii*
3. Lamina flat, occasionally acute at apex but mostly obtuse to broadly rounded, often emarginate, and sometimes apiculate (Figs. 5d, e); Bahamas and Cuba *M. lucida*
1. Venation of lamina reticulate, the veinlets not parallel to the 5–9 lateral veins (Fig. 6b, h).
4. Lamina 6–11 mm wide, linear to very narrowly ovate (Fig. 6a); sepals abaxially \pm densely sericeous beyond glands; pedicels uniformly and persistently sericeous; samara mostly orbicular or broadly V-shaped and not constricted at sides, rarely with some lateral constriction (Fig. 6c); Hispaniola *M. buchii*
4. Lamina 20–65 mm wide, narrowly to broadly ovate (Fig. 6g); sepals abaxially sparsely sericeous to glabrous beyond glands; pedicels sericeous distally to nearly glabrous, occasionally uniformly and persistently sericeous; samara usually Y-shaped, rarely the lateral constrictions slight to none, resulting in a V-shaped samara (Fig. 6i); Jamaica and Hispaniola *M. paniculata*

Mascagnia adamsii W. R. Anderson & C. Davis, **nom. nov.**; *Triopterys rigida* Sw., Prodr. 75. 1788, *non Mascagnia rigida* (A. Juss.) Griseb.; *Triopterys rigida* f. *vulgaris* Nied., Arbeiten Bot. Inst. Königl. Lyceum Hosianum Braunsberg 4: 11. 1912. Type: Hispaniola. O. Swartz s.n. (holotype: BM; isotype: S n.v.). (Fig. 6d–f)

Triopterys rigida var. *ovatifolia* Nied., Arbeiten Bot. Inst. Königl. Lyceum Hosianum Braunsberg 4: 11. 1912. Type: Hispaniola. H. Türkheim 3627 (lectotype, **here designated**: NY).

Lamina mostly 25–60 mm wide, broadly ovate, abruptly short-acuminate at apex (occasionally as narrow as 12 mm and narrowly ovate), notably falcate and often appearing folded when pressed, with many very fine and strongly parallel veins and veinlets producing a lineate pattern of venation. *Pedicels* sericeous to glabrous. *Sepals* abaxially mostly glabrous beyond glands. *Samara* 14–30 mm long, 11–24 mm wide, usually Y-shaped but the lateral constriction occasionally slight to none, resulting in a broadly V-shaped samara. Hispaniola (Dominican Republic and Haiti).

This species is named for C. Dennis Adams, 1920–2005, author of *Flowering Plants of Jamaica* and kind mentor to W. R. Anderson during his first tropical experience in Jamaica in 1963.

Mascagnia brittonii Small, N. Amer. Fl. 25: 120. 1910. Type: Cuba, Oriente Province, N. L. Britton 1900 (holotype: NY; isotypes: NY, US).

Lamina 6–12 mm wide, narrowly elliptical, acute or obtuse to rounded and sometimes apiculate at apex, flat, with many very fine and strongly parallel veins and veinlets producing a lineate pattern of venation. *Pedicels* sericeous to glabrous. *Sepals* abaxially mostly glabrous beyond glands. *Samara* 15 mm long and wide, \pm orbicular, the lateral wing continuous at base, broadly cleft to nut at apex, smoothly rounded on sides without any constriction. Oriente, Cuba.

The samaras of this plant are similar to those of *Mascagnia buchii*, but larger; however, the lineate leaf venation suggests that *M. brittonii* had an independent origin in *M. lucida*.

Mascagnia buchii Urb. & Nied. in Urban, Symb. Antill. 2: 452. 1901; *Triopteris buchii* (Urb. & Nied.) Urb. & Nied. in Urban, Ark. Bot. 20A(15): 40. 1926; *Triopteris buchii* var. *mascagnioides* Urb. & Nied. in Urban, Ark. Bot. 20A(15): 40. 1926, *nom. superfl.* Type: Haiti, Gonaïves, *W. Buch 314* (holotype: B†; lectotype, **here designated**: NY; isotype: GH). (Fig. 6a–c)

Triopteris jacquemontii Urb. & Nied. in Niedenzu, Arbeiten Bot. Inst. Königl. Lyceum Hosianum Braunsberg 4: 9. 1912; *Triopteris buchii* var. *jacquemontii* (Urb. & Nied.) Urb. & Nied. in Urban, Ark. Bot. 20A(15): 40. 1926. Type: Haiti, Gonaïves, 24 Mar 1827, *V. V. Jacquemont s.n.* (holotype: B†).

Lamina 6–11 mm wide, linear to very narrowly ovate, narrowly acute to obtuse to rounded and sometimes apiculate at apex, flat, with 5–9 prominent lateral veins on each side interconnected by cross-veins not parallel to lateral veins, producing a reticulate pattern of venation. *Pedicels* uniformly and persistently sericeous. *Sepals* abaxially ± densely sericeous beyond glands. *Samara* 12–18 mm long and wide, mostly orbicular or broadly V-shaped, with the lateral wing not constricted at sides, rarely with some lateral constriction. Hispaniola (western Dominican Republic and Haiti).

Mascagnia lucida (Humb., Bonpl. & Kunth) W. R. Anderson & C. Davis, **comb. nov.**; *Triopteris lucida* Humb., Bonpl. & Kunth, Nov. Gen. Sp. 5: pl. 451. 1821. Type: Cuba, between Guanavacoa and Havana, *F. W. H. A. Humboldt & A. Bonpland s.n.* (holotype: P-HBK). (Fig. 5)

Triopteris jamaicensis L., Sp. Pl. 428. 1753, *non Mascagnia jamaicensis* Urb. & Nied.; *Triopteris rigida* var. *jamaicensis* (L.) Griseb., Cat. Pl. Cub. 44. 1866, *nom. superfl.*; *Triopteris rigida* var. *caerulea* M. Gómez, Anales Soc. Esp. Hist. Nat. 19: 232. 1890, *nom. superfl.*; *Triopteris ovata* var. *jamaicensis* (L.) Nied., Arbeiten Bot. Inst. Königl. Lyceum Hosianum Braunsberg 4: 10. 1912, *nom. superfl.* Type: Purportedly from Jamaica, but nothing like it has ever been collected there, so it is much more likely to have come from Cuba or the Bahamas, collector unknown (lectotype, designated by W. R. Anderson in Jarvis et al. 1993: "Herb. Clifford: 169, Triopteris No. 1," BM).

Banisteria microphylla Jacq., Observ. Bot. 3: 7, pl. 56. 1768, *non Mascagnia microphylla* (A. Juss.) Griseb. Type: Bahamas?, *M. Catesby s.n.* in Herb. Gronov. (holotype: BM).

Triopteris havanensis Humb., Bonpl. & Kunth, Nov. Gen. Sp. 5 [quarto ed.]: 168. 1821 [1822]. Type: Cuba, near Havana, *F. W. H. A. Humboldt & A. Bonpland s.n.* (not found in P-HBK in 1993).

Triopteris parvifolia A. Juss., Ann. Sci. Nat. Bot., sér. 2, 13: 266. 1840. Type: Bahamas, collector unknown (lectotype, **here designated**: fruiting specimen from Richard's herbarium, annotated with the name *T. parvifolia* by Jussieu, P).

Banisteria eneaptera Sessé & Moc., Fl. Mexic. (ed. 2), 116. 1894. Type: Cuba, near Havana, no specimen known to exist.

The samaras of this plant are similar to those of *Mascagnia buchii*, but larger; however, the lineate leaf venation suggests that *M. brittonii* had an independent origin in *M. lucida*.

Mascagnia buchii Urb. & Nied. in Urban, Symb. Antill. 2: 452. 1901; *Triopteris buchii* (Urb. & Nied.) Urb. & Nied. in Urban, Ark. Bot. 20A(15): 40. 1926; *Triopteris buchii* var. *mascagnioides* Urb. & Nied. in Urban, Ark. Bot. 20A(15): 40. 1926, *nom. superfl.* Type: Haiti, Gonaïves, *W. Buch 314* (holotype: B†; lectotype, **here designated**: NY; isotype: GH). (Fig. 6a–c)

Triopteris jacquemontii Urb. & Nied. in Niedenzu, Arbeiten Bot. Inst. Königl. Lyceum Hosianum Braunsberg 4: 9. 1912; *Triopteris buchii* var. *jacquemontii* (Urb. & Nied.) Urb. & Nied. in Urban, Ark. Bot. 20A(15): 40. 1926. Type: Haiti, Gonaïves, 24 Mar 1827, *V. V. Jacquemont s.n.* (holotype: B†).

Lamina 6–11 mm wide, linear to very narrowly ovate, narrowly acute to obtuse to rounded and sometimes apiculate at apex, flat, with 5–9 prominent lateral veins on each side interconnected by cross-veins not parallel to lateral veins, producing a reticulate pattern of venation. *Pedicels* uniformly and persistently sericeous. *Sepals* abaxially ± densely sericeous beyond glands. *Samara* 12–18 mm long and wide, mostly orbicular or broadly V-shaped, with the lateral wing not constricted at sides, rarely with some lateral constriction. Hispaniola (western Dominican Republic and Haiti).

Mascagnia lucida (Humb., Bonpl. & Kunth) W. R. Anderson & C. Davis, **comb. nov.**; *Triopteris lucida* Humb., Bonpl. & Kunth, Nov. Gen. Sp. 5: pl. 451. 1821. Type: Cuba, between Guanavacoa and Havana, *F. W. H. A. Humboldt & A. Bonpland s.n.* (holotype: P-HBK). (Fig. 5)

Triopteris jamaicensis L., Sp. Pl. 428. 1753, *non Mascagnia jamaicensis* Urb. & Nied.; *Triopteris rigida* var. *jamaicensis* (L.) Griseb., Cat. Pl. Cub. 44. 1866, *nom. superfl.*; *Triopteris rigida* var. *caerulea* M. Gómez, Anales Soc. Esp. Hist. Nat. 19: 232. 1890, *nom. superfl.*; *Triopteris ovata* var. *jamaicensis* (L.) Nied., Arbeiten Bot. Inst. Königl. Lyceum Hosianum Braunsberg 4: 10. 1912, *nom. superfl.* Type: Purportedly from Jamaica, but nothing like it has ever been collected there, so it is much more likely to have come from Cuba or the Bahamas, collector unknown (lectotype, designated by W. R. Anderson in Jarvis et al. 1993: "Herb. Clifford: 169, Triopteris No. 1," BM).

Banisteria microphylla Jacq., Observ. Bot. 3: 7, pl. 56. 1768, *non Mascagnia microphylla* (A. Juss.) Griseb. Type: Bahamas?, *M. Catesby s.n.* in Herb. Gronov. (holotype: BM).

Triopteris havanensis Humb., Bonpl. & Kunth, Nov. Gen. Sp. 5 [quarto ed.]: 168. 1821 [1822]. Type: Cuba, near Havana, *F. W. H. A. Humboldt & A. Bonpland s.n.* (not found in P-HBK in 1993).

Triopteris parvifolia A. Juss., Ann. Sci. Nat. Bot., sér. 2, 13: 266. 1840. Type: Bahamas, collector unknown (lectotype, **here designated**: fruiting specimen from Richard's herbarium, annotated with the name *T. parvifolia* by Jussieu, P).

Banisteria eneaptera Sessé & Moc., Fl. Mexic. (ed. 2), 116. 1894. Type: Cuba, near Havana, no specimen known to exist.

Triopterys rigida f. *oblonga* Nied., Arbeiten Bot. Inst. Königl. Lyceum Hosianum Braunsberg 4: 11. 1912. Type: Bahamas, near Nassau, *A. H. Curtiss 146* (lectotype, **here designated**: the specimen stamped "Examined for NORTH AMERICAN FLORA," NY; isolectotypes: GOET, MO, NY).

Triopterys rigida f. *nana* Nied. in Engl., Pflanzenr. IV, 141: 153. 1928. Type: Cuba, Santayana, Camagüey, *E. L. Ekman 15342* (holotype: B†; lectotype, **here designated**: the specimen from Niedenzu's herbarium, NY; isotype: NY).

Lamina extremely variable in size and shape, from 4 mm wide and linear to 45 mm wide and broadly elliptical, ovate, or obovate, occasionally acute at apex but mostly obtuse to broadly rounded, often emarginate and sometimes apiculate, flat, with many very fine and strongly parallel veins and veinlets producing a lineate pattern of venation. *Pedicels* sericeous to glabrous. *Sepals* abaxially mostly glabrous beyond glands. Samara 9–27 mm long, 7–18 mm wide, always Y-shaped but the lateral constriction varying from partial to complete; lower lobe of lateral wing sometimes elongate like upper lobes, sometimes much shorter, as wide as long, and rounded. Bahamas and Cuba.

Plants from Camagüey, Cuba, have very narrow leaves and tiny samaras that set them apart from other Cuban collections. If we were treating the Cuban flora in isolation it would seem reasonable to segregate the Cuban plants with narrow leaves, which Niedenzu (1928) did when he named them *Triopterys rigida* f. *nana*, but specimens with the leaves and samaras only slightly larger have been collected in the Bahamas. That makes recognition of a Cuban segregate difficult to justify. We assume that this species reached Cuba at least twice, from different source populations, giving rise to the two very different-looking populations on Cuba.

Mascagnia paniculata (Mill.) W. R. Anderson & C. Davis, **comb. nov.**; *Malpighia paniculata* Mill., Gard. Dict. ed. 8, no. 6. 1768; *Bunchosia paniculata* (Mill.) DC., Prodr. 1: 582. 1824; *Triopterys paniculata* (Mill.) Small, N. Amer. Fl. 25: 124. 1910. Type: Jamaica, collector unknown (lectotype, **here designated**: the left-hand piece mounted with a hand-written label containing Miller's phrase names, BM). (Fig. 6g–i)

Triopterys ovata Cav., Diss. 9: 431, pl. 259. 1790; *Triopterys jamaicensis* var. *ovata* (Cav.) Nied. in Engl., Pflanzenr. IV, 141: 152. 1928. Type: "Santo Domingo" [Hispaniola], collector unknown (lectotype, **here designated**: P-JU 11687+A).

Triopterys brittonii Small, N. Amer. Fl. 25: 124. 1910; *Triopterys jamaicensis* f. *brittonii* (Small) Nied. in Engl., Pflanzenr. IV, 141: 152. 1928. Type: Jamaica, Mandeville, *N. L. Britton 1069* (holotype: NY).

Triopterys ovata f. *acuminata* Nied., Arbeiten Bot. Inst. Königl. Lyceum Hosianum Braunsberg 4: 10. 1912. Type: Hispaniola, Haiti, *L. Picarda 51* (lectotype, **here designated**: NY).

Triopterys ovata f. *obtusata* Nied., Arbeiten Bot. Inst. Königl. Lyceum Hosianum Braunsberg 4: 10. 1912; *Triopterys jamaicensis* f. *obtusata* (Nied.) Nied. in Engl., Pflanzenr. IV, 141: 152. 1928. Type: Hispaniola, *H. F. A. Eggers 1919* (lectotype, **here designated**: NY).

Triopterys ovata var. *domingensis* Nied., Arbeiten Bot. Inst. Königl. Lyceum Hosianum Braunschweig 4: 10. 1912. Type: Hispaniola, *H. F. A. Eggers 1919* (lectotype, **here designated**: NY).

Lamina 20–65 mm wide, narrowly to broadly ovate, abruptly acuminate, acute or narrowly to broadly obtuse or rounded, and sometimes emarginate or apiculate at apex, flat or nearly so, with 5–9 prominent lateral veins on each side interconnected by \pm horizontal cross-veins not parallel to lateral veins, producing a reticulate pattern of venation. *Pedicels* sericeous distally to nearly glabrous, occasionally uniformly and persistently sericeous. *Sepals* abaxially sparsely sericeous to glabrous beyond glands. *Samara* 11–23 mm long, 9–20 mm wide, usually Y-shaped, the lateral wing constricted at sides, giving the effect of three subequal, usually \pm elongate lateral wings, the upper two longer than the lower central lobe (rarely the lateral constriction slight to none, resulting in a V-shaped samara). Jamaica and Hispaniola (Dominican Republic and Haiti).

Nieden zu (1928) misapplied the name *Triopterys jamaicensis* to this species.

Acknowledgments

One of us (WRA) thanks Pat and Noel Holmgren for 40 years of collegial friendship, and we both congratulate them on their incredibly productive careers and hope they will enjoy many happy years of botanizing in their “retirement.” The beautiful drawings came from the pen of Karin Douthit. Christiane Anderson contributed helpful comments on the manuscript. Funding to support this research was provided by National Science Foundation grants DEB-0543909 to the University of Michigan for WRA and C. Anderson and DEB-0544039 and ATOL EF 04-31242 to Harvard University for CCD. The curators of the following herbaria welcomed visits by WRA or sent specimens as gifts or loans to the University of Michigan Herbarium: A, AAU, BH, BM, BR, CAS, CAY, CEPEC, CM, COL, CORO, CTES, CVRD, E, F, G, GH, HUA, HUEFS, INB, INPA, JBSD, K, LPB, MBM, MBML, MER, MEXU, MO, MU, MY, NY, P, PEUFR, PORT, U, ULM, US, VEN, WIS.

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