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Nomenclatural Innovations in Neotropical Salicaceae

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ABSTRACT. Macrothumia M. H. Alford is described as a new genus of Salicaceae based on Neosprucea kuhlmannii Sleumer from Brazil. The deciduous perianth, papillate leaf teeth, presence of receptacular disk glands, and analyses of plastid DNA data suggest that the new genus is more closely related to Ahernia Merrill and Pleuranthodendron L. O. Williams than to Banara Aublet or Neosprucea Sleumer. The monotypic genus Aphaerema Miers of Brazil and Argentina is transferred to Abatia Ruiz & Pavón, based on analyses of plastid DNA sequences and on the lack of morphological discontinuities between the genera. Because the name Abatia spicata (Turczaninow) Sleumer already exists, Abatia angeliana M. H. Alford is published as a replacement name for Aphaerema spicata Miers. A lectotype for Aphaerema spicata is also designated. The monotypic Hispaniolan genus Priamosia Urban, originally described as separate from Xylosma G. Forster based on its few stamens (four, instead of eight to numerous), is transferred to Xylosma, and a neotype is designated for Xylosma domingensis (Urban) M. H. Alford.

Key words: Abatia, Aphaerema, Argentina, Banara, Brazil, Flacourtiaceae, Hispaniola, Macrothumia, Neosprucea, Priamosia, Salicaceae, Xylosma.

Based on recent phylogenetic analyses of Salicaceae using both morphological and molecular data (Alford, 2005; Chase et al., 2002), several taxonomic changes were deemed urgent and sufficiently well supported to precede a forthcoming treatment of the family in the Kubitzki-edited series The Families and Genera of Flowering Plants (S. Zmarzty, in prep.). Salicaceae now include a large part of the former Flacourtiaceae (Alford, 2005; Chase et al., 2002), and the taxa considered here were all formerly placed in Flacourtiaceae. Phylogenetic analyses indicate that the monotypic Aphaerema Miers is nested within Abatia Ruiz & Pavón, that the monotypic Priamosia Urban is nested within Xylosma G. Forster, and that the species usually treated as Banara kuhlmannii...
Merrill. Neosprucea. The glandular apices of the leaf teeth did not mention anther shape. These characters were observed in Banara, not Neosprucea. Sleumer (1980) maintained Neosprucea and were unlike those of Banara. Regardless, he was convinced that the new species belonged in Neosprucea due to its large fruits (> 3 cm diam.). Such a large fruit had never been observed in Banara, and the few available fruits of Neosprucea were larger than those of most Banara. Following the collection of additional specimens, Kuhlmann (1953) reinforced Sleumer’s claims, pointing out that N. kuhlmannii was 4-merous and had flowers disposed in a racemose inflorescence. Kuhlmann did not mention anther shape. These characteristics matched those of the described species of Neosprucea and were unlike those of Banara.

In 1978, however, Sleumer transferred the species to Banara without comment, presumably because he had then seen flowers and realized that the globose to ellipsoidal shape of the anthers was characteristic of Banara, not Neosprucea. Sleumer (1980) maintained this treatment of the species as Banara kuhlmannii (Sleumer) Sleumer in his monograph of the Neotropical Flacourtiaceae.

The first specimen of Banara kuhlmannii that I examined (A. M. de Carvalho et al. 6689, MO) was annotated by Ron Liesner in 2000 as “If Flacourtia majoribus et numero petalorum differt, et Pleuranthodendron L. O. Williams affine, a quo fructibus majestatebus et numero seminoribus et tepalorum differt. Arbor, folia simplicia, alterna, ovata vel oblongo-elliptica, ad apicem petioli glandulis duabus rotundis crassis operculatis instructa, margine inconspicue serrato, venatione foliorum actinodromoa. Inflorescentia terminalis racemosa fasciculiformis vel umbelliformis, sepala et petala 3 vel 4, post anthesin decidua, stamina numerosa, antherae ellipsoideae, glandulæ discis praesentes, ovarium superum. Capsula globosa, 3–5 cm diametro, multisemina, pseudo-8–9-localis, placentibus 8–9-lamelliformibus, in cavitate profunde prominentibus, pericarpi fragili subcoriaceo.

Trees to 20 m tall, 30 cm DBH. Leaves simple, alternate, ovate to oblong-elliptic, 6–13 × 3–8 cm, apex acute to shortly acuminate, base rounded to subcordate, chartaceous, deciduous, margin subentire to inconspicuously serrate with papillate apices of the teeth, venation actinodromous, petiole 2–4.5 cm long, apex of petiole bearing a pair of thick, projecting, cup-shaped glands. Inflorescence a terminal, congested, fascicule- or umbel-like raceme of 3 to 9 flowers; sepals and petals 3 or 4, creamy yellow, ca. 1 cm long, deciduous in fruit; stamens numerous (ca. 100 to 130), anthers ellipsoidal, longitudinally dehiscent; disk glands present, consisting of only 1. Capsule globose, 3–5 cm diam., multisegmented, with 8 or 9 highly intruded parietal placentae, fruit wall subcoriaceous but brittle, base of style persistent. Seeds exarillate.

Macrothumia. A new genus allied to Ahernia and Pleuranthodendron. Macrothumia has parietal placenta, congested, fascicule- or umbel-like racemes, three or four petals per flower, and large fruits.
Figure 1. *Macrothumia kuhlmannii*. —A. Flowering branches. —B. Leaf, with close-ups of teeth and glands at the apex of the petiole. —D. Floral bud. —E. Flowers at anthesis. —F. Longitudinal section and cross section of a flower showing receptacular disk glands. —G. Stamens. —H. Pistil, close-up of stigma, and cross section of ovary, showing highly intruded parietal placentation. —I. Mature fruit. Scale bar equals 3 cm for A–C and I, 5 mm for E and F, and 3 mm for G and H. Length of D equals 1.3 cm. A, B, D, F, G, and H drawn from Mori et al. 10641 (NY, herbarium sheet, spirit collection, and photos), C and E from Thomas et al. 12530 (NY, herbarium sheet and photos), and I from Pirani et al. 3384 (NY).

Distribution. Brazil (Bahia, Espirito Santo, Minas Gerais).

Representative specimens examined. BRAZIL. Bahia: Belém & Pinheiro 2878 (NY), Carvalho et al. 6689 (MO), Mori et al. 10640, 10641 (NY), Mori & Thompson 11016 (NY), Thomas et al. 7063 (NY), Thomas et al. 12530 (MO, NY). Espirito Santo: Kuhlmann 6449 (FSU), Pirani et al. 3384 (NY). Minas Gerais: Mesia 3294 (BM, NY).

A thorough description of the species may be found in Sleumer (1980), as Banara kuhlmannii, although he failed to mention the key character of receptacular disk glands and reported, with the material at his disposal, that the flowers were 3-merous (or rarely 4-merous by splitting of the petals) instead of 3- or 4-merous. Information about the use of Macrothumia kuhlmannii as refreshment for both humans and wildlife may be found in Kuhlmann (1953).

Etymology. Macrothumia (μακρόθυμα) is a Greek word for long-suffering or enduring patience, a virtue prized by taxonomists.

ABATIA AND APHAEREMA

Abatia, Aphaerema, Pseudoscolopia Gilg, and Homalium Jacquin are the only genera in Salicaceae that have opposite leaves. Aphaerema and Abatia are closely related Neotropical genera, Pseudoscolopia is a South African genus of a different tribe, and Homalium is a pantropical genus of a different tribe with only a few species from Madagascar that have opposite or whorled leaves. Aphaerema is a monotypic genus from Brazil and Argentina of small shrubs (< 0.5 m) with 8 to 12 stamens and no staminodes (Angely, 1962). Abatia is a genus of nine montane species from Mexico and Central and South America of small to medium-sized shrubs (to 4 m tall) commonly with numerous stamens (ca. 20 to 35) and an outer ring of filamentous staminodes. Baillon (1872) noted that two new species of Abatia, since described as A. stellata Lillo (1919) and A. mexicana Standley (1931), have as few stamens (4 to 8) as Aphaerema. Baillon (1872) considered the genera closely related and did not believe that the absence of staminodes was alone sufficient for generic status. Thus, he treated Aphaerema as part of Abatia. Furthermore, several other species of Abatia, A. americana (Gardner) Eichler, A. glabra Sleumer, and A. microphylla Taubert, have intermediate numbers of stamens (12 to 20) and form an overall morphological continuum between the larger, common species of Abatia with numerous stamens and staminodes and the diminutive Aphaerema with few stamens and no staminodes. Despite the clear continuity between Aphaerema and Abatia, their segregation has been maintained, with some authors producing dichotomous keys with number of stamens as a principal character, presumably unaware of the less common species or their characters (e.g., Hutchinson, 1967). Further evidence of their close relationship has been inferred from analyses of plastid DNA (Alford, 2005).

Although considering the two genera congeneric, Baillon (1872, 1875, 1876) never made the proper transfer of Aphaerema to Abatia, because he did not associate the epithet of Aphaerema spicata Miers with Abatia (ICBN Art. 33.1, Greuter et al., 2000). Aphaerema spicata is thus transferred formally to Abatia here, but because that epithet is blocked in Abatia by Abatia spicata (Turczaninow) Sleumer, a substitute name is introduced (cf. ICBN Art. 11.2–11.4, Greuter et al., 2000).

A lectotype is chosen because Miers did not designate a holotype. He referred to a single collection in the protologue, J. Weir 427, of which one specimen exists at BM and two at K. Thus, the three specimens are syntypes. All specimens are of excellent quality, and the particular specimen at K is chosen due to the amount of material available on the sheet.

**Etymology.** The epithet honors João Alberto Angely (1917–), Brazilian botanist and editor of the small and short-lived series Flacourtiaceae: Série científica devotada ao estudo geral das plantas desta família.


A neotype is designated because the holotype (*H. Eggers 2285, B*) was destroyed in World War II. Photos of the holotype exist at F and NY, but no isotypes have been found. Very few quality specimens of *Xylosma domingensis* exist, but *Ekman H14082 (NY)* was chosen as neotype because the collection comes from the same area as the holotype ("Valle de Constanza") and has numerous duplicates.

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