

Briquetiastrum: a new genus of Malvaceae and the redefinition of *Briquetia*

Massimo G. Bovini

Instituto de Pesquisas Jardim Botânico do Rio de Janeiro, Diretoria de Pesquisas,
rua Pacheco Leão 915, CEP 22460-030, Rio de Janeiro, Brazil. mbovini@jbrj.gov.br

Abstract

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A historical overview of the genus *Briquetia*, with an analysis of its circumscription conflicts and the proposal for a new genus, *Briquetiastrum*, based on new morphological studies and phytogeographical data were made. A taxonomic treatment and three new combinations from *Briquetia* to *Briquetiastrum* (*Briquetiastrum inermis*, *B. spicatum* and *B. sonora*) are presented and *Briquetiastrum sonora* is illustrated for the first time. Descriptions and a key to the treated species are included.

Keywords: nomenclature, taxonomy, neotropics.

Resumen

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Se presenta una síntesis histórica del género *Briquetia*, documentando sus problemas de circunscripción genérica. Se propone un nuevo género, *Briquetiastrum*, basado en nuevos estudios morfológicos y análisis fitogeográficos. Se presentan también un estudio taxonómico y tres nuevas combinaciones de *Briquetia* para *Briquetiastrum* (*Briquetiastrum inermis*, *B. spicatum* e *B. sonora*). *Briquetiastrum sonora* es ilustrada por primera vez. Se incluyen descripciones y una clave para las especies tratadas.

Palabras clave: nomenclatura, taxonomía, neotrópicos.

INTRODUCTION

The genus *Briquetia* Hochr., described by Hochreutiner (1902), has still a fragile and inconsistent circumscription. This characteristic is shared with other genera, such as *Batesimalva* Fryxell, *Dirhamphis* Krapov., *Hochbreutinera* Krapov., *Horsfordia* A. Gray, *Pseudabutylon* R.E. Fries, and *Wissadula* Medik., which are morphologically very similar to it. A striking feature common to these genera is the fruit, in which the morphology of the calyx and mericarp, the presence or absence of endoglossum, and the number of seeds, frequently combine to define the taxon. Krapovickas (1970), Fryxell (1976, 1997, 2007), and Bovini (2009, 2010), commented on the morphology of some of these genera, analyzed their differences, and proposed new genera and species that are similar to *Briquetia*.

In spite of their efforts, the generic boundaries in this group are not clearly defined yet, due to the use of diagnostic fruit features that do not seem unambiguously associated to each one. Moreover, Fryxell & Stelly (1993) counted the chromosomes of some Malvaceae and concluded that species of *Dirhamphis* need to be reevaluated, because their basic chromosome numbers differ and perhaps they may be not congeneric. Later, Tate & al. (2005) made a phylogenetic analysis of the genera of the tribe Malveae based on molecular data and concluded that they are geographically, chromosomally, and morphologically divided in several clades, and that the phylogeny with ITS markers with 14 generic alliances proposed initially by Bates (1968; Bates & Blanchard 1970) and later presented by Bayer & Kubitzki (2003) is artificial. This phylogeny identified a series of closely related genera of this tribe. (*Batesimalva*, *Briquetia*, *Dirhamphis*, *Hochbreutinera*, *Horsfordia*, *Pseudabutylon*, and *Wissadula*), among which the results showed a close relationship between *Briquetia*, *Dirhamphis*, and *Hochbreutinera*.

Based on the review of specimens from several herbaria, its morphological analysis, and literature review, the

present study aims at establishing morphological limits for the genus *Briquetia*. It also aims at proposing a new genus of Malvaceae, named *Briquetiastrum*, which includes a group of species described by Fryxell (1976, 1990) under *Briquetia* due to their floral characters in common, but which differ from those described in the type species of *Briquetia*.

MATERIAL AND METHODS

The present study was based on the analysis of collections of national and international herbaria: ARIZ, INPA, K, LL, MBM, NY, RB, US, (Thiers 2012), as well as fieldwork carried by the author. The criteria for typification followed McNeill & al. (2012), and morphological analysis under a stereoscopic microscope, and used a caliper to take the measurements.

The species were evaluated in their conservation status following the categories and criteria of IUCN (2001), and provided subsidies for defining species that should be protected.

For pollen analysis, flowers or flower buds from three samples of each species were used, except for *Briquetiastrum inermis*, whose material was removed from specimens deposited in the herbaria ARIZ, NY, and RB. Pollen grains were observed, analyzed, and photographed in a S.E.M Zeiss EVO-40 microscope, at the Research Institute of the Botanical Gardens of Rio de Janeiro, and the terminology adopted in the morphological description followed Barth & Melhem (1988). The map here presented was designed using the software package ArcGIS 9.3.

Intragenetic relationships

Briquetia was described as a monotypic genus in 1902, based on a specimen from Paraguay, *B. ancylocarpa* Hochr., which had one ovule per mericarp and two hook-shaped aristae located at the lower outer part of the mericarp. Later, Hassler

(1905) established the combination *Briquetia denudata* (Nees & Mart.) Chodat & Hassl. for a species from Bahia (Brazil) that previously was described as belonging to the genus *Sida* L., and reported the new synonym *B. ancylocarpa*, which was described after *S. denudata*.

Literature reviews brought out many doubts about the true morphology of the genus. When Hochreutiner (1902) described *Briquetia* for the first time, he emphasized the presence of two small hooks in the lower part of the mericarps and the presence of one seed. However, what called the attention is the lack of endoglossum in the original description, which is a characteristic that frequently limits the current characterization of genus.

For decades, there were only a few studies about the genus; only Krapovickas (1970) and Fryxell (1976) provided taxonomic notes or proposed new species. According to Fryxell (1997), *Briquetia* comprised five species, among which only *B. spicata* (Kunth) Fryxell is broadly distributed in the Neotropics, whereas the other four species have a more restricted distribution, and are poorly known in terms of morphology. Fryxell (1997) also reported that the genus needs further studies, because as new species of *Briquetia* were described, their generic characteristics have been suppressed and currently there is no basic set of characters that separates the genus *Briquetia* from similar genera.

The proposal to differentiate the above mentioned genera is presented in Table 1 the morphological characteristics of similar genera, with the new morphological limits for *Briquetia* and the establishment of the new genus *Briquetiastrum*.

TAXONOMIC TREATMENT

Briquetiastrum Bovini, gen. nov.

TYPE: *Briquetiastrum spicatum* (Kunth) Bovini

Diagnosis: Subshrub or shrub. Leaves petiolate. Synflorescence frondose-bracteate or reduced racemes. Ovary 5-13 celled, 2-3 ovules per cell. Fruit in schizocarp with mericarps without projections at the base, with endoglossum.

Subshrub or shrubs, erect. Branches erect, rarely terete. Leaves petiolate below, and amplexicaul below the inflorescence; lamina membranaceous, concolor or discolor, cordate, base cordate, apex acute, margin entire, crenate or serrate, both the surfaces pilose. Synflorescence frondose-bracteate, pyramidal, lax or spiciform raceme. Flowers pedicellate; calyx campanulate, sepals cleft up to the half of the calyx length; corolla yellow; ovary 5-13 celled, 2-3 ovules per cell. Schizocarp with 5-13 mericarps, laterally reticulate or entire wall, not perforate, without projections basally, with endoglossum; 2-3 seeds.

Geographical distribution: *Briquetiastrum* is a Neotropical genus. It occurs from Mexico to Brazil at the limit of the Tropic of Capricorn. In South America there are no records for Argentina, Chile, Paraguay, and Uruguay (Fig. 1).

Pollen: 65-70 µ, large, nonpolar, spheroidal, pentacolporate, echinate-microreticulate-granulate. Spines densely distributed over the microreticulate exine; there are many granules on the tecta. Short spine on tectum elevations, wide on the base, with no basal constriction, gradually sharpening towards a sharp apex, mostly straight (Fig. 2a, b).

Table 1. Differences among seven genera of the Malvaceae related to *Briquetiastrum*

| | <i>Batesimalva</i> | <i>Briquetia</i> | <i>Briquetiastrum</i> | <i>Dirhamphis</i> | <i>Horsfordia</i> | <i>Pseudabutilon</i> | <i>Wissadula</i> |
|---|-------------------------------------|--|--|------------------------------|-----------------------------|--|--|
| Leaf | Petiolate | amplexicaule below the inflorescence | amplexicaule below the inflorescence | petiolate | petiolate | petiolate | petiolate |
| Inflorescence | solitary, rare fasciculate axillary | frondo-bracteate | frondo-bracteate or spiciform raceme | solitary axillary | solitary or fasciculate | paniculate, solitary or glomerule axillary | paniculate, solitary or spiciform raceme |
| Number of mericarps | 8-16 | 6-9 | 5-13 | 6-11 | 5-10 | 3-6 (7) | 3-6 (7) |
| Projections at base of mericarps | Absent | present | absent | absent | absent | absent | absent |
| Endoglossum | present | absent | present | absent | present or absent | absent | absent |
| Seeds | 1 | 1 | 2-3 | 2 or 3 | 3 | 3 (1) | 3 (1) |
| Distribution | Mexico to Paraguay | Southern Brazil, Paraguay and northern Argentina | Neotropical, except Argentina, Chile and Uruguay | Mexico, Bolivia and Paraguay | Mexico (Sonora), California | USA to Argentina | Neotropical, except Chile |
| Number of species (based Fryxell, 1997, except <i>Briquetia</i> and <i>Briquetiastrum</i>) | 4 | 1 | 3 | 4 | 19 | 26 | 26 |

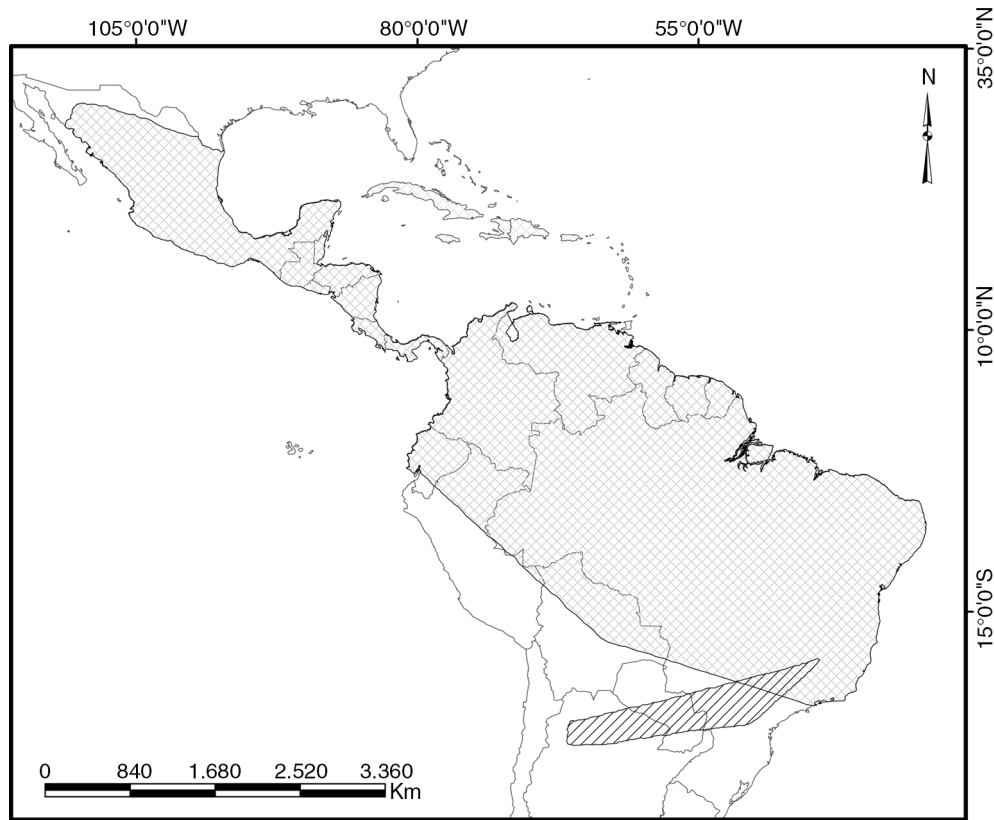


Fig. 1. Distribution map of *Briquetia* (lines parallel) and *Briquetiastrum* (grid squares).

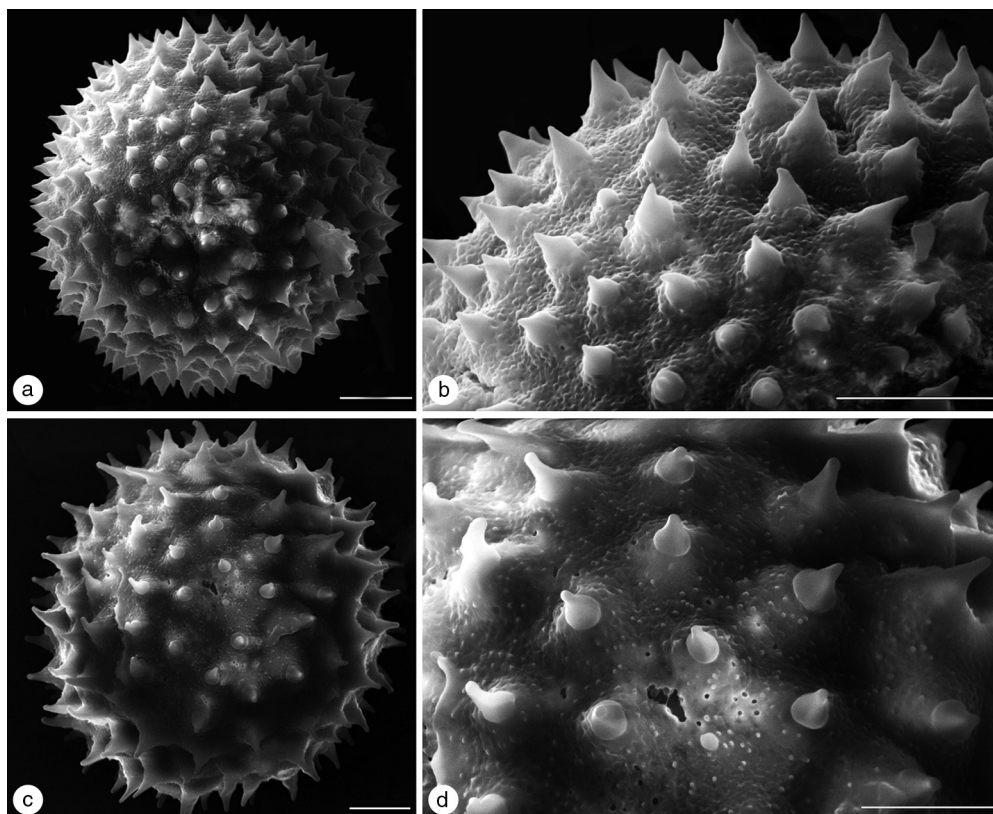


Fig. 2. Pollen grain. *Briquetiastrum spicatum*. **a**, polar view; **b**, detail of ornamentation. *Briquetia denudata*. **c**, polar view; **d**, detail of ornamentation (Krapovickas 14140). [a, b) Dorr 7649 (NY)]; c, d) Krapovickas 14140 (RB)]. Escala: a, c=10 μ m; b, d=2 μ m.

Etymology: similar to *Briquetia*.

KEY TO THE SPECIES OF *BRIQUETIASTRUM*

1. Synflorescence spiciform raceme. Schizocarp 5-(6) mericarps, 3 seeds 3. *B. spicatum*
1. Synflorescence frondose-bracteate, lax. Schizocarp with 7-13 mericarps, 2 or 3 seeds 2.
2. Schizocarp 2 seeds 2. *B. sonora*
2. Schizocarp 3 seeds 1. *B. inermis*

1. *Briquetiastrum inermis* (Fryxell) Bovini, comb. nov.

≡*Briquetia inermis* Fryxell, Brittonia 28: 318-325. f.1. 1976.
 TYPE: MEXICO. Chihuahua, La Bufa, southeast of Creel, fl.fr., 13-IX-1957, *I. Knobloch* 412. (Holotype: ENCB; Isotype: BM, LL!, MSC).

Subshrubs ca. 1 m tall. Branches erect, pubescent, trichomes simple and fasciculate. Stipules ca. 1 mm, filiform, caducous. Leaves petiolate below, and petiole ca. 8 cm long., pubescent, trichomes simple and long, and amplexicaule below the inflorescence; lamina 5,5-10×4-9 cm, ovate, sometimes slightly lobate to the apex, membranaceous, slightly discolor, base cordate, apex acute, margin serrate; adaxial surface puberulous, trichomes fasciculate and simple, abaxial surface pubescent, trichomes fasciculate. Synflorescence frondo-bracteate, pyramidal, lax; anthopodium ca. 1 cm long. Flowers with pedicel ca. 2 mm long, pubescent, trichomes simple and fasciculate; calyx ca. 4 mm long; sepals free to the middle below to medium portion, pubescent, trichomes fasciculate; corolla ca. 1 cm diameter, yellow, with margin pubescent at the base; staminal column with few hyaline trichomes, simple and fasciculate-stipitate, free portion of filaments 1-2 mm long; ovary 11-13 celled, 3 ovules per cell; style ca. 4 mm long. Schizocarp ca. 8 mm diameter; 11-13 mericarps, ca. 5×3 mm, the cells divided by a simple endoglossum; laterally reticulate wall, not perforate, strigose, trichomes simple; seeds 3, ca. 2 mm long, the lower cell 1-seeded, the upper cell 2-seeded, glabrate, trichomes simple.

Geographic distribution: *Briquetiastrum inermis* is known only from three samples of Mexico, two collected in the state of Chihuahua, and one collected in the state of Sinaloa. Based on the studied specimens, it occurs in arid areas.

Conservation status: There are no data on abundance or population size for this species. There is almost no information available on its environment and threats to its conservation. Date Deficient species.

Briquetiastrum sonora (Fryxell) Bovini, comb. nov.

≡*Briquetia sonora* Fryxell, Brittonia 28: 318. f.1. 1976.
 TYPE: MEXICO. Sonora, Sierra Bojihuacame, southeast of Cd. Obregón, fl.fr., 17-X-1954, *H.S. Gentry* 14495. [Holotype: LL!; Isotype: ARIZ, DES, (image US!)].
Illustrations: fig. 3a, b, c, d.

Subshrubs 0,5-1,5 m tall. Branches erect or terete, glabrate to pubescent, trichomes fasciculate, simple and long. Stipules ca. 0,5 cm, caduceus. Leaves petiolate below, and petiole ca. 3 cm long., vilose, trichomes simple and long, and amplexicaul below the inflorescence; lamina 2-8×1,5-4 cm, membranaceous, concolor, base cordate, apex acute, margin entire; adaxial surface velutinous, rare glabrate, trichomes fasciculate and simple, abaxial surface velutinous, trichomes

fasciculate. Synflorescence frondo-bracteate, pyramidal, lax; peduncle ca. 1 cm long. Flowers with pedicel ca. 8 mm long, glabrate, trichomes fasciculate; calyx ca. 4 mm long; sepals free to the middle below to medium portion, tomentose, trichomes simple and fasciculate; corolla 7-8 mm diameter, yellow, with margin pubescent at the base; staminal column with few hyaline trichomes, simple and fasciculate-stipitate, free portion of filaments 1-2 mm long; ovary 7-8 celled, 2 ovules per cell; style ca. 3 mm long. Schizocarp ca. 8 mm diameter; 7-8 mericarps, 7-8×1-2 mm, the cells divided by a simple endoglossum; laterally reticulate wall, not perforate, glabrate, trichomes simple, glandular and fasciculate; seeds 2, ca. 2 mm long, glabrate, trichomes simple.

Specimens examined: **MÉXICO. Sonora**: Guaymas, deserto de Sonora, Canon la Pintada, 8.7 miles east of restaurante La Pintada, fl.fr., 03-I-1984, *R.K. Van Devender & T.R. Van Devender* 84-35 (NY). Tanon Nacapules, about 4,5 miles north of Bahia San Carlos, fl.fr., 19-XI-1984, *R.S. Felger & D.V. Zamudio* 84-575 (US). Canada el Tetabejo, Sierra Libre, 300 m s.m., fl.fr., 26-IX-1995, *T.R. Van Devender & al.* 95-1038 (ARIZ).

Geographic distribution: *Briquetiastrum sonora* occurs only in Mexico, where it is found in the Sonora desert in xeric shrubby forests; it is poorly represented in herbaria, probably due to its very restrict distribution. Its sympatric distribution is well delimited, with consistent morphological characteristics.

Conservation status: Occurs in protected areas and there is strong evidence of the rarity for this species. Its extent of occurrence (EOO) is smaller than 5,000 km² and this species can be considered EN B1b (i, ii, iv).

The amplexicaul leaves, the morphology of the mericarps and the number of seeds help a lot in the characterization of this species. Its mericarps have two seeds, separated by an endoglossum, and the presence of two small basal projections makes distinctive this species.

Briquetiastrum spicatum (Kunth in H.B.K.) Bovini, comb. nov.

≡*Abutilon spicatum* Kunth in H.B.K. Nov. Gen. Sp. Pl. 5: 271. 1821.
 TYPE: BRAZIL/VENEZUELA “prope San Carlos del Rio Negro”,
A.J.A. Bonpland, & F.W.H.A. Humboldt s.n. (holotype P-HUMB)

≡*Sida spiciflora* DC. Prodr. 1: 468. 1824.

≡*Wissadula spicata* (Kunth in H.B.K.) Presl., Rel. Haenk. 2: 117. 1835.

≡*Sida spicata* (Kunth in H.B.K.) Salzm. ex Schum., Fl. Bras. 12 (3): 448. 1891.

≡*Pseudabutilon spicatum* R.E. Fries, Kungl. Svenska Vetenskapsakad. Handl. 43: 98. 1908.

≡*Briquetia spicata* (H.B.K.) Fryxell, Brittonia 28: 321. 1976. (Lectotype: P-Bonpl.!)

=*Briquetia brasiliensis* Fryxell, Contr. Univ. Mich. Herb. 17: 163. 1990.

TYPE: BRASIL. Rondônia: Ariquemes, Mineração, Mibrasa, setor Alto Candeias, Km 128, 10°35'S, 63°35'W, capoeirão, fl.fr. 13. mai. 1982, *Teixeira & al.* 423. [Holotype: INPA; Isotype: K, NY!, (image US!)], **syn. nov.**

Illustrations: Vellozo (1831); Schumann (1891); Fries (1908); Fryxell (1976, 1988) e Berazain (2007).

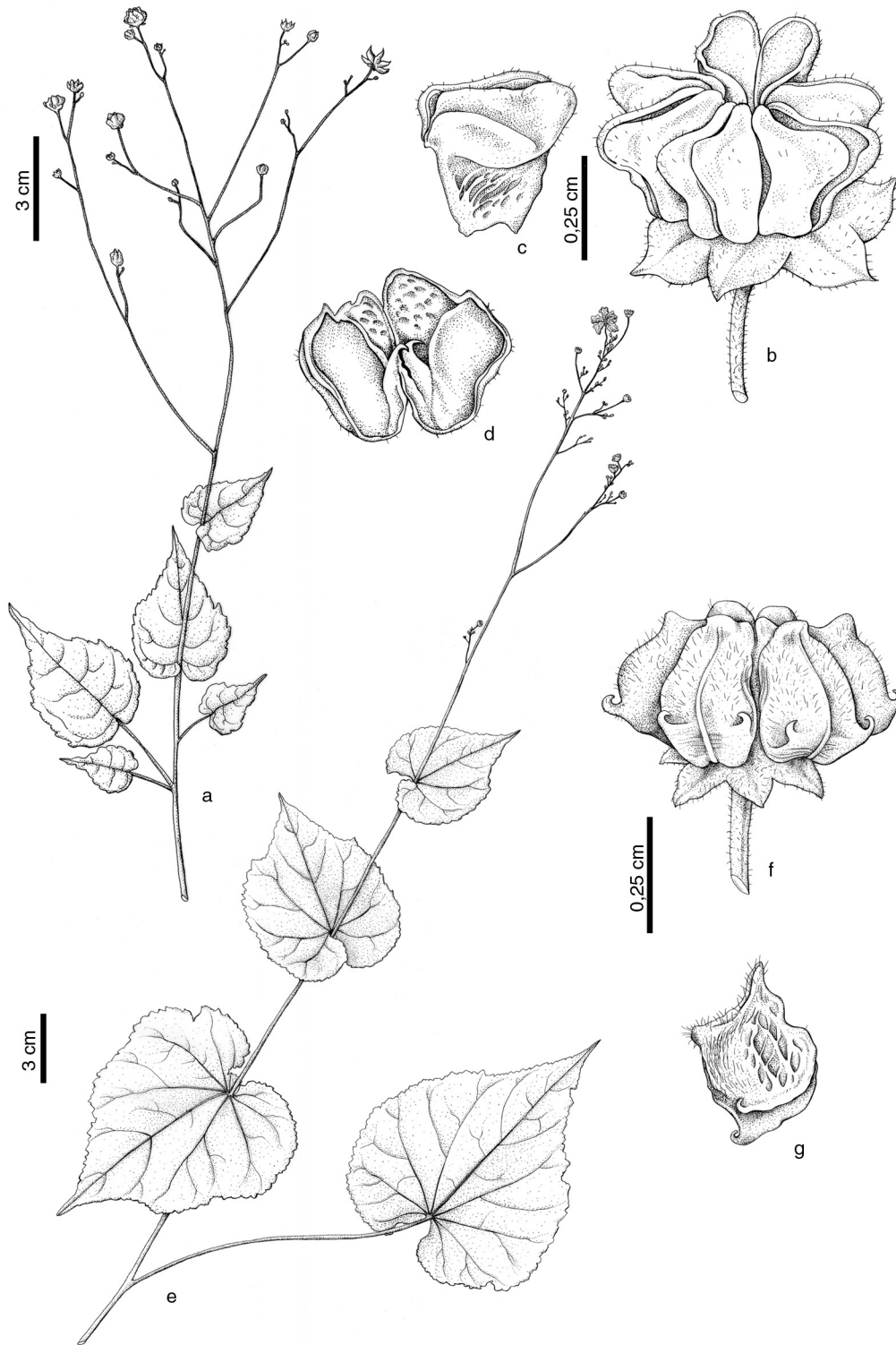


Fig. 3. *Briquetiastrum sonora*: **a**, branch with flowers and fruits; **b**, fruit; **c**, mericarp; **d**, mericarp with endoglossum; *Briquetia denudata*. **e**, branch with flowers; **f**, fruit; **g**, mericarp. [a-d] Devender & Devender 84-35 (NY); e-g) Krapovickas 14140 (RB)]. Scale: a, e=3 cm; b-d, f, g=0,25 cm. (author: Fabrício Proença).

Subshrubs or shrubs 1-2 m tall. Branches erect tomentous, trichomes fasciculate and frequently simple and long. Stipules 8-10 mm long., linear to slightly lanceolate, trichomes simple and rarely fasciculate. Leaves petiolate below, and petiole until 20 cm long., vilose, trichomes simple, long, and

fasciculate, sometimes towards the apex of the branches, the leaves become sessile; lamina 4,5-21×4,5-19,5 cm, membranaceous, slightly discolour, sometimes trilobate, base cordate, apex acute to acuminate, margin entire; adaxial surface pubescent or velutinous, trichomes fasciculate; abaxial

surface velutinous, trichomes fasciculate. Synflorescence spiciform raceme, 10-20 cm long.; anthopodium ca. 2 cm long., puberulous. Flowers with pedicel ca. 2 mm long, villose, trichomes fasciculate; calyx ca. 4 mm long; sepals free to the middle below to medium portion, tomentose, trichomes simple and fasciculate; corolla 9 mm diameter, yellow, with margin pubescent at the base; staminal column with few hyaline trichomes, simple and fasciculate-stipitate, free portion of filaments 1-2 mm long; ovary 5-7 celled, 3 ovules per cell; style ca. 3 mm long. Schizocarp ca. 6 mm diameter; 5-(6) mericarps, ca. 5×4 mm, without projections, the cells divided by a simple endoglossum; laterally entire wall, glabrate, trichomes simple and fasciculate; seeds 3, ca. 2 mm long, the upper cell with 2 collateral seeds; glabrate, trichomes simple.

Specimens examined: BOLIVIA. **Guanai:** V-1886, fl.fr., H.H. Rusby 1862 (NY). **Santa Cruz:** Velasco, R.E. El Refugio, 27-IV-1995, fl.fr., R. Guillén et V. Roca 3357 (NY). BRAZIL. **Amazonas:** Borba, 27-VI-1983, fr., S.R. Hill 12880 (RB, US). **Goiás:** Nova Roma, 02-III-2000, fl., M. Aparecida 4319 (IBGE, NY, US). **Maranhão:** São Luiz, 1940, fr., B.A. Krukoff 11843 (NY). **Mato Grosso:** Lacerda, 19-V-1985, fr., A. Krapovickas & al. 40121 (CTES, NY). **Minas Gerais:** Ituiutaba, 12-II-1949, fl., A. Vasconcellos s.n. (RB 66358). **Pará:** Tapajós, IX-1931, fl., B.A. Krukoff 1233 (NY). **Pernambuco:** Tapera, 01-VIII-1931, fl., B. Pickel s.n. (NY). **Rio de Janeiro:** Paraty, 02-IV-2009, fl.fr., M.G. Bovini & al. 2766 (RB). **Rio Grande do Norte:** Caraubas, 01-VI-1984, fl.fr., J.E. Collares & L. Dutra 149 (NY, RB). **Rondônia:** Ariquemes, Mineração Mibrasa, 11-V-1982, fl.fr., L.O.A. Teixeira & al. 352 (INPA, NY, US). COLOMBIA. **Bolívar:** 15-XI-1926, fr., E.P. Killip & A.C. Smith 14503 (NY). COSTA RICA. **Guanacaste:** 14-XI-1997, fr., A. Rodríguez & al. 2790 (NY). EL SALVADOR. **Ahuachapán:** 25-X-1995, fl., S. Castillo s.n. (US 3390044). EQUADOR. **Guayas:** 06-IV-1987, fl., J.E. Madsen s.n. (NY). GUATEMALA. **El Petén:** I-1907, fl., H. Pittier 1798 (NY, US). GUIANAS. **U. Takutu-U:** 19-IX-1993, fl.fr., T.W. Henkel & al. 3059 (NY). HONDURAS. **Cortés:** 21-III-1962, fl.fr., A. Molina 10513 (NY). MÉXICO. **Chiapas:** 23-X-1974, fl., D.E. Breedlove 39123 (NY); **Coalcoman:** Huizontla, 24-XI-1938, fl.fr., G.B. Hinton & al. 12651 (NY); **Sinaloa:** Concordia, 12-X-1966, fl.fr., P. Fryxell 550 (NY). NICARAGUA. **Leon:** 07-XII-1968, fr., D.A. Dudgey 221 (NY). PANAMÁ. **Alhajuela:** 12-IV-1911, fr., H. Pittier 2365 (NY). PERÚ. **San Martín:** 08-IX-1992, fl.fr., M. Rimachi 10263 (NY, US). VENEZUELA. **Capihuará:** Casiquiare, 1942, fl., L. Williams 15805 (NY); **Edo. Portuguesa:** 29-XI-1985, fl., G. Aymard 4343 (NY).

Geographic distribution: Neotropical, except for Argentina, Chile, Paraguay, and Uruguay.

Conservation status: Certainly, *Briquetiastrum spicatum* is the species with the broader distribution in the genus: it occurs in both protected and unprotected areas across the neotropics. Its EOO is larger than 20,000 km², and it can be classified as LC (least concern).

Historically, *Briquetiastrum spicatum* has always been the subject of taxonomic revision. Originally described in the genus *Abutilon*, it was placed through decades in other genera, such as *Wissadula* (Presl, 1835), *Pseudabutilon* (Fries, 1908), and finally *Briquetia* (Fryxell 1976).

The presence of an endoglossa in this species, breaks the homogeneity for this character within the genus. As in

some of these genera, this trait, as well as the number and arrangement of its seed in the mericarp, exhibit intrageneric variability.

After the analysis leaf variation among *B. spicatum* specimens, it was found that individuals that occur from Mexico to northern Peru may present their leaf blade with a more or less trilobate morphology.

Fryxell (1990) accepts *Briquetia brasiliensis*, as a very similar species to *B. spicata*, but with the inflorescence frondose-bracteate. After the analysis of the type specimen (Teixeira 423), we can describe the inflorescence not frondose-bracteate, but in spiciform raceme. Furthermore, additional material collected in the same area (Teixeira 352) has the more typical inflorescence spiciform raceme of *B. spicata*. Thus, it is proposed as a new synonym.

B. spicatum is characterized by the synflorescence in contracted raceme, which resembles an ear, and the presence of three seeds characterize the species.

Briquetia Hochr. Ann. Cons. Jard. Bot. Genève 6: 11. 1902. TYPE: *Briquetia denudata* (Nees & Mart.) Chodat & Hassl.

Subshrubs. Branches erect. Leaves petiolate; leaves membranaceous, discolor, base cordate, apex acute, margin crenate, both the surfaces pilose. Synflorescence frondose-bracteate, lax. Flowers pedicellate; calyx campanulate, sepals cleft up to the medial region of the calyx; corolla yellow; ovary 6-8 celled, 1 ovule per cell. Schizocarp 6-8 mericarps, with 2 basal projections hooked, without endoglossum, laterally reticulate wall, perforate; 1 seeded.

Geographic distribution: Currently occurs in Argentina, Paraguay, and Brazil. In the latter, occurs in the states of Bahia, Mato Grosso do Sul, Minas Gerais, and Paraná (Fig. 1).

Pollen: 60-65 µ, large, nonpolar, spheroidal, pentacolporate, echinate-microreticulate-granulate. Spines sparsely distributed over the microreticulate exine; there are sparse granules on the tecta. Short thorns on tectum elevations, wide on the base, no constriction, abruptly sharpening towards a round apex, mostly curve (Fig. 2c, d).

Etymology: Homage to the Swiss botanist J.I. Briquet (1870-1931).

It is characterized by basal projections on the mericarp, lack of endoglossum, and one seed per mericarp.

Briquetia denudata (Nees & Mart.) Chodat & Hassl., Plantae Hassl. 2: 296. 1905.

≡ *Sida denudata* Nees et Mart., Nova Acta Acad. Caes. Leop. Carol. German. Nat. Cur. 11: 100-101. 1823.

TYPE: BRASIL. Bahia, in Serra do Mundo Novo, locis silvestribus. Serenissimus Princeps Maxim. Neov. (Holotype: probably S).

≡ *Anoda denudata* (Nees et Mart.) K. Schum., Fl. Bras. 12 (3): 357, t.65. 1891. Drawing based of *Balansa 1603* (apud Krapovickas 1970).

= *Sida bihamata* A. St.-Hil. et Naud., Ann. Sci. Nat. Bot. Ser. 2, 18: 54. 1842.

TYPE: BRASIL. Minas Gerais, *Claussen 1838* (Holotype: P, image!).

= *Wissadula balansae* E.G. Baker, Journ. Bot. 31: 69. 1893.

TYPE: PARAGUAY. Vila Rica, *B. Balansa 1603*, fl.fr., 25.02.1876 (P!). Non *Hassler 390* (NY).

Briquetia ancylocarpa Hochr., Ann. Cons. Jard. Bot. Geneve 6: 11-12, t.1. 1902.

TYPE: PARAGUAY. Yerbales, Sierra de Maracayú, fl.fr., XII.1900 (?), E. Hassler 5737 (Holotype: probably NY, type not found).

Illustrations: fig. 3e, f, g.

Subshrubs ca. 1 m tall. Branches erect, glabrate, trichome fasciculate. Stipules ca. 1 mm long, filiforme, caduceus. Leaves with petiole 2-6 cm long, velutinous, trichome simple and fasciculate; lamina 2-8×1,5-4 cm, membranaceous, slightly discolour, base cordate, apex acute, margin crenate; adaxial surface puberulous, trichome simple and fasciculate, abaxial surface puberulous, trichome fasciculate. Synflorescence frondo-bracteate, lax; anthopodium ca. 1,5 cm long. Flowers with pedicel ca. 1 cm long., glabrate, trichomes simple; calyx ca. 4 mm long; sepals free to the middle below to medium portion, tomentose, trichome simple and fasciculate; corolla 7-9 mm diameter., yellow; with margin vilose at the base; free portion of filaments 1-2 mm long; ovary 7-8 celled, 1 ovules per cell; style ca. 3 mm long. Schizocarp ca. 6 mm diameter; 6-8 mericarps, ca. 3×2 mm, with 2 basal projections hooked, without endoglossum, laterally reticulate wall, perforate, glabrate, with trichomes simple glandulate; 1-seeded.

Geographic distribution: *Briquetia denudata* occurs in Argentina, Paraguay, and Brazil. In the latter, occurs in the states of Bahia, Minas Gerais, Mato Grosso do Sul, and Paraná, in the Pantanal and Cerrado biomes.

Conservation status: The species is poorly represented in collections and occurs in some already threatened localities, such as the Cerrado. In the state of Bahia, it was only found in the type collection. I infer that there has been a decline in the quality of its habitat and its EOO is smaller than 20,000 km². *Briquetia denudata* was considered VU B1ab (i, ii, iii).

With our new circumscription, the genus *Briquetia* becomes monotypic. It is characterized by the presence of two hook-shaped projections on the base of the mericarp, one seed per mericarp, and the lack of endoglossum.

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