

# Towards a revision of *Pseudobombax* Dugand (Malvaceae-Bombacoideae): typification of names published by E. Hassler and R. Chodat in the related genus *Bombax* L.

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## Abstract

CARVALHO-SOBRINHO, J. G. de, L. RAMELLA, L. P. de QUEIROZ & L. J. DORR (2014). Towards a revision of *Pseudobombax* Dugand (Malvaceae-Bombacoideae): typification of names published by E. Hassler and R. Chodat in the related genus *Bombax* L. *Candollea* 69: 93-99. In English, English abstract.

To facilitate an ongoing taxonomic revision of *Pseudobombax* Dugand as part of studies on the systematics of Neotropical *Bombacoideae* (Malvaceae), we clarify the typification of 16 names in *Bombacoideae* that were published by Emil Hassler and Robert Chodat based mostly on specimens collected by Hassler in Paraguay and collected by Robert Fries and Gustaf Malme in Argentina and Brazil. We designate 4 lectotypes for the following names: *Bombax elegans* R. E. Fr., *Bombax longiflorum* var. *emarginatum* Hassl., *Bombax marginatum* subsp. *meridionale* Hassl., *Bombax marginatum* var. *praecox* Hassl. An epitype is designated for *Bombax elegans* R. E. Fr. In addition, we narrow down André Robyns' lectotypification of *Bombax marginatum* f. *arboreum* Chodat to a single specimen.

## Key-words

MALVACEAE – *Bombacoideae* – *Bombax* – *Pseudobombax* – Paraguay – Argentina – Brazil – Typification – Lectotype – Two-step typification

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## Introduction

DUGAND (1943) created the genus *Pseudobombax* (*Bombacoideae*, *Malvaceae*) to accommodate several species from Central America that did not fit his concept of *Bombax* L. He considered *Bombax* to be a monospecific genus restricted to Central and South America and although he selected *B. ceiba* L. as type, it is clear from his description and the material that he cited that his concept of this species corresponds to what is now considered to be *Pachira fendleri* Seem. Subsequently, ROBYNS (1961) argued that *B. ceiba* could only be typified by an Asian element in its protologue and, ever since Robyn's choice of type was conserved (ICBN-Berlin, GREUTER & al., 1988), *Bombax* has been considered to be a genus restricted to the Paleotropical region.

When DUGAND (1943) described *Pseudobombax*, he transferred three species originally described in *Bombax* to his new genus: *P. septenatum* (Jacq.) Dugand (the type species), *P. ellipticum* (Kunth) Dugand, and *P. palmeri* (S. Watson) Dugand. DUGAND (1943) also speculated that additional species of *Bombacoideae* probably would be transferred to *Pseudobombax* after a taxonomic revision of the group. ROBYNS (1963), in the last major comprehensive revision of *Bombax s.l.*, expanded *Pseudobombax* by describing six new species and proposing 10 new combinations of which 9 were based on species described earlier in a more broadly defined *Bombax*.

*Pseudobombax* now is the second largest genus of the *Bombacoideae* (ALVERSON & al., 1999; BAUM & al., 1998, 2004; BAYER & al., 1999; ROBYNS, 1963). It encompasses ca. 25 species inhabiting vegetation types predominantly associated with seasonal climate in the Neotropical region (CARVALHO-SOBRINHO & QUEIROZ, 2010, 2011; FERNANDEZ-ALONSO, 2001). Species of *Pseudobombax* are mostly trees with unarmed trunks; the bark is usually marked with vertical, greenish stripes; the leaves are digitately compound and pulvinate and leaflets are not articulated with the petiole; the flowers are showy, reaching ca. 25 cm in length; the receptacle has conspicuous glands; the calyx is fleshy, accrescent in fruit, and marcescent; the filaments are numerous and partially connate in a tube; the anthers are monothecate and hippocrepiform; the capsules are woody and have abundant kapok; and the seeds are relatively small and numerous (CARVALHO-SOBRINHO & QUEIROZ, 2010; CARVALHO-SOBRINHO & al., 2013a; ROBYNS, 1963). The distally dilated or expanded petiole with leaflets that lack an abscission zone where they join the petiole are probable synapomorphies for the genus (CARVALHO-SOBRINHO & QUEIROZ, 2011).

Collections of *Pseudobombax* often do not fit on a single herbarium sheet and require multiple sheets to be mounted because they have large leaves and flowers. In addition, their capsules are frequently bulky and can be stored separate from herbarium sheets in cross-referenced carpological collections.

However, well-curated carpological collections of *Bombacoideae* are scarce and frequently incomplete. The phenological phase of every sheet and separate element, including those comprising type specimens, is seldom clearly specified in the botanical literature (CARVALHO-SOBRINHO, pers. obs.). In addition, collections of *Pseudobombax* and other *Bombacoideae* from seasonally dry forest and savanna habitats are typically incomplete because species are commonly leafless during the flowering period; specimens often consist of leaves only or flowers only. Incomplete exsiccatae and incomplete carpological collections both commonly raise doubts regarding species circumscriptions (CARVALHO-SOBRINHO & QUEIROZ, 2010). Complicating matters, collectors who attempt to make complete exsiccatae of species that flower when they are leafless often create mixed collections of Neotropical *Bombacoideae*. There are even type specimens based on mixtures of elements from different families, which requires lectotypification in order to properly circumscribe names (CARVALHO-SOBRINHO & al., 2013a; CARVALHO-SOBRINHO & al., 2013b).

The issues mentioned above depict idiosyncrasies of *Bombacoideae* taxonomy that represent a major challenge: matching separately-collected leaves, flowers, and fruits in order to better circumscribe a taxon (CARVALHO-SOBRINHO & QUEIROZ, 2008, 2010; CARVALHO-SOBRINHO & al., 2012; CARVALHO-SOBRINHO & al., 2014). These issues also highlight the importance of clarifying and typifying names in this group.

During a taxonomic revision of *Pseudobombax* (CARVALHO-SOBRINHO & al., in prep.), we realized that several names of infraspecific taxa in the genus *Bombax* published by CHODAT (1904) and HASSLER (1910, 1913) that were based mostly on specimens collected by Hassler in Paraguay and that are associated with *Pseudobombax* require clarification and in some instances lectotypification.

Altogether we discuss the typification and status of 16 names in *Bombacoideae* that were described based on material from Argentina, Brazil, and especially from Paraguay, and designate 4 lectotypes and 1 epitype for 4 of these 16 names. Clarification of the types of these names will assist in the taxonomic revision of *Pseudobombax* and contribute to a monograph of *Bombacoideae* for the Flora of Paraguay and adjacent countries.

## Material and methods

We carefully examined the taxonomic literature on *Bombacoideae* in order to check typifications and synonymies of taxa based on collections from Paraguay. In addition to the work of CHODAT (1904) and HASSLER (1910, 1913), we evaluated the revision by ROBYNS (1963) of *Bombax* L. *s.l.* and subsequent nomenclatural publications related to *Pseudobombax* from Bolivia (CARVALHO-SOBRINHO & al., 2013a), Brazil

(CARVALHO-SOBRINHO & QUEIROZ, 2010; CARVALHO-SOBRINHO & al., 2013b), and Colombia (FERNANDEZ-ALONSO, 1999, 2001). The controversial paper by RAVENNA (2005) also was reviewed.

Collections of *Bombacoideae* deposited in the following herbaria were examined: ALCB, BHCBC, CEN, CEPEC, CVRD, F, G, HAMAB, HRB, HUEFS, IAC, IBGE, INPA, IPA, K, M, MBM, MBML, MO, NY, P, PEUFR, R, RB, S, SJRP, SP, SPF, SJRP, UB, UEC, UFP, US, VIC, and WIS. Special attention was given to G where original collections made in Paraguay by Hassler are deposited. Hassler's collections of *Bombacoideae* are mostly comprised of leaves and flowers mounted in multiple sheets and incomplete duplicates were occasionally found in other herbaria that were visited. Collections of BM, LIL, MICH, and MPU were accessed through JSTOR (2014). Phenological phases of each sheet comprising type specimens were checked and are indicated below (as "lf" for the presence of leaves, "fl" for flowers, and "fr" for fruits) in order to facilitate a more precise taxonomy of the group.

For a given infraspecific name it was sometimes necessary to clarify which of several duplicates of a specimen was the holotype. We did this by examining pertinent specimens for the presence of the author's handwriting and any other written indication that the author had selected a specimen as type (see also ICBN-Melbourne, Art. 9.1). Lectotypes were selected from the original material that best matched critical morphological characters mentioned in protologues.

### Lectotypifications and clarifications of type status

1. *Bombax cyathophorum* var. *latifoliolatum* Hassl. in Repert. Spec. Nov. Regni Veg. 12: 255. 1913.

**Holotypus:** PARAGUAY. Amambay: "In altaplanitie Sierra de Amambay", V.1912-1913, Hassler, E. 11240 (G [G00094602]! [lf, fl]). **Isotypi:** (G [G00094600]! [lf, fl], G [G00094601]! [lf, fl], G [G00094603]! [lf, fl], K! [lf], K! [lf, fl], P [P06622842]! [lf, fl]).

2. *Bombax cyathophorum* var. *longipes* Hassl. in Repert. Spec. Nov. Regni Veg. 12: 255. 1913.

**Holotypus:** PARAGUAY. Amambay: "In altaplanitie Sierra de Amambay", V.1912-1913, Hassler, E. 11240a (G [G00094608]! [lf, fl]). **Isotypi:** (G [G00094607]! [lf, fl], P [P06622841]! [lf, fl]).

3. *Bombax longiflorum* f. *elegans* (R. E. Fr.) Hassl. in Repert. Spec. Nov. Regni Veg. 8: 68. 1910.

≡ *Bombax elegans* R. E. Fr. in Kongl. Svenska Vetensk. Acad. Handl. 42(12): 27. 1908.

**Lectotypus** (in hoc loco designatus): BRAZIL. State of Mato Grosso: "Brasiliae civit. Matto Grosso: Cuyabá. In cerrado", 4.VII.1903, Malme, G. O. A. s.n. (S [SR11279] [image]! [fl]).

**Epitypus** (in hoc loco designatus): BRAZIL. State of Mato Grosso: "Brasiliae civit. Matto Grosso: Cuyabá", 4.XII.1902, Malme, G. O. A. s.n. (S [S10-38650]! [lf]).

**Isoepitypus:** (S [SR11280] [image]! [lf]).

Two specimens collected by Malme were used by Fries to describe and illustrate *B. elegans* (FRIES, 1908: 27-28, plate IV) and thus they are syntypes of this name. The collection dated 4.VII.1903 [SR11279] has several, separate floral buds and juvenile flowers, and the collections dated from 4.XII.1902 have mature, seven-foliolate leaves ([SR11280], [S10-38650]). ROBYNS (1963: 59) considered both vegetative and reproductive specimens as type material of *B. elegans*: "jul. 1903, Malme s.n. (f., fl.; holotypus *B. elegans* S)", but he failed to designate a lectotype for this name. We designate the flowering specimen as the lectotype for *B. elegans* based on both Fries' indication of new species status "*Bombax elegans* R. E. Fr. n. sp." as well as indication of the habitat ("In cerrados") on the specimen label that match Fries' protologue.

Since the present lectotype lacks leaves, which represent diagnostic characters for *B. elegans* (FRIES, 1908: 27-28), we designate the specimen [S10-38650] as an epitype to permit a precise application of the name in accordance with Art. 9.8 (ICBN-Melbourne).

The lectotype and epitype of *B. elegans* are also syntypes of *B. longiflorum* var. *emarginatum*.

4. *Bombax longiflorum* var. *emarginatum* Hassl. in Repert. Spec. Nov. Regni Veg. 8: 68. 1910.

**Lectotypus** (in hoc loco designatus): PARAGUAY. Amambay: "Sierra de Amambay in campis serrados Esperanza", XI.1907-1908, Hassler, E. & T. Rojas 10848 (G [G00094606]! [lf, fr]).

**Syntypi:** BRAZIL. State of Mato Grosso: "Brasiliae civit. Matto Grosso: Cuyabá", 4.XII.1902, Malme, G. O. A. s.n. (S [SR11280] [image]! [lf], S [S10-38650]! [lf]); "Brasiliae civit. Matto Grosso: Cuyabá. In cerrado", 4.VII.1903, Malme, G. O. A. s.n. (S [SR11279] [image]! [fl]).

Under *B. longiflorum* var. *emarginatum*, HASSLER (1910: 68) accommodated *B. longiflorum* f. *multifoliolatum* as a different taxon from *B. longiflorum* f. *elegans* (R. E. Fr.) Hassl. (= *B. elegans* R. E. Fr.). However, Hassler did not designate a holotype for var. *emarginatum*. Types of the names of the two forms published by him (see under their names) are syntypes of this variety. We choose as lectotype of this variety the specimen that is also the holotype of *B. longiflorum* f. *multifoliolatum* as it allows a clear application of the present

name according to Hassler's concept. The syntype *Malme s.n.* [SR11279] is also the lectotype of *B. elegans*, and the syntype *Malme s.n.* [S10-38650] is also epitype of *B. elegans*.

5. *Bombax longiflorum* f. *multifoliolatum* Hassl. in Repert. Spec. Nov. Regni Veg. 8: 68. 1910.

**Holotypus:** PARAGUAY. **Amambay:** "Sierra de Amambay in campis serrados Esperanza", XI.1907-1908, *Hassler, E. & T. Rojas 10848* (G [G00094606]! [lf, fr]).

*Hassler & Rojas 10848* is also the lectotype of *B. longiflorum* var. *emarginatum*.

6. *Bombax marginatum* f. *apaense* Hassl. in Repert. Spec. Nov. Regni Veg. 8: 70. 1910.

**Holotypus:** PARAGUAY. **Concepción:** "In dumetis prope Rio Apa", V.1885-1895, *Hassler, E. 410* (G [G00307102]! [lf, fl]). **Isotypi:** (G [G00307100]! [fl], G [G00307101]! [fl], K! [fl], NY [NY00133529]! [fl], NY [NY00133530]! [fl], P [P06622878]! [fl], P [P06622882]! [fl]).

The specimen [G00307102] has not been annotated as form *apaense* by Hassler, but it is the only one with leaf and flowers and thus the only specimen matching the protologue. The specimen [G00307101] was annotated by Hassler but it does not include any leaf material.

The form *apaense* is included in *B. marginatum* var. *arboresum* (Chodat) Hassl. and *Hassler 410* is also the lectotype of its basionym *B. marginatum* f. *arboresum* Chodat.

7. *Bombax marginatum* var. *arboresum* (Chodat) Hassl. in Repert. Spec. Nov. Regni Veg. 8: 70. 1910.

= *Bombax marginatum* f. *arboresum* Chodat in Bull. Herb. Boissier ser. 2, 5: 72. 1904.

**Lectotypus** (gathering designated by ROBYNS, 1963; specimen in hoc loco designatum): PARAGUAY. **Concepción:** "In dumetis prope Rio Apa", V.1885-1895, *Hassler, E. 410* (G [G00307102]! [lf, fl]). **Isolectotypi:** (G [G00307100]! [fl], G [G00307101]! [fl], K! [fl], NY [NY00133529]! [fl], NY [NY00133530]! [fl], P [P06622878]! [fl], P [P06622882]! [fl]).

**Syntypi:** PARAGUAY. **Cordillera:** "In rupestribus Cordillera de Altos", II.1898-1899, *Hassler, E. 6031* (G [G00077086]! [lf, fl], G [G00094589]! [lf, fl], G [G00094590]! [lf, fl], G [G00094591]! [lf, fl]), LIL [LIL000882] [image]! [fl], MICH [MICH1210020] [image]! [lf, fl], MO [MO309212]! [lf, fl], P [P00634474]! [lf], P [P00634475]! [fl], P [P06622935]! [lf], P [P06622940]! [fl], S [S10-34541]! [lf, fl]).

ROBYNS (1963: 79) designated *Hassler 410* as holotype of *Pachira marginata* f. *arborea*, and this designation is correctable to lectotype (ICBN-Melbourne, Art. 9.9).

The exact citation of *P. marginata* f. *arborea* in ROBYNS (1963: 77) is: "*Pa. [Pachira] marginata* f. *arborea* Chodat et Hassl., loc. cit. [Bull. Herb. Boiss. ser. 2, V], p. 72 (1905)". In the original publication, CHODAT (1904: 72) mentions in this place: "*Bombax marginatum* K. Sch. [...] forma *arborea*". Furthermore *P. marginata* A. St.-Hil. & al. is the basionym of *B. marginatum* (A. St.-Hil. & al.) K. Schum. We consider then *P. marginata* f. *arborea* in ROBYNS (1963: 77, 79) therefore to be a *lapsus calami*. We believe that Robyns intended *B. marginatum* f. *arboresum*, as did CHODAT (1904: 72), since Robyns' concept of *Pachira* included only *P. aquatica* Aubl. and *P. insignis* (Sw.) Savigny (ROBYNS, 1963: 233).

Robyns annotated 2 duplicates of *Hassler 410* in G ([G00307101], [G00307102]) but he did not designate either one of them as the lectotype. In the sense of Art. 9.17 (ICBN-Melbourne) we complete herein Robyns' typification by narrowing down his selection to the only duplicate with both leaves and flowers as lectotype.

Under *B. marginatum* var. *arboresum*, HASSLER (1910: 70) described *B. marginatum* f. *apaense* (holotype: *Hassler 410*) and *B. marginatum* f. *rupestre* (holotype: *Hassler 6031*).

8. *Bombax marginatum* f. *argentinum* (R. E. Fr.) Hassl. in Repert. Spec. Nov. Regni Veg. 8: 70. 1910.

= *Bombax argentinum* R. E. Fr. in Ark. Bot. 6(2): 3. 1906.

**Holotypus:** ARGENTINA. **Province of Jujuy:** "Quinta pr. Laguna de la Brea in silva minus densa", 5.VI.1901, *Fries, R. E. 126* (S [SR11277] [image]! [lf, fl]). **Isotypi:** (S [S06-7888] [image]! [fl], S [S09-1901] [image]! [fl], S [S09-4073] [image]! [fr]).

9. *Bombax marginatum* var. *cuspidatum* Hassl. in Repert. Spec. Nov. Regni Veg. 12: 256. 1913.

**Holotypus:** PARAGUAY. **Amambay:** "Cerrados region C. Margarita", II.s.a., *Hassler, E. & T. Rojas 11005* (G [G00094596]! [lf, fl]).

10. *Bombax marginatum* f. *fiebrigii* Hassl. in Repert. Spec. Nov. Regni Veg. 8: 71. 1910.

**Holotypus:** PARAGUAY. **Concepción:** "Caballero-cue", II.1908-1909, *Fiebrig, K. 5244* (G [G00094587]! [lf, fl]). **Isotypi:** (G [G00307098]! [lf, fl], K [K001050343]! [lf, fl], M [M0211667]! [lf, fl]).

The present holotype, *Fiebrig 5244*, is also the lectotype of *B. marginatum* subsp. *meridionale* and *B. marginatum* var. *praecox*.

11. *Bombax marginatum* f. *fruticosum* Chodat in Bull. Herb. Boissier ser. 2, 5: 73. 1904.

**Holotypus:** PARAGUAY. Amambay: “In campis in regione cursus superioris fluminis Apa”, XII.1901-1902, Hassler, E. 8237 (G [G00094612]! [lf, fl]). **Isotypi:** (G [G00094610]! [lf, fl], G [G00094611]! [lf, fl], K! [lf, fl], LIL [LIL000883] [image]! [lf, fl], MO [MO309148]! [lf, fl], MPU [MPU016295] [image]! [lf, fl], P [P04694199]! [lf, fl], P [P04694200]! [lf, fl], P [P04694201]! [lf, fl], P [P04694202]! [lf, fl], P [P06622938]! [lf, fl], P [P06622939]! [lf, fl], RB [RB94114]! [lf, fl], S [S10-34539]! [lf, fl], US [US00811396]! [lf, fl]).

Part of the gathering Hassler 8237 was later (HASSLER, 1910: 69) used as type of *B. marginatum* var. *intermedium* (see below) as Hassler 8237 p.p. (i.e. pro parte).

12. *Bombax marginatum* var. *intermedium* Hassl. in Repert. Spec. Nov. Regni Veg. 8: 69. 1910.

**Holotypus:** PARAGUAY. Amambay: “In regione cursus superioris fluminis Apa”, XII.1901-1902, Hassler, E. 8237[a] (G [G00094599]! [lf, fl]).

The type of *B. marginatum* var. *intermedium* was indicated by Hassler in the original description as Hassler 8237 p.p. (i.e. pro parte). To make the distinction with the type of *B. marginatum* f. *fruticosum* based on part of the same gathering (see above) the letter [a] has been added to this particular specimen. Hassler did annotate it with his own handwriting: “*Bombax marginatum* K. Sch. subsp. *meridionale* Hassler var. *intermedium* Hassler”.

13. *Bombax marginatum* subsp. *meridionale* Hassl. in Repert. Spec. Nov. Regni Veg. 8: 69. 1910.

**Lectotypus** (in hoc loco designatus): PARAGUAY. Concepción: “Caballero-cue”, II.1908-1909, Fiebrig, K. 5244 (G [G00094587]! [lf, fl]). **Isolectotypi:** (G [G00307098]! [lf, fl], K [K001050343]! [lf, fl], M [M0211667]! [lf, fl]).

HASSLER (1910: 69) described *B. marginatum* subsp. *genuinum* based on Hassler 8237 p.p. to accommodate the typical *marginatum* apart from *B. marginatum* subsp. *meridionale*. However, according to Art. 26.2 (ICBN-Melbourne), the name *genuinum* is a superfluous name for *B. marginatum* subsp. *marginatum* (Art. 52.1) that was automatically established (whether or not it appears in the publication in which taxa are created) when Hassler validly published the subspecies *meridionale* (Arts. 6.8, 26.3, and 32.3). The type of *B. marginatum* subsp. *marginatum* is a St.-Hilaire collection from Brazil.

Under *B. marginatum* subsp. *meridionale*, HASSLER (1910: 69-70) accommodated three new varieties: *intermedium*, *arboresum*, and *praecox*. However, he did not designate a holotype

for subspecies *meridionale*. Types of the names published by him within *meridionale* (five forms and three varieties) are syntypes of this subspecies.

Based on Hassler’s diagnoses, two clear-cut characters were used to distinguish his two new subspecies: the indumentum of the ovaries and the indumentum of fruits. No fruits were found in Hassler’s collections for subspecies *genuinum* or *meridionale*. Nevertheless, the existence of tomentose ovaries can be seen in type specimens of the varieties. We choose the type of the form *fiebrigii* that allows a clear application of the name of this subspecies *meridionale* according to Hassler’s concept.

The present lectotype, Fiebrig 5244, is also the lectotype of *B. marginatum* var. *praecox* and the holotype of *B. marginatum* f. *fiebrigii*.

14. *Bombax marginatum* var. *praecox* Hassl. in Repert. Spec. Nov. Regni Veg. 8: 70. 1910.

**Lectotypus** (in hoc loco designatus): PARAGUAY. Concepción: “Caballero-cue”, II.1908-1909, Fiebrig, K. 5244 (G [G00094587]! [lf, fl]). **Isolectotypi:** (G [G00307098]! [lf, fl], K [K001050343]! [lf, fl], M [M0211667]! [lf, fl]).

Under *B. marginatum* var. *praecox*, HASSLER (1910: 68) accommodated the new forms *paraguayense*, *argentinum*, and *fiebrigii* based on the presence of glabrous staminal tubes. However, he did not designate a holotype for this variety. Types of the names of the three forms are syntypes of the variety. We choose the type of the form *fiebrigii* that allows a clear application of the name of this variety according to Hassler’s concept.

The present lectotype, Fiebrig 5244, is also the holotype of *B. marginatum* f. *fiebrigii* and the lectotype of *B. marginatum* subsp. *meridionale*.

15. *Bombax marginatum* f. *rupestre* Hassl. in Repert. Spec. Nov. Regni Veg. 8: 70. 1910.

**Holotypus:** PARAGUAY. Cordillera: “In rupestribus Cordillera de Altos”, II.1898-1899, Hassler, E. 6031 (G [G00094591]! [lf, fl]). **Isotypi:** (G [G00077086]! [lf, fl], G [G00094589]! [lf, fl], G [G00094590]! [lf, fl], LIL [LIL000882] [image]! [lf, fl], MICH [MICH1210020] [image]! [lf, fl], MO [MO309212]! [lf, fl], P [P00634474]! [lf, fl], P [P00634475]! [lf, fl], P [P06622935]! [lf, fl], P [P06622940]! [lf, fl], S [S10-34541]! [lf, fl]).

The present holotype, Hassler 6031, is also a syntype of *B. marginatum* f. *arboresum*.

16. *Bombax martianum* subsp. *guaraniticum* Hassl. in Repert. Spec. Nov. Regni Veg. 12: 255. 1913.

**Holotypus:** PARAGUAY. Amambay: “In altiplanitie Sierra de Amambay. Cerrados altos - Limeira”, V[lf, fl]-X[fr]. 1912-1913, Hassler, E. & T. Rojas 11216 (G [G00077083]! [lf, fl, fr]). **Isotypi:** (BM [BM000545864] [image]! [lf, fl], G [G00077084]! [lf, fl], G [G00094614]! [lf, fl], G [G00094615]! [lf, fl], K! [lf, fl], P [P06622881]! [lf, fl]).

The holotype and two isotypes ([G00094614], [G00094615]) are dated 1912-1913. The specimen that we consider to be the holotype is found in Hassler’s original herbarium and he wrote “*subsp. guaraniticum* Hassler” on this specimen. We consider the specimen [G00077084], which is dated 1907-1908, to be an isotype despite the date conflict. Hassler wrote “*ssp. guaraniticum* K. Sch.” on this latter specimen.

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