



## Busted ghosts: Rediscovery of supposedly destroyed types of Brazilian *Mimosa* (Leguminosae, Mimosoideae)

LEONARDO MAURICI BORGES\* & JOSÉ RUBENS PIRANI

Departamento de Botânica, Universidade de São Paulo, Rua do Matão 277, 05508-900, São Paulo, Brazil

\*Corresponding author: [aquitemcaqui@gmail.com](mailto:aquitemcaqui@gmail.com)

### Abstract

In his monograph for neotropical *Mimosa*, Rupert Barneby made seemingly effective lectotypifications for a few binomials originally published by Taubert. He chose specimens in the Berlin herbarium (B), which he supposed had been destroyed. We hereby bring new evidence for the absence of these specimens in Berlin, their being in Hamburg (HBG) instead, and we designate them as lectotypes for the names in question.

**Key words:** Berlin, Brazil, Ernst Ule, Fabaceae, Hamburg, lectotype, nomenclature, typification

### Introduction

*Mimosa* Linnaeus (1753: 516) is a large genus with more than 500 species distributed mainly in the neotropical region (Barneby 1991, Luckow 2005). Although broadly characterized by the constant presence of a craspedium-like fruit (and its derivatives) (Barneby 1991), *Mimosa* shows a wide range of morphological diversity, mainly in habit, encompassing life forms from trees to tiny subshrubs. Pachycaul treelets and shrubs with developed underground systems, apparently associated with fire regimes (Barneby 1991, Simon *et al.* 2009), occur in several *Mimosa* species from the Cerrado Domain in Central Brazil, the South American center of endemism of the genus (Luckow 2005, Simon & Proença 2000).

For a long time the Central Brazilian Plateau has been a target of botanical interest, having been explored by naturalists such as W.J. Burchell, A.F.M. Glaziou and E. Ule (Glaziou 1906, Smith & Smith 1967, Taubert 1896, Urban 1906). Particularly Ule visited some of the altitudinal areas highlighted by Simon & Proença (2000) as major centers of diversity for *Mimosa*, namely Chapada dos Veadeiros, Serra dos Cristais and Serra dos Pirineus in Goiás State, as well as Chapada da Contagem in the Federal District. In his expeditions to those areas, between 1892 and 1894, he collected a few *Mimosa* species that were later described by Taubert (1896), who worked at the Royal Botanical Museum (now the Botanic Garden and Botanical Museum Berlin-Dahlen), in Berlin, from 1889 to 1895 (Stafleu & Cowan 1986). Taubert's descriptions of *Mimosa* species, each based on a single collection, meet all the criteria for valid publication of names of new taxa (Articles 32–45 of the Code; McNeill *et al.* 2012), but they lack information about collections (or herbaria) holding the studied specimens, preventing a proper indication of holotypes.

Barneby (1991), in his comprehensive monograph of the genus and after studying European collections, apparently clarified the situation by making implicit lectotypifications, by citing a particular specimen as “holotypus”. As the protologues lack mention of herbaria, Barneby assumed that the holotypes would have been in the Berlin herbarium (B), where Taubert worked (see above), but he indicated them as having been destroyed (during World War II) by placing a plus sign “+” before the herbarium code “B” (Fig. 1). However, there may never have been duplicates of the types in Berlin, since there are no images of them among the Field Museum Berlin Negatives Collection (<http://fieldmuseum.org/explore/our-collections/berlin-negatives>), and most of Ule's collections below number 5000 were actually sent to Hamburg (HBG) (Matthias Schultz [<http://migre.me/hgGRS>], pers. comm., based on letters archived at HBG). Hence, Barneby's indications of these “holotypes” do not point to actual specimens and, thus, are not in accordance with Article 9.2 and 9.12 of the Code (McNeill *et al.* 2012); they are mere speculation, not to be accepted.

Whereas it is highly probable that those particular specimens collected by Ule were never at Berlin, and consequently were not destroyed, the species names are still lacking types and therefore demand proper lectotypification, which is provided below.

*Mimosa laniceps* Barneby (1991: 412) ≡ *Mimosa tomentosa* Taub. (Taubert 1896: 434), nom. illeg. [non *M. tomentosa* Humb. & Bonpl. ex Willd. (Willdenow 1806: 1033), nec *M. tomentosa* Rottler (Rottler 1803: 208). Lectotype (designated here): BRAZIL. Goiás: Valle rivi Vargem Grande, September 1892, fl., *E. Ule* 2832 (HBG! [also annotated as “9”]), isolectotype: P! [2 sheets; only annotated as “9”]]

In order to correct the illegitimate publication of *Mimosa tomentosa* Taub., which is a later homonym, Barneby (1991: 412) chose *M. laniceps* as the replacement name for the taxon.

## Acknowledgments

We are grateful to Matthias Schultz for enlightenment on Ule’s biography; to the curators and staff of the studied herbaria for facilitating access to the specimens, particularly Matthias Schultz and Norbert Jürgens from HBG for kindly providing and allowing use of type images, as well as Vera Lúcia C. Martins from R; Nick Turland and Werner Greuter for reviewing the original manuscript; FAPESP (2010/11093-1) and FAPESP (2013/ 13709-8) for support to LMB; as well as CNPq for support to JRP.

## References

- Barneby, R.C. (1991) Sensitivae censitae: a description of the genus *Mimosa* Linnaeus (Mimosaceae) in the New World. *Memoirs of the New York Botanical Garden* 65: 1–835.
- Bentham, G. (1841) Notes on Mimoseae, with a short Synopsis of Species. *Journal of botany: being a second series of the Botanical miscellany*: 243–392.
- Glaziou, A.F.M. (1906) Plantae Brasiliae centralis a Glaziou lectae (Liste des plantes du Brezil central recueillies en 1861–1895). Légumineuses (Mimosées). *Bulletin de la Société Botanique de France Memoirs* 3: 175–194.
- Linnaeus, C. (1753) *Species Plantarum, Exhibentes Plantas Rite Cognitas, ad Genera Relatas, Cum Differentiis Specificis, Nominibus Trivialibus, Synonymis Selectis, Locis Natalibus, Secundum Systema Sexuale Digestas. Tomus II*. Stockholm.
- Luckow, M.A. (2005) Tribe Mimoseae. In: Lewis, G.P., Schrire, B., Mackinder, B. & Lock, M. (Eds.) *Legumes of the world*. Royal Botanical Gardens, Kew, pp. 163–183.
- McNeill, J., Barrie, F.R., Buck, W.R., Demoulin, V., Greuter, W., Hawksworth, D.L., Herendeen, P.S., Knapp, S., Marhold, K., Prado, J., Prud’homme van Reine, W.F., Smith, G.F., Wiersema, J.H. & Turland, N.J. (Eds.) (2012) *International Code of Nomenclature for algae, fungi, and plants (Melbourne Code): Adopted by the Eighteenth International Botanical Congress Melbourne, Australia, July 2011*. Regnum Veg. 154. Koeltz Scientific Books, Königstein, 208 pp.
- Poppendieck, H.H. (2001) A Botanical Odyssey the evacuation of the Hamburg Herbarium 1943–1990. In: Rushton, B.S., Hackney, P. & Tyrie, C.R. (Eds.) *Biological Collections and Biodiversity: an edited volume arising from papers presented at a joint symposium between the Linnean Society of London and the Royal Horticultural Society held at the Ulster Museum, Belfast*. Westbury Academic & Scientific Publishing, Otley, Westbury, pp. 43–50.
- Rottler, S. (1803) Botanische Bemerkungen auf der Hin- und Rückreise von Trankenbar nach Madras. *Der Gesellschaft Naturforschender Freunde zu Berlin, neue Schriften* 4: 180–224.
- Simon, M.F., Grether, R., de Queiroz, L.P., Skema, C., Pennington, R.T. & Hughes, C.E. (2009) Recent assembly of the Cerrado, a neotropical plant diversity hotspot, by in situ evolution of adaptations to fire. *Proceedings of the National Academy of Sciences of the United States of America* 106: 20359–64. <http://dx.doi.org/10.1073/pnas.0903410106>
- Simon, M.F. & Proença, C. (2000) Phytogeographic patterns of *Mimosa* (Mimosoideae, Leguminosae) in the Cerrado biome of Brazil: an indicator genus of high-altitude centers of endemism? *Biological Conservation* 96: 279–296.
- Smith, L.B. & Smith, R.C. (1967) Itinerary of William John Burchell in Brazil, 1825–1830. *Phytologia* 14: 492–505.
- Stafleu, F.A. & Cowan, R.S. (1986) *Taxonomic literature: a selective guide to botanical publications and collections with dates, commentaries and types (TL2). Volume VI: Sti–Vuy*. Second. Bohn, Scheltema & Holkema, Utrecht.
- Taubert, P.H.W. (1896) Beiträge zur Kenntnis der Flora des centralbrasilianischen Staates Goyaz. *Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie* 21.
- Thiers, B. (2014+) Index Herbariorum: A global directory of public herbaria and associated staff. *New York Botanical Garden’s Virtual Herbarium*. Available from: <http://sweetgum.nybg.org/ih/>.
- Urban, I. (1906) Vitae Itineraque Collectorum Botanicorum, Notae Collaboratorum Biographicae. In: von Martius, C.F.P. (Ed.) *Flora Brasiliensis, enumeratio plantarum in Brasilia hactenus detectarum: quas suis aliorumque botanicorum studiis descriptas et methodo naturali digestas partim icone illustratas. Vol. I. Part I. Fasc. CXXX*, pp. 1–212.
- Willdenow, K.L. (1806) *Caroli Linnaei Species plantarum: exhibentes plantas rite cognitas, ad genera relatas, cum differentiis specificis, nominibus trivialibus, synonymis selectis, locis natalibus, secundum systema sexuale digestas. Vol. 4 (2)*. Impensis G.C. Nauk, Berlin.