

A RESUME OF THE GENUS TIPUANA (LEGUMINOSAE)

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In the course of tabulating the numerous species originally assigned to Machaerium, but now excluded from that genus, a number of secondary problems have come to my attention. One such involves the now monotypic genus Tipuana (Benth) Benth.

Tipuana was first published as a section of Machaerium (Benth, in Jour. Bot. Kew Misc. 5: 267. 1853) and it included M. heteropterum Freire Allemão, "M. grandiflorum (Benth. in Hook. Journ. Bot. vol. 11. p. 67), and M. Tipu* a hitherto undescribed species found by Tweedie in the Parana." The asterisk refers to a Latin description of "Machaerium (Tipuana) Tipu" and a paragraph in English, "A large free-flowering handsome tree, known in the Parana by the name of Tipú of Peru, and giving its name to the valley of Tipuana, where the best gold in the Parana is found. Tweedie." The appropriate lectotype of Machaerium section Tipuana would seem to be M. tipu.

In the Latin description of M. tipu the inflorescence and the venation of the legumes are compared to those of "M. grandiflori" and the "Corollae majores, fere Platypodii, flavi." The reference to M. grandiflorum possibly was a lapsus calami, or mentis, with Platypodium grandiflorum Benth in mind. On the page cited by Benth, in Hook. Journ. Bot. 2: 67. 1840, there is the original description of Machaerium macrocarpum Benth, later transferred to Tipuana (Jour. Linn. Soc. 4, suppl.: 72. 1860), and erroneously cited as "Machaerium mucronatum" in Martius, Fl. Bras. 15(1): 259. 1862.

Benth raised Tipuana to generic status in 1860 with the three species, T. macrocarpa, T. heteroptera, and T. speciosa, the latter an illegitimate name based on Machaerium tipu. In 1898 Otto Kuntze made the correct combination, Tipuana tipu (Benth) O. Kuntze, and that species, I believe, automatically became the lectotype of the genus Tipuana, rather than T. speciosa Benth (Ducke, in Arch. Jard. Bot. Rio de Janeiro 5: 137. 1930) or T. macrocarpum (Benth) Benth as cited by Burkart (Las Leguminosas Argentinas, ed. 1. 544. 1943) and followed by the Index Nomina Genericorum. More recently, Burkart correctly cited T. tipu as the sole species of Tipuana and, indirectly, T. macrocarpa as Vatairea macrocarpa.

A few additional species were assigned to Tipuana before splitting of the genus was begun; Vatairea was resurrected; Luetzelburgia was described as new; other leguminous genera with superficially similar, terminally winged, samaroid fruit, such as Ferreira, Machaerium, Nissolia, Paramachaerium, and Vataireopsis, have added to confusion in identification, a fact that is reflected in the synonymy of the taxa and the physical location of pertinent specimens in most herbaria. Tipuana finally stands as a monotypic genus, as indicated by Ducke in 1930 (Arch. Jard. Bot. Rio de Janeiro 5: 135).

Having had to unravel this tangled nomenclature, it may be useful to present a list of the species published under Tipuana and to indicate their disposition. The species are given in alphabetical order, the synonymy chronological, and, what I currently believe to be the correct name is emphasized with capital letters.

TIPUANA (Benth) Benth, Jour. Linn. Soc. 4, suppl.: 27. 1860; in Martius, Fl. Bras. 15(1): 259. 1862; in Benth & Hooker, Gen. Pl. 1: 546. 1865. Lectotype: Tipuana tipu (Benth) O. Kuntze (Machaerium tipu Benth).
Machaerium section Tipuana Benth, Jour. Bot. Kew Misc. 5: 267. 1853. Lectotype: Machaerium tipu Benth.

Trees; bark gray to brown, with irregular, flat-topped ridges; young stems sericeous, glabrescent; unarmed; leaves alternate to sub-opposite, pinnately compound, about 11-31-foliolate; leaflets alternate to sub-opposite, elliptic or elliptic-oblong, about 2-5 cm. long, 1-2 cm. wide, slightly emarginate, rounded at the base, glabrous above, moderately pubescent below, glabrescent; stipules small, linear, caducous; stipels lacking; inflorescences terminal or axillary, paniculate; bracts and bracteoles minute, caducous; flowers papilionoid, about 2 cm. long; calyx 5-8 mm. long, moderately pubescent to subglabrous, campanulate with 5 subequal lobes; petals yellow to light-orange; stamens 10, diadelphous 9:1, the anthers uniform, dorsifixed; ovary brevi-stipitate, 1-4-ovulate; style glabrous; stigma small, truncate; fruit samaroid, about 6-8 cm. long including stipe 1 cm. long, the basal, fertile body 1.5-2 cm. long, 1-1.5 cm. wide, the terminal wing striate, 3.5-5 cm. long, 2-2.5 cm. wide; $n = 10$.

Distribution: Native to subtropical forests of Bolivia and northwestern Argentina; introduced as an ornamental in warm temperate and subtropical areas of Brazil, Uruguay, Europe, and the United States.

1. T. amazonica Ducke, Arch. Jard. Bot. Rio de Janeiro 1: 35. 1915
= VATAIREA MACROCARPA (Benth) Lucke, fide Ducke, Arch. Jard.
Bot. Rio de Janeiro 5: 192, 197. 1930.

2. T. auriculata Freire Allemão, Trab. Comm. Sc. Expl. Bot. Rio de
Janeiro 21. 1862-66.
Luettelburgia pterocarpoides Harms, Bericht. Deutsch. Bot. Ges.
40: 178. 1922.
Bowdichia (?) freirei Ducke, Arch. Bot. Rio de Janeiro 3: 133.
1922.
LUETZELBURGIA AURICULATA (Freire Allemão) Ducke, Notizbl. 11. 584.
1932.

3. T. cinerascens (Benth) Malme, Arkiv. Bot. 18, no. 17: 14. 1924.
Andira cinerascens Martius ex Benth, Jour. Linn. Soc. 4, suppl.:
72. 1860, nomen in synon.
T. macrocarpa var. cinerascens Benth, in Martius, Fl. Bras.
15 (1): 260. 1862.
VATAIREA MACROCARPA var. CINERASCENS (Benth) Ducke, Arch. Jard.
Bot. Rio de Janeiro 5: 139. 1930.

4. T. erythrocarpa Ducke, Arch. Jard. Bot. Rio de Janeiro 3: 152,
pl. 11a. 1922.
VATAIREA ERYTHROCARPA (Ducke) Ducke, Arch. Jard. Bot. Rio de Jan-
eiro 5: 139, 192, pl. 12, fig. 25. 1930.

5. T. fusca Ducke, Arch. Jard. Bot. Rio de Janeiro 4: 78. 1925.
VATAIREA FUSCA (Ducke) Ducke, Arch. Jard. Bot. Rio de Janeiro 5:
139, 192. 1930.

6. T. heteroptera (Freire Allemão) Benth, Jour. Linn. Soc. 4,
suppl.: 72. 1860.
Machaerium heteropterum Freire Allemão, Trab. Soc. Vell. 4. 1852.
VATAIREA HETEROPTERA (Freire Allemão) Ducke ex de Assis Iglesias,
Album Floristico, Minist. Agric. Serv. Flor. Brasi. 51. 1940.

7. T. lundellii Standley, Carnegie Inst. Wash. Publ. 461: 65. 1935.
VATAIREA LUNDELLII (Standley) Killip ex Record, Trop. Woods no. 63.
5. 1940.

8. T. macrocarpa (Benth) Benth, Jour. Linn. Soc. 4, suppl.: 72.
1860.
Machaerium macrocarpum Benth, Hook. Jour. Bot. 2: 67. 1840.
VATAIREA MACROCARPA (Benth) Ducke var. MACROCARPA, Arch. Jard.
Bot. Rio de Janeiro 5: 141. 1930.

9. T. macrocarpa var. cinerascens Bentham, in Martius, Fl. Bras. 15(1): 260. 1862.
Andira cinerascens Martius ex Bentham, Jour. Linn. Soc. 4, suppl.: 72. 1860, nomen in synonym.
Tipuana cinerascens (Bentham) Malme, Arkiv. Bot. 18, no. 17: 14. 1924.
VATAIREA MACROCARPA var. CINERASCENS (Bentham) Ducke, Arch. Jard. Bot. Rio de Janeiro 5: 139. 1930.
10. T. mucronata (Bentham) Macbride, Candollea 6: 10. 1934.
Machaerium mucronatum Bentham, in Martius, Fl. Bras. 15(1): 259. 1862, nomen in synonym., a typographical error for M. macrocarpum Bentham, non M. mucronatum Vogel, 1837.
 = VATAIREA MACROCARPA (Bentham) Ducke.
11. T. (?) praecox Harms, in O. Kuntze, Rev. Gen. 3(2): 72. 1898.
Machaerium praecox (Harms) K. Schumann, Just. Bot. Jahresb. 26: 354. 1900.
Ferreirea praecox (Harms) Malme, Arkiv. Bot. Stockh. 18, no. 17, 18. 1924.
LUETZELBURGIA PRAECOX (Harms) Harms, Ber. Deutsch. Bot. Ges. 40: 177. 1922; 43: 595. 1926.
12. T. sericea Ducke, Arch. Jard. Bot. Rio de Janeiro 4: 79. 1928.
VATAIREA SERICEA (Ducke) Ducke, Arch. Jard. Bot. Rio de Janeiro 5: 139, 192, pl. 12, fig. 27. 1930.
13. T. speciosa Bentham, Jour. Linn. Soc. 4, suppl.: 72. 1860. Based on Machaerium tipu Bentham = TIPUANA TIPU (Bentham) O. Kuntze.
14. T. TIPU (Bentham) O. Kuntze, Rev. Gen. 3(2): 72. 1898.
Machaerium tipu Bentham, Jour. Bot. Kew Misc. 5: 267. 1853.
Tipuana speciosa Bentham, Jour. Linn. Soc. 4, suppl. 72. 1860.
Machaerium fertile Grisebach, Goett. Abh. 19: 127. 1874.
Tipuana tipa Lillo, Contrib. Conoc. Arb. Argent. 58. 1910.