



A new combination in the genus *Talipariti* (Malvaceae)

Uma nova combinação no gênero Talipariti (Malvaceae)

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Abstrat

A new combination reestablishes the species *Talipariti pernambucense* (Arruda) Bovini, known before as a variety. Morphological and genetic studies by several authors have shown the need to establish this taxon at the specific level.

Key words: Brazil, *Hibiscus*, nomenclature, *Talipariti pernambucense*, *Talipariti tiliaceum*.

Resumo

É restabelecida uma espécie em nova combinação: *Talipariti pernambucense* (Arruda) Bovini, antes reconhecida como variedade. Estudos morfológicos e genéticos de vários autores, mostraram a necessidade de estabelecer o nível específico deste táxon.

Palavras-chave: Brasil, *Hibiscus*, nomenclatura, *Talipariti pernambucense*, *Talipariti tiliaceum*.

Introduction

Hibiscus is a pantropical genus of the Malvaceae family which contains about 200 species (Fryxell 1988). It is widely cultivated for its beautiful flowers and commonly used in landscaping. Fryxell (2001), analyzing the section *Azanza*, distinguishes the following morphological characteristics in relation to the other species of the genus: arborescent habit, large-ovate to elliptic leaves, large and oblong stipules, calyx lobate with nectaries on the veins, capsule bearing not only five true septa, but also five false septa; and the largest number of chromosomes in the genus (ca. 100). Fryxell (2001) raises this section to genus level, based on McVaugh's (1945) concepts adapted by Gillis (1971), establishing a new name, *Talipariti*, which was chosen in accordance with Article 62.3 (McNeill *et al.* 2006). Saint Hilaire (1825) proposed the generic name *Paritium* for some species of this group. However, it has the same type specimen as *Bupariti* and *Pariti*, previously proposed by Duhamel du Monceau (1760) and Adanson (1763), respectively, and in accordance with Article 14.4 (McNeill *et al.* 2006) both names are rejected. Currently *Talipariti* is composed of 22 taxa that are found from southeast Asia to Central and South

America, with one species occurring in Korea, Japan, and coastal Australia (Fryxell 2001).

Materials and Methods

Herbaria collections from CBM, CEPEC, GUA, RB and SP were analyzed. The specialized literature was consulted and field expeditions were carried out from 2004 to 2006 to observe and comment on live material.

Results and Discussion

Talipariti tiliaceum var. *tiliaceum* and *T. tiliaceum* var. *pernambucense*, established by Fryxell (2001), were previously described as species of the genus *Hibiscus*. However, this author suggests that further studies should reassess their taxonomic status, placing them at the species level. They are very similar, and have been the focus of much controversy, considered by various authors as distinct species, infra-specific taxa or synonyms.

Several studies have been carried out seeking evidence to help clarify this taxonomic impasse. The following are the most important ones: Silva (1966) examined the anatomy of stem, leaves and

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pollen grains; Rocha & Neves (2000) performed a comprehensive study of leaf anatomy; Silva *et al.* (2004) analyzed pollen; and finally Takayama *et al.* (2006) studied the phylogeography and genetics of both populations. All of these studies showed significant differences between the two taxa, suggesting they should be considered as distinct species.

Sivarajan & Pradeep (1996), in flora of the Indian Peninsula, comment that *Talipariti tiliaceum* (= *Hibiscus tiliaceus*) is widely found in the region and that it is probably of Indian origin, also emphasizing the presence of a purple spot in the center of the corolla (the outstanding feature). On the other hand, Standley & Steyermark (1949), in flora of Guatemala, affirm that the petals of *Talipariti tiliaceum* (= *Hibiscus tiliaceus*) become red when senescent, a striking feature of *Talipariti tiliaceum* var. *pernambucense* (= *Hibiscus pernambucensis*), in addition to its occurrence in the New World. Takayama in 2007 (pers. comm.) states that specimens from Malaysia have a purple spot in the center of the corolla and that many reach a height of 20 meters or more.

The main distinguishing features of both species are shown in Table 1, based on the articles and comments above, examined material plus phytogeographic data.

Talipariti pernambucense (Arruda) Bovini, *comb. nov.* *Hibiscus pernambucensis* Arruda, Diss. Pl. Brazil 44. 1810. *Paritium pernambucense* (Arruda) G. Don, Gen. Hist. 1: 485. 1831. *Hibiscus tiliaceus* subsp. *pernambucensis* (Arruda) Castellanos, Sellowia 19: 50. 1967. *Talipariti tiliaceum* var. *pernambucense* (Arruda) Fryxell, Contr. Univ. Mich. Herb. 23: 262. 2001. Type: BRAZIL. PARANÁ: Guaratuba, Boa Vista, margin Sai-Guaçu river, *Oliveira* 229 (neotype US; isoneotype MBM!), designated by Fryxell 2001).

Selected specimens examined: *T. pernambucense*: BRASIL. PERNAMBUCO: Ponta de Pedras, km 13, 27.III.2005, fl., K. Takayama & M.G. Bovini (CBM, RB 410552). BAHIA: Porto Seguro, 20.IV.1982, fl. e fr., A.M. Carvalho (CEPEC, RB 255809). RIO DE JANEIRO: Rio de Janeiro, Baía de Sepetiba, 25.II.1967, fl., D. Sucre 2041 (GUA, RB); Magé, 5º Distrito, 1.I.1991, fl., L.C. Giordano 903 (RB). Parati, Parati-Mirim, 9.XI.1991, fl., L.C. Giordano 1207 (RB); Praia Vermelha, 27.XI.1994, fl., M.G. Bovini 657 (RB, SP). SANTA CATARINA: Florianópolis, Distrito

Table 1 – Comparative characteristics of *Talipariti pernambucense* (Arruda) Bovini and *T. tiliaceum* L.

Characteristics	<i>Talipariti pernambucense</i>	<i>Talipariti tiliaceum</i>
Habit	Small trees with open canopy	Generally trees with dense canopy
Stipules	Scars markedly curved	Scars slightly curved
Leaves	Apical pendulous, at almost a 90° angle with the ground Coriaceous Shiny Druses uncommon Hypostomatic	Parallel to the ground Chartaceous Matte Druses very common Amphistomatic
Corolla	Yellow, becoming red when senescent	Yellow with purple spot at petal base, retaining color when senescent
Staminal tube	Long (about 4 cm long)	Short (about 3 cm long)
Stigmas	Yellow	Vinaceous
Fruit	Ovoid capsules	Globular capsules
Pollen grains	Porate, conical spines with attenuated apex, sexine thicker than the nexine	Pantoporate, spines with acute apex, nexine thicker than the sexine
Occurrence	New World (Mangrove)	Southeast Asia (cultivated in New World)

de Daniela, 18.III.2005, fl., *T. Kajita et al.* (CBM, RB 410568). *T. tiliaceum*: praia do Leblon (cultivada), VIII.1941, fl., *L. Tatto 357* (GUA, RB); Jardim Botânico (arboreto), 22.II.1991, fl. e fr., *B. Kurtz 129* (RB).

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References

- Adanson, M. 1763. Families dès plantes. 2 vols. Paris.
- Duhamel du Monceau, H.L. 1760. Dès semis et plantations dès arbres, et de leur culture. Additions, Paris.
- Fryxell, P.A. 1988. Malvaceae of Mexico. Systematic Botany Monographs 25: 1-522.
- Fryxell, P.A. 2001. *Talipariti* (Malvaceae), a segregate from *Hibiscus*. Contributions from the University of Michigan Herbarium 23: 225-270.
- Gillis, W.T. 1971. The systematics and ecology of poison-ivy and poison-oaks (*Toxicodendron*, Anacardiaceae). *Rhodora* 73: 72-159, 161-237, 370-443, 465-540.
- McNeill, J.; Barrie, F.R.; Burdet, H.M.; Demoulin, V.; Hawksworth, D.L.; Marhold, K.; Nicolson, D.H.; Prado, J.; Silva, P.C.; Skog, J.E.; Wiersema, J.H. & Turland, N.J. (eds.). 2006. International Code of Botanical Nomenclature (Vienna Code). Adopted by the Seventeenth International Botanical Congress Vienna, Austria, July 2005. Regnum Vegetabile 146. A.R.G. Gantner Verlag, Ruggell. 181p.
- McVaugh, R. 1945. The genus *Triodanis* Rafinesque and its relationship to *Specularia* and *Campanula*. *Wrightia* 1: 13-52.
- Rocha, J.F. & Neves, L.J. 2000. Anatomia foliar de *Hibiscus tiliaceus* L. e *Hibiscus pernambucensis* Arruda (Malvaceae). *Rodriguésia* 51: 113-132.
- Saint-Hilaire, A. 1825. *Flora brasiliae meridionalis*. Vol. 1. A. Belin, Paris. 256p.
- Silva, S.A.F. 1966. Notas sobre a anatomia e pólen de *Hibiscus tiliaceus* e *H. pernambucensis*. *Sellowia* 18: 105-108.
- Silva, F.H.M.; Oliveira, P.P. & Santos, F.A.R. 2004. Morfologia polínica de *Hibiscus pernambucensis* Arruda e *Hibiscus tiliaceus* L. (Malvaceae). *Acta Biológica Leopoldensia* 26: 203-211.
- Sivarajan, V.V. & Pradeep, A.K. 1996. Malvaceae of Southern Peninsular India: a taxonomic monograph. Daya Publish House, Delhi. 312p.
- Standley, P.C. & Steyermark, J.A. 1949. Malvaceae. In: *Flora of Guatemala*. *Fieldiana, Bot.* 24: 324-386.
- Takayama, K.; Kajita, T.; Murata, J. & Tateishi, Y. 2006. Phylogeography and genetic structure of *Hibiscus tiliaceus* speciation of a pantropical plant with sea-drifted seeds. *Molecular Ecology* 15: 2871-2881.