



## Short Communication / Nota Científica

# An amendment to the original description for *Pitcairnia ulei* (Pitcairnioideae - Bromeliaceae)

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### Abstract

This study provided an amendment to the original description for *Pitcairnia ulei* (Pitcairnioideae - Bromeliaceae).

**Key words:** Cerrado, *Pepinia*, Poales, winged seeds.

### Resumo

Este estudo forneceu uma emenda à descrição original de *Pitcairnia ulei* (Pitcairnioideae - Bromeliaceae).

**Palavras-chave:** Cerrado, *Pepinia*, Poales, sementes aladas.

*Pitcairnia* L'Her. is traditionally recognized in two subgenera distinguished by seed morphological characters: *Pitcairnia* subgenus *Pitcairnia* presents bicaudate ovules and seeds, whereas *Pitcairnia* subgenus *Pepinia* (Brongn. ex André) Baker is characterized by winged ovules and seeds, sometimes without appendages (Smith & Downs 1974). The reliability of this infrageneric circumscription was discussed by André (1870), Baker (1881), Smith & Downs (1974), Varadarajan & Gilmartin (1988a, b), Grant & Zijlstra (1998), and Taylor & Robinson (1999). Based on seeds morphology analysis by Scanning Electron Microscopy (SEM) and leaf anatomy, Taylor & Robinson (1999) pointed a high variability of the seeds due to ecological and geographic conditions. In a recent phylogenetic study based on macro and micromorphology analysis of the genus *Pitcairnia*, Saraiva *et al.* (2015) found that the two subgenera do not emerge as monophyletic, not agreeing with the infrageneric actual classification. The phylogenetic tree pointed *Pitcairnia bradei* Markgr., *Pitcairnia cristalinensis* (Leme) D.C.

Taylor & H. Rob., and *Pitcairnia ulei* L.B. Sm. as a clade; these species present canaliculate and coriaceous leaves, yellow flowers and winged seeds, besides rheophytic habit.

For *Pitcairnia ulei*, Smith & Downs (1974) described only obtuse and short-caudate ovules, the fruit was not observed (as well as in the original description - there is no fruit in the holotype) and this species was allocated in *Pitcairnia* subg. *Pitcairnia*. In addition to its known restricted distribution (Brazil - Goiás state and Distrito Federal), current collections of this species were made in watercourse banks (rheophytic habit), with plants in fruit, exhibiting winged seeds, and in accordance to the infrageneric concept these characteristics belong to the species allocated in *Pitcairnia* subgenus *Pepinia*.

This note provides an amendment to *Pitcairnia ulei* description, adding features of fruit and seeds (form, color and measures) and illustration, besides contributing to the future morphological and phylogenetic studies about *Pitcairnia s.l.*

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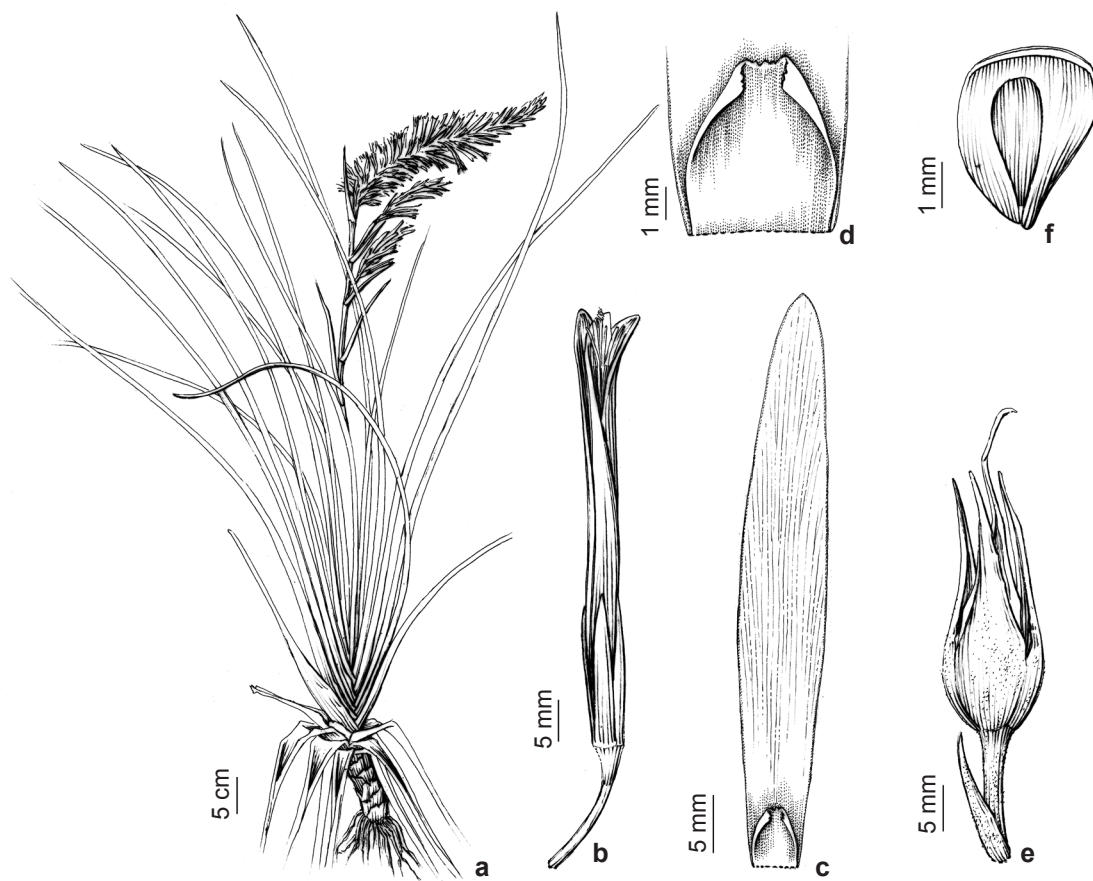
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***Pitcairnia ulei*** L.B. Smith, *Bol. Mus. Nac. Rio de Janeiro* 15: 5, plate I, figs. h-j. 1952. *emend.* C.C. Araujo & Wand. Type: BRAZIL. Goiás: region of Corumbá de Goiás, *Ule* 788 (holotype [mounted in two sheets with same herbarium number, 46458] R! barcode 000046458; isotype [fragment] US! barcode 00088950). Figs. 1; 2

Rheophyte, caespitose; stem covered by leaf sheaths. Leaves tristichously-spiral, isomorphic, linear, long-attenuate, subcanaliculate; sheath castaneous, 3–5.5 × 4–7 cm, deltoid, laxly inserted in stem; blade green, 84–93 × 1.2–1.5 cm, glabrous in adaxial face and lepidote in abaxial face; margin entire. Peduncle green to orange, 45.5–61.1 cm long, glabrescent; bracts green-yellow, 3.8–67 cm long, lepidote, the basal foliaceous, surpassing the internodes, the apical triangular-lanceolate, smaller than the internodes, apex attenuate. Inflorescence

simple or compound, suberect; rachis 41–64.5 cm long, erect, glabrescent; primary bracts 3–4.5 cm long. Floral bracts green to orange, 0.6–1.2 cm long, lanceolate. Flowers 4.5–6.5 cm long, slightly zygomorphic at anthesis; pedicels orange to green, 0.8–1.6 cm long; sepals orange, 1.9–2.2 cm long, free, lanceolate, acute apex, lepidote; petals yellow, 4.8–5.7 cm long, free, oval-lanceolate; apex rounded, overlapping at anthesis (partial zygomorphy); petal appendages ca. 0.5 cm long, adnate, apex free and dentate; stamens 4.4–5.1 cm long, free, filaments yellow, anthers yellow, 0.8–1 cm long, basifixed; ovary 0.9–1 cm long, semi-inferior, entering more than its half in the receptacle, style yellow, ca. 5 cm long, stigma yellow, ca. 0.2 cm long, spiral-conduplicate. Fruit green, 1.4–1.8 cm long, globose, lepidote; seeds 0.1–0.2 cm long, winged, falciform to reniform, numerous.



**Figure 1** – a-f. *Pitcairnia ulei* – a. habit; b. flower; c. petal and petal appendage; d. petal appendage; e. fruit; f. seed. (a-e. C.C. Araujo 15; f. C.C. Araujo 51). Illustration: Klei Sousa.



**Figure 2** – a-f. *Pitcairnia ulei* – a. habit; b-d. flowers; e. fruits; f. leaves tristichously-spiral. (a-d. C.C. Araujo 15; e-f. C.C. Araujo 51). Photos: C.C. Araujo.

Distribution and habitat: Brazil, in Goiás state, and in the Distrito Federal. In Distrito Federal is found in waterways margins, mainly in forest phytophysionomies. Flowering in February, and

July to November, fruiting in February, October and November.

**Specimens examined:** BRAZIL. DISTRITO FEDERAL: Brasília, VIII.1964, *Irwin & T.R. Soderstrom* 5782 (SP); VII.1982, *B.A.S. Pereira* 326 (IBGE); IX.1982, *J.H. Kirkbride Jr.* 4870 (UB); VI.1985, *R.C. Mendonça & M. Ribeiro* 480 (IBGE, SP); II.1999, *C. Proença et al.* 2088 (UB); 15°57'40''S, 47°56'36''W, XI.2011, *D.P. Saraiva et al.* 309 (CEN); 15°34'55''S, 48°02'49''W, IX.2012, *J.E.Q. Faria* 2820 (UB); 15°58'37''S, 47°52'10''W, VII.2012, *M. Aparecida-da-Silva et al.* 7730 (IBGE). Gama, Córrego Gama, IX.1965, *Irwin et al.* 8681 (NY, UB, US); XI.1965, *Irwin et al.* 10137 (NY!, US). Cidade Satélite Brazlândia, 15°34'54.3''S, 48°02'50.3''W, XI.2014, *C.C. Araujo* 51 (SP). Cidade Satélite Lago Sul (Brasília), 15°57'40.4''S, 47°56'39.2''W, X.2013, *C.C. Araujo* 15 (SP). Cidade Satélite São Sebastião, 15°57'14.2''S, 47°40'21.3''W, XI.2014, *C.C. Araujo & S.E. Martins* 50 (SP). GOIÁS: Alto Paraíso de Goiás, 14°11'38''S, 47°50'27''W, XI.2011, *D.P. Saraiva et al.* 293 (CEN).

Smith (1952) cited only one specimen as type, which is deposited in R mounted in two sheets. However there is a duplicate deposited in US, therefore an isotype, composed only of parts of the flower.

*Pitcairnia ulei* as well as *Pitcairnia cristalinensis* and *Pitcairnia bradei* is endemic to Brazilian Cerrado. Characters that differ among these species are presented in detail in Table 1.

*Pitcairnia cristalinensis* occurs in Goiás state and is very similar to *P. ulei*. This species was before synonymized under *P. ulei* (Forzza *et al.* 2014 *apud* Saraiva *et al.* 2015) but today is an accepted name according to Flora do Brasil (2020).

*Pitcairnia bradei* is endemic to the Minas Gerais state (Flora do Brasil 2020) and differs from *P. ulei* mainly by fragrant flowers. Smith & Downs (1974) cited two records of *P. bradei*, both from the same location, at Distrito Federal – *Irwin et al.* 8681 (Córrego Gama, IX.1965, UB!, NY!, US) and *Irwin et al.* 10137 (Gama, XI.1965, NY!, US). However we have seen these vouchers and determined as *P. ulei*.

**Table 1** – Taxonomic characters that differ among the species *Pitcairnia ulei*, *Pitcairnia bradei*, and *Pitcairnia cristalinensis*, which were observed in this study. \*Information for *Pitcairnia bradei* and *P. cristalinensis* were based on Flora do Brasil (2020) and Leme (1995), respectively.

Species	Inflorescence	Floral bracts	Petal appendage
<i>Pitcairnia ulei</i>	Simple or compound	Smaller than pedicels	Present
<i>Pitcairnia bradei</i>	Simple*	Smaller than pedicels*	Absent*
<i>Pitcairnia cristalinensis</i>	Simple*	Equaling to exceeding ovary*	Present*

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