



## *Paepalanthus conjunctus*, a new species of *Paepalanthus* sect. *Diphyomene* (Eriocaulaceae) from Central Brazil

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### Abstract

We describe and illustrate *Paepalanthus conjunctus*, a new species of *Paepalanthus* sect. *Diphyomene* restricted to open humid fields in the vicinity of Brasília (DF). It can be distinguished from other species by its cespitose habit forming clumps of a few individuals, linear leaves, short reproductive axis, hairy scapes, and short corolla tubes. As the species is known from a single population growing in an area undergoing intense anthropic activity, it is considered endangered. A detailed description and illustrations, as well as comments on distribution, morphological variation, and affinities are provided.

**Keywords:** *Paepalanthus*, Poales, Nomenclature, Systematics, Taxonomy

### Introduction

*Paepalanthus* Martius (1834: 28) *nom. cons.* is the largest genus of Neotropical Eriocaulaceae, comprising ca. 400 species (Ruhland 1903, Giulietti & Hensold 1990, Stützel 1998, Sano 2004, Parra *et al.* 2010, Giulietti *et al.* 2012). Such taxonomic diversity encompasses a broad morphological variation in both floral and vegetative structures, these serving as the basis for its infrageneric classification. *Paepalanthus* sect. *Diphyomene* Ruhland (1903: 184) is one of the few groups with dimerous flowers, and is distinguished by its elongated reproductive axis bearing a complex umbelliform inflorescence (Ruhland 1903, Trovó & Sano 2010, Trovó *et al.* 2010, Alves *et al.* 2013). Until now, the group has consisted of eighteen species distributed mainly in the savannas of Central Brazil (Trovó & Sano 2011, Trovó *et al.* 2013a, 2013b). Recent analysis of herbarium material and field expeditions revealed a new species from Brasília (Distrito Federal). The species is described herein and illustrated. Comments on morphological variation, distribution and affinities are provided.

### Taxonomic treatment

*Paepalanthus conjunctus* Trovó, *sp. nov.* (Fig. 1)

Differs from the remaining species of *Paepalanthus* sect. *Diphyomene* by its cespitose habit forming clumps of a few individuals, linear leaves, short reproductive axis, hairy scapes, and shortened corolla tubes.

**Type:**—BRAZIL. Distrito Federal: Recanto das Emas, Núcleo Rural Monjolo, 11 August 2009, A.E. Ramos, F.P.R. Jesus, G.C. Reis, G. Cota, M. Oliveira 1878 (holotype HEPH!).

bracts in 3 to 4 series, brown, linear to rarely lanceolate, flat, ca. 3 mm long, glabrous or abaxially pubescent, margin ciliate toward the apex, apex acute; receptacle semi-spherical, pubescent. *Flowers* dimerous, ca. 75 per capitulum, ca. 70 staminate and 5 pistillate; floral bracts linear, brown to golden, flat, ca. 3 mm long, abaxially pubescent to glabrous, margin ciliate toward the apex, apex acute. *Staminate flowers* ca. 3 mm long; pedicel ca. 0.5 mm long, with long trichomes; sepals navicular, brown to golden, ca. 3 mm long, abaxially pubescent to glabrous, margin ciliate toward the apex, apex mucronate; fleshy anthophore elongated; corolla fused, bilobate, shortened, hyaline, membranaceous, ca. 0.5 mm long; stamens ca. 1.5 mm long; pistillodes 2, papillose. *Pistillate flower* (juvenile) ca. 2 mm long, sessile; sepals navicular to dolabriform, brown to golden, ca. 2 mm long, abaxially pubescent to glabrous, margin ciliate toward the apex, apex mucronate; petals obovate, hyaline, ca. 0.4 mm long, abaxially pubescent, margin ciliate toward the apex, apex rounded; gynoecium ca. 1 mm long, stigmatic branches bifid, as long as the nectariferous branches, staminodes completely reduced. Fruits and seeds not seen.

**Etymology:**—The epithet “*conjunctus*” refers to the tufted habit of the species, forming small clumps of individuals.

**Distribution, Habitat, and Conservation:**—A single flowering population is known from the vicinity of Brasilia, Distrito Federal. The species grows in open humid fields intermixed with grasses. *Paepalanthus conjunctus* is classified as endangered according to criteria B1, B2a i, and B2a of the IUCN (2011).

**Additional specimens examined:**—BRAZIL. Distrito Federal: Recanto das Emas, Núcleo Monjolo, 10 May 2010, Ramos A.E. et al. 1959 (HEPH); 10 May 2010, Ramos A.E. et al. 1963 (HEPH); 10 May 2010, Ramos A.E. et al. 1969 (HEPH).

**Comments:**—*Paepalanthus conjunctus* has a combination of rare features (described in the diagnosis) that clearly distinguishes it from the other species in *Paepalanthus* sect. *Diphyomene*. It has linear leaves erectly disposed along the short stem. This feature is shared with *Paepalanthus linearis* Trovó (2013a: 327), a species possessing a much longer reproductive axis (31–40 cm vs. 1.5–3.5 cm), restricted to the north of the Espinhaço Range in Minas Gerais. Hairy scapes are only found in *Paepalanthus sericiscapus* Trovó (2013a: 329), *Paepalanthus arcuatus* Trovó (2013a: 325), and *Paepalanthus decussus* Koern (1863: 318). These species are all easily segregated from *P. conjunctus* by their lanceolate leaves. Additionally, they are restricted to Minas Gerais. The growing habit forming clumps attached by the rhizome is also found in *Paepalanthus polycladus* Silveira (1928: 189). *Paepalanthus polycladus* can be differentiated from *P. conjunctus* by its longer reproductive axis (30–80 cm vs. 1.5–3.5 cm) and its short lanceolate leaves. Herbarium specimens of *Paepalanthus conjunctus* may be misidentified as *Paepalanthus elongatus* (Bongard 1831:630) Koern. (1863: 312) due to their linear leaves and linear involucre bracts with acute apex. *Paepalanthus elongatus* belongs, however, to *Paepalanthus* ser. *Dimeri* Ruhland (1903: 166), a group of species without reproductive axes. Although some old capitula of *Paepalanthus conjunctus* were examined, only a few juvenile pistillate flowers were found. The low frequency of pistillate flowers could be a sampling artifact or may be indicative of low allocation of resources for sexual reproduction, explaining also the tufted habit of the individuals. Further investigations are required for an assertive answer to this question.

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