



## ***Dyckia sulcata* (Bromeliaceae), a new species from Minas Gerais, Brazil, with notes on leaf anatomy**

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### **Abstract**

*Dyckia sulcata* is described and illustrated here as a new species from Minas Gerais State, Brazil. Information on its phenology, ecology, distribution, and conservation status is provided. The species is morphologically compared with *D. brachyphylla* and *D. saxatilis*, which are the species considered most similar. Illustrations and descriptions of leaf anatomy are also provided.

**Keywords:** Rocky fields, Espinhaço Mountain Range, Pitcairnioideae, Leaf Anatomy

### **Introduction**

*Dyckia* Schult. & Schult. f. (1830: 1194) is the second largest genus in the subfamily Pitcairnioideae, Bromeliaceae, with 164 species (Gouda *et al.* cont. upd.) distributed among Argentina, Bolivia, Brazil, Paraguay, and Uruguay (Krapp *et al.* 2014). Brazil has the largest number of species (129), distributed throughout the country (Forzza *et al.* 2014), with the center of diversity in the southeastern region with 41 species; Minas Gerais State has the largest number of species (37).

*Dyckia* is characterized by having rosettes formed by aculeate, succulent or coriaceous leaves with sheaths much wider than the blades. Its inflorescence is always lateral, with generally orange flowers (but also yellow, red or brown) and, depending on the species, they are odorless, or slightly fragrant, sessile to pedicellate, and usually with a campanulate corolla. The stamens are included (or rarely exerted), and its filaments are free or connate above the connate petal-stamen ring; the anthers are dorsifixed near their bases, curved; stigma conduplicate spiral, sessile or with evident style; fruits capsular.

Molecular and anatomical analyses indicate that *Dyckia* is a monophyletic genus that (with *Encholirium*) forms a sister-clade to *Deuterocohnia* (Givnish *et al.* 2011; Santos-Silva *et al.* 2013; Krapp *et al.* 2014). According to Givnish *et al.* (2011), the lineage *Dyckia-Encholirium* spread from the Andes throughout the Brazilian Shield approximately 8.5 Ma. Although new studies on the phylogeny of *Dyckia* strengthen its monophyletic status, there is evidence that this genus had a much more recent radiation—supporting the hypothesis that the common ancestors of *Dyckia* and *Encholirium* occurred in eastern Brazil long before the *Dyckia* lineage became differentiated (Krapp *et al.* 2014). According to Leme *et al.* (2012), the hypothesis of a recent explosive radiation of *Dyckia* helps explain the difficulties encountered in identifying consistent morphological characteristics that are taxonomically useful for distinguishing its species—even using complete and fully documented specimens—as separate populations would not yet have accumulated significant distinctions. Krapp *et al.* (2014) examined *Dyckia* using DNA sequence data from six plastid loci and a portion of the nuclear gene *PHY-C* and encountered a poorly resolved phylogeny with many paraphyletic or polyphyletic lineages. A better understanding of the species of *Dyckia* is therefore of paramount importance to understanding its phylogeny.

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