



## Three new species of *Encholirium* (Bromeliaceae) from eastern Brazil

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### Abstract

*Encholirium* is an exclusively Brazilian genus of Bromeliaceae that occurs principally in the South American dry diagonal, with only a few species found on inselbergs within the Atlantic Forest. The center of diversity of the genus falls within the Campos Rupestres of the Espinhaço Range of the state of Minas Gerais, followed by rocky outcrops found within the Caatinga and Cerrado biomes. Three new species are described and illustrated, two of which occur on limestone outcrops in western Bahia (*Encholirium splendidum* and *Encholirium fragae*), while the third, *Encholirium kranzianum*, occurs in the Campos Rupestres of the Espinhaço Range of Minas Gerais.

**Keywords:** Pitcairnioideae, xeric clade, rocky outcrops, *Dyckia*, *Deuterocohnia*

### Introduction

*Encholirium* is a genus of Bromeliaceae endemic to Brazil, and its species occur on different types of rocky outcrops in eastern Brazil. This genus is placed within the ‘xeric clade’ of subfamily Pitcairnioideae, and together with *Dyckia* and *Deuterocohnia*, share diverse molecular, morphologic and anatomical synapomorphies (Givnish *et al.* 2011; Santos-Silva *et al.* 2013). Forming a natural group with its center of diversity within the South American dry diagonal (Prado & Gibbs 1993). The delimitation between these genera is not yet very clear and some studies suggest that their current circumscription may need to be revised (Forzza 2001; Givnish *et al.* 2011; Krapp *et al.* 2014).

*Encholirium* comprises 28 species, 13 of which are restricted to the Espinhaço Range in Minas Gerais; with the largest concentration occurring in the region of Serra do Cipó and Diamantina plateau (Forzza 2005; Forzza & Zappi, 2011; Forzza *et al.* 2012, Forzza *et al.* cont.upd.; Leme *et al.* 2014), where one of the newly described species originates. Another area where the genus seems to be very common, but for which there are very few records so far, are the limestone outcrops of the Bambui series distributed along the valleys of the São Francisco and Jequitinhonha rivers, in western Bahia and northern Minas Gerais, where the other two new species were collected. These outcrops harbor many interesting micro-endemic xeric species from other plant families, for example in the Cactaceae (Taylor & Zappi 2004).

Due to their micro-endemism and to the fragmented nature of the habitats they occupy, that are subject to many threats, such as mining, invasive species and fires, 11 species of *Encholirium* (c. 40% of their total) feature in the Brazilian Red List, six of them as critically endangered (CR) and five as endangered (EN) (Forzza *et al.* 2013).

### Methods

The terminology follows Radford *et al.* (1974); Weberling (1989) and Forzza (2005). The conservation status was proposed following the recommendations and criteria of IUCN Red List Categories and Criteria, Version 3.1 (IUCN cont.upd.). GeoCAT (Bachman *et al.* 2011) was used for calculating the Extent of Occurrence (EOO) and the Area of Occurrence (AOO).