Alcantarea pataxoa (Bromeliaceae), a New Species from Bahia, Brazil

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Abstract—Alcantarea pataxoa is described and illustrated. The new species is compared to Alcantarea burle-marxi, which we assume is the most morphologically similar species, as well as to A. nahoumii. The new species is the second taxon of this genus recorded for the flora of the state of Bahia, northeastern Brazil, and its differences from A. nahoumii are highlighted in an updated taxonomic key for that state.

Keywords—Atlantic forest, inselberg, Parque Nacional do Monte Pascoal, Pataxós, Tillandsioideae, Vrieseeae.

The Brazilian Atlantic forest is among the most important tropical forests in the world, considered a top priority in terms of conservation due to its degree of threat and megadiversity (Mori et al. 1981; Ribeiro et al. 2009). In this forest, Bromeliaceae is considered a peculiar taxonomic group, due to the high degree of endemism and significant ecological value mainly from its interactions with the fauna (Holst and Luther 2004; Martinelli et al. 2008). The flora of the state of Bahia, northeastern Brazil, is extremely rich (e.g. Cardoso and Queiroz 2008). Some authors consider the southern portion of the state as the center of diversity for some plant and animal groups (e.g. Mori et al. 1981; Thomas et al. 1998) and this area is particularly valuable for bromeliad diversification and endemism (e.g. Sousa et al. 2007). On the whole, Bromeliaceae is well represented in the entire state of Bahia, totaling 29 genera and 286 species (Forzza et al. 2010).

Alcantarea encompasses nearly 30 species, most of them restricted to gneiss-granitic inselbergs inserted in the Atlantic forest domain, with few representatives also occurring restricted to gneiss-granitic inselbergs inserted in the Atlantic forest, inselberg, Parque Nacional do Monte Pascoal, Pataxós, Tillandsioideae, Vrieseeae.

Alcantarea pataxoa


Alcantarea burle-marxi cui affinis sed habitus minoribus, bracteis scapalibus et florigeris majoribus differt. Alcantarea nahoumii similis sed bracteis florisgeris gibbosa et staminibus divericato differt.

Rupicolous herbs, ca. 1.4 m tall when flowering, short caulescent. Rosette ca. 90 × 115 cm, infundibuliform, phytotelm developed. Leaves ca. 25, suberect; leaf sheath 17–20 × 10–12 cm, elliptic to oblong, dark brown passing to green densely wine-red maculate in ovate, densely brown-lepidote in both faces in sicio, coriaceous; leaf blade 40–60 × 7–8 cm, linear-triangular, yellowish green, concolorous, densely lepidote abaxially, sparsely lepidote to glabrous adaxially, slightly canaliculate, coriaceous, suberect, distinctly nervet; margins with 2–3 prominent nerves, with a narrow lateral line and wine-red maculate; blade apex acute, attenuate, green, recurved, apiculate for ca. 10 mm. Peduncle ca. 85 × 1 cm, erect, straight, terete, olive-green; bracts 15–20 × 5 cm, triangular, apex acute, the proximal ones green in both faces and with a reddish base, the distal ones becoming wine-red to pinkish-green, suberect, slightly inflate at the base, finely nervet, chartaceous, margins green to wine-red. Inflorescence compound, panicle of spikes, few branches also presenting a secondary order ramification, ellipsoidal to obbovoidal, erect, rachis straight; primary bract shorter than the lateral peduncles, ca. 5 × 3 cm, ovate, apex acuminate, wine-red, finely nervet, chartaceous, with the basal margins membranaceous; inflorescence branches ca. 8, 10–15-flowered; lateral peduncles 6–11 × 0.9 cm, weakly complanate, distinctly nervet, green, glabrous; sterile bracts 2–7, shorter than the floral bract, 1.5–2 cm long; rachilla 15–30 cm, straight to flexuous, green, glabrous; internodes 1.5–3 × 0.7 cm; floral bract 3.42 × 3.2 cm, ovate, apex obtuse, brownish-green along the gibbous central

Materials and Methods

The morphological description of the new species is based on a living specimen cultivated at the Rio de Janeiro Botanical Garden and its freshly collected flowers, as well as on the herbarium specimen prepared (Vasconcellos 221). Comparisons to the two other species, Alcantarea burle-marxi (Leme) J. R. Grant and A. nahoumii, are based on a thorough herbaria survey including: BHCB, C, CESJ, GUA, HB, HBR, HRB, HRCB, HUEFS, K, LOJA, LFB, MBM, MBML, MO, NY, P, R, RB, RFA, SEL, SP, SPF, UB, UEC, US, USM, QCA, QCNE, and VIC. Field observations of the populations of this new species were conducted by the third author during his expedition to Monte Pascoal National Park in 1999. Conservation assessment for the new species was based on field observation, applying the IUCN red list category criteria (IUCN 2001).
portion and olive-green to wine red along the margins in vivo, glabrous abaxially, subdensely brown-lepidote adaxially, slightly rugose along the borders, central portion smoother, coriaceous, ecarinate, margins membranaceous, yellowish-hyaline in sicco. Flowers inodorous, distichous, generally suberect; sepals ca. 3.8 × 1.8 cm, elliptic to obovate elliptic, apex nearly obtuse, symmetric, exceeding the floral bracts by ca. 1.2 cm, generally pale green to yellowish-green, rarely green-wine-red, eventually green spotted along the borders, glabrous abaxially, subdensely brown-lepidote adaxially, slightly carnose, ecarinate, margins membranaceous, yellowish-hyaline in sicco; petals ca. 7.5 × 1 cm, ligulate, apex obtuse, constricted by the sepals apices, pale yellow to cream color in anthesis; petal appendages ca. 30 × 2–3 mm, ligulate, longitudinally adnate to the petal for ca. 20 mm, apex acute, asymmetric; stamens spreading; filament 7 cm + ca. 1.2 cm, terete to slightly angulose, 1 mm, white, densely papillose, constricted by the sepals apices, pale yellow to cream color in anthesis; anther ca. 13 mm + ca. 2 mm, terete to slightly angulose, white; stigma lobes ca. 4 + 1 cm, white, densely papillose, conduplicate-spiral (type II, Brown and Gilmartin 1984); ovary ca. 10 mm (superior portion), slightly angulose, green-whitish, hypanthium ca. 11 mm long; ovaries ca. 1.4 mm, with an elliptic apical appendage, numerous. Fruits and seeds unknown. Figures 1A–F, 2.

Phenology—It was flowering in cultivation in March-April.

Distribution—So far the species is known only from the Parque Nacional do Monte Pascoal, Porto Seguro, in the southern portion of the state of Bahia, northeastern Brazil.

Ecology—It grows forming dense heliophyous populations on patches of exposed granite rock in the Atlantic forest. Other Bromeliaceae species that occur in the same area include Pitcairnia fallipea Lindl. (Fig. 1I) and Aechmea alb Mez, the latter restricted to the shaded and mesic sites along the top of this mountain.

Conservation—The species is provisionally treated as least concern (LC), due to its large population size (Fig. 1I) growing on places of difficult access and protected within a Brazilian national park.

Etymology—The epithet chosen is a reference to the native indians (Pataxós) that still survive in this area and that were the first to get in contact with Europeans, following the discovery of Brazil by Pedro Álvares Cabral, in 1500. These Native Americans have been brutally massacred as well as reduced in number and lost most of their territory. Brazilian indians numbered more than five million at the time of the colonization, but have been progressively reduced to less than 400,000 (Ribeiro 1995).

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Literature Cited


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**Key to the Species of *Alcantarea* in the State of Bahia**

1. Floral bracts yellow, nearly smooth; petals golden-yellow; stamens bundled; peduncle bract concolorous red .............................................. *A. nahoumii*

1. Floral bracts brownish-green along the central portion and olive-green to wine red along the margins, gibbous; petals pale yellow to cream color; stamens spreading; peduncle bracts green passing to wine-red .............................................. *A. pataxoana*

**Discussion**

This new species is closely related to *A. burle-marxii*, which occurs further inland, towards the northeastern portion of Minas Gerais (Versieux and Wanderley 2010b). They can be separated by the size of the flowering plants, size and shape of the floral bracts, and by the distinct arrangement of the bracts along the peduncle. Also, flowers of *A. pataxoana* are distinctly smaller than those from *A. burle-marxii* (Table 1).

This new species is similar to the *Alcantarea extensa* complex that groups taxa with primary bracts shorter than the lateral branches, spreading stamens, and dull colored floral bracts and petals (Versieux and Wanderley 2010b), that suggest a bat pollination syndrome. As with the other species of this complex, *A. pataxoana* presents turgid floral buds and irregularly shaped spikes (Figs. 1A, D).

This new taxon is similar to *A. nahoumii* as well, the other species occurring in Bahia, but they can be separated by the floral bract texture and color, by the distinct flower morphology, and by a distinct arrangement of stamens at anthesis (see key), which probably reflects pollinator shifts (i.e. spreading stamens in *A. pataxoana* that presumably is bat pollinated vs. bundled stamens in *A. nahoumii*, suggesting pollination by insects or birds). The new species also has a secondary order branching for some lateral spikes (Fig. 1F), a characteristic that has been recorded only for *A. nahoumii* and *A. odorata* (Leme) J. R. Grant (Versieux and Wanderley 2010a).


