Abstract

*Tillandsia paraibensis* is described and illustrated as a new species known only from the state of Paraíba, Brazil. The affinities of this new species to other species and information on its biology are discussed.

**Key words:** taxonomy, inselbergs, Paraíba.

Introduction


According to Leme et al. (2010), the genus has a wide geographic distribution, and the species vary greatly in habitat, size, and leaf and flower architecture. The species invariably have entire leaf margins, free petals usually without appendages, stigmas which are usually conduplicate, spiral, or simple-erect, rarely coralliform or with convolute blades, superior ovaries, ovules which are generally long-caudate, and plumose seeds with straight basal appendages.

In 2006, Pontes & Agra cited the occurrence of 12 species of *Tillandsia* for this state of Paraíba. Currently 17 species are recognized for the state (Forzza et al. 2012).

Material and Methods

For a description of the species, we used the usual terminology for the family following the works of Smith & Downs (1977), Ehlers & Till (2008), and Leme (1993). We studied the collections of the following herbaria (acronyms according Holmgren et al. (2003): JPB, IPA, UFP, RB, HB and a virtual visit to WU.

Results and Discussion

We collected an unusual species of *Tillandsia*, subgenus *Anoplophytum*, from inselbergs in the municipality of Araruna, Paraíba, near the border of Rio Grande do Norte (Fig. 1). After exhaustive taxonomic study we determined that it represents a species new to science and describe it here.

*Tillandsia paraibensis* R.A. Pontes, *sp. nov.* Type: BRAZIL. PARAÍBA: Araruna, Pedra da Boca State Park, 06°27'02.5"S, 35°40'38"W, 240 m, 23.XII.2010, fl., J.C. Casteliano 01 (holotype JPB; isotype RB!).

Species nova Tillandsia minageirasensis, affinis, inflorescentia erecta pallide rosea, floribus sessilibus cum staminibus quam calyce majoribus, filamentis manifeste plicatis differt.
Plant stemless, rupiculous, flowering 13–22 cm high (Fig. 2). Leaves many, ca. 70, densely arranged, strongly secund, subcoriaceous toward the base, never exceeding the inflorescence; sheath inconspicuous and barely distinct from the blade; blade strongly narrowly triangular, canaliculate toward the base, 10–14 cm long, ca. 1 cm wide, distinctly shorter than the inflorescence, densely white-lepidote on both sides with trichomes adpressed and completely obscuring the color of the blades, the apex long filiform-caudate. Scape erect, 3–6 cm long, 3–4 mm diameter, green, glabrous; scape-bracts densely imbricate, 4–6 × 0.9–1 cm, lepidote, the apex 1.8–2.5 cm, the base truncate, ecarinate, pale rose, glabrous, finely nervet, distinctly exceeding the internodes, the lower membranous-foliaceous, the upper elliptic-lanceolate, long filiform-caudate; inflorescence a simple, erect spike, 10–12 flowered, 4.5–5.5 cm long, ca. 2.5 cm diameter, pale rose, the axis slender, terete, glabrous, covered by the floral bracts, greenish, the internodes 2–3 × 0.2–0.4 cm; primary bracts narrowly elliptic to obovate-elliptic, acute, ca. 2.5 × 1 cm, apiculate-caudate (basal ones) to shortly apiculate (upper ones), ecarinate, pale rose, white-lepidote only toward the apex, membranous, finely nervet, erect; floral bracts elliptic-lanceolate, acute and minutely apiculate, 2–2.5 × 1 cm, the base truncate, ecarinate, pale rose, glabrous, membranous, finely nervet, never exceeding 1/2 the length of the petals, imbricate. Flowers 2–2.5 cm long, odorless, erect, polystichously spirally arranged, sessile; sepals lanceolate, acute, ca. 1.5 × 0.5 cm, glabrous, greenish, ecarinate, membranous, inconspicuously connate at base, the margin hyaline; petals sublinear, 2–2.5 × 0.3 cm, slightly broader toward apex, 5 mm wide, elliptic, recurved at anthesis, white, membranous, free. Stamens equaling the stylet, ca. 2 mm above the base, filaments flat, membranous, hyaline, strongly plicate, the anthers ca. 2 mm long, linear, obtuse at both ends, dorsifixed near the base; ovary subglobose, greenish, glabrous; style elongate, cylindrical, glabrous; stigma conduplicate-spiral, recurved blades, hyaline-whitish. Fruits and seeds not observed.

It occurs in Brazil, in the state of Paraíba, region of Curimataú. It is known only on three inselbergs in the Pedra da Boca State Park: i.e., Pedra do Carneiro, Pedra da Santa, and Pedra da Boca. Tillandsia paraibensis grows on vertical granite rock in full sun, usually in scattered, small clumps formed by few individuals. Elevation is 240 m. Flowering occurs in October. We observed it for over five years in the field and in cultivation, with no record of flowering. Live specimens of this new Tillandsia species are in cultivation in the bromeliad collection of the João Pessoa Botanical Gardens, Paraíba.

The specific epithet comes from the collected region, Paraíba state.

This new species is morphologically similar to Tillandsia minasgeraisensis Ehlers & W. Till (Tab. 1), a terrestrial or rupiculous species (from habitat “campos rupestres”), near Diamantina (18°14’56”S, 43°36’0”W), in the state of Minas Gerais (Elhers & Till 2008). Tillandsia paraibensis (Fig. 1) differs from T. minasgeraisensis by its erect, pale rose inflorescence (vs. curved and coral), floral bracts not exceeding half of the petal length (vs. equal to the height of the flower), and filaments strongly plicate (vs. slightly plicate).
Figure 2 - *Tillandsia paraibensis* – a. Pedra da Boca State Park, detail of Pedra do Carneiro; b. population on vertical rock, with *Brassavola turbeculata* Hook. (Orchidaceae); c. flowering habit; d. detail of inflorescence; e. flowers in top view.
Table 1 – Morphological comparison of *Tillandsia paraibensis* and *T. minasgeraisensis*.

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Tillandsia paraibensis</th>
<th>Tillandsia minasgeraisensis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Habitat</td>
<td>Granitic rocks</td>
<td>Flat rocks</td>
</tr>
<tr>
<td>Leaves</td>
<td>10–14 cm, strongly secund, never exceeding the inflorescence</td>
<td>10 cm, more or less secund, not exceeding the inflorescence</td>
</tr>
<tr>
<td>Scape</td>
<td>Erect, 3‒6 cm long</td>
<td>Curved, 5‒7 cm long</td>
</tr>
<tr>
<td>Scape bracts</td>
<td>Elliptic-lanceolate, pale rose, lepidote</td>
<td>Elliptic-acuminate, red, finely pruinose</td>
</tr>
<tr>
<td>Floral bracts</td>
<td>Elliptic-lanceolate, 2‒2.5 cm, pale rose, glabrous</td>
<td>Ovate or elliptic, 2‒2.3 cm, coralline, finely pruinose-lepidote</td>
</tr>
<tr>
<td>Flower</td>
<td>2‒2.5 cm, sessile</td>
<td>2.6 cm, sessile</td>
</tr>
<tr>
<td>Sepals</td>
<td>Lanceolate, 1.5 cm</td>
<td>Ovate, 1.4‒1.7 cm</td>
</tr>
<tr>
<td>Petals</td>
<td>Sublinear, 2‒2.5 cm, apex elliptic, white</td>
<td>Lingulate, 2.6 cm, apex slightly crenate, white</td>
</tr>
<tr>
<td>Stamens</td>
<td>Equaling the stylet</td>
<td>Longer than the stylet</td>
</tr>
<tr>
<td>Anthers</td>
<td>2 mm long</td>
<td>3 mm long</td>
</tr>
<tr>
<td>Stigma</td>
<td>Recurved blades</td>
<td>Erect blades</td>
</tr>
</tbody>
</table>

Figura 3 – *Tillandsia paraibensis* – a. habit; b. flower; c. floral bracts; d. calyx; e. sepal; f. staminate petal; g. plicate stamen; h. pistil; i. cross section of the ovary. Scale = 1 cm. (R.A.Pontes 712).
Tillandsia paraibensis, a new species of Bromeliaceae


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