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Tillandsia carrilloi (Bromeliaceae), A New Species from Guatemala.

Mario Esteban Véliz Pérez & Uwe Feldhoff (Guatemala)

• Summary

Tillandsia carrilloi Véliz and U. Feldhoff is similar to a recently described species of the region of *espinoso horsemanship* of Guatemala, but is different from *Tillandsia bourgaei* Baker because it has longer inflorescence, floral bracts and sepals, and flowers are of a purple colour.

• **Keywords:** Bromeliaceae, *Tillandsia*, *Tillandsia carrilloi*, dry forest, Guatemala, Central America.

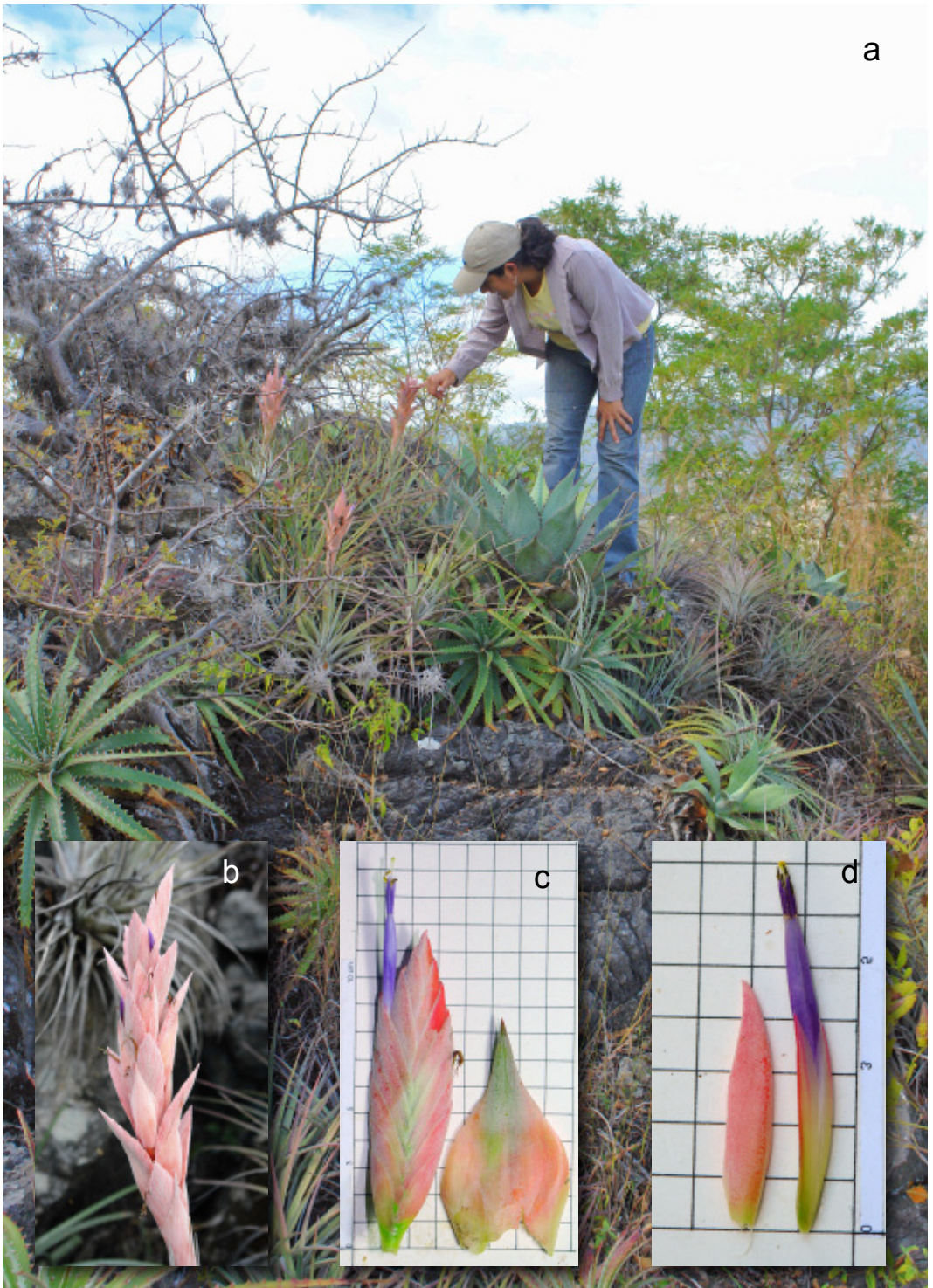
Tillandsia carrilloi Véliz & U. Feldhoff is described as a new rupicolous species from the dry forest region of Guatemala. It is different from *Tillandsia bourgaei* Baker because it has longer spike, floral bracts, sepals and petals, also the flower is purple.

• **Keywords:** Bromeliaceae, *Tillandsia*, *Tillandsia carrilloi*, dried forest, Guatemala America exchange.

• Introduction

Tillandsia L. 1753 (Bromeliaceae), is a genus including epiphytic, sometimes terrestrial or rupicolous, caulescent or acaulescent herbs; leaves arranged in rosettes or fasciculate, ligulate to narrowly triangular, entire; scapes generally distinct; inflorescence simple or compound; flowers perfect, collectively but shortly pedunculate, asymmetrical, rarely symmetrical sepals, connate, stamens free or welded with petals, inserted or exerted; ovary superior, fruits in septicidal capsules and seeds with a plumose and erected appendices (Davidse, Sousa & Chater, 1994, Smith & Downs 1977, Standley & Steyermark, 1958). Smith & Downs divide this genus into 7 sub-genera: *Allardtia*, *Anoplophyton*, *Phytarrhiza*, *Diaphoranthema*, *Tillandsia*, *Pseudalcantarea* and *Pseudo-catopsis*; *Allardtia* and *Tillandsia* are the largest sub-genera, with 59 % of the described species. In the Flora of





a

b

c

d

Figure 1. *Tillandsia carrilloi* Véliz & U. Feldhoff. a. Habitat, b. Inflorescence. c. Flower and primary bract. d. Floral bract and flower.

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Guatemala (Standley & Steyermark, 1958) 53 species and 7 varieties are described, whereas in Flora Mesoamericana (Davidse, Sousa & Chater, 1994) 93 species are described for the region. During the expeditions of collection to the semi-arid zones of Guatemala, financed by the National Collection Fund for the Conservation of Nature-FONACON, F02-2007 project, the purpose of which was to inform the biodiversity and the distribution of Guatemala Cactaceae species, and the National Secretariat of Science and Technology - SENACYT, FODECYT 02-2010 project, we collected specimens of a new species within the genus *Tillandsia*, which is described below:

***Tillandsia carilloi* Véliz & U. Feldhoff sp. nov.** (see figure 1,2).

TYPE : Guatemala, Chiquimula. Municipio Camotán. Grows on rocks together with *Mammillaria columbiana*, *Hechtia dichroantha*, *Pistacia mexicanin*; *Lamourouxia viscosa*, *Alvaradoa amorphoides*, *Tillandsia recurvata* and *Agave pachycentra*. Altitude 700-1000 m. 14 ° 46 ' N; 89 ° 22 ' O. 12 dec. 2007 (fl.) M. Véliz MV 19459 with T. Calderon & J. López. (**Holotype** : BIGU; **Isotypes** : BIGU, MEXU, MO).

Diagnosis

Tillandsiae bourgaei Baker similis sed spicis 10-14 cm longis 32-35 mm latis, flores 14-18 continentibus, bracteis floralibus 37-46 mm longis; sepala 38-41 mm longa, discreta; petala purpura 5.8 -6.1 cm longa.

Caractères	<i>Tillandsia carrilloi</i>	<i>Tillandsia bourgaei</i>
Habit	Rupicolous	Epiphyte
Length of floral stalk	10-14 cm	7-9 cm
Diameter of floral stalk	32-35 mm	20-30 mm
Number of flowers per stalk	14-18	10-14
Length of floral bracts	37-46 mm	25-30 mm
Length of sepals	38-41 mm	near 30 mm
Colour & Length of petals	violet, 5.8-6.1 cm	yellow-green, 4 cm

• **Description** :

Rupicolous plant, 60-90 cm high when in flowers, acaulescent; leaves 40-55 cm long; sheaths 8-9 cm long, 5-6.5 cm wide, brown, with a basal strip light brown; limbs 2.5-3.5 cm wide, densely cinereous-lepidote, sharply triangular, little pungent; scape 60-80 cm long; lower bracts slightly triangular; median bracts swelled, linear, superior median sub-swelled, tubular to elliptic, densely lepidote; inflorescence dense, 1-pennate, compound, 12-19 pennate ascendant, in angles between 15-17°; **primary bract** sub-coriaceous, shorter than the stem, densely lepidote, not carinate, ovo-lanceolate, 8-12 cm long, 3.5-4.7 cm



Figure 2. Holotype of *Tillandsia carrilloi* Véliz & U. Feldhoff.

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wide; spike 10-14 cm long, 3-3.5 cm wide, hooked, sub-convex, ascending, densely lepidote, with 14-18 flowers; **Floral bracts**, 37-46 mm long, 17-18 mm wide, ribbed by the extremity about half, shorter than sepals, imbricate, erect, sub-coriaceous and lepidote, glabrous on the underside, tip thin, cucullate;

Flowers sessile, env. 7 cm long, **sepals** 38-41 mm long, 6-7 mm wide, cartaceous, glabrous, bent, giving the impression of geniculate petals, tip thin, margin hyaline, posterior sepals carinate and united by 2-3 mm, with a hull, reddish in almost all length, anterior sepals not carinate, reddish ca. 1/3 from the tip to the base; **petals** 5.8-6.1 cm long, 7-8 mm wide, violet purple from the tip to half then whitish, glabrous, tip retuse, margin entire; stamens 6, 12-15 mm, glabrous, 7 to 7.4 cm long, purple in colour ca. 1/3 of length, from the tip to the base, then whitish; anthers 2.5-3 mm long, 1 mm wide, exserted; ovary 6-7 mm long, glabrous, style 7-7.5 cm long, exserted, with 3 branches, stigmas obliquely discoid, ca. 1.5 mm long, viscid. Capsule 24-26 mm long.

• **Habitat:** grows on cliffs together with *Mammillaria columbiana*, *Hechtia dichroantha*, *Pistacia mexicain*, *Lamourouxia viscosa*, *Alvaradoa amorphoides*, *Tillandsia recurvata* and *Agave pachycentra*. Flowers from November until January.

• **Distribution:** known only for the type locality and the nearby cliffs in the municipality of Camotán, Chiquimula. 800-1000 m. in alt. (See figure 3).

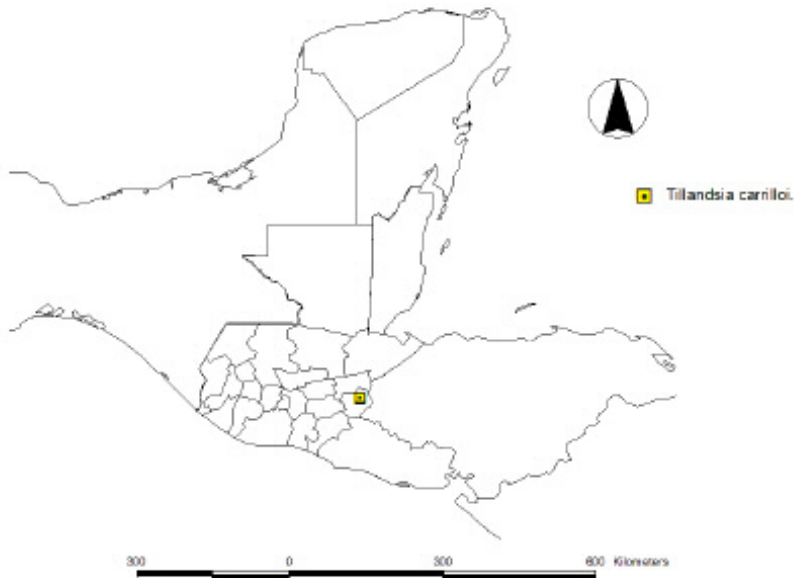


Figure 3. Distribution of *Tillandsia carrilloi* Véliz & U. Feldhoff

Paratypes : GUATEMALA, Chiquimula, Municipio Camotán. 12 dec. 2007 (fl.) M. Véliz MV 19460, 19461, 19462, 19463 (fr.) with T. Calderón and J. López, 18 nov. 2009. M. Véliz with L. Velásquez, MV 21050; 30 jan. 2011. (fl.) M. Véliz, M. Véliz 22605; 16 mar. 2011. M. Véliz with L. Velásquez, MV 22804, 22805, 22811, 22812, 22813, 22814 (AGUAT, BIGU, F, MEXU, MO, USCG).

Tillandsia carrilloi Véliz & U. Feldhoff present symmetrical, free or connate sepals, exerted stamens, erected petals to the anthesis, the limbs of leaves ligulate to shortly triangular, and thus belongs to the subgenus *Tillandsia*. This species is close to *Tillandsia bourgaei* Baker (Smith & Downs, 1977; Davidse, Sousa & Chater, 1994), but it differs from this, with a spike 10-14 cm long, 32-35 mm wide and produce 14-18 flowers (vr. spike 7-9 cm long, 20-30 cm wide and with 10-14 flowers), floral bracts of 37-46 mm long (vr. floral bracts of 25-30 mm long), sepals 38-41 mm long (vr. sepals about 30 mm long) and petals of purple colour, 5·8-6·1 cm long (vr. petals of yellowish-green colour and 4 cm long).

Etymology: the name of this new species is dedicated to Emeritus professor José Ernesto Carrillo (1927-1997), maestro and botanist instructor in Guatemala.

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Tillandsia carrilloi Véliz & U. Feldhoff. a. Habitat & inflorescence, detail. © M. Véliz & U. Feldhoff.