



## The re-establishment of *Tillandsia cucaensis* (Bromeliaceae), a good species formerly confused with a new species from the Gulf of Honduras

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### Abstract

*Tillandsia cucaensis* is re-established and lectotypified. It was commonly considered as a synonym of *T. makoyana*, but it differs from it by its green corolla, pink axis (vs. violet corolla and bright red axis), and its larger flowers and floral bracts. *Tillandsia cucaensis* has been confused with a phenetically similar taxon, which turned out to be a new species, described here as *T. izabalensis*. This differs from *T. cucaensis* by its softer, abaxially smooth leaves, floral bracts that are smooth upon drying, and spreading stigma lobes (vs. stiffer, abaxially veined leaves, floral bracts strongly veined upon drying, and spiraled stigma lobes). In addition, *T. cucaensis* is restricted to the Pacific slopes from Tropical Mexico into northwestern Costa Rica, while *T. izabalensis* occurs only in the Gulf of Honduras. Moreover, *T. aesii* is treated as a synonym of *T. cucaensis*, since no evidence supports it as a distinct species. Conservation status of both species was assessed as LC (Least Concern) following the criteria of the IUCN.

**Key words:** Central America, IUCN, lectotypification, Mexico, *Tillandsia aesii*, *T. cucaensis*, *T. izabalensis*, *T. utriculata* complex

### Resumen

Se restablece y se lectotipifica *Tillandsia cucaensis*. Esta especie había sido comúnmente considerada como sinónimo de *T. makoyana*, de la que difiere por su corola verde, eje de la inflorescencia rosa (vs. corola violeta y eje de la inflorescencia rojo brillante), y sus flores y brácteas florales más grandes. *Tillandsia cucaensis* ha sido confundida con un taxón fenéticamente similar que resultó ser una nueva especie, descrita aquí como *Tillandsia izabalensis*. Esta especie difiere de *T. cucaensis* por sus hojas más suaves, abaxialmente lisas, sus brácteas florales lisas en especímenes secos, y los lóbulos del estigma extendidos (vs. hojas más rígidas, abaxialmente nervadas, brácteas florales fuertemente nervadas en especímenes secos y lóbulos del estigma espiralados). Además, *T. cucaensis* es endémica de la vertiente del Pacífico del trópico mexicano hasta el noroeste de Costa Rica, mientras que *T. izabalensis* lo es del Golfo de Honduras. Finalmente, se trata a *T. aesii* como sinónimo de *T. cucaensis*, ya que no se encontró evidencia de que represente a una especie diferente. El estatus de conservación de ambas especies fue evaluado de acuerdo con los criterios de la UICN resultando como LC (preocupación menor).

### Introduction

The *Tillandsia utriculata* Linnaeus (1753: 286) complex as defined by Ramírez *et al.* (2004) is formed by species that share vegetative and floral characters as the narrowly triangular leaves, the flexuous rachis with remote floral bracts, and flowers typical for subgenus *Tillandsia*, i.e. tubular corolla with the style and the filaments exserted. This group of species has a complicated taxonomic history probably because upon drying

**Other specimens examined (paratypes):**—BELIZE. El Cayo: Augustine, Mountain Pine Ridge, 457 m, 26 March 1960, Hunt 612 (US). Toledo: Punta Gorda, W of beach rd., 23 March 1967, E. Dwyer & M. Dwyer 623 (MO). COLOMBIA. San Andrés y Providencia: Isla de Providencia, 13°21'N, 81°23'W, 29 March–9 May 1948, Proctor 3480 (PH). CUBA. Without precise locality: 1968, Schubert s.n. (HAL). GUATEMALA. Baja Verapaz: Purulhá, 12 June 1980, Luther s.n. (SEL). El Progreso: El Rancho, 500 m, March 1993, Salazar s.n. (MEXU). Izabal: Río Dulce, 1992, K. & R. Ehlers EG922001 (WU); vicinity of Quiriguá, 75–223 m, 15–30 May 1922, Standley 24228 (US); between Milla 49.5 and ridge 6 miles from Izabal, Montaña del Mico, 65–600 m, 1 April 1940, Steyermark 38542 (F); Livingston, 150 m, 2 August 1998, Véliz s.n. (MEXU). Without precise locality: Eastern portions of Vera Paz and Chiquimula, 1885, Watson 49 (US). HONDURAS. Gracias a Dios: Arroyada del río Dursuna; 70 km al O de Puerto Lempira, 15°00'N, 85°13'W, 7 April 1972, Nelson 816 (TEFH); Puerto Lempira, orilla laguna de Catarasca, 15°15'32"N, 83°46'04"W, 6 m, 5 September 1978, Nelson 4824 (TEFH). Islas de la Bahía: Camino entre New Port Royal y Alligator Nose Beach, 0–95 m, 14 September 1982, Nelson 8441 (SEL, US); origin. coll. Cayos Cochinos, Perqueno [Pequeño], 0–3 m, 16 July 2007, Luther s.n. ex Foster s.n. (WU). Olancho: Near Río Pueblo Viejo, between Dulci Nombre de Culmi and La Colonia, 7 February 1982, Blackmore & Heath 1738 (MO). NICARAGUA. Zelaya: in and around the Miskito Indian village of Karatá on the southeastern shore of Laguna de Karatá on sandy soil associated with coastal mangrove and inland pine forest and savanna, south of Puerto Cabezas, 13°55'30"N, 28°29'00"W, 0–5 m, 15–18 March 1994, Grant et al. 94–02319 (SEL).

**Etymology:**—The specific epithet makes reference to the Department of Izabal, in Guatemala, where this plant is abundant, according to information in herbarium specimens labels.

**Phenology:**—Most flowering specimens of the species have been collected between January and May, with odd flowering specimens in July. Fruiting specimens have been collected in August and September.

**Variation:**—The total height of *Tillandsia izabalensis* ranges between 70–300 cm when flowering, in a similar way as in *T. dasyliriifolia*. According to the information from the herbarium specimens and photographs, the coloration of the inflorescence (axis, rachis) can be green or dull to bright pink; the floral bracts are usually green but may be suffused with bright pink; the petals are white to pale green, always lighter than the sepals, which are apple green.

**Ecology and distribution:**—This species is distributed along the Caribbean coast, from southern Belize to northern Nicaragua, including the Islas de la Bahía in Honduras and Isla de Providencia (Colombia) (Fig. 2). It is reported in Cuba by a single specimen, which, however, lacks a precise locality. Most of the specimens examined are located within the Eastern Central America biogeographical province (Morrone 2001). The plants of this species are epiphytes, growing in tropical rain forests, mangroves, or tropical pine forests, at elevations between 3 and 550 m, in a tropical wet climate.

**IUCN conservation assessment:**—Least concern (LC). The distributional area of *Tillandsia izabalensis* (extent of occurrence) far exceeds 20000 km<sup>2</sup> (104000 km<sup>2</sup>) and the area of occupancy spreads through most of this area. The species occurs in a variety of ecosystems at low elevations (see above). It is fairly common in many places; there is evidence that *Tillandsia izabalensis* forms large populations in mangrove associations and in tropical pine stands. It is also not subject to significant collecting pressures.

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