

# A new epilithic bromeliad (*Stigmatodon*, Tillandsioideae) from Pedra dos Três Pontões, Espírito Santo, Brazil, with an emended combination for the genus

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## Abstract

**Background and aims** – *Stigmatodon* (Bromeliaceae) is a monophyletic genus currently comprising 33 species, all endemic to rocky outcrops, mainly inselbergs, from the Atlantic Forest and campos rupestres of the Espinhaço range, Brazil.

**Material and methods** – Our fieldwork in the inselbergs of the Atlantic Forest of the state of Espírito Santo led to the discovery of a new *Stigmatodon* species with a tubo-laciniate stigma type. Standard herbarium taxonomy practices were adopted to study the novelty. Morphological data were obtained from herbarium specimens and fresh material collected in the field.

**Key results** – *Stigmatodon lemeanus* is here described and illustrated. Diagnostic characters and affinities of the new species are discussed, accompanied by notes on its ecology, geographic distribution, and conservation status. A key to the species of *Stigmatodon* from Espírito Santo state is provided. The novelty is similar to *S. goniorachis* from coastal inselbergs of Rio de Janeiro and *S. attenuatoides*, another inselberg endemic from southern Espírito Santo. *Stigmatodon lemeanus* is preliminarily assessed as Vulnerable (VU) according to the IUCN Red List criteria. Additionally, we present a new combination of *Tillandsia oligantha* in *Stigmatodon*, correcting a nomenclatural error.

## Keywords

Atlantic Forest, Brazilian endemics, campo rupestre, inselbergs, taxonomy, Vrieseinae

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## INTRODUCTION

On isolated granitic and/or gneissic outcrops, known as inselbergs, plant communities with different ecological requirements inhabit different vegetational habitats, such as mats, shallow depressions, ephemeral flush vegetation, rock pools, and crevices (Porembski and Barthlott 2000; Porembski 2007; Paula et al. 2016). In Sugarloaf Land, in south-eastern Brazil, vertical rock walls of inselbergs are colonized by specialized epilithic bromeliads (mainly *Alcantarea* (É.Morren ex Mez) Harms, *Stigmatodon* Leme,

G.K.Br. & Barfuss, and *Tillandsia* L.), forming impressive vertical mats (Couto et al. in press). These extremophile mat communities occur in one of the most extreme and neglected habitats in the tropics, where new species of bromeliads are constantly discovered, mainly related to the genus *Stigmatodon*, which is endemic to Brazil (Leme et al. 2010a, 2014, 2022; Couto et al. 2020a, 2020b).

*Stigmatodon* (Bromeliaceae, Tillandsioideae) was created to accommodate 18 lithophytic species that were formerly included in *Vriesea* Lindl. (Barfuss et al. 2016). The first broad phylogenetic analysis focussing

on *Stigmatodon*, using two plastid markers (*matK* and *rps16-trnK*) and the nuclear gene *PHYC*, was recently published, including the reconstruction of ancestral states for ecological and morphological characters (Couto et al. 2022). Accordingly, the taxonomic limits of *Stigmatodon* proposed by Barfuss et al. (2016) were expanded to include the eight species of the “*Vriesea limae* L.B.Sm. complex” (sensu Leme and Siqueira Filho 2006). The genus is morphologically characterized by (1) the semi-xeromorphic to xeromorphic, coriaceous, and usually triangular leaves with truncate margins; (2) the stamens usually positioned in two groups of three on each lateral side of the corolla; (3) the stigma of the tubo-laciniate or convolute-blade type; (4) the stomata usually positioned above the ordinary epidermal cells; and (5) the water-storage parenchyma differentiated on both surfaces (Barfuss et al. 2016; Couto et al. 2022).

Currently, *Stigmatodon* comprises 33 species (Gouda et al. 2023), 15 of them recently added to the genus (Couto et al. 2020a, 2020b, 2022, 2023; Leme et al. 2022). They occur on inselbergs within the Atlantic Forest of the states of Alagoas (AL), Bahia (BA), Espírito Santo (ES), Minas Gerais (MG), Pernambuco (PE), and Rio de Janeiro (RJ), and in campos rupestres of the Espinhaço mountain range from BA and MG (Couto et al. 2022). Species in *Stigmatodon* s.s. (sensu Barfuss et al. 2016), with tubo-laciniate stigma type I—with the exception of *S. plurifolius* (Leme) Leme, G.K.Br. & Barfuss (Leme 1987: 314; Barfuss et al. 2016: 58), which has tubo-laciniate stigma type II (Leme et al. 2022)—are ‘rock-climber bromeliads’, growing exclusively on vertical rock walls on dome-shaped inselbergs, in south-eastern Brazil (BA, ES, MG, and RJ). According to Leme et al. (2022), the *Stigmatodon limae* group includes species with three different stigma types: (1) tubo-laciniate stigma type II, observed in *S. ilhanus* Leme & D.R.Couto (Leme et al. 2022: 239) and *S. rosulatus* (Leme) Leme, G.K.Br. & Barfuss (Leme 2012: 10; Barfuss et al. 2016: 58); (2) convolute blade type III (stigmatodontoid type), observed in *S. andaraiensis* (Leme) D.R.Couto & A.F.Costa (Leme 2012: 16; Couto et al. 2022: 352), *S. limae* (L.B.Sm.) D.R.Couto & A.F.Costa (Smith 1970: 181; Couto et al. 2022: 354), and *S. zonatus* (Leme & J.A.Siqueira) D.R.Couto & A.F.Costa (Leme and Siqueira Filho 2006: 374; Couto et al. 2022: 354); and (3) convolute blade type II (vrieseoid type), observed in *S. vellozicolus* (Leme & J.A.Siqueira) D.R.Couto & A.F.Costa (Leme and Siqueira Filho 2006: 406; Couto et al. 2022: 354), *S. freicanecanus* (J.A.Siqueira & Leme) D.R.Couto & A.F.Costa (Leme and Siqueira Filho 2006: 377; Couto et al. 2022: 352), *S. vexatus* (Leme) Leme & D.R.Couto (Leme 2017: 137; Leme et al. 2022: 245), and *S. oliganthus* (Baker) D.R.Couto & A.F.Costa, whose name was not validly published. These species grow on different rock types (granite, gneiss, and quartzite outcrops), on different degrees of rock inclination, including vertical to slightly inclined rock slopes, flat outcrops, or more rarely as epiphytes on stems of *Vellozia* J.Agardh (Leme and Siqueira Filho 2006; Cacossi et al. 2019; Couto et al. 2022).

A total of 16 species of *Stigmatodon* occur in the State of Espírito Santo, which encompasses several mountain ranges. In the central region of the State rises the Serra do Castelo, or Serra Capixaba (Chiron and Bolsanello 2015), consisting of imposing granitic mountains such as the Pico do Forno Grande (2,039 m) in the Castelo County, the Pedra Azul (1,822 m) in Domingos Martins, and the Pedra dos Três Pontões (1,968 m) in Afonso Cláudio, all of which harbour a diverse vascular flora (Pinto-Junior et al. 2021; Marcusso et al. 2022). In the last decades, several new plant species were described from the Pedra dos Três Pontões, most being narrow endemics, namely *Mandevilla declinata* J.F.Morales, A.P.Fontana & L.Kollmann (Apocynaceae, Morales et al. 2022: 1081), *Pleroma subsessilis* F.S.Mey. & L.Kollmann (Melastomataceae, Meyer et al. 2016: 202), and the bromeliads *Alcantarea glaucifolia* Leme & L.Kollmann (Leme and Kollmann 2016: 156), *Orthophytum boudetianum* Leme & L.Kollmann (Leme and Kollmann 2007: 149), and *Pitcairnia diversifolia* Leme & A.P.Fontana (Leme et al. 2010b: 491).

During field expeditions, a new rock-climbing species of *Stigmatodon* was found in this locality, growing exclusively on large inselberg vertical walls. This new taxon is described and illustrated in this work, its conservation status assessed, and its taxonomic affinities discussed. In addition, this paper provides an emended key for the species of *Stigmatodon* from Espírito Santo and a nomenclatural note for *Stigmatodon oliganthus*.

## MATERIAL AND METHODS

Morphological data were obtained by studying herbarium specimens and fresh material collected randomly in pre-selected sites during fieldwork in Bahia and Espírito Santo. Descriptions and illustrations are based on both living and dried material, which were studied using a stereomicroscope Motic K700; the descriptive terminology follows Stearn (1973), Radford (1986), Smith and Downs (1977), with the modifications suggested by Scharf and Gouda (2008), and Leme et al. (2022) for stigma types. Voucher specimens were dried and pressed according to Fidalgo and Bononi (1984) and deposited at MBML, RB, and R (acronyms following Thiers 2023). The nomenclature follows the Shenzhen Code (Turland et al. 2018).

Data on the distribution of the new and related species, gathered from field notes and herbarium labels, were plotted on a map using DIVA-GIS v.5.2 (Hijmans et al. 2005), over a layer of inselbergs prepared by IEMA (2016). The conservation assessment complies with the criteria of the IUCN (2022), with the extent of occurrence (EOO) and the area of occupancy (AOO) estimated with GeoCAT and the AOO based on a user-defined cell size of 2 km<sup>2</sup> (Bachman et al. 2011).

## TAXONOMIC TREATMENT

*Stigmatodon lemeanus* D.R.Couto, A.P.Fontana & Fraga, **sp. nov.**

urn:lsid:ipni.org:names:77319956-1

Figs 1–4

**Type.** BRAZIL – **Espírito Santo** • Afonso Cláudio, Pedra dos Três Pontões, inselberg, epilithic on vertical rock wall; 20°04'33"S, 41°02'39"W; 1078 m; 21 Oct. 2019; fl.; *D.R. Couto & C.N. Fraga* 4926; holotype: MBML [MBML055811]; isotype: RB.

**Diagnosis.** Similar to *Stigmatodon goniorachis* (Baker) Leme, G.K.Br. & Barfuss but distinguished by the suberect to patent peduncle (vs erect to suberect) that is more robust with a diameter of 6.5–7.8 mm (vs 3.5–6.2 mm), the main axis with shorter internodes (8.5–9.5 mm vs 15–25 mm long) that supports fewer flowers (11–13 vs 14–32), the longer flowers (56–60 mm vs 35–40 mm long), the larger petals (38–39 × 17–21 mm vs 22–28 × 13–15 mm), the basal appendages with irregularly acute-dentate apex (vs irregularly bidentate), and the shorter stamens (19–22 mm vs 26–28 mm long).

**Description.** Lithophytic herb, 50–67 cm tall when flowering, propagating by basal shoots. Stem long, creeping, 7–20 cm in length. Leaves 12–20 in number, rosulate, thickly coriaceous, forming a funnellform rosette; sheath elliptic, 10–14 × 6–8.5 cm, densely and minutely castaneous-lepidote on both sides; blade narrowly triangular, apex acuminate-caudate, recurved, flat, suberect to arcuate, (11–)17–20 cm long, 2–2.8 cm wide at the base, green on both sides and usually with purplish-vinaceous spots on the adaxial side, usually vinaceous along margins, densely white-lepidote on both sides, with trichomes forming white crossbands adaxially, not obscuring the green colour of the blade, margins truncate, ca 0.5 mm thick. Inflorescence simple, ascending, 14–17 cm long, apex obtuse before and at anthesis, 11–13 flowered; peduncle suberect to patent, 35–42 cm long, 6.5–7.8 mm in diameter, green, glabrous, smooth at anthesis, sulcate in sicco; peduncle bracts subfoliaceous at the base, ovate above, apex obtuse-acuminate to apiculate, 2.5–3.5 × 2.4–2.8 cm, erect, imbricate, exceeding the internodes, green and usually with purplish-vinaceous spots on the adaxial side, densely lepidote abaxially, sparsely white-lepidote becoming denser towards the apex adaxially, smooth at anthesis; main axis smooth at anthesis, sulcate in sicco, green, glabrous, internodes 8.5–9.5 mm long; floral bracts broadly ovate, apex obtuse, 27–30 × 40–42 mm, shorter than sepals, green at anthesis, densely lepidote abaxially, adaxially glabrous, ecarinate, secund with the flowers before and during anthesis, coriaceous, thicker toward the base, smooth at anthesis, corrugate-sulcate in sicco. Flowers 56–60 mm long, night-blooming, with garlic scent and producing translucent mucilage, distichous, densely disposed, secund at anthesis; pedicel 9.5–11 mm long, 9–11 mm in diameter at distal end, stout, green,

glabrous; sepals obovate, apex obtuse to rounded, (22–)30–35 × (15–)21–23.5 mm, green, glabrous on adaxial side, densely lepidote abaxially, thick and coriaceous near the base, margins membranaceous; corolla 33–37 mm in diameter; petals obovate, apex rounded to emarginate, recurved near the apex at anthesis, 38–39 × 17–21 mm, greenish-white, strongly thickened with membranous margins, bearing 2 appendages at the base; appendages 9.5–11.6 × 3–3.8 mm, spatulate, basally adnate to the petals for 4.5–6.5 mm, apex irregularly acute-dentate; filaments free, complanate, 19–22 × 1.7–2 mm wide, white; anthers 8.5–9.5 mm long, dorsifixed near the base, base bilobed, apex obtuse, arranged in 2 groups of three on each lateral side of the corolla at anthesis; pistil equalling or exceeding the stamens; ovary superior, 5.6–7.4 mm long; ovules caudate; style 24.5–27 mm long, green; stigma tubo-laciniate type I, denticulate at the margins, 1.7–1.8 mm in diameter, green. Fruits a capsule, ellipsoid, apex apiculate, 32–45 mm long, 9.5–10.5 mm diameter, brown. Seeds fusiform, 3–4 mm long, brown; basal coma 15–21 mm long, beige; apical coma 1–1.6 mm, beige.

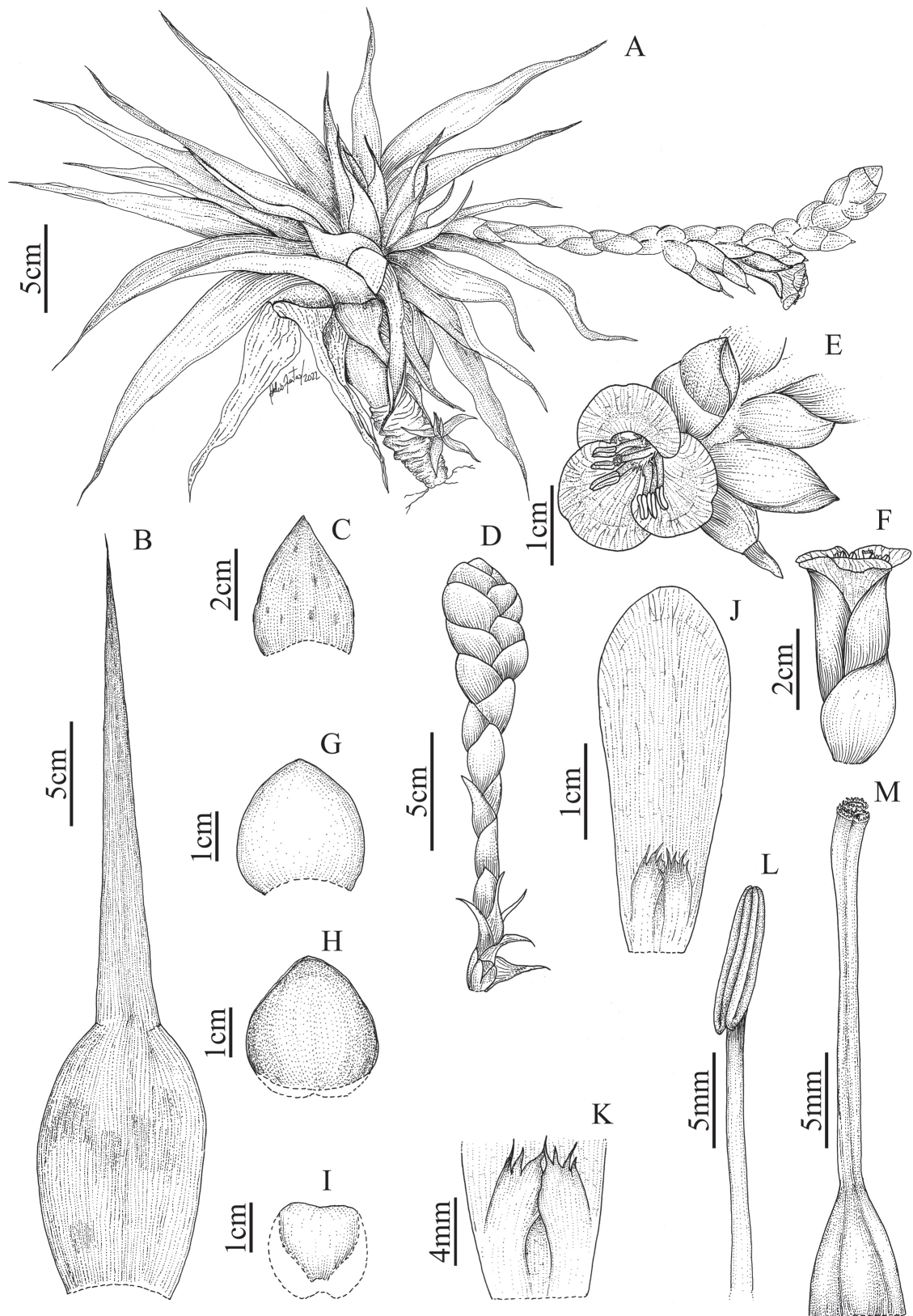
**Distribution.** *Stigmatodon lemeanus* is endemic to Pedra dos Três Pontões, from the county of Afonso Cláudio in the central region of Espírito Santo, Brazil (Fig. 3), growing on bare and vertical walls of inselbergs, 1,000 m a.s.l. (Fig. 4). The Municipality of Afonso Cláudio recently created the Conservation Unit “Monumento Natural Municipal Pedra dos Três Pontões” to protect the local fauna and flora.

**Habitat and ecology.** The plant is epilithic, heliophilic, living on bare and vertical rock walls of inselbergs, where it forms large populations (Figs 2A, 4C), surrounded by Atlantic Forest fragments and farmland. In the type locality, *Stigmatodon lemeanus* grows on vertical rock walls (Fig. 2A–B), including on the large and pointed peaks of the mountain, from which the name “Pedra dos Três Pontões” is derived (Fig. 4B). In some places, they grow alongside sparse individuals of *Pitcairnia diversifolia* (Bromeliaceae), *Mandevilla declinata* (Apocynaceae), and the orchids *Bulbophyllum weddellii* Rchb.f., *Bifrenaria harrisoniae* (Hook.) Rchb.f., and *Pseudolaelia dutrae* Ruschi.

**Phenology.** Flowers were recorded in October and fruits from May to October.

**Etymology.** The specific epithet honours our friend Dr Elton Martinez Carvalho Leme (1960–), from Rio de Janeiro, Brazil, whose personal efforts have substantially contributed to the knowledge of the diversity, taxonomy, and systematics of Brazilian bromeliads. In addition, Dr Elton Leme is one of the authors of the genus *Stigmatodon* and has greatly contributed to the knowledge of these plants.

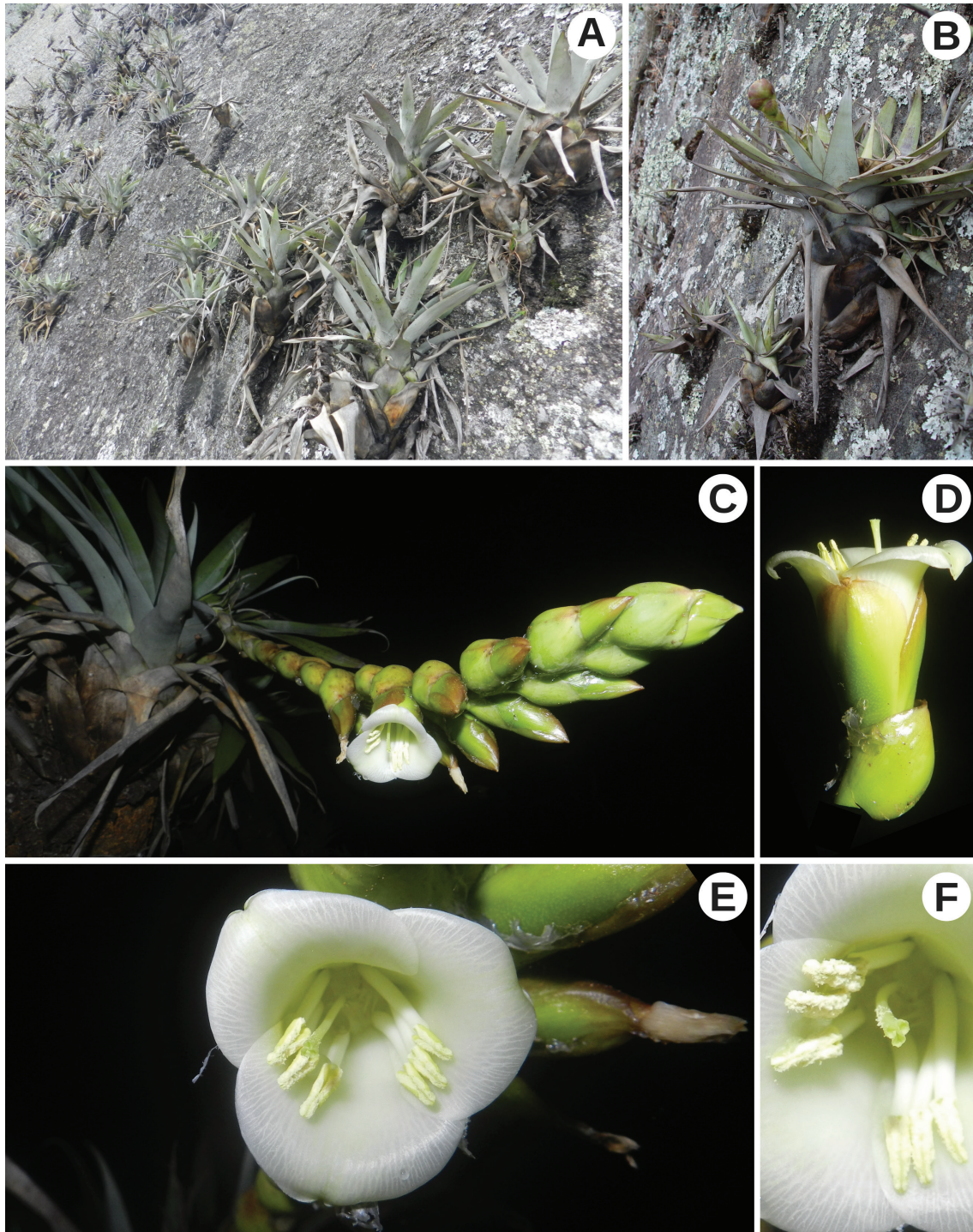
**Preliminary IUCN conservation assessment.** Vulnerable: VU D2. The new species is known from only one very small population within a protected area, with an AOO of 4 km<sup>2</sup>. These figures fall within the limits for Critically Endangered (CR), based on criterion B2 (area of occupancy), taking into account only the number of



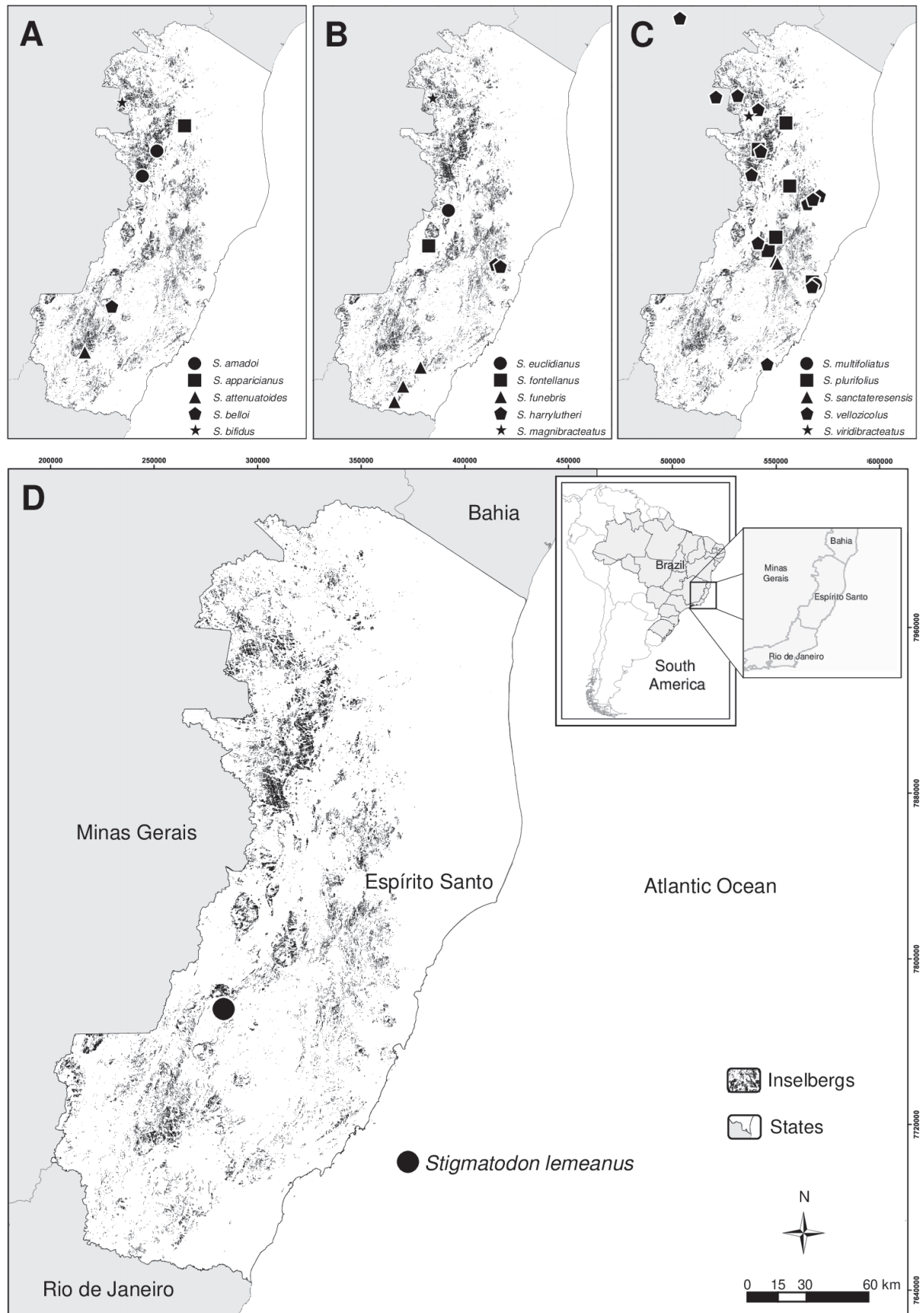
**Figure 1.** *Stigmatodon lemeanus*. A. Habit. B. Leaf. C. Peduncle bract. D. Inflorescence before anthesis. E. Flower, frontal view with detail of the stamens arranged in two groups of three on each lateral side of the corolla. F. Flower, lateral view. G. Floral bract, adaxial side. H. Floral bract, abaxial side. I. Floral bract, detail of the thickest part at the base. J. Petal with two basal appendages. K. Basal appendages, details. L. Stamen. M. Pistil. From the holotype D.R. Couto & C.N. Fraga 4926 (MBML). Drawn by Joelcio Freitas.

locations or severely fragmented areas, which can lead to a continuous decline in the extent of occurrence, area of occupancy and quality of habitat of the new species. However, population isolation and fragmentation are natural conditions on inselbergs, thus evaluations of plant distribution on inselbergs probably yield overestimated values of AOO and EOO (Leme et al. 2022). We do not have reliable information about this species' continuing

decline in plant numbers or extreme population fluctuations to enable us to apply criterion B. The Pedra dos Três Pontões inselberg is included in the Monumento Natural Municipal Pedra dos Três Pontões, an integral protection unit with the basic objective of preserving nature, with only the indirect use of its natural resources being permitted. Therefore, we estimate the human impact to be neither high nor continuous on the bare granitic and



**Figure 2.** *Stigmatodon lemeanus*. A–B. Plants in situ at the type locality. C. Flowering individual in cultivation. D. Lateral view of the flower and floral bract. E. Frontal view of the flower. F. Details of the tubo-laciniate stigma and anthers. Photographs: A, C–F by Dayvid R. Couto, B by André P. Fontana.



**Figure 3.** Geographic distribution of the 16 species of *Stigmatodon* on the inselbergs of Espírito Santo. **A.** *S. amadoi*, *S. apparicianus*, *S. attenuatoides*, *S. belloi*, *S. bifidus*. **B.** *S. euclidianus*, *S. fontellanus*, *S. funebris*, *S. harrylutheri*, *S. magnibracteatus*. **C.** *S. multifoliatus*, *S. plurifolius*, *S. sanctateresensis*, *S. vellozicolus*, *S. viridibracteatus*. **D.** *S. lemeanus*.

vertical walls of the inselbergs where it occurs. Due to the apparent rarity and very narrow distribution (a single location and AOO < 20 km<sup>2</sup>), this species is prone to the effects of stochastic events in the near future, such as fire or impact from climbers. Therefore, it seems prudent to include it in the Vulnerable category: VU D2.

**Additional material examined.** BRAZIL – Espírito Santo  
• Afonso Cláudio, Pedra dos Três Pontões, inselberg,

epilithic on vertical rock wall; 20°04'33"S, 41°02'39"W; 1078 m; 21 Oct. 2019; fr.; *D.R. Couto & C.N. Fraga* 4921; R • Afonso Cláudio, Pedra dos Três Pontões, rupícola no sol em paredão vertical; 18 May 2007; fr.; *A.P. Fontana et al.* 3386; MBML [MBML00029444].

**Notes.** *Stigmatodon lemeanus* is morphologically related to *S. goniorachis*, differing by the fewer number of leaves per rosette up to 20 (vs up to 30), acuminate-caudate



**Figure 4.** *Stigmatodon lemeanus*. A–B. General view of the landscape at the type locality, highlighting the large and vertical pointed peaks of Pedra dos Três Pontões. C. Detail of the population on a vertical rock wall alongside sparse individuals of *Pitcairnia diversifolia*; some individuals grow close to the base of the slope, which facilitated the collection of some specimens for the study and description of the new species. Photographs: A by André P. Fontana, B–C by Claudio N. Fraga.

leaf blade apex (vs acute apex), green, and usually with purplish-wine spots in the adaxial surface, usually vinaceous along margins (vs green); ovate peduncle bracts (vs elliptic); the main axis densely flowered at anthesis (vs laxly flowered), broadly ovate floral bracts (vs elliptic-ovate to suborbiculate) that are wider (40–43 mm vs 13–20 mm long); and the larger sepals (30–35 × 21–23.5 mm vs 21–30 × 15–19 mm), in addition to the characters cited in the diagnosis. Furthermore, while *S. lemeanus* is endemic to inselbergs in the mountainous region of Espírito Santo (> 1,000 m elevation), *S. goniorachis* is endemic to vertical walls of several coastal inselbergs by the sea, in the city of Rio de Janeiro, Brazil. When compared with *S. attenuatoides* D.R.Couto, Manhães & A.F.Costa (Couto et al. 2020a: 144), another pachypetalous species endemic to the inselbergs in the south of Espírito Santo, *S. lemeanus* can be distinguished by the distinctly smaller size when flowering (50–67 cm vs 90–105 cm tall); the acuminate-caudate apex of leaf blades (vs acute or acuminate), which are smaller (17–20 × 2–2.8 cm vs 20–25(–36) × 3–5.5 cm), green, and usually with purplish-wine spots in the adaxial surface, usually vinaceous along the margins, without epicuticular wax (vs green concolorous, covered by a thick layer of white epicuticular wax); the simple inflorescence (vs compound) with fewer flowers (11–13 vs 20–40);

the larger flowers (56–60 mm vs 50–55 mm long) with obovate sepals (vs elliptic), which are longer and wider (30–35 × 21–23.5 mm vs 22–24 × 16–17 mm), and with larger corolla (33–37 mm vs 27–28 mm in diameter).

***Stigmatodon oliganthus*** (Baker) D.R.Couto & A.F.Costa, **comb. nov.**

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*Tillandsia oligantha* Baker, The Journal of Botany, British and Foreign 25: 345. 1887. (Baker 1887)

*Vriesea oligantha* (Baker) Mez (Mez 1894: 544).

*Stigmatodon oliganthus* (Baker) D.R.Couto & A.F.Costa, nom. inval. (Couto et al. 2022: 354).

**Type.** BRAZIL – Minas Gerais • Serra d'Ouro Branco; 10 Nov. 1884; fl.; *Glaziou 15472*; holotype: K [K000322056]; isotype: P [P00753328].

**Notes.** Couto et al. (2022) proposed eight new combinations in *Stigmatodon*. However, in the combination of *Tillandsia oligantha* Baker, the protologue of the basionym was erroneously cited. To address this uncorrectable error under Art. 41.8 of the Shenzhen Code (Turland et al. 2018), the name is here validly published with the correct citation of the protologue as indicated by Art. 41.5 (see Ex. 14) of the same Code.

### Key to the species of *Stigmatodon* in Espírito Santo state, Brazil

1. Stigma of the convolute-blade type II (vrieseoid type II), epiphyte on *Vellozia* in inselberg vegetation ..... ***S. velozicolus*** (Leme & J.A.Siqueira) D.R.Couto & A.F.Costa
- Stigma of the tubo-laciniate type, epilithic on inselberg vertical rock wall ..... **2**
2. Simple inflorescence ..... **3**
- Compound inflorescence ..... **14**
3. Leaf blades at least 10 cm long ..... **4**
- Leaf blades less than 10 cm long ..... **13**
4. Leaf blade less than 1 cm wide at the base, utricular rosette, forming non-impounding rosettes ..... ***S. plurifolius*** (Leme) Leme, G.K.Br. & Barfuss
- Leaf blade at least 1 cm wide at the base, infundibuliform rosette, forming impounding rosettes ..... **5**
5. Floral bracts smooth at anthesis ..... **6**
- Floral bracts strongly nervate-sulcate at anthesis ..... **7**
6. Leaf blade with acute apex, flowers ca 4 cm long, sepals with emarginate apex, petals slightly thickened ..... ***S. fontellanus*** (Leme & G.K.Br.) Leme, G.K.Br. & Barfuss
- Leaf blade with acuminate-caudate apex, flowers 5.5–6 cm long, sepals with obtuse apex, petals strongly thickened ..... ***S. lemeanus*** D.R.Couto, A.P.Fontana & Fraga
7. Leaves, 28–45 in number, blade up to 2.5 cm wide, with a truncate margin (ending very abruptly as if cut straight across) less than 1 mm thick, peduncle bracts smooth at anthesis ..... ***S. multifolius*** (Leme & G.K.Br.) Leme, G.K.Br. & Barfuss
- Leaves, 15–25 in number, blade more than 2.5 cm wide, margins distinctly truncate thicker than 1 mm, peduncle bracts strongly nervate-sulcate at anthesis ..... **8**
8. Greyish-green leaf blades ..... ***S. apparicianus*** (E.Pereira & Reitz) Leme, G.K.Br. & Barfuss
- Cinereous leaf blades ..... **9**
9. Peduncle bracts ovate-lanceolate, more than 45 cm long ..... ***S. magnibracteatus*** (Leme & L.Kollmann) Leme, G.K.Br. & Barfuss
- Peduncle bracts ovate, up to 45 cm long ..... **10**
10. Floral bracts green, smooth, inconspicuously corrugate-sulcate near the apex at anthesis ..... ***S. viridibracteatus*** D.R.Couto, Fraga & Leme
- Floral bracts castaneous, stramineous, strongly nervate-sulcate at anthesis ..... **11**
11. Leaf sheaths ovate-elliptic to elliptic, 9–12 cm wide, peduncle erect to suberect, flowers 4.7–5.1 cm long ..... ***S. euclidianus*** (Leme & G.K.Br.) Leme, G.K.Br. & Barfuss
- Leaf sheaths obovate to broadly elliptic, 7–8.5 cm wide, peduncle suberect, flowers 4–4.5 cm long ..... **12**



12. Leaf blade canaliculate toward the base, with margins 0.9–1 mm thick, peduncle bracts lax, sepals elliptic with obtuse-emarginate apex, appendages with bifid-caudate apex ..... *S. bifidus* (Leme & L.Kollmann) Leme, G.K.Br. & Barfuss
- Leaf blade flat toward the base, with margins 1.5–2 mm thick, peduncle bracts imbricate, sepal oblong to ovate with rounded apex, appendages with irregularly long-dentate to acuminate apex ..... *S. harrylutheri* (Leme & G.K.Br.) Leme, G.K.Br. & Barfuss
13. Leaf sheath 8.5–10 cm long (longer than the leaf blade), leaf blade ligulate, 5.8–7.3 cm long, flowers 2–3 cm long.....  
..... *S. amadoi* (Leme) Leme, G.K.Br. & Barfuss
- Leaf sheath 7–9.8 cm long (equaling to the leaf blade length), leaf blade triangular, 7–10 cm long, flowers 3.4–4 cm long.....  
..... *S. sanctateresensis* (Leme & L.Kollmann) Leme, G.K.Br. & Barfuss
14. Sublinear-triangular leaf blade, erect to the suberect peduncle, dark-wine floral bracts .....  
..... *S. funebris* (L.B.Sm.) Leme, G.K.Br. & Barfuss
- Narrowly triangular leaf blade, peduncle strongly curved, vinaceous-green floral bracts..... **15**
15. Leaf blades vinaceous-green, peduncle pending, 35–50 cm long ..... *S. belloi* (Leme) Leme, G.K.Br. & Barfuss
- Leaf blades green, concolorous, peduncle patent, 57–60 cm long ..... *S. attenuatoides* D.R.Couto, Manhães & A.F.Costa

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