

***Tetramerium vargasiae* (Acanthaceae), a New Species from the Basin of the Río Balsas in Guerrero, Mexico**

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Tetramerium vargasiae is newly described and illustrated from the arid portion of the basin of the Río Balsas in Guerrero, Mexico. It is distinguished from its congeners by the combination of the following characters: shrubby habit, linear leaves, pubescent (eglandular trichomes only) and entire bracts that are 16 to 19 mm long, five-lobed calyx, pseudopapilionaceous and white (with purple markings) corollas, and glabrous capsules that are seven mm long. It is compared to the superficially similar *T. tetramerioides* from Oaxaca, Mexico.

KEYWORDS: *Tetramerium*, Guerrero, Mexico, endemic species, Acanthaceae

Se describe e ilustra *Tetramerium vargasiae* como especie nueva de la cuenca árida del Río Balsas en Guerrero, México. Se distingue de sus congéneres por la combinación de los siguientes caracteres: hábito arbustivo, hojas lineares, brácteas pubescentes (sólo tricomas eglandulares) y enteras de 16 a 19 mm de largo, cáliz con cinco lóbulos, corolas pseudopapilionáceas y blancas (con marcas de color púrpura) y cápsulas glabras siete mm de largo. Se compara la especie nueva con *T. tetramerioides*, una especie superficialmente similar del estado de Oaxaca, México.

Tetramerium Nees consists of 29 currently recognized species (Daniel 1986, 2003) that occur from the United States to Bolivia. Most species (22) occur in Mexico, and 19 of them are endemic there. Arid and semi-arid regions in western and southern Mexico, from Jalisco to the Isthmus of Tehuantepec in Oaxaca, are especially rich in species of *Tetramerium* with at least 17 occurring there and 10 endemic to the region (Daniel 1986). Another distinctive species from this region was collected in the arid portion of the basin of the Río Balsas in Guerrero. It is described below.

***Tetramerium vargasiae* T.F. Daniel & Cruz Durán, sp. nov.**

TYPE. MEXICO: **Guerrero:** Mpio. Huitzucó de los Figueroa, 0.7 km NE de San Francisco Ozomatlán [ca. 17°56'0.63"N, 099°19'37.41"W], 650 m, bosque tropical caducifolio, 30–III–1990 (flr, frt), *A. Vargas* P. 288 (holotype: FCME!).

Tetramerium vargasiae differs from congeners by the combination of its shrubby habit, linear leaves, pubescent (eglandular trichomes only) and entire bracts that are 16–19 mm long, 5-lobed calyx, pseudopapilionaceous and white (with purple markings) corollas, and glabrous capsules that are 7 mm long.

Shrubs to 1 m tall; older stems with bark exfoliating in strips; young stems \pm terete, \pm evenly pubescent with antrorse to antrorsely appressed eglandular trichomes 0.05–0.2 mm long, nodes more densely pubescent. Leaves (immature; plants mostly leafless during anthesis) subsessile (petioles to 2 mm long), blades linear, sometimes \pm conduplicate, 10–17 mm long, 0.6–0.9 mm wide, length:width = 16.7–18.9, both surfaces and margin covered with antrorsely appressed eglandular trichomes 0.05–0.2 mm long, only midvein evident. Inflorescence of terminal (sometimes terminating short axillary branches) and congested spikes to 46 mm long, 14–19 mm across (measured flat) near midspike, rachis densely and evenly pubescent with flexuous to antrorse to antrorsely appressed eglandular trichomes to 0.5 mm long, median internodes 6 mm long. Bracts \pm coriaceous, lanceolate to lance-elliptic, 16–19 mm long, 1.8–3.2 mm wide, obscurely to \pm prominently and palmately 3-veined, apically straight, erect, and mucronate, mucro 0.5–0.6 mm long, abaxial surface densely pubescent with antrorse to antrorsely appressed eglandular trichomes to 0.4 mm long, margin densely ciliate with spreading-flexuous, silky eglandular trichomes to 2.5 mm long (at least some trichomes > 1 mm long). Bracteoles lance-subulate, 9–14 mm long, 0.8–1.1 mm wide, only midvein evident (sometimes obscure), abaxial surface and margin pubescent like bracts. Flowers sessile. Calyx 5-lobed, 6.5–8.5 mm long, lobes lance-subulate to subulate, 6–7 mm long, 0.4–0.5 mm wide, abaxial surface and margin pubescent like bracteoles. Corolla pseudopapilionaceous, white with purple markings on upper lip, 20 mm long, externally glabrous, tube 10.5 mm long, upper lip obovate, 9.5 mm long, 2.5 mm wide, lower lip 9 mm long, lower-central lobe conduplicate, 7 mm long, 4.6 mm wide, lateral lobes obovate, 7 mm long, 3.5 mm wide. Stamens ca. 7 mm long, thecae ca. 1.2 mm long. Capsules 7 mm long, glabrous, stipe 2.5 mm long, head 4.5 mm long. Seeds not seen.

PHENOLOGY.— Flowering and fruiting: March.

DISTRIBUTION AND HABITAT.— Endemic to Mexico where it is known only from the arid portion of the basin of the Río Balsas of north-central Guerrero in a region of tropical deciduous forest at 650 m elevation.

CONSERVATION ASSESSMENT.— *Tetramerium vargasiae* is known from a single collection from a population that was not observed during this study. The collector of the type indicated that only a few plants were observed at that site. Given the lack of additional information, this species is assessed as Data Deficient (DD) according to IUCN guidelines (IUCN 2014).

Although *Tetramerium vargasiae* is incompletely known, it is highly distinctive. It pertains to Daniel's (1986) sect. *Tetramerium* and resembles *T. tetramerioides* (Lindau) T.F. Daniel from southeastern Oaxaca (previously known only from the type, but recently rediscovered in the vicinity of the type collection) in several characteristics, including: shape of the bracts and bracteoles, marginal pubescence of the bracts, number of calyx lobes, color and shape of the corolla, and size and surface vesture of the capsule. These two species can be distinguished by the characters noted in the following key:

- 1a. Young stems \pm evenly pubescent with antrorse to antrorsely appressed eglandular trichomes 0.05–0.2 mm long; leaves (immature) subsessile (petioles to 2 mm long), blades linear, length:width = 16.7–18.9; spikes 14–19 mm wide (measured flat) near midspike, rachis pubescent with eglandular trichomes; bracts 16–19 mm long, abaxial surface densely pubescent with antrorse to antrorsely appressed eglandular trichomes to 0.4 mm long; bracteoles 9–14 mm long; calyx 6.5–8.5 mm long; corolla 20 mm long; Guerrero *T. vargasiae*
- 1b. Young stems \pm bifariously pubescent with an understory of glandular trichomes 0.05–0.2 mm long and an overstory (absent on some internodes) of flexuose eglandular trichomes 0.2–0.7 mm long; leaves subsessile to petiolate (petioles to 15 mm long), blades lance-ovate,

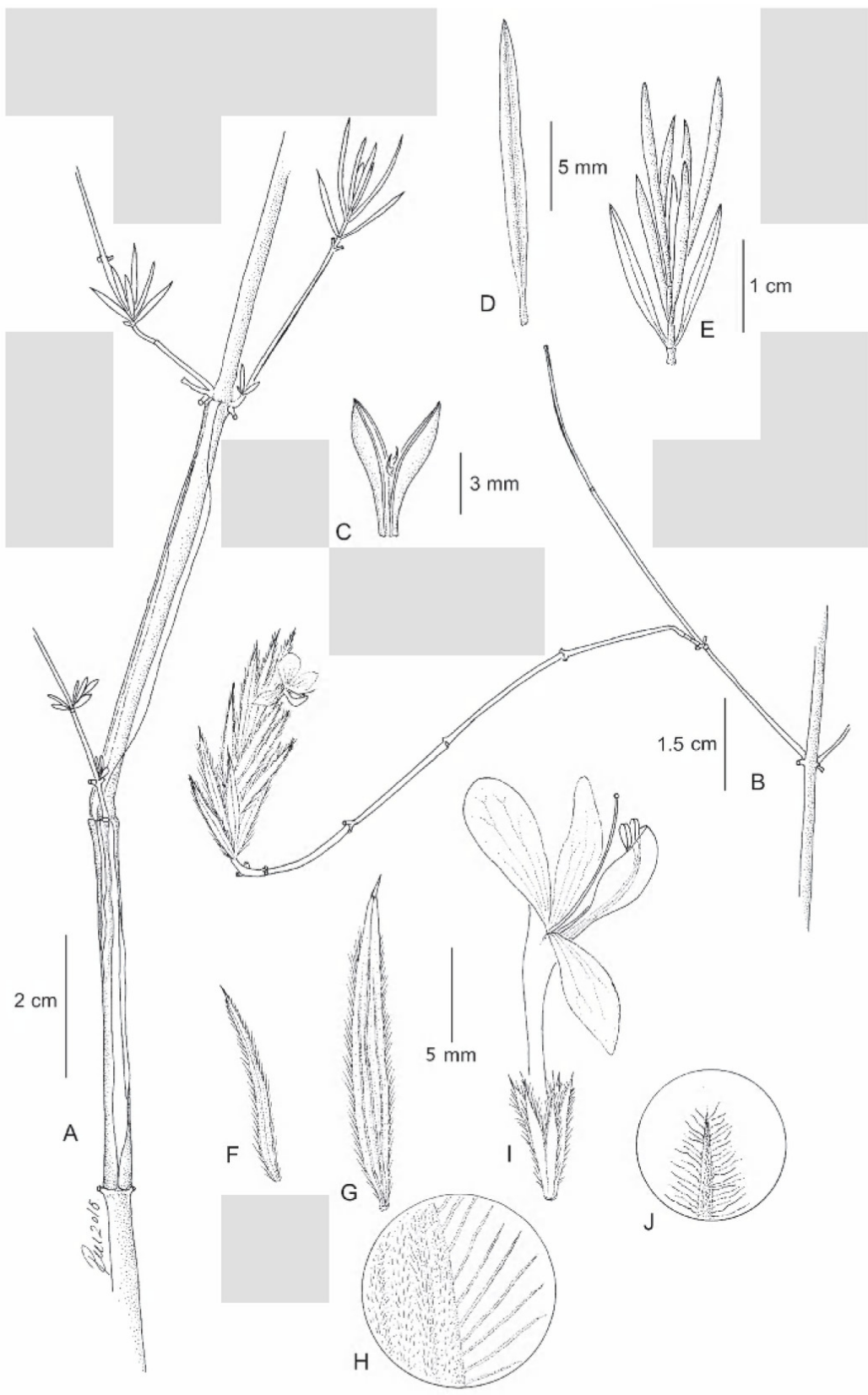


FIGURE 1. *Tetramerium Vargasiae* (from the holotype). A. Stem with exfoliating epidermis and young leaves. B. Branch with terminal inflorescence. C. Capsule. D. Young leaf. E. Branch with young leaves. F. Bracteole. G. Bract. H. Detail of bract showing trichomes on margin. I. Flower. J. Detail of calyx lobe showing trichomes. Drawn by Ramiro Cruz Durán.

length:width = 2.2–3.8; spikes 3–7 mm wide (measured flat) near midspike, rachis pubescent with glandular and eglandular trichomes; bracts 7–10 mm long, abaxial surface pubescent with an inconspicuous understory of glandular trichomes 0.05–0.2 mm long and a sparse overstory (especially along the midvein) of flexuose eglandular trichomes to 1.5 mm long; bracteoles 6–8 mm long; calyx 3.2–4 mm long; corolla 14–15 mm long; Oaxaca. . . . *T. tetramerioides*

This species is named in honor of the collector of the type, Andira Vargas Pérez, who collected plants for FCME between 1989 and 1990 during a study of the flora and vegetation in the eastern part of the basin of the Río Basas in Guerrero.

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