



Discovery of *Hyptis pseudolantana* in Jalisco and Michoacán, and description of *H. cualensis* and *H. macvaughii* (Ocimeae, Lamiaceae), two new species from western Mexico

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Abstract

The distribution of *Hyptis pseudolantana* is documented in the states of Jalisco and Michoacán, species previously reported exclusively from the state of Guerrero, Mexico. An expanded description, distribution map and photographs are provided for it. *Hyptis cualensis* and *H. macvaughii* are also described and illustrated by photographs, as two new species from the Mexican states of Jalisco and Nayarit, respectively. Also, an identification key to species of tribe Hyptidinae in western Mexico is provided.

Resumen

La distribución de *Hyptis pseudolantana* es documentada en los estados de Jalisco y Michoacán, especie registrada con anterioridad únicamente del estado de Guerrero, México. Se proporciona una descripción ampliada, mapa de distribución y fotografías de la misma. *Hyptis cualensis* e *H. macvaughii* son también descritas e ilustradas mediante fotografías, como dos especies nuevas de los estados mexicanos de Jalisco y Nayarit, respectivamente. Además, se incluye una clave para la identificación de las especies de la tribu Hyptidinae encontradas en el occidente de México.

Key words: *Hyptis* section *Rhytidea*, *Hyptis* subsection *Mutabiles*, *Hyptis* subsection *Umbellatae*, subtribu Hyptidinae

Introduction

The genus *Hyptis* Jacquin (1786: 101) is one of the richest Lamiaceae genera with almost 300 species. *Hyptis* grows mainly in the New World with few species extending as weeds to the Old World (Epling 1936, Harley 1988, Li & Hedge 1994, Harley *et al.* 2004, Pastore *et al.* 2011). The subtribu Hyptidinae (in tribe Ocimeae), which includes *Hyptis*, can be recognized—excluding *Asterohyptis* Epling (1933a: 17)—because of the downwardly directed stamens, and the thickened lower corolla lobe that acts as a hood, protecting them before anthesis, and releasing them explosively when mature (Harley *et al.* 2004). However, the distinction of the genera embedded in the subtribu is not entirely unambiguous (El-Gazzar & Rabei 2008). As stated in the keys provided by Harley (1988) and Harley *et al.* (2004), the delimitation of the genera is achieved by means of a set of characters: structure of the inflorescences, calyx bilabiate or not, appendiculate, spiny or simple calyx lobes, these reflexed or not, stylopodium present or not, mericarp shape, amongst others. In *Hyptis*, the diagnostic character is the absence of a stylopodium, even when the species with involucrate capitula might present it eventually.

Besides, phylogenetic analysis based on DNA sequences (Pastore *et al.* 2011) have brought to light *Hyptis* as a polyphyletic genus since all other Hyptidinae genera appeared nested within *Hyptis* lineages in the cladograms. Also, the polyphyly of the genus had been previously suggested by the phenetic analysis of morphological characters (El-Gazzar & Rabei 2008). Given this complexity, two solutions may be taken, one is to reduce all other

- *Hyptis oblongifolia*
- Flowers in hemispherical glomerulus or pectinate cymes, not densely tomentose, the hairs not hiding floral bracts and calyx tubes, never with branched hairs 15
 - 15. Calyx lobes linear (triangular only in the base for 1/4 to 1/5 of its length), with a ring of hairs clearly defined inserted internally in the throat and projecting between the lobes 16
 - Calyx lobes triangular, with a ring of hairs diffusely or well-defined inserted internally in the throat but not projecting between the lobes 17
 - 16. Flowers arranged in pectinate cymes with peduncles 1–2 mm long; calyx tube surrounded with a thickened vein just below its apical portion, being perpendicular to calyx lobes *Hyptis pectinata*
 - Flowers arranged in not pectinate cymes with peduncles 10–30 mm long; calyx tube without a thickened vein surrounding it at its apical portion *Hyptis urticoides*
 - 17. Stems, petioles, and leaves without glandular-capitate hairs; blades 1.6–5.5 × 0.9–3.7 cm, rounded to short cuneate at the base, irregularly serrate at the margin; flowers arranged in pectinate cymes, peduncles 3–7 mm long; calyx 2.6–3.7 mm long in flower, with a diffuse ring of hairs internally inserted just below the throat. Plants only known from western sides of Sierra del Halo, Jalisco, eastern Sierra de Coalcomán, and northeastern slopes of Sierra Madre del Sur in Guerrero *Hyptis pseudolantana*
 - Stems, petioles, and lower blade surface covered with glandular-capitate hairs; blades 6–10 × 4–6 cm, cordate at the base, serrate at the margin; flowers in spherical glomerulus, peduncles 8–20 mm long; calyx 4–5.9 mm long in flower, with a well-defined ring of hairs internally inserted below the throat. Plants only known from the mountain range in San Sebastián del Oeste and Sierra de El Cuale, Jalisco *Hyptis pinetorum*

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