



Resurrection of *Salvia* species (Lamiaceae) recently synonymized in Flora Mesoamericana

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Abstract

Some species of *Salvia* were regarded as conspecific with other species of the genus in *Flora Mesoamericana*. Several of these changes are not justified and could eventually create misconceptions and confusion regarding the identification and distribution of these species, as well as the diversity exhibited by the genus. Therefore, in order to avoid the negative consequences of this synonymizing, updated and improved descriptions, a discussion of the diagnostic features, distribution maps and photographs of the taxa involved are provided here.

Resumen

Algunas especies de *Salvia* fueron sumergidas como conespecíficas de otras especies del género en *Flora Mesoamericana*. Varios de estos cambios no están justificados y podrían eventualmente generar malinterpretaciones y confusión respecto a la identificación y distribución de estas especies, y sobre la diversidad del género. Por tanto, para evitar los efectos negativos del proceso de sinonimización, se proveen descripciones actualizadas y complementadas, una discusión de las características diagnósticas, mapas de distribución y fotografías de los taxa implicados.

Introduction

The large number of species (about 900 species worldwide) and extensive distribution of the genus *Salvia* L. (Harley et al. 2004) make this genus taxonomically difficult. At present, no comprehensive modern revision of the genus is available, since Bentham (1876) and Briquet (1897). However, since that time several new species and geographical novelties have been published (for example: Epling 1939, Fernald 1900, dos Santos 1991, Espejo & Ramamoorthy 1993, Torke 2000, Fernández-Alonso 2006, Wood 2007, Celep et al. 2010, Cornejo-Tenorio & Ibarra-Manríquez 2011, Klitgaard 2012). On the other hand, phylogenetic analysis based in DNA sequences have revealed that the genus is not monophyletic as traditionally defined, other genera from subtribe Salviinae are intermixed within *Salvia* lineages; altogether at least three well-defined clades (Walker & Sytsma 2004, Walker 2006, Walker et al. 2007, Jenks et al. 2011, Jenks et al. 2013). One of these clades embraces subgenus *Calosphace* (Bentham 1832–1836: 198) Epling (1939: 4) plus section *Audibertia* Benth. in Lindley (1829: sub t. 1282), and incorporates the majority of *Salvia* growing in America. There are also some representatives of subgenus *Leonia* Bentham (1876: 1196) section *Heterosphace* Bentham (1876: 1196) and three species that originally constituted the genus *Salviastrum* Heister & Fabricius (1759: 231) in the continent; these correspond to a different clade to that of *Calosphace*.

The development of regional floras has been an outstanding contribution to the inventory, classification and solution of taxonomic uncertainties. One of these projects that are currently in progress is *Flora Mesoamericana*. It deals with vascular plant diversity found along Central America and southeastern Mexico, including the Mexican states of Campeche, Chiapas, Tabasco, Quintana Roo and Yucatán. The last volume

eduardi Trel., *Q. greggii* (A.DC.) Tre., *Q. grisea* Liebm., *Q. laeta* Liebm., *Q. mexicana* Bonpl., *Q. opaca* Tel., *Q. potosina* Trel., *Q. sideroxylla* Bonpl., *Sisyrinchium tenuifolium* Humb. & Bonpl. ex Willd., *Stevia lucida* Lag., *Yucca filifera* Chabaud; it is sympatric with other *Salvia* species as *S. axillaris* Moc. & Sessé, *S. macellaria* Epling, *S. microphylla* Kunth, and *S. prunelloides* Kunth. It flowers and fructifies from the end of May to October.

Discussion: *Salvia unicastata* belongs to section *Uliginosae* (Epling 1935: 52) Epling (1939: 54), this is noteworthy because the calyx is covered with dark amber sessile glandular dots and the upper calyx lip is trimucronate. Klitgaard (2012) reduced *S. unicastata* to the synonymy of *S. reptans*, a species that belongs to section *Farinaceae*. Nonetheless, additionally to the distinctive characters of *Uliginosae* exhibited by *S. unicastata*, this can be distinguished by means of its clearly opposite leaves (*vs.* pseudo-whorled in *S. reptans*), thicken and whitish midvein (*vs.* slender and green), revolute leaf margin (*vs.* not revolute), floral bracts (outer surface), floral axis, pedicels and calyces covered with glandular-capitate hairs (*vs.* hispidulous), calyx lobes stiff at the apex like a tiny spine (*vs.* acute and slender), shorter corolla tube [5–6.2 mm *vs.* 7.9–8.5(–10) mm], shorter upper corolla lip (3.6–4.1 mm *vs.* 5.2–6.2 mm), geniculate connective (*vs.* ornate at midportion with a retrorse acute tooth), shorter connective (4.5–5 mm *vs.* 6.6–7.7 mm), shorter filament (1.4–1.6 mm *vs.* 2.5–2.8 mm), and shorter style (8.5–9 mm *vs.* 12.2–13 mm).

Salvia unicastata grows in semiarid habitats in the Mexican Plateau and surrounding portions of Sierra Madre Oriental; hence it is not present in the area covered by the *Flora Mesoamericana* project. Furthermore, the kind of habitat occupied by *S. unicastata* differs from that of *S. reptans*, which grows in wet soils.

Representative specimens examined: MEXICO. Jalisco. Lagos de Moreno: cerro de El Espía, 3 km al S de la presa Juan Vaquero, 21°42'45"N 101°45'17.9"W, 2300 m, 20 October 2011, *J.G. González-G. & F. Pérez 1121* (IBUG!). Nuevo León. Arramberi: La Escondida-San Francisco, 1795 m, 23 June 1993, *G.B. Hinton 23079* (Herbario Hinton!); San Josecito, below, 2395 m, 31 June 1999, *G.B. Hinton et al. 27393* (Herbario Hinton!). Nuevo León. Zaragoza-Puerto Pino, above, 2790 m, 26 June 1978, *G.B. Hinton et al. 17408* (Herbario Hinton!). Zacatecas. Pinos: Ejido La Purísima, aproximadamente 4 km al SW del pobaldo Cerrido de Dolores, 2540 m, 4 sep 2013, *L.F. Colin-Nolasco & J.F. Guerrero-Rodríguez 868* (IBUG!).

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