



A new species of *Cascabela* (Apocynaceae; Rauvolfioideae, Plumerieae) from Michoacán, Mexico

LEONARDO O. ALVARADO-CÁRDENAS^{1,3} & JOSÉ CARMEN SOTO NÚÑEZ²

¹Laboratorio de Plantas Vasculares. Departamento de Biología Comparada, Facultad de Ciencias, Universidad Nacional Autónoma de México, Apartado Postal 70-399, 04510, Mexico, D.F. Mexico.

²Departamento de Botánica, Instituto de Biología, Universidad Nacional Autónoma de México (UNAM), Apartado Postal 70-233, 04510, Mexico, D.F. Mexico.

³Correspondence author: leonardo_ac@yahoo.com

Abstract

A new species of *Cascabela* endemic to the Balsas Basin from Michoacán, Mexico is described and illustrated. *Cascabela balsaensis* can be separated from all known species of the genus because of its elliptic-lanceolate to lanceolate and subcoriaceous leaves with dense pubescence, very small calycine colleters, and shorter corollas. In addition, we provide an evaluation of conservation, a map of distribution, and a species key.

Key words: *Cascabela*, *Thevetia*, Apocynaceae, Mexico

Resumen

Se describe e ilustra una nueva especie de *Cascabela* para la Cuenca del Balsas en el Estado de Michoacán, México. *Cascabela balsaensis* puede ser separada del resto de las especies del género por sus hojas lanceoladas, subcoriáceas, con densa pubescencia, coléteres sepalinos diminutos y corolas pequeñas. Además, proporcionamos una evaluación acerca del estado de conservación de la especie, mapa de distribución y una clave de especies.

Introduction

The genus *Cascabela* Rafinesque (1838: 162) is a member of Apocynaceae with five species ranging from Mexico to northern South America (Alvarado-Cárdenas & Ochoterena 2007, Morales 2009a, b), one of which, *C. thevetia* (L.) Lippold (1980: 52), is cultivated throughout the tropics. The genus belongs to the tribe Plumerieae within the subfamily Rauvolfioideae, together with ten other genera (Endress & Bruyns 2000, Alvarado-Cárdenas & Ochoterena 2007, Simões *et al.* 2007), some of them of economic and medical importance, such as *Plumeria* Linnaeus (1753: 209) (Juárez-Jaimes *et al.* 2007), *Allamanda* Linnaeus (1771: 146) (Sakane & Shepherd 1986), and *Cerbera* Linnaeus (1753: 208) (Gaillard *et al.* 2004).

Cascabela has had a convoluted history with respect to its generic limits with *Thevetia* Linnaeus (1758: 212) and *Cerbera* (Gensel 1969, Lippold 1980, Leeuwenberg 1999, Alvarado-Cárdenas & Ochoterena 2007). The validity of *Cerbera* is not in question, but the circumscription of *Cascabela* and *Thevetia* remains controversial. On the one hand, a phylogenetic analysis (Alvarado-Cárdenas & Ochoterena 2007), taxonomic treatments (Morales 2009a, b), and international data bases (<http://www.theplantlist.org/>) regard both genera as distinct entities. On the other, there are other systematic works that treat *Cascabela* as synonym of *Thevetia* (Simões *et al.* 2007, Zarucchi 2009, Tropicos.org 2014). In addition, an update of classification for the family (Endress *et al.* 2014) recognizes only *Thevetia* as valid. Here we consider the two genera to be valid taxa based on the contrasting flower and fruit structure and seed shape. *Cascabela* has flowers with yellow infundibuliform corollas, black drupaceous fruits with one stony and smooth endocarp enclosing one to four oblongate seeds, whereas *Thevetia* has flowers with yellow to whitish hypocrateriform or infundibuliform corollas, red drupaceous fruits with usually four ovate seeds each surrounded by a hard and fibrous endocarp.

Additional specimens examined (paratypes): MEXICO. Michoacán: Municipio de Huetamo de Núñez. En Huetamo, en el barrio de Las Colonias. Cultivated, 400 m, 3 September 1982, *Soto 4274* (MEXU). En la subida al Cerro Dolores, aprox 4.5 km al NE de La Parota y a 10.5 km al NE de Huetamo, por la brecha a La Estancia, 600 m, 18°40'0.61"N, -100°51'56.95"W, 22 June 2009, *Soto 15792* (MEXU).

Key of the species of *Cascabela*

- 1 Leaves with inconspicuous secondary venation.....2
- Leaves with conspicuous secondary venation.....4
- 2 Leaves obovate to oblanceolate, membranaceous to subleathery, glabrous; flowers greenish-yellow *Cascabela gaumeri*
- Leaves filiform, linear to lanceolate, membranaceous, glabrous or sparsely puberulent; flowers yellow or orange3
- 3 Leaves sessile, linear to filiform, sparsely puberulent on both surfaces; inflorescence peduncles 8–30 mm..... *Cascabela pinifolia*
- Leaves petiolate, lanceolate to elliptic-lanceolate, glabrous on both surfaces; inflorescence peduncles 3–9 mm
..... *Cascabela thevetia*
- 4 Leaves obovate to oblanceolate, leathery *Cascabela ovata*
- Leaves linear-lanceolate to elliptic-lanceolate, membranaceous to subcoriaceous.....5
- 5 Leaves pubescent on both surfaces, lower corolla tube 8–12 mm *Cascabela balsensis*
- Leaves glabrous adaxially, sparsely tomentulose abaxially, lower corolla tube 20–30 mm *Cascabela thevetioides*

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