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Echeveria cerrograndensis (Crassulaceae) a new species from eastern calcareous Sierra de Manantlán, Colima, Mexico

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Abstract

Echeveria cerrograndensis, a new species from eastern Sierra de Manantlán, in the Jalisco-Colima border, Western Mexico, is described and illustrated. This species belongs to series Gibbiflorae, it is morphologically related to E. fulgens but it differs from the latter in having smaller habit, margin straight to slightly undulate; glaucous to pale green or reddish leaves; lower number of flowers per branch and lower total number of flowers; shorter inflorescences, none bicolored corolla, and dark red thecae and nectaries. A key for the species of the *E. fulgens* complex is provided.

Key words: *Echeveria fulgens*, endemic, Tolimán, rock flower ("flor de piedra")

Resumen

Echeveria cerrograndensis se describe e ilustra como especie nueva de la porción oriental de la Sierra de Manantlán, Jalisco-Colima, México. Esta especie pertenece a la serie Gibbiflorae, se asemeja a *E. fulgens,* pero difiere de esta última en su hábito más pequeño, hojas glaucas a verde pálido o rojizas con margen recto a ligeramente ondulado, menor número de flores por rama, menor número total de flores, inflorescencias más cortas, corola de un solo color, y en sus tecas y nectarios de color rojo oscuro. Se incluye un clave de identificación para las especies del complejo *E. fulgens.*

Introduction

Echeveria DC. (Candolle 1828: 401) comprises some 140 known species, and 95% of these are found in Mexico, the center of diversity and endemism of the genus (Uhl 1992, Thiede 1995, Meyrán-García & López-Chávez 2003, Etter & Kristen 2013). There are nearly 20 species of *Echeveria* in western Mexico, including the one described here, 15 of which occur in the State of Jalisco, Mexico (Pilbeam 2008), mostly distributed in temperate mountainous rocky areas, with four of them strictly occurring in tropical forests and only two of them inhabiting on calcareous rocks: 1) the ivory-white flowered *Echeveria yalmanantlanensis* A. Vázquez & Cházaro (Vázquez-García *et al.* 2013) and 2) the pink flowered *Echeveria* here described here as new. As expected by Uhl (2002) and Pilbeam (2008), several new species have been described recently out of the *Echeveria fulgens* Lem. (Lemaire 1845: 8) complex, including *E. roseiflora* J. Reyes & O. González (Reyes-Santiago & González-Zorzano 2010: 22), *E. perezcalixii* Jimeno-Sevilla & P.Carrillo (Jimeno-Sevilla & Carrillo-Reyes 2010: 303), and *E. purhepecha* I. García (García-Ruiz 2011: 63) and *E. munizii* Padilla Lepe & A.Vázquez (Vázquez-García *et al.,* in press).

Here we describe *Echeveria cerrograndensis*, another new species out of the *E. fulgens* complex, a rupicolous species in karstic topography of the Cerro Grande massif in the Sierra de Manantlán Biosphere Reserve, Jalisco-Colima, Mexico, a species that despite its abundance remained unnoticed to many botanists undertaking intensive explorations in the natural area (Vázquez *et al.* 1995). *Echeveria cerrograndensis* was first discovered in 2002, when Miguel Cházaro, Ignacio Contreras and Antonio Machuca visited Cerro Grande, Minatitlán, Colima, México. Living specimens were obtained on a second trip in July 2004, that later bloomed at home of Antonio Vázquez in January 19, 2005.

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Key to species of the *Echeveria fulgens* complex

1. Nectaries red to dark red.....2.
- Nectaries yellow to pale yellow .....3.
2. Stems not evident; leaves 6–10 ×3.5–5.5 cm, margin crenulated and reddish; floral stems 2–3, 50–54 cm, total number of flowers (12–)18–20, nectaries red .....*E. roseiflora*
- Stems 2–5 cm; leaves (3–)4–6 × 2.5–3.5 cm, margin straight and pinkish; floral stems 1–2, 11–22 (–35) cm, total number of flowers 4–11; nectaries dark red .....*E. cerrograndensis*
3. Stems 1–11 cm; corolla not bicolored ..... 4.
- Stems 15–40 cm; corolla bicolored .....5.
4. Stems 1–1.5 cm long, leaves broadly obovate, pale to olive green, grayish green or purple; total number of flowers 7–28; corolla orange pinkish to pink .....*E. perezcalixii*
- Stems 8–11 cm long, leaves oblong-obovate, pale to dark green; total number of flowers 5–7; corolla scarlet red to coral red..... ..... *E. purhepecha*
5. Bracteoles absent; leaves green yellowish, somewhat glaucous, to dark red, the margin undulated reddish, not hyaline; inflorescence 50–90 cm; total number of flowers ca. 20–24, flowers per branch 12 or more, pedicels 2–6 mm; corolla 12–15 cm long..... ..... *E. fulgens*
- Bracteoles present; leaves green or olive to brownish green, the margin straight green, hyaline; inflorescence 30–40, total number of flowers 10–11, flowers per branch (1–)3–5, pedicels 7–8 mm; corolla 10–11 cm long..... *E. munizii* (in press)

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