*Phytotaxa* 170 (1): 035–040
www.mapress.com/phytotaxa/


**Article**

ISSN 1179-3155 (print edition)
PHYTOTAXA
ISSN 1179-3163 (online edition)

http://dx.doi.org/10.11646/phytotaxa.170.1.4

# *Echeveria marianae* (Crassulaceae), a new species from Jalisco, México

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## Abstract

A new species, *Echeveria marianae* (Crassulaceae) is described from Sierra del Tigre, Valle de Juárez, State of Jalisco, Mexico. The species belongs to ser. *Gibbiflorae* due to of its acaulescent or short caulescent rosette habit, paniculiform inflorescence, conical-urceolate corolla, and tricolpate pollen grains. Within ser. *Gibbiflorae* it shares morphological affinities with *E. novogaliciana* and *E. dactylifera* from which it differs in the shape, color and margin of leaves, corolla size and color, stamen length, nectaries morphology, and its geographical distribution.

## Resumen

Se describe *Echeveria marianae* (Crassulaceae) como una especie nueva para la ciencia de la Sierra del Tigre, Valle de Juárez, Estado de Jalisco, México. Esta especie pertenece a la ser. *Gibbiflorae* por poseer un breve tallo o acaule, arrosetada, inflorescencia paniculiforme, corola cilíndrico-urceolada y granos de polen tricolpado. Dentro de las especies de esta ser. *Gibbiflorae*, comparte afinidades morfológicas con *E. novogaliciana* y *E. dactylifera,* de las cuales difiere en la forma, color y margen de las hojas, color y tamaño de la corola, longitud de los estambres, morfología de los nectarios y su distribución geográfica.

**Key words**: corolla appendages, conservation, morphology, scanning electron microscopy, taxonomy, ser. *Gibbiflorae*

## Introduction

*Echeveria* includes ca. 140 species of which over 90% have diversified in Mexico where the genus is characterized by a high degree of endemism (Uhl 1992; Thiede 1995; Meyrán & López-Chavez 2003). A revision of herbarium specimens collected in 1997 from Sierra del Tigre in Western Jalisco revealed a new species and further field work was conducted in 2012–2013 to collect more plant material for additional examination. The species, which we name *E. marianae*, belongs to ser. *Gibbiflorae* (Baker) A. Berger (Berger 1930: 474), which is characterized by large leaves, paniculiform inflorescences, pedicellate flowers, dark-colored stigmas (Walther 1972), and tricolpate pollen grains (Pérez-Calix 2004). Phylogenetic relationships within this group are largely unknown because only a few species were included in a recent molecular study (Carrillo-Reyes *et al*. 2009). Historically, the series was separated into two unranked subgroups useful for identification (Walther 1972; García & Pérez-Calix 2007): one group of species with acaulescent rosettes or having a short caudex, and one group characterized by a long caudex. The new species belongs to the former subgroup, which includes, among others, *E. dactylifera* (Walter 1972: 179) and the recently described *E. novogaliciana* (Reyes *et al.* 2011: 89).

## Material and methods

Field work was conducted in Sierra del Tigre, Jalisco in 1996–1997 and 2012–2013. In addition to herbarium specimens, flowers and leaves were fixed in FAA (Ruzin 1999) for morphological studies. Several living plants were collected with soil and cultivated in Jiquilpan, Jalisco for further study. We examined the basic morphology of both fresh and fixed flowers under a Nikon SMZ1500 stereomicroscope equipped with a PaxCam Arc digital camera and Pax-it 7.6

*Accepted by Alex Monro: 12 Apr. 2014; published: 19 May 2014*

**TABLE 1**. (Continued)

| Character | *Echeveria marianae* | *E. novogaliciana* | *E. dactylifera* |
|---|---|---|---|
| **Gynoecium/carpels** | | | |
| Length × width (mm) | 10–13 × 4 | 10–11 × 8 | 26.5 × 9.7 |
| **Fruit** | follicles semierect, 8.5 × 2.8 mm | — | — |
| **Seeds** | oblong to obovate, reticulate, 0.6–0.8 × 0.25–0.3 mm | — | — |
| **Flowering** | August–October | August–October | October |
| **Geographical distribution** | SE of Jalisco | Aguascalientes, Jalisco | Jalisco, Durango Sinaloa y Aguascalientes |
| **Habit** | Saxicole or occasionally epiphytic; wet and shaded habitats | — | — |
| **Vegetation type** | Oak-pine with mesophyllous mountain forest elements | Tropical deciduous forest; gallery forest; oak forest with elements of xerophilous matorral | Oak forests (?) |


## Acknowledgements

We would like to thank to Emmanuel Pérez-Calix for his comments on a first draft of the manuscript, Alexandre Monro for helping us choose the appropriate conservation rank, and to two anonymous reviewers for their suggestions. The first author also thanks to Hector Arandas, for his help in the field, and to COFAA of the Instituto Politécnico Nacional, Mexico for supporting this type of research.


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