

Tigridia suarezii (Iridaceae, Tigridieae), a New Species from Jalisco, Mexico

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ABSTRACT. *Tigridia suarezii* (Iridaceae, Tigridieae) is a new species from Mexico. Its distinguishing features are the dark purple, almost black color of the spreading tepal limbs and the white to cream floral cup with dark purple spots and stripes. It is morphologically similar to *T. alpestris* subsp. *obtusa* and *T. venusta*, from which it differs in the more robust habit of the plant, the shape, length, and width of the tepals, and the length of the anther, filament column, and style branches. *Tigridia suarezii* and *T. venusta* inhabit the understory in pine-oak forests in an altitudinal range from 2080 to 2800 m, whereas *T. alpestris* subsp. *obtusa* grows on exposed rocky slopes above 3000 m. *Tigridia suarezii* is known only from the state of Jalisco.

RESUMEN. *Tigridia suarezii* (Iridaceae, Tigridieae) es una especie nueva para México. Se caracteriza por el color púrpura, casi negro de la parte distal de los tépalos y el color blanco o crema con manchas o rayas púrpuras de la copa floral. Su morfología es similar a *T. alpestris* subsp. *obtusa* y *T. venusta* de las que se distingue por su hábito más robusto y en la forma, longitud y ancho de los tépalos. También son diferentes en la longitud de las anteras, la columna estaminal y las ramas del estilo. *Tigridia suarezii* y *T. venusta* crecen en el sotobosque del bosque de pino y encino en un rango altitudinal de 2080 a 2800 m. En contraste, *T. alpestris* subsp. *obtusa* crece en acantilados rocosos por encima de los 3000 m de altitud. *Tigridia suarezii* se conoce únicamente del estado de Jalisco.

Key words: Iridaceae, Jalisco, Mexico, *Tigridia*.

The iris family, Iridaceae, was divided into four subfamilies, Isophysidoideae, Nivenioideae, Ixoidae, and Iridoideae, by Goldblatt (1990). Similarly, the subfamily Iridoideae was divided into four tribes: Tigridieae, Sisyrinchieae, Irideae, and Mariceae. The tribe Tigridieae comprises the bulbous and plicate-leafed genera of Iridaceae and is found exclusively in the New World. It has radiated extensively in temperate and Andean South America

and in Mexico. Tigridieae include 19 genera and approximately 140 species.

Tigridia Jussieu is the largest genus of Tigridieae, with 50 species. The group has a notable disjunction with 37 species in Mexico and Guatemala and 13 species in the South American Andes. Thirty species are endemic to Mexico. *Tigridia* is taxonomically difficult and, since Molseed (1970), no other monographic study for the genus has been completed. In addition, this group is underrepresented in Mexican herbaria, and three species have been described based on single collections. Floral characters useful to define species may be poorly preserved when dried, making further taxonomic/morphological analysis problematic.

In the course of systematic studies of the tribe Tigridieae, Rodríguez et al. (1996) reported a new locality for *Tigridia alpestris* Molseed subsp. *obtusa* Molseed in the state of Jalisco. This species was previously known only from its type locality in the Cerro de Tancítaro in the state of Michoacán (Molseed, 1970; Espejo & Lopez-Ferrari, 1996); however, a direct comparison with fresh material was not possible at that time. A collecting trip in August 2002 gave us the opportunity to compare fresh material of *T. alpestris* subsp. *obtusa* from the type locality and these plants from Jalisco. An analysis of floral characters led us to conclude that the plants from Jalisco belong to an unrecognized species, which is described below.

Tigridia suarezii Aarón Rodríguez & L. Ortiz-Catedral, sp. nov. TYPE: Mexico, Jalisco: Mpio. de Tapalpa, camino de Juanacatlán a Tepec, 2330 m, 26 Aug. 1987, A. Rodríguez & J. C. Suárez-Jaramillo 972 (holotype, IBUG; isotypes, ENCB, MEXU, MO, UAMIZ). Figure 1.

Folia basalia nulla, folia caulina binaria; flores plures, erecti, crateriformes; cupula alba atropurpureo maculata; tepala externa ovato-elliptica, parte basali eburnea, parte supra cupulam patente atropurpurea; tepala interna ovata, concava, unguiculata, obtusa, alba vel eburnea, maculis atro-purpureis; glandula alba vel cinerascens ad tepalorum partem basalem posita, cordata; antherae liberae oblongae ascendentes, per totam longitudinem fertiles; styli

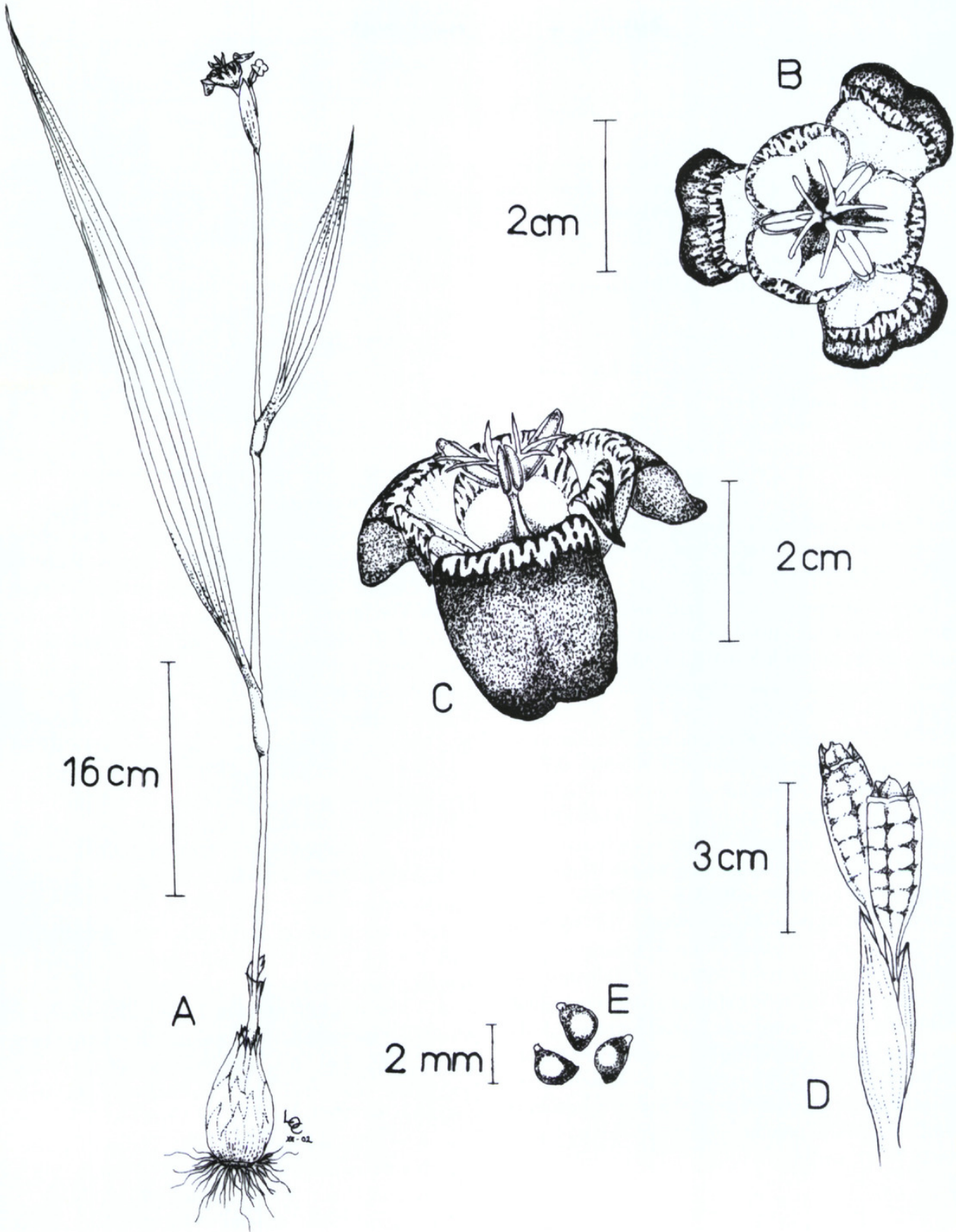


Figure 1. *Tigridia suarezii* Aarón Rodríguez & L. Ortiz-Catedral. —A. Habit. —B. Flower, cross-view. —C. Flower, lateral view. —D. Fruits. —E. Seeds. A, D, E, drawn from the type, Rodríguez & Suárez 972 (IBUG); B, C, drawn from Rodríguez et al. 3058 (IBUG).

Table 1. Morphological comparison of *Tigridia suarezii* and related taxa.

Character	<i>T. suarezii</i>	<i>T. alpestris</i> subsp. <i>obtusa</i>	<i>T. venusta</i>
Stem length (cm)	58–80	30–47	33–60
Flower diameter (cm)	2.6–3.5	2	4
Flower color	dark purple stripes and spots on a creamy white background	uniformly dark purple with some pale yellow stripes	dark purple stripes and spots on a creamy white background
Flower position	erect	erect	erect or secund
Outer tepal length (mm)	20–23	12.5–18	22–25
Outer tepal width (mm)	8–10	6–7.5	10–11
Inner tepal length (mm)	14–16	11–13	12–15
Inner tepal width (mm)	9–10	4–6.5	6–10
Column length (mm)	7–7.5	5.4–6	4–5
Anther length (mm)	7–7.5	5–6	12–13
Style branches length (mm)	5–5.5	3–4	9.5–11.5
Nectary bands length (mm)	9–9.5	5.5–7	4
Nectary bands width (mm)	6–8	4.4–5	3

ramuli bipartiti, ad apicem declinati, eburnei; mucro in sinibus styli ramorum instructum; capsula oblongo-clavata; semina pyriformia castanea.

Erect, bulbous perennial herb, stem 58–80 cm high, with 2 or 3 branches, glabrous; bulb ovoid, 4–7 × 2–3 cm, the outer tunics thin, pale brown. Basal leaves none; cauline leaves 2, linear, the lower 50–113 × 1.6–6.2 cm, upper one shorter, 10–25 × 0.6–2.4 cm. Inflorescence in a rhipidium with boat-shaped subequal spathes, 5.5–6.5 × 0.7 cm. Flowers 5 to 7 per rhipidium, erect, bowl-shaped, 2.6–3.5 cm diam.; outer tepals ovate-elliptic, clawed, basally cream to white, distally dark purple, 20–23 × 8–10 mm; inner tepals ovate, concave, clawed, obtuse, with dark spots and stripes over a white to creamy background, 14–16 × 9–10 mm; nectary at base of inner tepals, cordate, white to grayish, 9–9.5 × 6–8 mm; filaments connate in a column, 7–7.5 mm long; anthers oblong, ascending, 7–7.5 mm long; style branches 5–5.5 mm long, deeply bifid into 2 style arms slightly declined at apex, ivory-colored; an obvious mucro inserted between style arms; ovary 7–8 mm long. Fruit a capsule, oblong-clavate, 25–35 mm long; seeds brown pyriform with a chalazal crest.

Tigridia suarezii is most closely related to *T. alpestris* subsp. *obtusa*. They share the dark purple, nearly black color of the spreading tepal limbs. Both species have erect flowers, exposed nectaries, and a mucro between the style arms. However, *T. suarezii* differs from *T. alpestris* subsp. *obtusa* in having a more robust habit and larger and broader leaves. In addition, the flowers of *T. suarezii* are larger than those of *T. alpestris* subsp. *obtusa*. The tepals of *T. alpestris* subsp. *obtusa* are dark purple

to wine-colored with pale yellow stripes around the floral cup, whereas *T. suarezii* presents white to cream tepals with dark spots and stripes at their bases. The inner tepals of *T. suarezii* are ovate while those of *T. alpestris* subsp. *obtusa* are elliptic to lanceolate. The filament column is longer in *T. suarezii* than in *T. alpestris* subsp. *obtusa*. Finally, there are differences in their habitat preferences in Mexico. *Tigridia alpestris* subsp. *obtusa* grows on exposed rocky slopes above 3000 m surrounded by fir-pine forest in the state of Michoacán in west-central Mexico, whereas *T. suarezii* inhabits the understory in pine-oak forests in an altitudinal range from 2080 to 2800 m in the state of Jalisco in western Mexico.

The outer tepals of *Tigridia suarezii* are distally dark purple. This color pattern resembles that of *T. venusta*; however, the outer tepals of *T. suarezii* are ovate-elliptic, while those of *T. venusta* are oblong. Moreover, the anthers of *T. venusta* are fertile only in their apical portion, whereas those of *T. suarezii* are fertile along their full length. Lastly, the style branches for *T. venusta* are about twice as long as the style branches for *T. suarezii*. The distinguishing characteristics of *T. suarezii*, *T. alpestris* subsp. *obtusa*, and *T. venusta* are presented in Table 1.

Distribution and habitat. *Tigridia suarezii* is known only from the Sierra de Tapalpa and Cerro Viejo in the state of Jalisco in western Mexico. Common associated elements are *Arbutus* L. and *Rhus* (Tournefort) L. The soil is predominantly silty, black and rich in organic matter. The blooming period extends from August to October.

Etymology. The specific epithet honors José C. Suárez-Jaramillo, first collector of the species and

a noted enthusiastic collector and photographer of Mexican *Tigridia*.

Paratypes. MEXICO. **Jalisco:** Amacueca, camino entre Juanacatlán y Tepec, 20°3'0"N, 103°30'0"W, *A. Rodríguez* 2800 (ENCB, IBUG, IEB, MEXU, MO, UAMIZ, WIS, XAL); Chiquilistlán, brecha Tapalpa-Chiquilistlán a 1 km de la línea municipal, *A. Rodríguez & J. Suárez* 532 (ENCB, IBUG, MEXU); brecha Tapalpa-Chiquilistlán, *Rodríguez & Suárez* 973 (CHAPA, ENCB, IBUG, IEB, MEXU, MO, NY, UAMIZ, WIS, XAL); laderas del cerro El Chichimeco, brecha Tapalpa-Chiquilistlán, 1.5 km NW de la torre de estación de microondas Chiquilistlán, 20°0'0"N, 103°47'0"W, *Rodríguez* 2801 (ENCB, IBUG, IEB, MEXU, MO, NY, UAMIZ, WIS, XAL); Jocotepec, Cerro Viejo vereda de la Ventanilla a el Filo, 20°21'42"N, 103°26'27"W, *J. A. Machuca* 8983 (ENCB, IBUG, IEB, MEXU); Tapalpa, brecha entre Juanacatlán y Tepec, *Rodríguez & Suárez* 585 (IBUG), 1577 (ENCB, IEB, IBUG, MEXU); 11.5 km a partir de Tapalpa sobre la brecha a Chiquilistlán, 20°0'06"N, 103°49'05"W, *A. Rodríguez et al.* 3058 (IBUG).

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