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## Rediscovery of *Hymenocallis cordifolia* (Hymenocallideae, Amaryllidaceae) an endemic species of Guerrero, Mexico

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### Abstract

A complete description and a detailed figure of *Hymenocallis cordifolia*, a rare, microendemic species of the state of Guerrero, Mexico, are provided. The taxon is distinguished from all the other species of the genus by the presence of broadly ovate leaves whose leaf sheaths form a long and conspicuous pseudostem. An epitype is designated. Until now, there was no reference herbarium material of the species in any Mexican collection, nor was there any data regarding its phenology and distribution.

**Key words:** Geophytes, Monocots, Petatlán River, Zihuatanejo

### Resumen

Se proporciona una descripción completa y una figura detallada de *Hymenocallis cordifolia*, una especie rara y microendémica del estado de Guerrero, México. Este taxon se distingue de las demás especies del género por la presencia de hojas ampliamente ovadas cuyas vainas foliares forman un pseudotallo largo y conspicuo. Se designa un epítipo. Hasta la fecha, no se contaba con material de herbario de referencia de la especie en ninguna colección mexicana, ni con datos sobre su fenología y distribución.

**Palabras clave:** Geofitas, Monocots, río Petatlán, Zihuatanejo

### Introduction

*Hymenocallis* Salisbury (1820: 338), with ca. 67 species (POWO 2026), is one of the American genera of Amaryllidaceae and is distributed from central and southeastern United States of America to northern and northeastern South America, as well as in the Antilles. In Mexico, the genus comprises 33 species (Sealy 1954, Bauml 1979, Espejo-Serna & López-Ferrari 1993, Villaseñor 2016), 97% of which are endemic to the country (Espejo-Serna 2012). There is no updated monograph on the genus after the one prepared by Bauml (1979), although for Mexico there are contributions to some regional floras that include it (McVaugh 1989, López-Ferrari & Espejo-Serna 2002, García-Mendoza 2021).

*Hymenocallis* is placed in the tribe Hymenocallideae (Meerow & Snijman, 1998) of the Amaryllidaceae, and its recognition as a genus is supported by phylogenetic studies based on both morphological and molecular characters (Meerow *et al.*, 2002). According to APG IV (Angiosperm Phylogeny Group, 2016), the genus is placed in the subfamily Amaryllioideae, tribe Hymenocallideae of Amaryllidaceae.

The state of Guerrero stands out not only for the number of *Hymenocallis* species, but also for its high level of endemism, since of the 10 recorded taxa, seven (70%) restrict their distribution to the state. According to Espejo-Serna (2012), Tapia-Campos *et al.* (2012), Villaseñor (2016), García-Mendoza (2021), Jiménez Ramírez *et al.* (2022) and Vigosa (2025), the following species inhabit Guerrero: *H. acutifolia* (Herbert 1826: t. 2621) Sweet (1830: 513), *H. astrostephana* T.M. Howard (1981: 89), *H. cordifolia* Micheli (1899: 444), *H. eucharidifolia* Baker (1884: 700), *H. glauca* (Zuccarini: 1837) M. Roemer (1847: 173), *H. guerreroensis* T.M. Howard (1978: 64), *H. harrisiana* Herbert (1840: 35), *H. lehmilleri* T.M. Howard (2005: 141), *H. maximiliani* T.M. Howard (1982: 41), and *H. ximixtlanensis* J. Jiménez Ramírez, R. Cruz Durán & E. García (2021: 193).

Collections of the genus *Hymenocallis* from the state of Guerrero are not abundant in Mexican institutional collections, but a particularly notable case is that of *H. cordifolia*. The original material of this species was collected by Langlassé, in January 1899, near the Petatlán River in the state of Guerrero (Micheli 1899, 1900, McVaugh, 1951). Langlassé sent live bulbs of this plant to Marc Micheli, a botanist and horticulturist based in Geneva, who cultivated them until he obtained the plant that flowered in the second half of June, from which the figure that appears in the original publication of the species was made (Micheli, 1899, 1900), but it is uncertain whether he pressed any specimens.

In his thesis on the genus *Hymenocallis* in Mexico, Bauml (1979) selected the plate appearing in the species protologue as the lectotype of *H. cordifolia*, since he was unable to locate sheets of the species in the collections of Geneva herbarium, in which, if it was pressed, the specimen of Langlassé should be. Although Bauml never formally published this lectotype, it is unnecessary because according to Articles 9.1 and 9.2 of the Madrid Code (Turland *et al.* 2025), the plate in question is the holotype. Although this plate allows the recognition of the described species, we consider it is important to deposit reference herbarium material in Mexican institutional collections, which can facilitate its recognition. For this reason we have decided to design an epitype as indicated below, providing also a complete description and a figure that illustrates in detail the distinctive characteristics of this taxon.

## Material & Methods

During a work trip through the state of Guerrero in 1977, the first author, in the company of José Pastrana Salgado (1937–2014), an enthusiastic naturalist from the state of Guerrero, collected live material of two plants of *Hymenocallis* in a vegetative state, which were kept in cultivation, one in a greenhouse and the other in a private garden in the state of Morelos. Since then, both plants produced leaves year after year, but it was not until 2019 that the only surviving plant flowered. Its flowering cycles were monitored in subsequent years, and it was recently confirmed to be *H. cordifolia* Micheli. This species is clearly distinct from the rest of its congeners and is recognized by the presence of four broadly ovate leaves whose long leaf sheaths form a conspicuous pseudostem. The complete description was made from the live plant, and herbarium specimens were prepared and deposited in the Herbario Metropolitano, Universidad Autónoma Metropolitana-Iztapalapa (UAMIZ). Collections of the herbaria FCME, MEXU and UAMIZ (Thiers 2026) were also consulted with the purpose of locating and reviewing all *Hymenocallis* specimens from the state of Guerrero, to corroborate the presence or absence of specimens of *H. cordifolia* in the Mexican institutional herbaria with a good representation of the Guerrero flora.

## Results

### Taxonomy

*Hymenocallis cordifolia* Micheli (1899: 444). Figs. 1–3.

Type:—MEXICO. Guerrero: the long du rio Petatlán “Detatlan”, à 500 m d’altitude, dans des terrains d’alluvion, janvier 1899, *E. Langlassé s.n.* (holotype: Figure 191, *Revue Horticole* (Paris) 71: 445. 1899).

Epitype (designated here):—MEXICO, Guerrero, municipality of Zihuatanejo de Azueta, near Vallecitos de Zaragoza, Ciudad Altamirano-Zihuatanejo highway, tropical deciduous forest on rocky substrate, ca. 700 m a.s.l., collected in March 1977, pressed in May 2025, *E. Aguirre-León and J. Pastrana-Salgado s.n.* (epitype: UAMIZ×2, 94337!, 94340!, isoeptype: MEXU×2!).



Fig. 191. — *Hymenocallis cordifolia*.

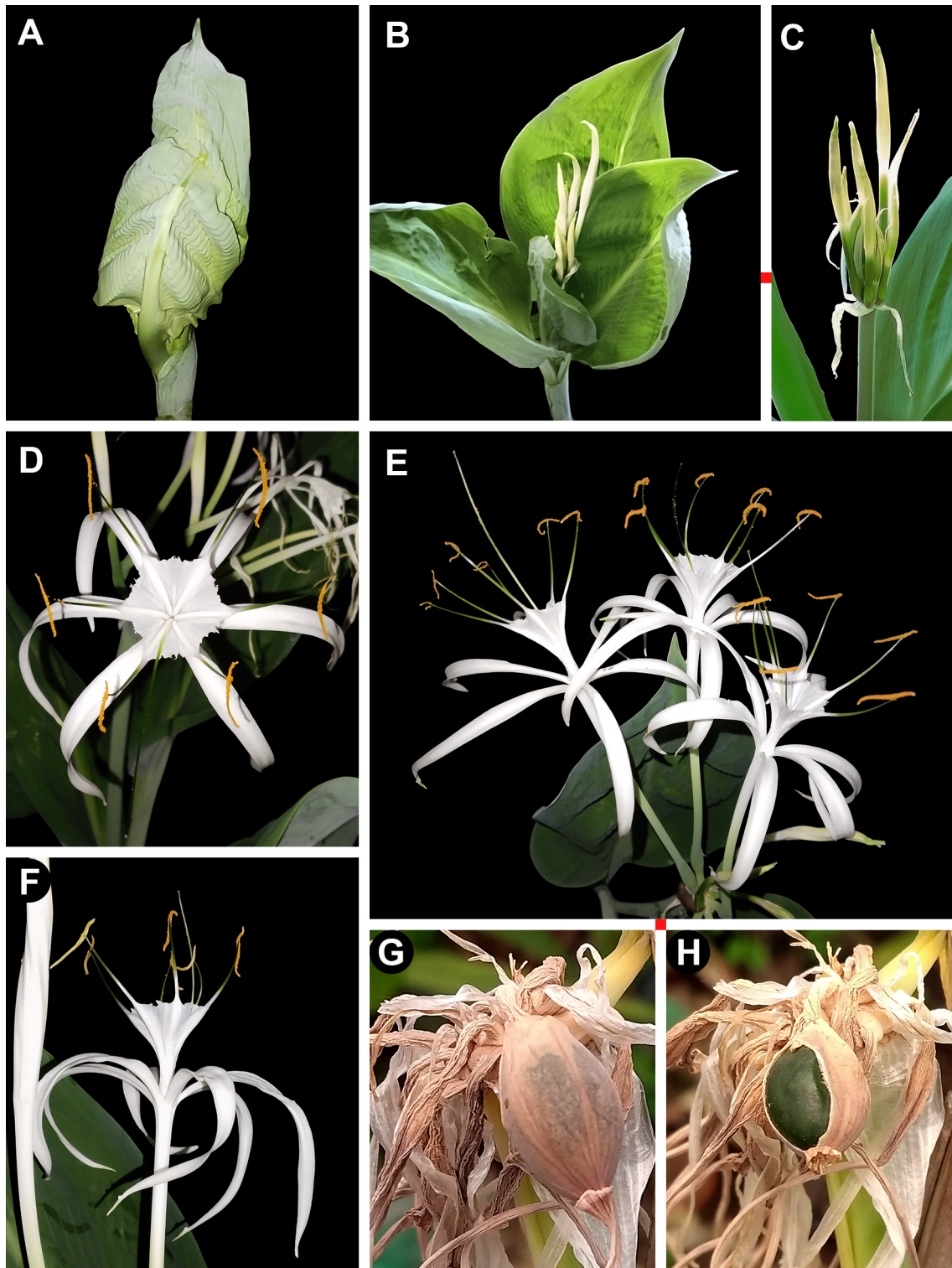
**FIGURE 1.** Holotype of *Hymenocallis cordifolia*. Plate 191 published in *Revue Horticole* (Paris) 71: 445. 1899.

**Plant** perennial, pruinose, 100–110 cm high; **bulb** globose, 6–8 cm in diameter, tunicate, cataphylls brownish, membranaceous; roots fibrous, fasciculate. **Leaves** four, basal, the long leaf sheaths forming a pseudostem up to 60 cm high; foliar blades pale green, elliptic to broadly elliptic, 26–40 × 13.8–22 cm, membranaceous, entire, acuminate at the apex, cordate to rounded at the base, central vein sunken and much clearer on the adaxial surface, secondary veins conspicuous, glabrous, abaxial surface conspicuously pruinose; pseudopetioles conspicuous, 10–16 cm long. **Inflorescence** with 7–15 flowers, ancipital scape 80–86 × ca. 1.3 cm, pruinose; inflorescence bracts narrowly triangular, 5–8 cm long, scariose; **flowers** white, pedicellate, pedicels 5–7 mm long, tepals subequal, linear-oblong, 9–10 × 0.8–0.9 cm, acute at the apex; flower tube 10.5–12.4 cm long, 3–4 mm in diameter, greenish at the basal portion, whitish at the apical portion; staminal crown infundibuliform, 3–3.3 cm high, 2.3–2.7 cm in diameter, tube 1.5 cm long, margin irregular and minutely toothed, lobes triangular, free portion of the filaments 2.3–2.5 cm long, whitish at the base, greenish at the distal portion; anthers linear, 1.5–1.8 cm long; ovary green, ellipsoid, slightly falcate, 1.5–1.7 cm long, ca. 1.2 cm in diameter, style 17.5–20 cm long, the free portion greenish for almost its entire length, stigma capitate, greenish. **Fruit** dark green, slightly fleshy, ellipsoid, ca. 1.5 cm long, ca. 1.2 cm in diameter; mature seeds not seen.

**Distribution:**—*Hymenocallis cordifolia* is known so far only from the southwestern portion of the state of Guerrero, where it grows in tropical deciduous forests, on rocky substrate and among leaf litter, at an elevation between 500 and 700 m a.s.l. Bauml (1979) cites the collection of *G.B. Hinton et al. 10289*, from the town of the same name (Vallecitos), but from the district of Montes de Oca, currently the municipality of La Unión de Isidoro Montes de Oca,

also in the state of Guerrero. However, it was not possible to locate this specimens in the collections mentioned by this author.

**Phenology:**—*Hymenocallis cordifolia* plants begin their vegetative growth and development in the months of March or April and bloom from April to June. The flowers last a couple of days and anthesis starts around 7:30 p.m., completing it in less than 15 minutes. The vegetative structures remain until July or August and the plants go dormant from autumn until the end of winter.



**FIGURE 2.** *Hymenocallis cordifolia* Micheli A. Young plant in prefoliation, B. Young plant with developing inflorescence, C. Detail of the developing inflorescence, D. Flower, top view, E. and F. Flowers, lateral view, G. and H. Young fruits covered by floral remains.



FIGURE 3. Epitype of *Hymenocallis cordifolia* Micheli (E. Aguirre-León and J. Pastrana-Salgado s.n.).

## Discussion

*Hymenocallis cordifolia* is easily distinguished from the rest of the Mexican representatives of the genus by the presence of a conspicuous pseudostem formed by the long leaf sheaths, as well as by its four leaves with widely elliptical blades, 13.8 to 22 cm wide. Most species of *Hymenocallis* have sessile, linear to oblong leaves that do not exceed 10 cm in width.

The foliage of *Hymenocallis cordifolia*, together with the appearance of the individuals and the number and size of its flowers, makes the species particularly striking as an ornamental plant, and the ease with which it develops could be used to propagate it and promote its conservation.

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