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A new species of *Sicydium* (Cucurbitaceae) from Argentina

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Abstract

We describe a new species of *Sicydium* endemic to Argentina. Relationships and differences with morphologically and geographically closest species are discussed, including a key for material with staminate flowers to all species of *Sicydium*, and an illustration of the new species.

Introduction

Sicydium Schlechtendal (1832: 388) is a Neotropical genus of Cucurbitaceae with about seven species of tendrilous, usually dioecious, climbers (Lira 2004, Schaefer & Renner 2011b, and literature therein). Mexican (and Central American) species of *Sicydium* were reviewed by Lira (1995, 2004), and South American species were treated by Cogniaux (1916) and Jeffrey & Trujillo (1992). Within tribe Triceratieae A. Richard (1845: 298), *Sicydium* is phylogenetically and morphologically close to *Pteropepon* (Cogniaux in Martius 1878: 112) Cogniaux in Engler (1916: 260), a South American genus with five species restricted to Peru, Argentina, and Brazil (Schaefer & Renner 2011a, b). Both genera share the same basic structure of staminate flowers, staminate inflorescences, and uniseminate ovaries, but differ mainly by the fruit type, seed compression, ovary shape, and pubescence on leaves and stems. During the revision of the Cucurbitaceae collections housed at CTES, we found a voucher assignable to *Sicydium*, as a new species and the first record of that genus for Argentina.

Taxonomy

Sicydium nereoi Pozner *sp. nov.* (Fig. 1)

Type:—ARGENTINA. Prov. Corrientes: Dpto. Esquina, Islas frente a Esquina, 30 November 1974, *A. Krapovickas, C.L. Cristóbal, J. Irigoyen & A. Schinini 26905* (holotype CTES!).

Tendrilous, villose-glandulose, diclinous climber. Stems 5-sulcate, densely villose-glandulose. Glandulose trichomes simple, uniseriate, patent, variable in length up to 0.8 mm long, mixed with simple, less frequent, eglandulose trichomes 1.5–2 mm long, more abundant and dense at the nodes. Leaves entire, simple, cordate, up to 4 cm wide × 6 cm long, 7–9-pedately nerved, apex acute-acuminate, margin entire, adaxial surface densely villose, most trichomes simple, eglandulose, abaxial surface villose-glandulose, with simple glandulose and eglandulose trichomes mixed as on the stem, particularly denser on the nerves. Petioles 7–8 mm, densely villose-glandulose. Tendrils distally bifid, coiling below and above the branching point, villose-glandulose at base, becoming almost glabrous towards the distal end. Staminate flowers in axillar, bracteate thyrses up to 7–9 cm long, lower bracts ovate, acute, becoming narrower up to linear towards the distal cymes, bracts and rachis villose-glandulose as the stem but with shorter trichomes, floral pedicels glabrous, ebracteolate, articulate at their very base. Staminate flowers minute, hypanthium saucer-shaped, sepals 5, triangular to long triangular, ca. 0.2 mm wide × 0.8 mm long, margin entire, with some trichomes on the abaxial side, petals 5, triangular to long triangular-acuminate, 0.4–0.5 mm wide × 1–1.8 mm long, with some trichomes on both sides, and along the margin in a ciliated arrangement, inner side of the hypanthium densely covered by

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glandular trichomes forming a cushion-like trichomatous nectary, stamens 3, one monothecate with horizontal theca, and two bithecous with vertical thecae, filament 0.1–0.15 mm thick, 0.3–0.4 mm long, usually erect in the bithecous stamens and incurved in the monothecous stamen, connective usually wide up to divaricate, thecae 0.2 mm long, longitudinally dehiscent. Carpellate flowers and fruits unknown.

Distribution:—*Sicydium nereoi* is known only in Corrientes province, in the islands on the Paraná River in front of Esquina city.

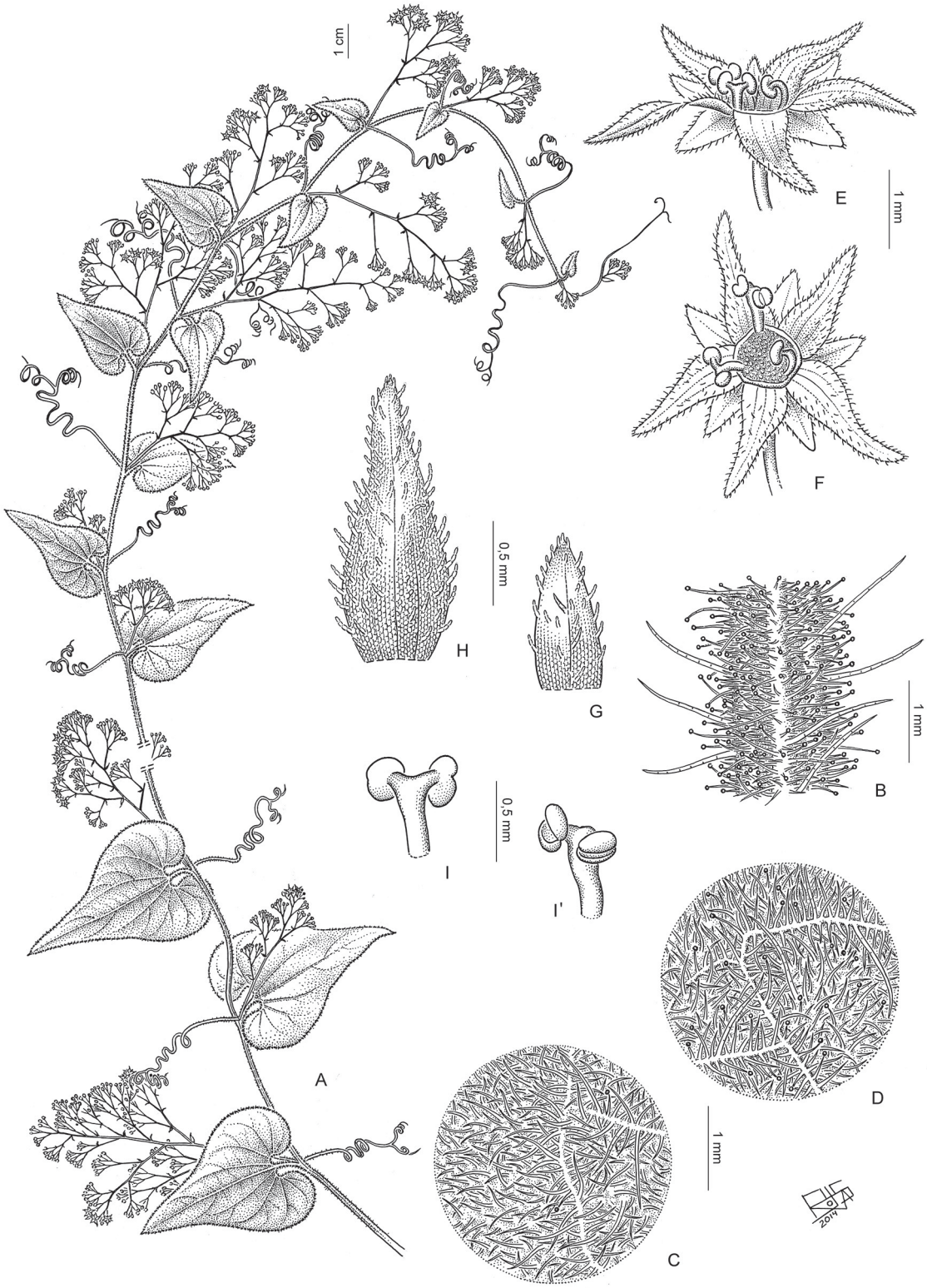

FIGURE 1. *Sicydium nereoi*. **A.** Habit. **B.** Stem pubescence. **C.** Leaf abaxial pubescence. **D.** Leaf adaxial pubescence. **E–F.** Staminate flower, side and front view. **G.** Sepal. **H.** Petal. **I–I'.** Bithecal stamen with divaricate connective. Drawn by Francisco Rojas from *A. Krapovickas et al. 26905*.

Etymology:—*Sicydium nereoi* is dedicated to Raúl Nereo Martínez Crovetto, Argentinean botanist and professor at "Universidad Nacional del Litoral", Corrientes, who produced, along his career, the first and most complete research about taxonomy of Cucurbitaceae from Argentina.

Relationships:—Species of *Sicydium* and *Pteropepon* share the same staminate flower structure, being distinguished by the 2-winged samara (ovary strongly compressed in the carpellate flower) in *Pteropepon* versus the globose berries of *Sicydium* (ovaries not compressed in carpellate flowers). Concerning vegetative characters, species of *Pteropepon* are usually glabrous with deltoid to 3–5-lobed leaves, versus the hirsute-villose, frequently glandulose pubescence, and entire, cordate leaves of *Sicydium*. Despite the lack of carpellate flowers and fruits, we decided to describe this new species under *Sicydium* (and not *Pteropepon*) because of its leaf morphology and particular pubescence, so much similar to *Sicydium* species. The closest morphologically similar species to *Sicydium nereoi* are *S. gracile* Cogniaux (1878: 113) from southern Brazil and *S. tamnifolium* (Kunth in Humboldt, Bonpland & Kunth 1825: 175) Cogniaux in Candolle & Candolle (1881: 905) from Mexico to Peru and Bolivia. *Sicydium nereoi* is morphologically related to *S. tamnifolium* by the pubescence and foliar morphology, but differs by the glandulose-pubescent pedicels (glabrous in *S. nereoi*), the pedicel articulation at the lower half (versus at the very base of the pedicel in *S. nereoi*) and the slightly cup-shaped hypanthium (completely flat and exposed in *S. nereoi*). It also differs from *S. gracile*, by the dense villose-glandulose pubescence (glabrous or short eglandulose in *S. gracile*), pedicels articulate at the very base (versus the distal articulation just under the staminate flower in *S. gracile*), and the slightly cup-shaped hypanthium (completely flat and exposed in *S. nereoi*). There is a third, clearly different species from southern Brazil, *S. diffusum* Cogniaux (1878: 112): *Sicydium nereoi* is densely villose-glandulose with pedicels articulated at the very base, while *S. diffusum* is almost completely glabrous (but the pedicels) with pedicels articulated on the upper distal half.

Additional specimens examined:—*Sicydium gracile* Cogn. BRAZIL. Rio Grande do Sul: Montenegro, sarmentum in silva, 500 m, 20 November 1950, *A. Sehnem 5057* (SI). Alto Matador, 800 m, 24 November 1958, *R. Reitz & R.M. Klein 7598* (CTES). *Ibid.*, 11 September 1958, *R. Reitz & R.M. Klein 7074* (CTES). *São* Leopoldo, in silva primaeva scandens, 17 December 1948, *B. Rambo 38907* (LIL 314263). *Ibid.*, 16 October 1935, *B. Rambo 1608* (LIL 181090). *Ibid.*, ad montem Sapucaya, in silva primaeva scandens, *B. Rambo 37947* (LIL 238145). Porto Alegre, in silva campestri scandens, 1 September 1948, *B. Rambo 37489* (LIL 236579). *Ibid.*, 20 November 1948, *B. Rambo 38148* (LIL 123994). *Ibid.*, Morro de la Gloria, in silva, 26 October 1945, *B. Rambo 29319* (LIL 157554), *F. Sellow s.n.* (syntypes BR 0000006605087, F 0BN009022, JSTOR images). *Sicydium diffusum* Cogn. BRAZIL. Amazonas: Rio Negro, "prope Manaos, prov. do Alto Amazona, fl. May", 3–8 August 1857, *R. Spruce 1539* (holotype K000424201, isotypes C10009957, NY00468323, BR0000006605520, JSTOR images). *Sicydium tamnifolium* (H.B.K.) Cogn. COLOMBIA. Antioquia: Guarumo, Río Magdalena, *A. Bonpland 1674* (holotype P, JSTOR image).

Key to identify species of *Sicydium* based on material with staminate flowers

The following key was based on Lira (2004) and modified to include *Sicydium nereoi*, *S. gracile*, and *S. diffusum*. The main diagnostic characters of *Sicydium* species are found in the staminate flowers and pubescence. Carpellate flowers do not possess characters to discern the species (Lira 2004), probably because material with carpellate flowers and fruits is rare. In fact, those structures are not known for *Sicydium davilae*, *S. nereoi*, and *S. difussum* (cf. Cogniaux 1878, Porto 1974, Lira 2004).

1. Pedicels of the staminate flower articulate at some point on the upper, distal half.....2
1. Pedicels of the staminate flowers articulate at some point on the lower, proximal half.....6

2. Plants glabrous (only the pedicels pubescent), filaments 1–1.5 mm long..... *Sicydium diffusum*
2. Plants pubescent, if glabrous, with filaments no longer than 0.7 mm.....
3. Pedicels articulated just under the flower.....*Sicydium gracile*
3. Pedicels articulated in between the staminate flower and the middle point.....4

4. Plant glabrous or slightly puberulent, trichomes usually shorter than 1 mm, leaves always entire, surface frequently shiny on both sides.....*Sicydium schiedeanum* Schlechtendal (1832: 388)
4. Plants noticeable puberulent, pubescent, tomentose or sometimes woolly, at least on the abaxial side of leaves, trichomes 1–3 mm long, easy to see, leaves entire, angulose or slightly lobate-lobulate, surface never shiny.....5

5. Stems and leaves densely tomentose to woolly, indument made of eglandular trichomes, whitish or yellowish when dry..... .....*Sicydium davilae* Lira (1995: 284)

5. Stems puberulent to noticeable pubescent, leaves puberulent and rough-scabrose on the adaxial side, and smooth pubescent to tomentose on the abaxial side, indumenta made of glandulose and eglandulose trichomes, usually dark brown, reddish or sometimes greenish when dry.....*Sicydium tuerckheimii* Donnell Smith (1911: 49)

6. Pedicels articulated at the base (no pedicel remains on the cyme peduncle after flower senescence), pedicels glabrous. Filaments as long or twice the length of the anther, connective usually widened or divaricate .....*Sicydium nereoi*
6. Pedicels articulated at some point on the lower, proximal half (part of the pedicels remain on the cyme peduncle after flower senescence), pedicels puberulent-glandulose, connective narrow or very much reduced.....*Sicydium tamnifolium*

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