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Herbertia darwinii (Iridaceae: Tigridieae: Cipurinae), a new species from South America

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Summary. *Herbertia darwinii* is described from the grasslands of Northwest of Argentina and Southern Brazil. The new species resembles *Herbertia lahue* ssp. *amoena*, but can be easily distinguished by its bigger flowers, broader tepals, robust habit, recurved secondary divisions of the style arms, and bigger fruits. A key to the species of the genus is provided in which 6 species are recognized.

Key words: Iridaceae, *Herbertia*, Argentina, Brazil.

Resumen: *Herbertia darwinii* (Iridaceae: Tigridieae: Cipurinae), una nueva especie de Sudamérica. Se describe *Herbertia darwinii*, especie común en pastizales del noreste de Argentina y sur de Brasil. La nueva especie recuerda a *Herbertia lahue* ssp. *amoena*, pero se distingue fácilmente por su mayor tamaño, flores más grandes con tépalos exteriores de mayor tamaño y ancho, las ramas del estilo recurvadas y frutos mayores. Se provee una clave en la cual se reconocen seis especies para el género.

Palabras clave: Iridaceae, *Herbertia*, Argentina, Brasil.

Herbertia Sweet is a small genus of Iridaceae, Trigrideae, Cipurinae, distributed in temperate North and South America. The flowers have large, obovate outer tepals and smaller, oblanceolate inner tepals. The staminal column narrowed above; linear anthers; and bifid style. Five species have been recognized: *H. lahue* (Molina) Goldblatt (with 3 subspecies), *H. tigridioides* (Hicken) Goldblatt, *H. pulchella* Sweet, *H. quareimana* Ravenna, and *H. crosae* Roitman et A. Castillo (Roitman & Castillo, 2004), that inhabit grasslands from Uruguay to Chile, and a variety, *Herbertia lahue* ssp. *caerulea* (Herb.) Goldblatt, that occurs in southern USA.

During several trips to Northern Corrientes, we found populations of a big flowered species of *Herbertia* in mixed populations with *H. lahue* ssp. *amoena*. Bulbs collected in the field were cultivated in the J. O. Hall Garden facilities (Facultad de Agronomía, Universidad de Buenos Aires, 34º 35' S, 58º 30' W) and, for the last 4 years, observations on growth and phenology were carried out. Detailed observations of the habit, size, flowers and chomosome numbers counts, led us to treat this as a new species, allied to *H. quareimana* and *H. lahue* spp. *amoena*, sharing features of both species, but with clear differences with both of them.

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Herbertia darwinii Roitman & A. Castillo, **sp. nov** (Fig. 1, 2).

A Herbertiæ lahue, *magna statura, floribus majoribus, tepalis externis ovatis, ramis styli caniculatis divisionibus recurvatis, a* H. quareimana, *floribus minoribus, filamentis staminum omnio unitis, tepalis rectis differt.*

Type: ARGENTINA. Prov. Corrientes. *Dpto. Paso de los Libres*: Cercanías de Bompland, 9-X-2006, G. Roitman s. n. (BAA 25702).

Herb, 15-30 cm high. Bulb subglobose, 20-27 mm wide, covered by dark-brown, membranous coats, prolonged upwards into a neck. Leaves 2-5, plicate, linear, at anthesis green, erect, 9-15 cm long, 12-20 mm wide. Inflorescence a 1-2 -flowered rhipidium; spathes green, the lower 2-2.3 cm long, the upper 2.5-3 cm

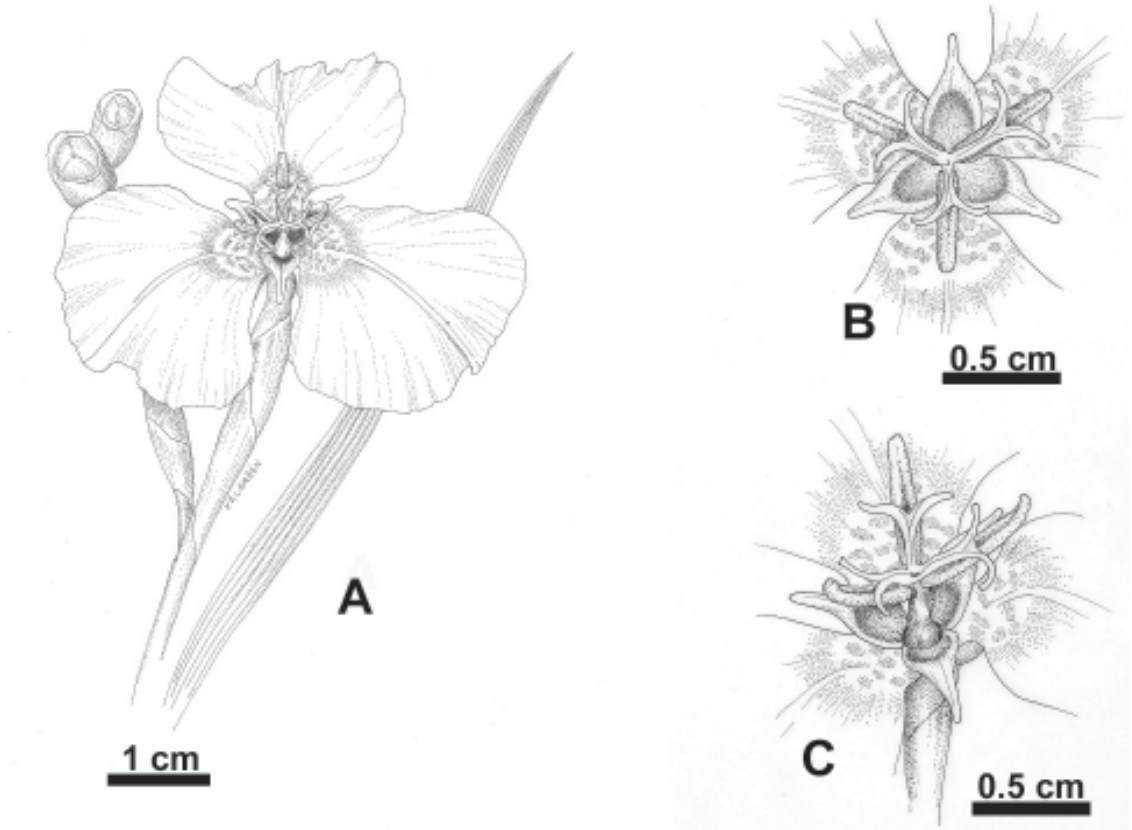

Fig. 1. *Herbertia darwinii*. **A**, View of the upper part of the inflorescence; **B**, Upper view of staminal column and the stigma; **C**, Lateral view of staminal column and the stigma. From the holotype (BAA 25702).

long. Flower lilac-blue, radially symmetrical, 4.0–5.7 cm wide. Outer tepals oblong-obovate, 3.2 – 3.6 x 3.1-3.4 cm, with a yellow linear stripe at the base and dark violet dots; inner tepals oblanceolate, 6-9 mm long, 3-5 mm wide, dark lilac. Filaments entirely united forming a column, pale lilac, 5-7 mm long; anthers linear, curved at dehiscence, 7-9 mm long. Ovary 6-8.5 x 3.5-4 mm. Pollen yellow. Style arms channelled, lilac, 6 mm long, bifid for 4 mm, the divisions divaricate, recurved, apically stigmatose. Capsule ovobate-oblong, 12 x 17 mm. Seeds obovate, slightly angled, brown, 3.5 x 2 mm.

Studied material:

ARGENTINA. Prov. Corrientes. *Dpto. Paso de los libres:* Ruta 14, altura Paso de los Libres. 9-X-2006, G. Roitman s. n. (BAA 25703). *Dpto. Santo Tomé:* 9 km al E de Santo Tomé, sobre Ruta 14, 19-X-1989, A. Castillo, J.P. O´Farrell *et al.* s. n., común, flores violeta (Colom Chart RHS 94A), crece en la banquina (BAA 21632).

BRASIL. Estado Rio Grande do Sul. BR 472, camino de Uruguayana a Itaquí, bajada de Sandonai, 15-X-1989, A. Castillo, J. P. O´Farrell *et al.* s. n., común, flores azules (BAA 21607). BR 472 y acceso a Itaquí, en el cantero central del acceso, 19-X-1989, A. Castillo, J. P. O´Farrell *et al*. s. n., flor violeta (Colom Chart RHS 94A), bulbos en cultivo en Ezeiza, (BAA 21610). Ea. Tres Figueiras, 50 km al E de Itaquí, 16-X-1989, A. Castillo, J. P. O´Farrell *et al.* s. n., flor lila (BAA 21617).

Obs.: This new species resembles *Herbertia lahue* (Mol.) Goldblatt, but can be easily distinguished by the bigger size (15 to 30 cm vs. 8 to 12 cm), broader leaves (12-20 mm vs. 6-10 mm), the bigger flowers (4.0-5.2 cm wide vs. 3.5-4.0 cm wide) the presence of a yellow stripe at the base of the tepals (vs. absence of yellow stripe), the channeled style arm (vs. style arms not channeled), the recurved secondary divisions of the style arm and the broader fruits (12 mm vs. 9 mm). From *H. quareimana* can be distinguished by the smaler flowers (4.0-5.2 cm wide vs. 5.5-6.5 mm wide), filaments united in a column vs. filaments free at the apex; tepals straight vs. tepals curved.

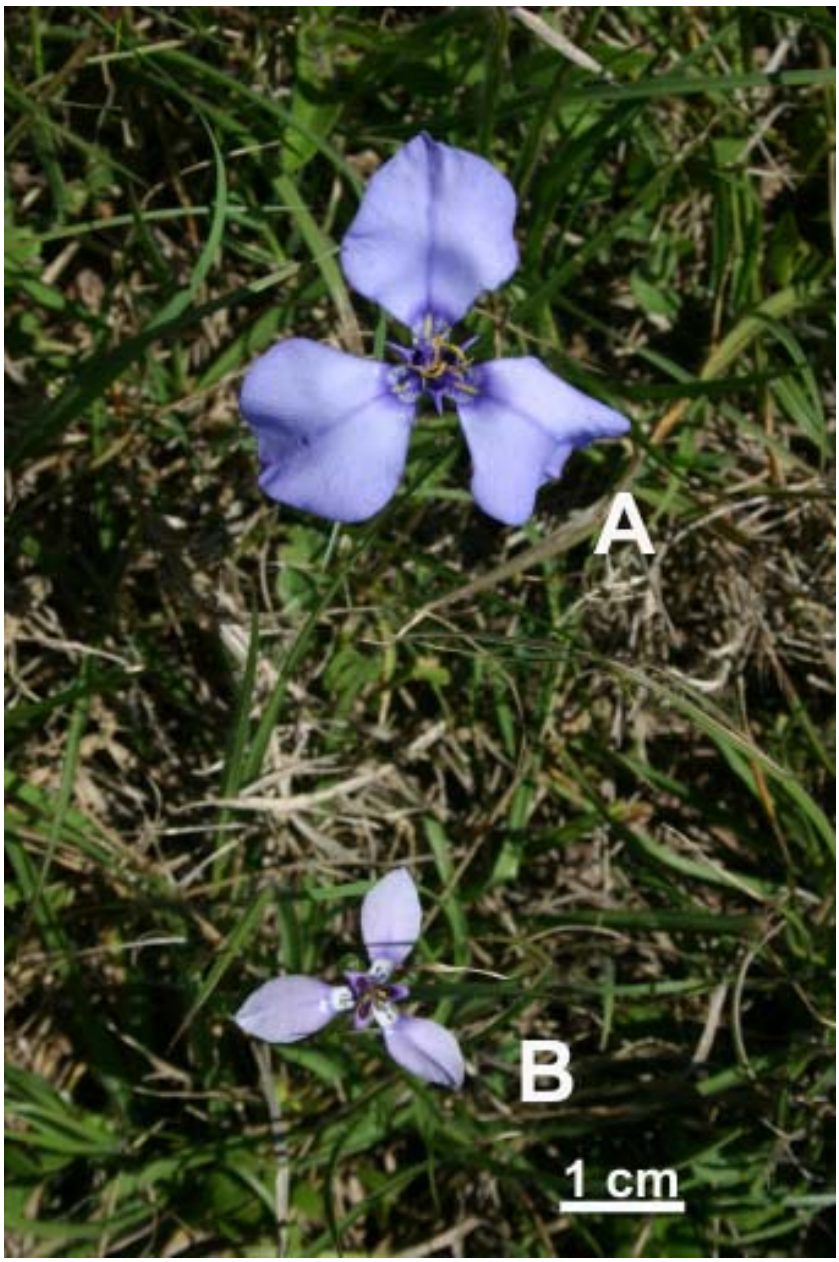

Fig. 2. Photograph of: **A**, *Herbertia darwinii*; **B**, *Herbertia lahue* ssp. *amoena*, in the vicinities of Bompland, Corrientes province.

Cytology: 2n = 14 (N. Moreno & G. Bernardello, pers. comm.; based on roots taken from the holotype). *Herbertia lahue* ssp. amoena was referred to have 2n=42 (Goldblatt &Takei, 1997; Baeza *et al.*, 2001) and *H. quareimana* 2n = 28 (Goldblatt &Takei, 1997).

Distribution and ecology: In Argentina (Provinces of Misiones and Corrientes) and Brazil (Rio Grande do Sul). It was found growing in stony grasslands with *H. lahue* ssp. *amoena*. *Herbertia quareimana* Ravenna, with large violet flowers, also occurs in the area.

Etymology: We dedicate this species to Charles Darwin in conmemoration of his 200th birth anniversary.

Key to the species of *Herbertia*

1. Filaments free at the apex for 1 to 4 mm long, anthers attached to the filaments.

Style arms channelled. Secondary divisions of the style arms recurved.

2. Filaments free for 3-4 mm long at the apex. Flowers blue. Outer tepals with a white streak from base to half of its length.

H. pulchella

2'. Filaments free for 1 mm long at the apex. Flowers violet. Outer tepals without a white streak.

3. Flowers 55-65 mm wide, violet, the claws whitish with black-violet spots. Inner tepals dark violet; filament column smooth

H. quareimana

3'. Flowers 25-29 mm wide, pale lilac. Inner tepals lilac with a yellow stripe; filament column with red, adpressed hairs.

H. crosae

1'. Filaments entirely united forming a column, the anthers attached directly to the filament column.

4. Secondary divisions of the style arms recurved.

H. darwinii

4'. Secondary divisions of the style arms straight.

5. Style arms horizontal. Secondary divisions of the style as long as the style arm. Flowers in summer and autumn.

H. tigridioides

5'. Style arms ascending. Secondary divisions of the style shorter than the style arm. Flowers in spring.

H. lahue ssp. *amoena*

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