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THE GENUS *ISOSTIGMA* (ASTERACEAE, HELIANTHEAE) IN ARGENTINA: TWO NEW RECORDS AND NOTES ON DISTRIBUTION

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ABSTRACT: Peter, G. 2004. The genus *Isostigma* (Asteraceae, Heliantheae) in Argentina: two new records and notes on distribution. *Darwiniana* 42(1-4): 207-215.

Isostigma dissitifolium and *I. speciosum* are newly reported for Argentina (Misiones Province). Five species have been previously recorded: *I. cordobense*, *I. crithmifolium*, *I. hoffmannii*, *I. molfinianum* and *I. peucedanifolium*. All distributions are updated. *I. dissitifolium* and *I. speciosum* are described, illustrated and their geographical distribution is given. A key to differentiate Argentine species of *Isostigma* is provided.

Key words: *Isostigma*, Flora, Taxonomy, Heliantheae, Asteraceae, Argentina.

RESUMEN: Peter, G. 2004. El género *Isostigma* (Asteraceae, Heliantheae) en la Argentina: dos nuevos registros y notas sobre distribución. *Darwiniana* 42(1-4): 207-215.

Isostigma dissitifolium e *I. speciosum* son registradas por primera vez para la Argentina (Provincia de Misiones), sumándose a las cinco especies del género ya citadas para el país: *I. cordobense*, *I. crithmifolium*, *I. hoffmannii*, *I. molfinianum* e *I. peucedanifolium*. Se actualizan las distribuciones de todos estos taxones. *I. dissitifolium* e *I. speciosum* son descritas e ilustradas y se provee una clave para diferenciar las especies argentinas de *Isostigma*.

Palabras clave: *Isostigma*, Flora, Taxonomía, Heliantheae, Asteraceae, Argentina.

INTRODUCTION

Isostigma (Asteraceae, Heliantheae, Coreopsidinae) is a South American genus described by Lessing in 1831. It is a poorly studied group of 13 species (Sherff, 1926, 1931; Cabrera, 1959) of perennial herbs and subshrubs from northeastern and central Argentina, southern Brazil, southeastern and central Bolivia, Paraguay and northwestern Uruguay. Species of *Isostigma* range from arid and semi-arid to moist habitats. Plants belonging to this genus exhibit Kranz syndrome. A new type of Kranz anatomy for the Asteraceae was described for some species of *Isostigma* (Peter & Katinas, 2003).

In previous works (Sherff, 1926, 1931; Ariza Espi-

nar, 1969, 1975, 2000; Cabrera, 1974; Sáenz, 1999) five species of *Isostigma* have been noted to occur in Argentina: *I. cordobense*, *I. crithmifolium*, *I. hoffmannii*, *I. molfinianum* and *I. peucedanifolium*. *Isostigma dissitifolium* has been cited for Paraguay, and *I. speciosum* have been cited for Brazil and Paraguay, although neither of them has been previously known for the Argentinean flora. During a revision of the genus *Isostigma*, material of *I. dissitifolium* Baker and *I. speciosum* Less. was found from the Province of Misiones, in Argentina. Therefore, with these records, there are seven species of the genus in Argentina.

TAXONOMIC TREATMENT

Key to the Argentinean species of *Isostigma*

- 1. Capitula in pseudocorymbs. Leaves linear to narrowly ovate, entire or 3-furcate *I. molfinianum*
- 1. Capitula solitary 2
- 2(1). Leaves distributed along the stem 3
- 2. Leaves rossulate 5
- 3(2). Perennial herbs or subshrubs 0.60-1 m tall, with xylopodium. Cypselas glabrous *I. dissitifolium*
- 3. Perennial herbs or subshrubs up to 0.60 m tall, lacking xylopodium. Cypselas hispid 4
- 4(3). Leaves deeply pinnatisect, with 1-2 pairs of linear leaflets, less than 1 mm wide *I. cordobense*
- 4. Leaves pinnatisect or rarely bipinnatisect, with 1-3 pairs of ovate leaflets of 0.5-4 mm width, sometimes furcate or dentate at the apex *I. hoffmannii*
- 5(2). Stem expanded at the base of the capitulum (4-7 mm wide), more than 20-bracteolate on the upper part *I. speciosum*
- 5. Stem isodiametric throughout (up to 3 mm at the base of the capitulum), less than 10-bracteolate on the upper part 6
- 6(5). Leaves pinnatisect to multipinnatisect, leaflets subulate or filiform of 0.2-0.7 mm wide. Petiole and leaflets canaliculate *I. peucedanifolium*
- 6. Leaves pinnate or bipinnatisect, leaflets linear of 0.5-1.3 mm width. Petiole and leaflets flat *I. crithmifolium*

1. *Isostigma dissitifolium* Baker, in Martius, Fl. Bras. 6 (3): 239. 1884. *Isostigma peucedanifolium* Less. var. *dissitifolium* (Baker) Hassl., Repert. Spec. Nov. Regni Veg. 14: 277. 1916. TYPE: Paraguay, Dept. Paraguari, "Guarapi (commune de Yaguaron), sur les collines incultes, Juin 1877", *Balansa 907* (lectotype, K, designated by Sherff, 1926: 251; photograph of lectotype: BBB!; isolectotypes, F!, G!, P, photograph of isolectotypes, P 265804!, P 265805!, P 265806!). Fig. 1.

Perennial herbs or subshrubs, erect, 0.60-1 m tall, with xylopodium. Stems: multiple, moderately branched, leafy, striate, glabrous, 1.5-3 mm wide (up to 5 mm at the base). Basal leaves: crowded, deeply bipinnatisect; stem leaves: alternate or rarely opposite, deeply pinnatisect or simple; glabrous, 2-16 cm long, shorter towards the apex, margin hyaline very narrow; leaflets: linear or subulate, 0.3-10 cm long x 0.5-1 mm wide, acute or acuminate; the simple ones subulate, up to 4.5 cm long, with margin hyaline; petiole: short, expanded at the base, up to 4 cm long x 1-1.5 mm wide. Capitula: broadly campanulate or subglobose, solitary, radiate, 1.4-2 cm high x 1.7-5 cm wide at flowering and 1.3-2 cm high x 1.5-3 cm wide at fructification; peduncle: somewhat expanded at the base of the capitulum. Involucre: 2-3-seriate, 1-1.1 cm high x 1.5-2 cm wide, with 1-2 bracteoles at the base; outer phyllaries: 8-10,

subulate or linear, acute or acuminate, margin hyaline, 3-12 mm long x 0.5 mm wide; inner phyllaries: 1-2 rows, ovate, brown, scarios, obtuse, margin widely hyaline, irregular, 1-1.2 cm long x 2-3.5 mm wide. Receptacle: flat, alveolate. Paleae: linear, keeled, membranous, with veins and apex purple, acute, apically crenate, 6-13 mm long x 1 mm wide. Marginal florets: ligulate, 10-14, female; ligule: linear, pubescent, purple with the inner part white with dark veins, 10-nerved, 1.5-1.6 cm long x 2-2.5 mm wide; tube: 3.5-5 mm long, deeply 2-3-toothed, teeth acute, 3-5 mm long. Disc florets: perfect, purple, corolla tubular; limb: abruptly broadened, 5-lobed, pubescent, 4-5 mm long, lobes acute 1.5-2 mm long, pubescent; tube: 2.5 mm long. Anthers: obtuse at the base, 2.5-3 mm long; appendages cordate. Style branches with appendages of 4-5 mm in length, appendages covered by hairs on the external face; hairs simple, 1-2-seriate, 5-7 cells long. Cypselas linear, flattened, striate with the middle rib outstanding, black with the apex, base and wing yellow, glabrous, winged, 0.9-1.8 cm long x 1.5-2.5 mm wide, the marginal ones shorter. Pappus biaristate or null; aristae triangular, acute, erect to divergent, smooth, up to 1.5 mm long.

Phenology. Flowering from September to June.

Geographical distribution and ecology. Southern Paraguay (Departments of Cordillera and

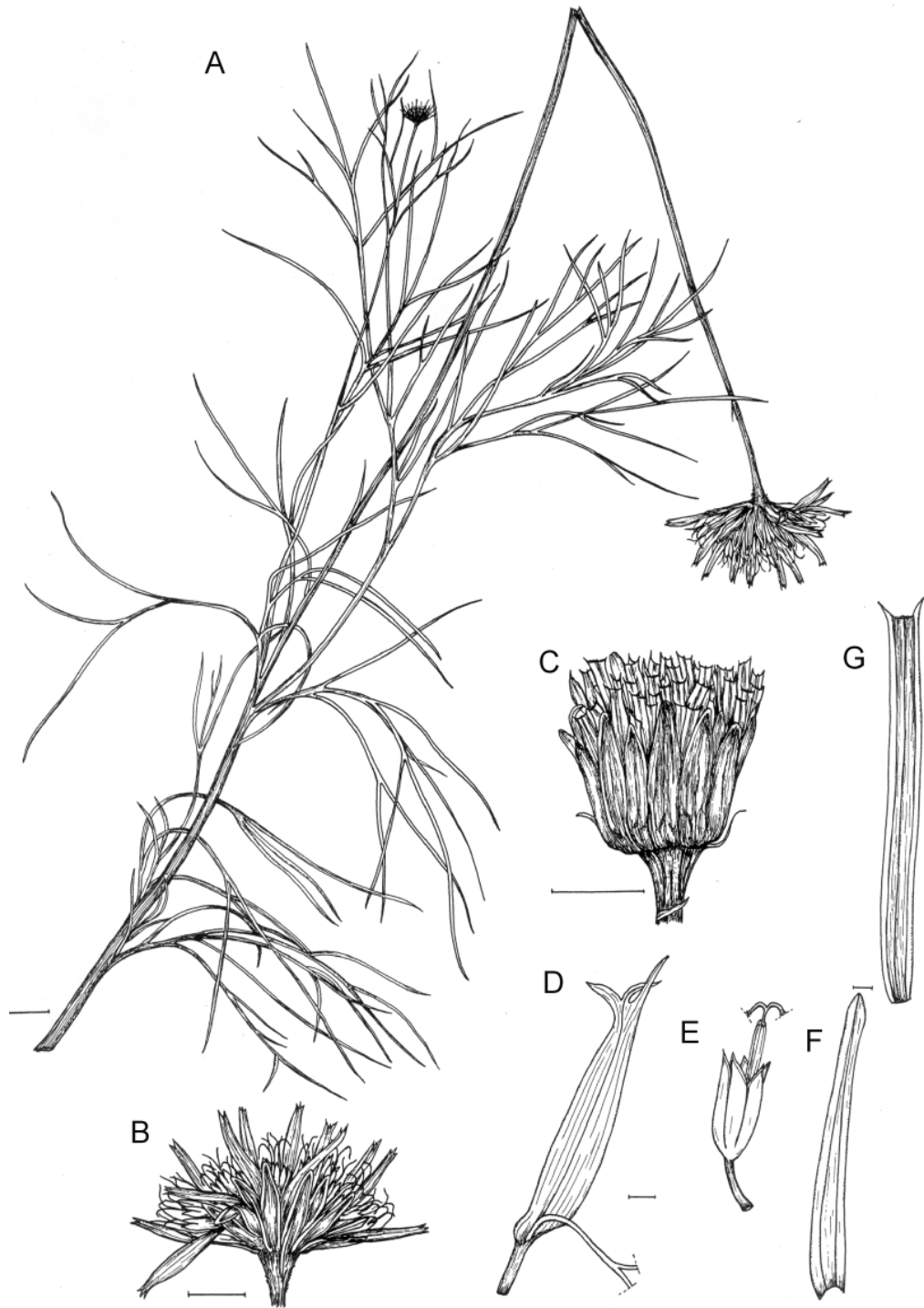


Fig. 1.- *Isostigma dissitifolium*. A: plant. B: capitulum in flower. C: capitulum with fruits. D: marginal flower. E: disc flower. F: palea. G: cypsela. A-B: from Hassler 6309 (NY). C-G: from Fiebrig 450 (GH). Scale bars: A-C = 1 cm; D-G = 1 mm.

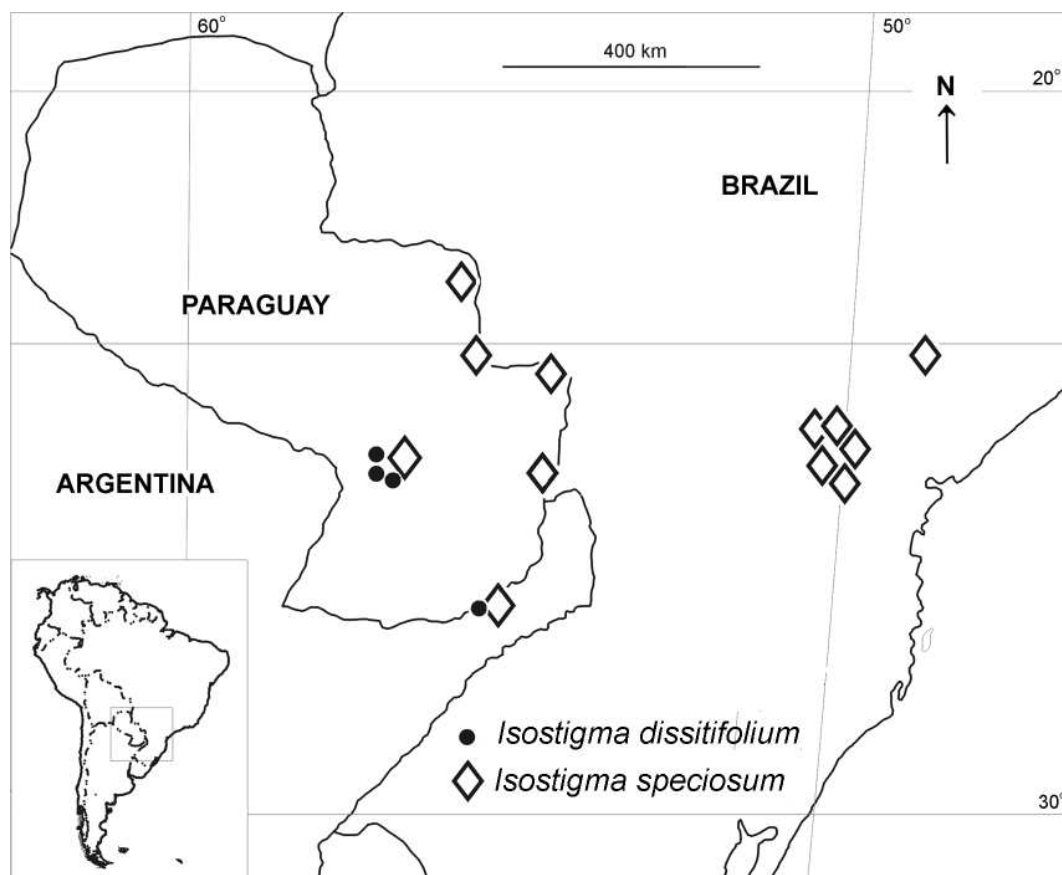


Fig. 2.- Map showing the distribution of *Isostigma dissitifolium* and *I. speciosum*.

Paraguari) and northeastern Argentina (Province of Misiones) (Fig. 2). With this record, the eastern boundary of *I. dissitifolium* distribution is extended, from 56°40'W to 55°30'W and the southern boundary from 25°S to 27°S. *Isostigma dissitifolium* grows upon hills, in rocky high places, grasslands and sandy fields.

Material examined

ARGENTINA. **Misiones.** Dept. Candelaria-San Ignacio: Campo entre Santa Ana y San Ignacio, I-1922, Molfino s.n. (F 672852).

PARAGUAY. **Cordillera.** Cordillera Central, Cerros de Tobatí, IX-1902, Hassler 6309 (BM, F, G, GH, NY; fotocopia: W); Cordillera de Altos, II-1898/1899, Hassler 3944 (G); Cordillera de Altos, XI-1902, Fiebrig 450 (BM, F, G, GH, US; fotocopias: RSA, W); Cordillera de Altos, Caacupé-Tobatí, XII-1936, Archer & Rojas 4894 (LP); along road between Caacupé and Tobatí, 2-I-

1937, Archer & Rojas 4894 (NY); Inter rupibus dunatae pr. Valenzuela, X-1942, Pavetti 9998 (AS); Itacurubí, X-1885/1895, Hassler 1074 (G); Mbocayá guazú-ty, 18-XII-1950, Schwarz 11118 (LIL); San Bernardino, X-1915, Hassler 1509 (G). Without locality, Hassler s.n. (G 8088/546); without locality and collector (G 8088/545).

Observations. *Isostigma fiebrigii* Hieron. ex Sherff, Bot. Gaz. 81 (3): 251, 1926, *nom. nud.*

According to Fiebrig (*in sched.*), the crumpled leaves smell like celery.

The specimens Archer & Rojas 4894 of LP and NY have different dates and details of collection. Because of that, they have been mentioned separately.

2. *Isostigma speciosum* Less., Linnaea 6: 515. 1831.

TYPE: "Brazil, Sello" (lectotype, B, designated



Fig. 3.- *Isostigma speciosum*. A: plant. B: xylopodium. C: entire leaf. D: pinnatisect leaf. E: capitulum in flower. F: capitulum with fruits. G: marginal flower without style. H: disc flower. I: palea. J: cypsel. A, C: from *Dusén 16444* (GH). B, D: from *Fiebrig 810* (RSA). E: from *Cruz et al. 80* (BHCB). F: from *Jörgensen 4806* (F). G: from *Dombrowski 1474* (LP). H-J: from *Montes 14903* (NY). Scale bars: A-F = 1 cm; G-J = 1 mm.

by Sherff, 1926: 256, probably destroyed; neotype, here designated, "Brasil, Paraná. Loc. Vila Velha. Obs. En campo cerca de la iglesia. Flores moradas. 16-I-1987, A. Krapovickas & C. L. Cristóbal 40922", CTES!; isoneotypes, F!, GH!). Fig. 3.

Isostigma peucedanifolium (Spreng.) Less. f. *discoidea* Hassl., Repert. Spec. Nov. Regni Veg. 14: 277. 1916. TYPE: Paraguay, Dept. Cordillera, "Cerros de Tobatí. 31-1-1903", *Fiebrig 810* (holotype, G 8088/575-569!; isotypes: AS!, BM!, F!, GH!, RSA, photocopy of isotype, BBB!).

Isostigma peucedanifolium (Spreng.) Less. f. *radiata* Hassl., Repert. Spec. Nov. Regni Veg. 14: 277. 1916. TYPE: Brazil, St. Mato Grosso do Sul, "1898/99. N° 5586 UNICUM. In campo Ipé-hú. Sierra Maracayu. Lect. Dec.", *Hassler 5586* (lectotype here designated, G 8088/570!; syntype: "Dr. E. Hassler. Plantae Paraguayenses. 1907-08. Itinera in Paraguaria septentrionali. N° 10366. UNICUM. Sierra de Amambay in campo siacese Punta Pará. Custos herbarii nostri T. Rojas leg. Mens. April", G!).

Perennial herbs or subshrubs, 0.6-1.2 m tall, with xylopodium. Stems simple, 1-2 per plant, erect, leafy at the base and bracteolate in the upper part (with more than 20 bracteoles), 2-3 mm wide, generally expanded at the base of the capitulum (4-7 mm wide). Bracteoles linear or subulate, acute, subobtusate or acuminate, margin scarious, glabrous or ciliate at the margin and/or back, the inferior ones up to 20 cm, gradually shorter and denser toward the apex. Leaves: rosulate, 8-45 cm long, entire or ternatisect, glabrous, long-petiolate, petiole canaliculate, from 1/2 to 2/3 of the total length, expanded at the base with a membranous margin; leaves deeply ternatisect or biternatisect: up to 8 leaflets, leaflets: ascendent, linear to subulate, 2-15 cm long x 0.5-2.5 mm wide, acute or acuminate; leaves entire: linear, canaliculate, acute, up to 1 mm wide. Capitula campanulate to subglobose, solitary, terminal, radiate or discoid, 1.3-2.3 cm high x 2.5-6 cm wide at flowering and 1.6-2 cm high x 3-4.2 cm wide at fructification. Involucre: 3-4-seriate, 1.4-2.5 cm high x 2.5-3.5 cm wide, glabrous; outer phyllaries linear or triangular, acute, margin scarious, sometimes ciliate, 0.5-1.3 cm long x 1-3 mm wide, similar to the stem bracteoles; inner phyllaries triangular to ovate, brown, scarious, margin hyaline

sometimes ciliate, acute, obtuse or rounded, apically crenate, 1.1-2.5 cm long x 1-4 mm wide. Receptacle convex, alveolate. Paleae linear to triangular, keeled at the base, membranous, veins and apex brown, acute, entire or apically crenate, somewhat ciliate, 1.5-1.7 cm long x 1-1.5 mm wide. Marginal florets ligulate, 15-20, female; ligule: linear, purple with the inner face yellow or white with dark veins, 14-nerved, 1.6-1.9 mm long x 2.5-4 mm wide, pubescent, 2-3-toothed; tube 2.5-3 mm. Disc florets: perfect, corolla tubular with abruptly broadened limb, 5-lobed, 4-7 mm long; lobes: acute, 3-4 mm long, pubescent on the outer face; tube 2-4 mm long. Anthers: obtuse at the base, 3-4 mm long; appendages cordate. Style branches with appendages of 5 mm long, appendages covered by hairs on the external face; hairs simple, 2-seriate, acute or rounded, 3-6 cells long. Cypselas linear-oblong, flattened, truncate at the apex, striate with 1-3 ribs outstanding, brown with hyaline wings, glabrous, 1.1-1.8 cm long x 2-3 mm wide. Pappus biaristate; aristae triangular to acicular, divergent to ascendent, smooth, rudimentary up to 2 mm long, one longer than the other.

Phenology. Flowering from November to March and fruiting from January to March.

Common names. "Cravo do campo", "Clavel de campo", "Clavelón".

Geographical distribution and ecology. Presently known from northeastern Argentina (Province of Misiones), southern Brazil (States of Mato Grosso do Sul, Paraná and São Paulo) and eastern Paraguay (Departments of Alto Paraná, Amambay, Caaguazú and Cordillera) (Fig. 2). With this record, the southern boundary of *I. speciosum* distribution is extended from 25°30'S to 27°20'S. *Isostigma speciosum* grows in "cerrado", hills, high fields, plateaus, slopes, valley boundaries, savannas, grasslands, "campos" and bordering forests; from 200-700 m elevation.; in dry and burned places. It can be scarce to locally abundant, and rebuds after fires.

Material examined

ARGENTINA. **Misiones:** Dept. San Ignacio: San Ignacio (Colonia), 12-III-1956, *Montes 14903* (NY).

BRAZIL. **Paraná.** Capão Grande, 7-III-1904, *Dusén 4345* (BM, SI), 3-II-1909, *Dusén 7676* (BM); Desvio

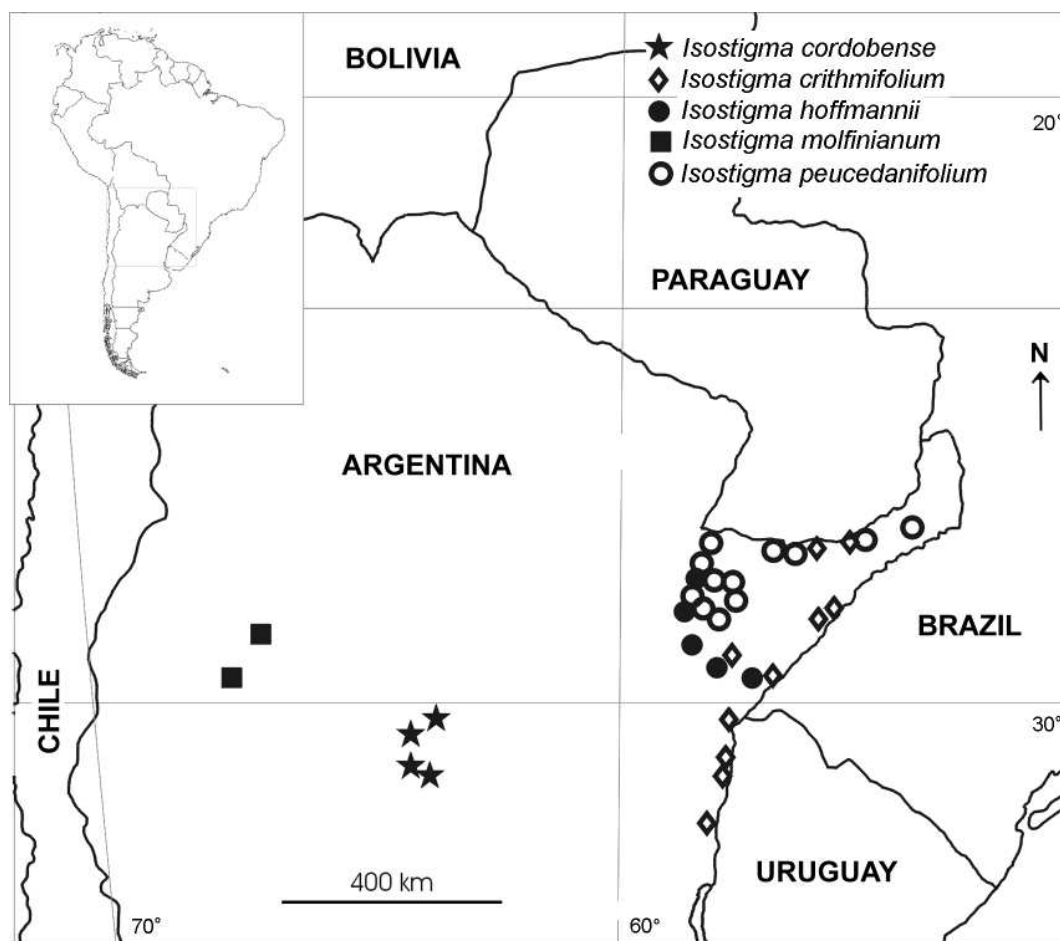


Fig. 4.- Map showing the distribution in Argentina of *Isostigma hoffmannii*, *I. molfinianum*, *I. peucedanifolium*, *I. crithmifolium* and *I. cordobense*.

Ribas, 17-XII-1911, *Dusén 11359* (GH); Estado do Café, km 70 PR, 7-II-1965, *Dombrowski 1474* (LP); Jaguaiaiva, 17-I-1915, *Dusén 16444* (F, GH, SI); Mun. Ponta Grossa, Vila Velha, 10-II-1960, *Pereira 5240* (F), 14-I-1964, *Pereira 8300 & Pabst 7575* (LP), 5-III-1970, *Koyama et al. 13847* (SP); Mun. Ponta Grossa, Rod. BR-277, km 522, próximo a Vila Velha, 3-II-1999, *Cruz et al. 80* (BHCB); Río Tibagi, 30-I-1959, *Hatschbach 5442*, hoja b (LIL). **São Paulo.** Itapetininga, 5-XI-1887, *Löfgren 16773* (NY, US).

PARAGUAY. **Alto Paraná.** Estancia Santa Elena, Reserva Abierta, NE de Hernandarias, zona Río Pytá, 2-I-1991, *Caballero Mármori 2009* (CTES). **Amambay.** Sierra de Amambay, 1907/1908, *Hassler 5586* (G 8088/571); Sierra de Amambay, Co. Torín, II-1922, *Rojas 4239* (LP). **Caaguazú.** Sierra de Maracayú, Yerbales, *Hassler 5586* (G 8088/572). Dept. unknown: Estancia Primavera, I-1932, *Jörgensen 4806* (F, MO, TEX). Without locality,

date and collector (AS 4239/349).

Observations: *I. speciosum* has a scent similar to honey or carnation.

This species is closely related to *I. peucedanifolium*, but *I. speciosum* has broader and more bracteolate stems than *I. peucedanifolium*, and the leaves of the latter are more divided. In some specimens, there is some overlap of these characters.

Some specimens (e.g., *Dusén 16444*, *Jörgensen 4806*, *Hatschbach 5442*) do not present the diagnostic character of a peduncle expanded at the base. This character shows some variation even within the same specimen.

Lessing (1831) did not cite a collection number or

any locality data for the type material collected by *Sello*. Sherff (1926) cited the *Sello* material deposited in B as the only type; therefore, I consider that material as the lectotype. But it could not be located at B, because it has been destroyed (Wallnöfer, pers. com.). There is not another specimen collected by *Sello* or duplicates of this material at the consulted herbaria. Therefore, it is necessary to designate a neotype.

In the description of *Isostigma peucedanifolium* f. *radiata*, Hassler (1916) mentioned two specimens from Paraguay: *Hassler 5586* and *Hassler 10366*. These specimens are syntypes. In G there are three sheets of *Hassler 5586* numbered as 570, 571 and 572, with different dates and places of collection. In his work Hassler referred to a previous work of Chodat (1901) when the locality is specified. With these data, I concluded that the specimen numbered as G8088/570 is the type material cited by Hassler. Besides, this specimen has a label with the inscription: "type". Therefore, I consider *Hassler 5586* as the lectotype and maintain *Hassler 10366* as a syntype. The collection data of the rest of the specimens numbered as *Hassler 5586* and not included in the type material are detailed in the material examined.

3. *Isostigma hoffmannii* Kuntze

Sherff (1926) mentioned that this species inhabits the Province of Santiago del Estero, based on a Lorentz specimen deposited in B; however, it was not possible to locate this specimen. Ariza Espinar (1969), Cabrera (1974) and Sáenz (1999) maintain this distribution based on Sherff's work but they did not cite any additional reference material. The same situation occurs for the Province of San Juan, mentioned by Sáenz (1999), but without reference material.

In the present work, the distribution of *I. hoffmannii* for Argentina can be confirmed only in the Province of Corrientes (Fig. 4).

Material examined

ARGENTINA. **Corrientes.** *Dpto. Bella Vista:* 3 km W del Paso Torre de Río Santa Lucía, 18-VI-1970, *Carnevali 2194* (CTES, CTES 28652). *Dpto. Empedrado:* Ea. "El Plata", 6-XII-1977, *Pedersen 12015* (CTES, SI). *Dpto. Lavalle:* Ruta 12 km 753, 27-II-1961, *Pedersen 5821* (CORD, LL, LP, NY; fotografía: B). *Dpto. Mercedes:* Mercedes, 7-II-1925, *Parodi 6288* (GH). *Dpto. Paso*

de los Libres: Ruta de Mercedes a Paso de los Libres, cerca de Miriñay, 5-XI-1976, *Pedersen 11365* (CTES, SI).

4. *Isostigma molfinianum* Sherff

This species is endemic to Argentina. Until now, it has been cited only for the Province of La Rioja (Sherff, 1931; Ariza Espinar, 1969, 2000; Sáenz, 1999), but during the revision of the genus, material from the Province of Catamarca was found. Therefore, the distribution of *I. molfinianum* is extended northwards (Fig. 4).

Material examined

ARGENTINA. **Catamarca.** Without locality, I-1910, *Lillo s/n* (F); without locality, I/II-1910, *Spegazzini 33185* (BAB); without locality, 1-II-1910, *Spegazzini 33306* (F). **La Rioja.** *Dpto. Capital:* 20 km al norte de Carrizal, entre Mazán y La Rioja, 4-VII-1933, *Hayward 8612* (BA). *Dpto. Chilecito:* Cuesta de Catinzaco, 30-I-1906, *Kurtz 13369* (CORD); Quebrada Totoral, cerca de Catinzaco, *Bodenbender s.n.*, II-1896 (CORD, GH, LP).

5. *Isostigma peucedanifolium* (Spreng.) Less.

Cabrera (1974) mentioned that this species had been cited for the Province of Entre Ríos by several authors. Sáenz (1999) cited *I. peucedanifolium* for the Provinces of Corrientes, Misiones and Entre Ríos. But, they did not cite specimens seen or bibliographic references. In the course of this work, distribution of *I. peucedanifolium* in Argentina is confirmed in the Provinces of Corrientes and Misiones (Fig. 4).

Material examined

ARGENTINA. **Corrientes.** *Dpto. Bella Vista:* Bella Vista, en la barranca del río Paraná, 1-XII-1945, *Boelcke 1565* (SI). *Dpto. Berón de Astrada:* Itá Ibaté, 15 km al W, Ayo. Santa Isabel, 16-I-1977, *Schinini 14082* (CTES, F). *Dpto. Capital:* lomada arenosa del Ayo. Riachuelo, 13-II-2004, *Peter 243* (BBB). *Dpto. Concepción:* Cerro Puitá, 14 km al E de la ruta, 28°35'S, 58°04'W, Ea. Tranquera de Hierro, 66 km al NE de Chavarría, camino a Concepción, 3-XII-1996, *Arbo, Cáceres & Maruñak 6966* (CTES). *Dpto. Empedrado:* Empedrado, Ea. Tres Marías, cercano al río Paraná, 59°W, 27°50'S, 20-III-1998, *Schinini 34383* (CTES, NY). *Dpto. General Paz:* 15 km al E de Itá Ibaté, ruta 12, Ayo. Santa Lucía, 9-IV-1972, *Mroginski, Schinini & Pueyo 753* (CTES). *Dpto. Goya:* camino a Las Mercedes, 14-XII-1948, *Cabrera 10535* (LP). *Dpto.*

Ituzaingó: Villa Olivari, Establecimiento Forestal, Reserva, 10-II-2004, *Peter* 240 (BBB). *Dpto. Lavalle*: Cerrito ruta 152 y Arroyo Batel, 21-XI-1979, *Schinini, Vanni & Norrman* 18867 (CTES, OS). *Dpto. Mburucuyá*: Ea. Santa Teresa, 15-XII-1951, *Petersen* 1392 (MO). *Dpto. San Cosme*: Paso de la Patria, near cementery, 26-XI-1978, *Renvoize* 3610 (CTES, MO, NY; fotografía: B). *Dpto. Saladas*: Pago Alegre, 6-XII-1949, *Schwarz* 9016 (LIL). *Dpto. San Miguel*: Ea. Juan Porajhu, ruta 17, 18 km ruta 12, potrero Tres Marías, 6-XII-1992, *Tressens, Beccaceci & Vanni* 4270 (CTES, FCQ). *Dpto. San Roque*: Ruta 17, 32 km SW del desvío a Santa Rosa, 1-XII-1983, *Tressens, Cáceres, Ferrucci, Schinini & Vanni* 2166 (CTES). **Misiones**. *Dpto. Caingúas*: Campo Grande, 13-III-1948, *Noratti* 166 (BAB). *Dpto. Candelaria*: Loreto, 25-I-1933, *Grüner* 1296 (LP, TEX). *Dpto. San Ignacio*: San Ignacio, campo vecino a la casa de Horacio Quiroga, 4-II-1995, *Krapovickas & Cristóbal* 46452 (CTES).

6. *Isostigma cordobense* Cabrera

This species is endemic to Argentina. Until now it has been cited only for the Province of Córdoba (Sherff, 1935; Cabrera, 1959; Ariza Espinar, 1969, 2000; Sáenz, 1999) (Fig 4).

Material examined

ARGENTINA. **Córdoba**. *Dpto. Capital*: Córdoba (campo de la Escuela de Agricultura), V-1905, *without collector* 14449 (F 672850). *Dpto. Colón*: Saldán, lomas frente al balneario San Remo, 22-XI-1964, *Ariza Espinar* 1969 (CORD, LP). *Dpto. Ischilín*: Sierras al este de Dean Funes, IV-1951, *Sayago* 701 (CORD, LP). *Dpto. Punilla*: Valle de Punilla, Capilla del Monte, cerca del Co. Uritorco, 23-XI-1917, *Hosseus* 1054 (CORD). *Dpto. Tulumba*: Co. Sauce Punco, 18-XII-1947, *Meyer* 13065 (CORD).

7. *Isostigma crithmifolium* Less.

Cabrera (1974) and Sáenz (1999) mentioned that this species had been cited for the northeastern Argentina, reaching the Province of Entre Ríos. In this work, this distribution is confirmed (Fig. 4).

Material examined

ARGENTINA. **Corrientes**. *Dpto. Gral. Alvear*: Torrent F.C.N.E.A., 2/10-XII-1936, *Spegazzini* 272 (CTES). *Dpto. Ituzaingó*: 25 km E de Ituzaingó, ruta 12, 15-I-1966, *Krapovickas & Cristóbal* 11995 (CTES). *Dpto. Mercedes*: M. I. Loza (Est. Solari), Estancia "El Cerro" del Sr. Brochon, 15-XII-1960, *Royo* 169 (CTES, MO). *Dpto. Monte Caseros*: Ruta 127, próximo a Monte

Caseros, 2-XII-1950, *Nicora* 5669 (CTES, LP). *Dpto. Paso de los Libres*: Est. "Santa Ana", rincón de S. Ana, 21 km al E de Bonpland, costa Río Uruguay, 19-XI-1973, *Lourteig, Schinini & Maruñak* 2809 (CTES). *Dpto. Santo Tomé*: ruta 40, 14 km S de Santo Tomé, 20-XI-1973, *Lourteig, Schinini & Maruñak* 2912 (CTES, LP). **Entre Ríos**. *Dpto. Colón*: Parque Nacional El Palmar, 22-XI-1981, *Cusato* 876 (CTES). *Dpto. Concordia*: Concordia, 24/30-XI-1936, *Spegazzini* 99 (BAB). *Dpto. Federación*: Salto Grande, 18-IV-1960, *Burkart & Gamarro* 21965 (SI). **Misiones**. *Dpto. Capital*: Itaimbé, 30-I-1935, *Rodríguez* 520 (BA).

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