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# Three New Species of *Prosopidastrum* (Mimosaceae) from Argentina

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**ABSTRACT.** The genus *Prosopidastrum* (Mimosaceae) was described by Burkart on the basis of two species: *P. mexicanum* (Dressler) Burkart from Mexico with fruits 12 mm wide, dehiscing by two valves dividing into 1-seeded segments, these separating from a persistent replum, with leaflets 4–8 × 2–4 mm, and *P. globosum* (Gillies ex Hooker f. & Arnott) Burkart from Argentina, which has lomentos 3–4 mm wide and leaflets 0.5–2 × 0.5–1 mm. Burkart noted the Argentinean *P. globosum* as polymorphic. Based on fieldwork, analysis of herbarium specimens, and palynological studies, we concluded that three entities new to science must be described: *P. dehiscens*, *P. angusticarpum*, and *P. gracile*. The new species are restricted to Argentina and are mostly allopatric, but rarely locally sympatric. Characters of fruit, flowers, pollen, and leaves identify each new species. A key to differentiate all the known species is provided, as well as a key to identify the Argentinean species based on pollen morphology.

**RESÚMEN.** El género *Prosopidastrum* (Mimosaceae) fue descrito por Burkart con la base en dos especies: *P. mexicanum* (Dressler) Burkart de México con frutos de 12 mm de ancho, dehiscente por dos valvas y desarticulándose en segmentos uniseminados que se desprenden de un replum persistente, con folíolos de 4–8 × 2–4 mm, en tanto que *P. globosum* (Gillies ex Hooker f. & Arnott) Burkart presenta lomentos de 3–4 mm de ancho y folíolos de 0.5–2 × 0.5–1 mm. Burkart advirtió que la especie argentina era muy polimórfica. Después de realizar numerosas observaciones de campo, análisis de ejemplares de herbario y un estudio palinológico, arribamos a la conclusión de que tres nuevas entidades para la ciencia, diferentes de las ya conocidas para el género, deben ser descritas: *P. dehiscens*, *P. angusticarpum* y *P. gracile*. Las tres nuevas especies se distribuyen exclusivamente en Argentina y son mayormente alopátricas, raramente en ciertas localidades son simpátricas. Las características del fruto, las flores, las hojas y el polen permiten identificar a cada nueva especie. Se proporciona una clave para diferenciar a todas las es-

pecies conocidas de *Prosopidastrum*, así como una clave para diferenciar a las especies argentinas con base en sus características palinológicas.

**Key words:** Argentina, Mimosaceae, *Prosopidastrum*.

During a revision of the genus *Prosopidastrum* for *Flora Fanerogámica Argentina* (Museo Botánico de Córdoba–Missouri Botanical Garden) we observed that several entities have been included under the name *Prosopidastrum globosum*. The genus was established by A. Burkart (1964), who studied exsiccatae from Mexico (Baja California) and Argentina (Occidental and Patagonian areas). He founded the new genus on the basis of fruit characters.

*Prosopidastrum mexicanum* is endemic to the Llanos de San Agustín area (Baja California, Mexico). Sensu Burkart (1964), *P. globosum* grows in Argentina from Catamarca province to northern Chubut; he pointed out that this species is polymorphic.

We studied herbarium specimens and type material analyzed previously by Burkart, and observed that some exsiccatae were incomplete or mixed collections. Subsequently, we carried out fieldwork studying topotypes, and floral, pollen, and fruit morphology. We therefore conclude that three entities exist separate from *P. globosum* and *P. mexicanum*, exhibiting different plant morphologies, geographic distributions, and pollen morphology.

## DESCRIPTION OF THE NEW SPECIES

**1. *Prosopidastrum dehiscens* R. A. Palacios & Hoc, sp. nov.** TYPE: Argentina. San Juan: Depto. Calingasta, Ruta Provincial 141, de Tocola a Villanueva, ca. 7 km al N de Villanueva, 12 Feb. 1994, R. A. Palacios, P. S. Hoc & M. A. Agulló 2550 (holotype, BAFC; isotypes, MO, SI). Figure 1A–C.

Haec species a *P. globoso* ramis hornotinis rectis, foliolis 2–4 × 0.8–2 mm, calyce pubescenti, non hirsuto; petalis dimidio superiore pilosis, non hirsuto-pubescenti,

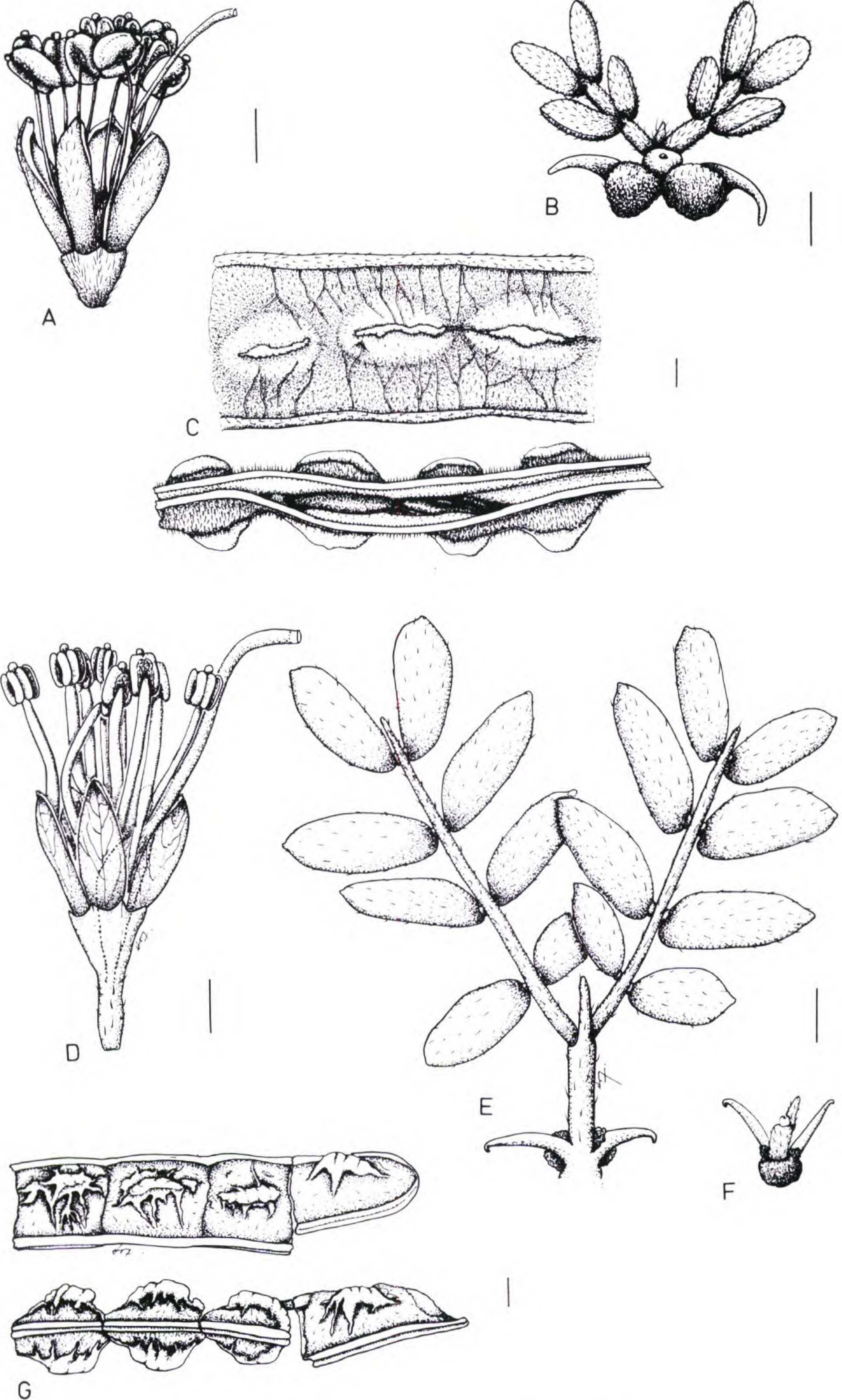


Figure 1. A–C, *P. dehiscens* R. A. Palacios & Hoc. —A. Flower. —B. Leaf, at the base, stipules divergent and recurved with their glandular bases, between them the petiolar gland. —C. Fruit, seen from above, and lateral view

Table 1. Distinguishing features of Argentinean *Prosopidastrum* species.

Character	<i>P. dehiscens</i>	<i>P. angusticarpum</i>	<i>P. gracile</i>	<i>P. globosum</i>
Young branches	Rigid, not prickly	Divaricate, prickly	Fastigiate, not prickly	Flexuose, not prickly
Stipules	Deciduous, recurved or straight, not adpressed, not prickly	Persistent, recurved, not adpressed, prickly	Deciduous, straight, adpressed, not prickly	Deciduous, straight, adpressed, not prickly
Glandular base of stipules	Persistent glandular, hemispherical	Persistent glandular, connate	Persistent auriculate, ovate-triangular gland	Persistent glandular, hemispherical
Pinnae	1-foliolate, to 3 pairs of leaflets	Never 1-foliolate, 2–4 pairs of leaflets	1-foliolate	1-foliolate, to 3 pairs of leaflets
Leaflets	Thickened	Papyraceous	Thickened	Thickened
Flowers	Sessile	Pedicellate	Pedicellate	Sessile
Calyx	Thickened, pubescent	Membranous, glabrous	Membranous, glabrous	Thickened, hirsute
Petals	Thickened, pilose at distal portion, cucullate, incurved	Membranous, glabrous, recurved at the apex	Membranous, glabrous, recurved at the apex	Thickened, pilose at distal portion, incurved at the apex
Stamen length	4.5–6.5 mm	(5)6–7 mm	6–10 mm	3.5–6 mm
Fruit	40–70 × (4)5–8 mm, dehiscent by ventral suture, spreading, chestnut brown, pubescent	40–75 × 3–5 mm, indehiscent, spreading, grayish brown, pilose	90–210 × 5–8 mm, indehiscent, pendulous, straw-colored, pubescent with adpressed villous hairs	60–70 × 3–4 mm, indehiscent, pendulous, chestnut brown, pubescent with white and not adpressed hairs

legumine in sutura ventrali dehiscente 40–70 × (4)5–8 mm differt.

Shrub 0.5–3 m tall; hornotinous (this year's growth) branches straight, rigid, pubescent, 3–4 mm diam. at base, not prickly, spreading at 20–90° to the axis, pubescent. Stipules 0.5–2 mm long, spinose, straight to recurved, divergent, pubescent, with persistent hemispherical glandular base. Leaves pubescent on both surfaces; petiole 0.5–1 mm long; petiolar gland circular and sessile; pinnae 1-foliolate or containing up to 3 pairs of leaflets and 0–5 mm long; leaflets 2–4 × 0.8–2 mm, thick, oblong to elliptic, obtuse at apex, truncate at base. Capitulae 10–15 mm diam., with (13)25–30 flowers; peduncle 8–13 mm long, pubescent; bracts broad and lanceolate, hirsute abaxially. Flowers sessile; calyx 1–1.3 mm long, white, green toward the apex, thick, tubular, pubescent, with very shallow triangular teeth; corolla 3.5–3.8 mm long, petals white in basal third, otherwise green, thick, incurved, cucullate, pilose abaxially (distal portion), with glandular papillae at apex; androecium 4.5–6.5 mm long, filaments white, short (exceeding petals for 1–2 mm), anthers broadly

elliptic; ovary green, hirsute. Fruits 1 to 2 per infructescence, dehiscent by ventral suture, splitting partially between the seeds, 40–70 × (4)5–8 mm, spreading, straight, subwoody and acute at the apex, chestnut brown, pubescent; umbos contiguous with crests generally connate, semicircular to trapezoid in outline as seen from ventral suture. Pollen grains 3-colporate, spherical, amb circular. Exine perforate, pits 0.88 μm diam., surrounded by other pits 0.3 μm diam. (mean value). Colpi membrane granulate, borders granulate, irregular; os with granulate membrane. Apocolpi perforate. Figure 3A, B. Table 2.

This species differs from *P. globosum* in having this year's growth branches straight rather than flexuous and 1–2 mm thicker in diameter than in *P. globosum*; leaflets 2–4 × 0.8–2 mm, mostly twice the length and width of those in *P. globosum*; a pubescent calyx green toward the teeth, not brown toward the apex as in *P. globosum*; a corolla white in the basal third and green elsewhere, with petals cucullate, not straight and incurved at the apex as occur in *P. globosum*, and pilose in the distal half

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showing ventral suture. Original drawings from R. A. Palacios et al. 2550 (BAFC, holotype). D–G, *P. angusticarpum* R. A. Palacios & Hoc. —D. Flower. —E. Leaf. —F. Stipules, with connate glands at base, and intermediate petiolar gland. —G. Fruit, seen from above and lateral view showing ventral suture. Original drawings for E, F, G from Hoc et al. 371 (BAFC, paratype) and for D from R. A. Palacios et al. 1803 (BAFC, paratype). A, B, D, E, F, scale bar = 1 mm. C, G, scale bar = 1 mm.

Table 2. Distinguishing pollen features of Argentinean *Prosopidastrum* species.

Character	<i>P. gracile</i>	<i>P. globosum</i>	<i>P. dehiscens</i>	<i>P. angusticarpum</i>
Apocolpi	Verrucate with pits	Verrucate or nonexis- tent	Perforate and/or per- fossulate	Perforate and/or per- fossulate
Colpi membrane	Verrucate, with granu- lar and verrucate borders	Smooth, with verrucate and granulate bor- ders	Granulate, with granu- late and irregular borders	Smooth or scarcely granulate, borders smooth
Sculpture of apo- colpi	Verrucate with pits	Verrucate or nonexis- tent	Perforate	Perforate and/or per- fossulate
Sculpture of ex- ine	Perforate with pits 0.24 $\mu\text{m}$ diam., sur- rounded by few pits <0.1 $\mu\text{m}$ diam.	Verrucate, perforate, with pits 0.47 $\mu\text{m}$ diam. and perfossu- late with fossulae 1.52 $\mu\text{m}$ long	Perforate, with pits 0.88 $\mu\text{m}$ diam., sur- rounded by scarce pits 0.3 $\mu\text{m}$ diam.	Perfossulate, with fos- sulae 1.2 $\mu\text{m}$ long and perforate with pits 0.6 $\mu\text{m}$ diam.
Amb	Circular	Semiangular	Circular	Semiangular
Apertures	Grains 3-colporate	Grains 3-colporate or 3- to 4-syncolporate	Spherical	Oblate

abaxially; an ovary hirsute and green, not sericeous and red as in *P. globosum*; a fruit dehiscent by ventral sutures, with umbos contiguous along the generally connate crest, not a loment as seen in *P. globosum* (Table 1).

**Distribution.** Rocky soils of the sub-Andean mountains, between 1400 and 2200 m (Prov. of San Juan and Mendoza). In two localities the populations of *P. dehiscens* grow with others of *P. globosum* (Fig. 4), but we observed that hybridization does not occur and the individuals can be assigned to one species or the other.

**Paratypes.** ARGENTINA. **San Juan:** Depto. Calingasta, Ruta Provincial 141 de Tocota a Villanueva, ca. 7 km al N de Villanueva, Jan. 1997, R. A. Palacios et al. 2771 (BAFC). **Mendoza:** Depto. San Carlos, La Jaula, 27 Nov. 1977, R. Cordo & T. Ferrer 77. d. 50 (SI); La Faja, 10 Nov. 1942, A. Burkart et al. 14143 (SI); Depto. San Rafael, Sierra Pintada, camino a la cuesta del Agua de Los Terneros, 22 Dec. 1960, A. Ruiz Leal 2572 (SI); San Rafael entre Malalhue y Chihuido, 1400–1480 m s. m., 27 Jan. 1941, A. Ruiz Leal 7399 (SI); entre Cuesta de los Terneros y Ayo. Pavón, H. A. L. 1463 (BA).

**2. *Prosopidastrum angusticarpum* R. A. Palacios & Hoc, sp. nov.** TYPE: Argentina. La Pampa: Loventué, entre El Durazno y Carro Quemado, 14 Feb. 1993, P. S. Hoc, R. A. Palacios & M. A. Agulló 369 (holotype, BAFC; isotypes, MO, SI). Figure 1D–G.

Haec species a *P. globoso* (Gillies ex Hooker f. & Arnot) Burkart ramis hornotinis pungentibus, divaricatis non flexuosis, stipulis persistentibus spinosis, recurvis, foliis papyraceis, floribus non sessilibus, pedicellis 0.5–2 mm longis, calyce membranaceo, glabro, petalis membranaceis, glabris, apice recurvo atque lomento patente piloso umbonibus a sutura visis cristis lobulatis differt.

Shrubs 1.2–1.5 m high. Hornotinous branches rigid, prickly, straight to recurved, spreading at 60–90° to the axis, divaricate, 2–3 mm diam. at base, puberulous in the furrows. Stipules 1–2.5 mm long, persistent, divergent, recurved, puberulous, with connate subhemispherical glandular bases. Leaves puberulous; petiole 0.5–2 mm long; pinnae 2–4 pairs, 3–10.5 mm long; leaflets 1–5 × 0.5–2 mm, papyraceous, oblong-elliptic. Capitulae 15–20 mm diam., with ca. 16 flowers; peduncle 7–15 mm long, puberulous, trichomes adpressed; bracts rhombic to ovate, cucullate, hirsute abaxially. Pedicel 0.5–2 mm long, puberulous; calyx yellowish white, 1–1.5 mm long, cupular, glabrous, membranous, with triangular teeth; corolla yellowish white, 3–4 mm long, glabrous, membranous, petals straight with recurved apex bearing glandular papillae; androecium (5)6–7 mm long, ca. twice as long as petals, filaments white, anthers yellow and oblong, ovary with adpressed pubescence. Loment, 3–7 per inflorescence, (36)40–75 × 3–4.5 mm, spreading, with straight or slightly sinuous margins, pilose, grayish brown, opaque; joints 9–18 per loment, 3.5–6 mm long × 3–5 mm wide, reticulately nerved; umbo with crests lobulated and trapezoidal or semicircular as seen from the suture. Pollen grains 3-colporate, oblate, amb semiangular. Exine perfossulate (fossulae 1.2  $\mu\text{m}$  long.) and perforate (pits 0.6  $\mu\text{m}$  diam.). Colpi membrane smooth or scarcely granulate, borders smooth; os with granulate membrane. Apocolpi perforate and/or perfossulate. Figure 3C, D. Table 2.

This species differs from *P. globosum* in having branches that are divaricate and prickly (vs. flex-

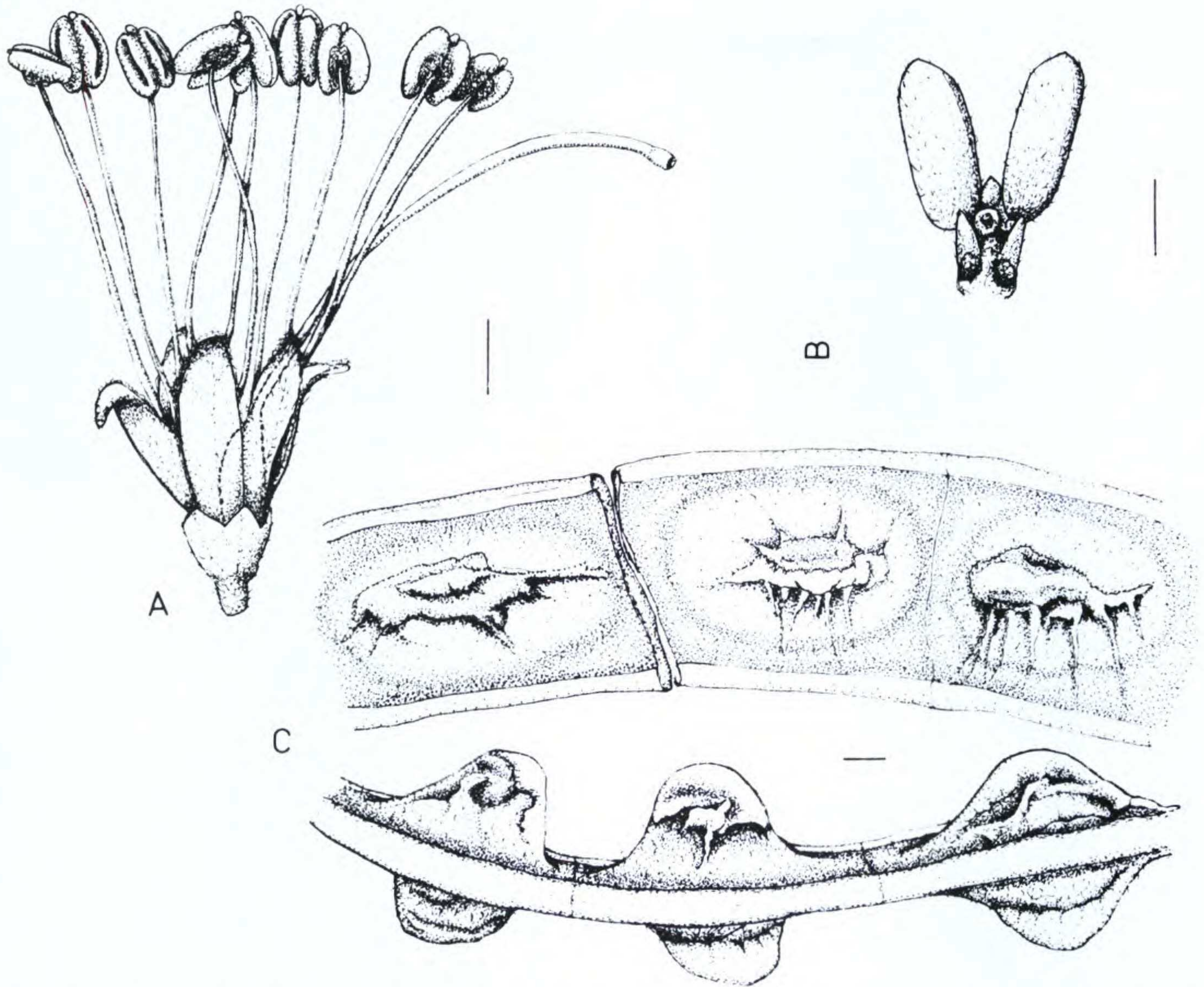


Figure 2. *P. gracile* R. A. Palacios & Hoc. —A. Flower. —B. Leaf, at the base, stipules straight, adpressed with their persistent glandular bases. —C. Fruit, seen from above and lateral view showing ventral suture. Original drawings from P. S. Hoc 368 (BAFC, holotype). A, B, scale bar = 1 mm; C, scale bar = 1 mm.

uose as in *P. globosum*); stipules that are persistent, spinose and with connate glandular bases (vs. stipules that are not spinose and the glands that are not connate in *P. globosum*); leaflets that are papraceous (vs. thick and pubescent as in *P. globosum*); flowers with pedicels 0.5–2 mm long, never sessile as in *P. globosum*; a calyx and corolla that are yellowish white, membranaceous and glabrous (vs. brown toward the apex and thickened as in *P. globosum*); petals with recurved apex (vs. incurved as in *P. globosum*); an androecium approximately twice the length of the corolla (vs. scarcely exceeding its length as in *P. globosum*); a pubescent green ovary (vs. red, sericeous as in *P. globosum*); a spreading, pilose loment that is grayish brown, and umbos with lobulate crests (vs. lomentum pendulous, chestnut-colored, with pubescence not adpressed, and umbos without crests in *P. globosum*) (Table 1).

*Distribution.* Thin, stony soils with calcareous

outcrop (La Pampa and northern Río Negro; Fig. 4).

*Paratypes.* ARGENTINA. **San Luis:** Depto. La Capital, Estancia San Martín del Alto Negro, ca. del casco, 19 Dec. 1968, *Anderson et al. s.n.* (I.N.T.A. Va. Mercedes 684, SI); Gobernador Dupuy, entre Anchorena y Nueva Galia, 18 Jan. 1951, *A. Ragonese & B. Piccinini 7568* (BAB). **La Pampa:** Depto. Loventué, al sur de Victorica, 14 Jan. 1951, *R. Pérez Moreau & T. Perrone s.n.* (BA 30/097); entre El Durazno y Carro Quemado, 14 Feb. 1993, *P. S. Hoc et al. 371* (BAFC); Depto. Lihué Calel, Sierra de Lihué Calel, 30 Nov. 1959, *N. Troncoso et al. 20607* (SI), 7 Nov. 1972, *Del Puerto & Marchesi 11799* (SI), 24 Nov. 1941, *A. Castellanos s.n.* (BA 37/492), 21 Dec. 1947, *A. Krapovickas 3618* (BAB); Depto. Utracán, General Acha, 10 Jan. 1944, *A. T. Hunziker 4158* (SI); Estancia "Las Acacias", entre Acha y Chachaunanardi, 15 Feb. 1958, *F. Vervoorst 5880* (BAB). **Prov. Río Negro:** Depto. General Roca, Paso Córdoba, 7 Nov. 1972, *E. M. Zardini & R. Kiesling 84* (SI); Depto. Pichi Mahuida, Ruta n° 251, entre Río Colorado y Gral. Conesa, entre km 60 y 70, 25 Jan. 1990, *R. A. Palacios et al. 1803* (BAFC).

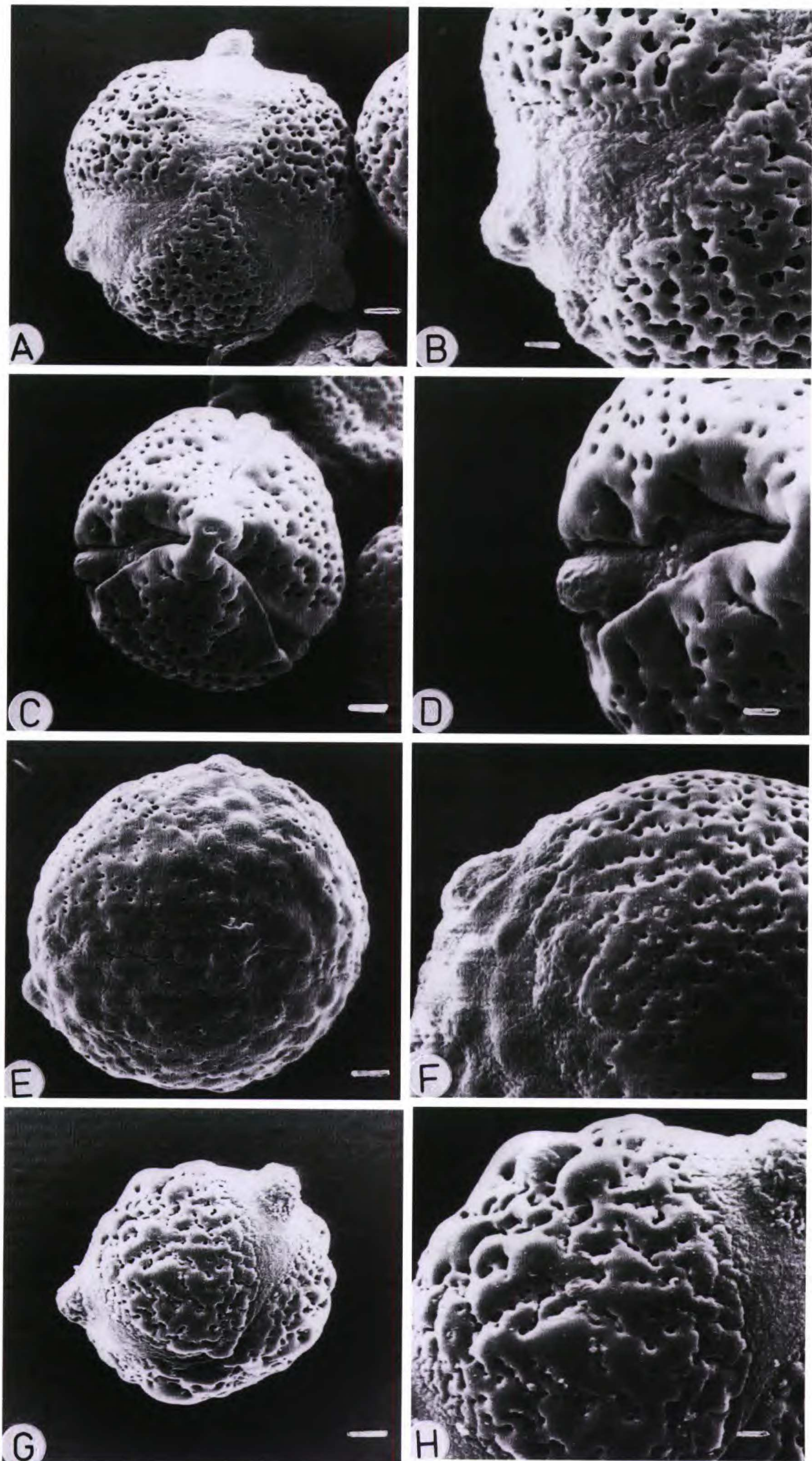


Figure 3. Pollen morphology. *P. dehiscens*:—A. Polar view (bar = 5  $\mu\text{m}$ ). —B. Colpus, os membrane and tectum sculpture (bar = 2  $\mu\text{m}$ ). *P. angusticarpum*:—C. Polar view (bar = 5  $\mu\text{m}$ ). —D. Colpus, os membrane, tectum sculpture

**3. *Prosopidastrum gracile*** R. A. Palacios & Hoc, sp. nov. TYPE: Argentina. Mendoza: General Lavalle, 5 km al sur del límite con San Juan, 13 Feb. 1993, R. A. Palacios, P. S. Hoc & M. A. Agulló in P. S. Hoc 368 (holotype, BAFC; isotypes, MO, SI). Figure 2.

Haec species a *P. globoso* (Gillies ex Hooker f. & Arnott) Burkart ramis hornotinis fastigiatis, gracilibus, non flexuosis, stipulis non pungentibus, rectis adpressis, basi auriculatis, glandula ovato-triangulari persistente praeditis, pinnis 1-foliolatis, capitula 17–20 mm diam., floribus non sessilibus, pedicellis 0.1–0.5 mm longis, calyce membranaceo, puberulo, petalis membranceis rectis apice recurvis dorso puberulis marginibus in tertia parte apicali papillis glandulosis ornatis, atque lomento (35)90–210 × 5–8 mm stramineo, pubescentia villosa adpressa vestito differt.

Shrubs 1.5–2 m high; hornotinous branches fastigiatae, slender, not prickly, 1–2 mm diam. at base, spreading at 15–50° to the axis, puberulous in furrows. Stipules 1–2 mm long, straight, adpressed, pubescent, auriculate, with a persistent ovate-triangular gland at the base. Leaves pubescent; petiole 0.5–1 mm long, gland stipitate, ovate to circular; pinnae 1-foliolate; leaflets 1–3 × 0.5–1 mm, elliptic to oblong, thickened, obtuse at apex. Capitulae 17–20 mm diam., with 13 to 26 flowers; peduncle 10–13 mm long, pubescent; bracts ovate-rhombic, hirsute-villose abaxially; pedicels 0.12–0.5 mm long. Calyx creamy white, 1.5 mm long, membranous, cupular, puberulous with triangular teeth; corolla creamy white, 3–4 mm long, membranous, petals straight with recurved apex, puberulous abaxially, with marginal glandular papillae on apical third; androecium 6–10 mm long, more than twice the length of petals, filaments white, anthers yellow, elliptical; ovary adpressed pubescent. Lomenta 1 to 7 per head, (35)90–210 × 5–8 mm, pendulous, straw-colored, straight to slightly arcuate, with margins straight to slightly sinuous, with adpressed villous pubescence; joints (2)11 to 19 per loment, 7–10 × 5–8 mm, umbos with triangular crests, trapezoidal or semielliptical as viewed from suture. Pollen grains 3-colporate, oblate, amb circular. Exine perforate, with pits 0.24 μm diam., surrounded by a few pits < 0.1 μm diam. Colpi membrane verrucate, borders granular and verrucate; os with annulus, membrane granulate. Apocolpi verrucate and with pits. Figure 3E, F. Table 2.

This species differs from *P. globosum* in having branches that are fastigiatae, slender, not flexuose; stipules that are not spinose, but adpressed and auriculate at the base with ovate-triangular glands (vs. stipules spinose, divergent, and straight to recurved at the base with hemispherical-shaped glands in *P. globosum*); pinnae always 1-foliolate (vs. 1–3 paired); capitulae 17–20 mm diam. (vs. 8–15 mm diam. in *P. globosum*); pedicels 0.1–0.5 mm long (vs. flowers sessile in *P. globosum*); calyx and corolla creamy white, membranous, puberulous abaxially (vs. calyx white and brown toward the apex and thickened, the corolla green toward the margins and thickened in *P. globosum*); petals recurved at apex with glandular papillae along the distal third margin (vs. petals incurved at the apex and with glandular papillae only at the apex in *P. globosum*); stamens more than twice the length of the petals (vs. stamens scarcely exceeding the length of the corolla in *P. globosum*); an ovary that is pubescent and green (not red and sericeous as in *P. globosum*); lomenta straw-colored, with adpressed villous pubescence, segments 7–10 × 5–8 mm and umbos with crests (vs. lomenta chestnut-brown, with spreading pubescence, segments 4–5 × 3–4 mm and umbos without crests in *P. globosum*) (Table 1).

*Distribution.* Endemic to the sand dunes in the northeastern Province of Mendoza (Fig. 4).

*Paratypes.* ARGENTINA. **Mendoza:** Depto. Lavalle, Ruta 142, km 55 camino a Encón, 23 Nov. 1997, P. S. Hoc 366, 367 (BAFC); 14 km al norte de El Alpero, 21 Jan. 1985, J. H. Hunziker et al. 11254 (SI); Médanos, 1938, *Telechea s.n.* (BA 31/494).

***Prosopidastrum globosum*** (Gillies ex Hooker f. & Arnott) Burkart, Darwiniana 13(2–4): 439. 1964. *Prosopidastrum globosa* Gillies ex Hooker f. & Arnott, Bot. Misc. 3: 205. 1832 (1833). *Mimosa globosa* (Gillies ex Hooker f. & Arnott) F. Macbride, Contr. Gray Herb. 59: 13. 1919. TYPE: “a low shrub rather sparingly in Valley of Uspallata,” 31 Jan. 1825, leg. Gillies (lectotype, designated by Burkart (1964), SI ex K photo).

For full synonymy of this species, see Burkart (1945).

Shrubs 0.5–1 m high, hornotinous branches rigid, flexuose, 1–3 mm diam. at base, not prickly,

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(bar = 2 μm). *P. gracile*:—E. Polar view (bar = 5 μm). —F. Colpus, os membrane, tectum sculpture (bar = 2 μm). *P. globosum*:—G. Polar-equatorial view (bar = 5 μm). —H. Colpus, os membrane, tectum sculpture (bar = 2 μm). Photographs taken from the exsiccatae: R. A. Palacios et al. 2550 (BAFC); Hoc et al. 369 (BAFC, holotype); Hoc 368 (BAFC, holotype); R. A. Palacios et al. 3034 (BAFC).

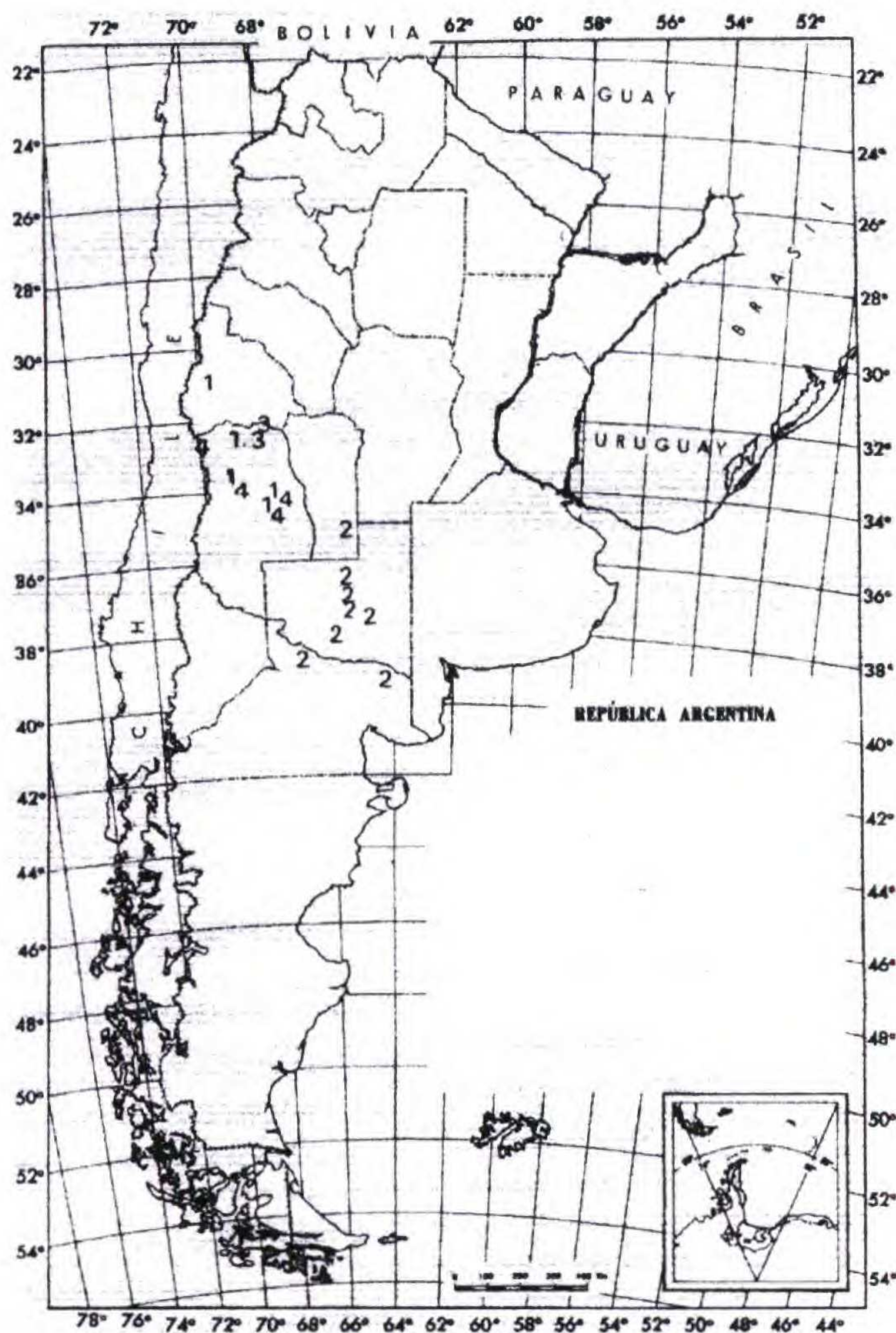


Figure 4. Distribution of the *Prosopidastrum* species endemic to Argentina: 1. *P. dehiscens*, 2. *P. angusticarpum*, 3. *P. gracile*, 4. *P. globosum*.

spreading at 45–70° to the axis, pubescence not adpressed. Stipules 1–2 mm long, spinose, straight to recurved, divergent, pubescent, with persistent hemispherical glandular base. Leaves pubescent; petiole 0.2–2 mm long; gland circular and sessile; pinnae 1-foliolate or containing up to 3 pairs of leaflets and 0–2 mm long; leaflets 0.5–2 × 0.5–1 mm, thick, elliptic. Capitulae with 23 to 27 flowers, 8–15 mm diam.; peduncle 5–13 mm long, pubescent; bracts spatulate to lanceolate, cucullate, hirsute abaxially. Flowers sessile. Calyx 0.5–2 mm long, white, brown toward apex, thickened, cupuliform to tubular, hirsute; corolla 3–4 mm long, petals white, green toward the margins and thickened, straight, incurved at apex, pilose abaxially in distal half, with glandular papillae at apex; androecium 3.5–6 mm long, filaments white, anthers elliptic, connective green; ovary red, sericeous. Loments 1 to 4 per infructescence, 60–70 × 3–4 mm, pendulous, with straight margins, spreading pubescence, chestnut-brown, opaque; joints 14 to 15 per loment, 4–5 × 3–4 mm, with semicircular umbo as seen from suture. Pollen grains 3-colporate or 3–4-syncolporate, spherical to oblate, amb semiangular.

Exine verrucate, perforate (pits 0.47  $\mu\text{m}$  diam.) and perfossulate (fossulae 1.52  $\mu\text{m}$  long.). Colpi membrane smooth, borders verrucate and granulate; os membrane granulate. Apocolpi verrucate or non-existent (grains syncolporate). (Fig. 3G, H; Table 2.)

*Distribution.* Sub-Andean mountains and their first slopes (Province Mendoza) (Fig. 4).

*Paratype.* “Loma de los Jagüeles, Province of Mendoza, leg. Gillies” (SI ex K photo).

*Specimens examined.* ARGENTINA. **Mendoza:** Depto. Uspallata, Uspallata, Km 1160, 20 Nov. 1996, R. A. Palacios et al. 3033, 3034 (BAFC); Depto. San Rafael, Atuel Valley, El Sosneado, 6 Dec. 1955, T. W. Böcher, P. Hjertinnig & K. Rahn 1393 (SI); Depto. Malargüe, Malargüe, 11 Feb. 1942, A. Burkart et al. 14147 (SI); Pampa del Alamo, 13 Jan. 1941, A. Castellanos s.n. (BA 36/729); Depto. Luján, Cerro Cacheuta, 11 Nov. 1949, A. Ruiz Leal 12743 (SI).

#### KEY TO SPECIES OF *PROSOPIDASTRUM* (MEXICO AND ARGENTINA)

- 1a. Fruit 45–80 × 12–13 mm, dehiscing by two valves, these separating from a persistent replum and dividing into 1-seeded segments, sometimes functional; leaflets 4–8 × 2–4 mm; peduncles 22–35 mm long; Mexico, Baja California . . . . . *P. mexicanum*
- 1b. Fruit 40–210 × 3–8 mm, indehiscent loment or dehiscing by the ventral suture; leaflets 0.5–5 × 0.5–2 mm; peduncles 7–15 mm long; Argentina.
  - 2a. Flowers pedicellate; calyx membranous, glabrous; petals membranous, glabrous, recurved at the apex; stamens (5)6–10 mm long; fruit always indehiscent; stipules persistent or not; leaflets papyraceous or thickened.
    - 3a. Young branches divaricate, rigid, prickly; stipules persistent, recurved, prickly; glandular base persistent, glands connate; pinnae 2- to 4-foliolate, leaflets papyraceous; fruit 40–75 × 3–5 mm, spreading, grayish brown, pilose; thin, stony soils with calcareous outcroppings; La Pampa, north of Río Negro . . . . . *P. angusticarpum*
    - 3b. Young branches fastigiata, gracile, not prickly; stipules deciduous, straight, adpressed, not prickly; base persistent, auriculate, with ovate-triangular glands; pinnae 1-foliolate, leaflets thickened; fruit 90–210 × 5–8 mm, pendulous, straw-colored, with adpressed pubescence and villous hairs; sand dunes of northeastern Mendoza . . . . . *P. gracile*
  - 2b. Flowers sessile; calyx thick, pubescent or hirsute; petals thick, pilose; stamens 3.5–6.5 mm long; fruit dehiscent or not; stipules always deciduous; leaflets always thickened, 1-foliolate or with up to 3 pairs per pinna.
    - 4a. Young branches flexuose; stipules straight, adpressed; calyx hirsute, petals



- incurved; fruit 60–70 × 3–4 mm, indehiscent, pendulous; sub-Andean mountains and lower slopes of Mendoza (160–1100 m s. m.) . . . . . *P. globosum*
- 4b. Young branches rigid; stipules recurved or straight, not adpressed; calyx pubescent, petals cucullate; fruit 40–70 × (4)5–8 mm, dehiscent along ventral suture, spreading; sub-Andean mountains of San Juan and Mendoza (1400–2200 m s. m.) . . . . . *P. dehiscens*
- 3a. Colpi membrane granulate with granulate borders, irregular; apocolpi perforate; exine perforate with pits 0.88 μm diam., surrounded by few pits 0.3 μm diam.; amb circular; grains spherical . . . . . *P. dehiscens*
- 3b. Colpi membrane smooth or scarcely granulate, with smooth borders; apocolpi perforate and/or perfossulate; exine perfossulate, with fossulae 1.2 μm long. and perforate with pits 0.6 μm diam.; amb semiangular; grains oblate . . . . . *P. angusticarpum*

KEY TO *PROSOPIDASTRUM* NATIVE TO ARGENTINA ON THE BASIS OF POLLEN MORPHOLOGY

- 1a. Apocolpi verrucate with pits, verrucate or non-existent.
- 2a. Colpi membrane verrucate, borders granular and verrucate; apocolpi verrucate with pits; exine perforate with pits 0.24 μm diam., surrounded by few pits < 0.1 μm diam.; amb circular; grains 3-colporate . . . *P. gracile*
- 2b. Colpi membrane smooth, borders verrucate and granulate; apocolpi verrucate or non-existent; exine verrucate, perforate, with pits 0.47 μm diam. and perfossulate, with fossulae 1.52 μm long.; amb semiangular; grains 3-colporate or 3- to 4-syncolporate . . . . . *P. globosum*
- 1b. Apocolpi perforate and/or perfossulate.

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