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THREE NEW SPECIES OF BEGONIA (BEGONIACEAE) FROM MEXICO

KATHLEEN BURT-UTLEY

Burt-Utley, Kathleen (Department of Biological Sciences, University of New Orleans, New Orleans, LA 70148). Three new species of *Begonia* (Begoniaceae) from Mexico. Brittonia 35: 115–119. 1983.—*Begonia lynceorum*, *B. multistaminea* and *B. sousae* from the state of Veracruz in Mexico are described as new, illustrated and discussed.

Begonia sousae Burt-Utley, sp. nov. (Fig. 1)

Rhizoma repens. Laminae supra juxta marginem hirsutulae. Florum ♂ sepala ovato-elliptica vel anguste obovata 3.5–5 × 2.5–3 mm; stamina 6–9. Stigmata lunata.

Herbaceous perennial; *rhizome* repent, internodes very short. *Leaf blades* chartaceous, oblique to transverse, asymmetrically oblong-elliptic to obovate, 14–20.7 × 9.5–14.5 cm, basally cordate, apically acuminate, marginally ciliate, dentate at ends of major nerves and often somewhat revolute, glabrous above except at the base of nerves and in a 1–1.5 mm submarginal band of short villi, sparingly hirtellous beneath on principal nerves, 9–10-palmatinerved. *Petioles* 10.5–31.5 cm × 1.5–4 mm, sparingly hirtellous to glandular-hirtellous with villi 0.5–2 mm long. *Stipules* caducous, lanceolate, 2 × 1 cm, strongly keeled. *Inflorescences* exceeding the leaves, weakly asymmetrically cymose, many-flowered, 8.5–20 cm diam. *Peduncles* 26.3–38.7 cm × 2.5–6 mm, glabrous to very sparingly glandular-hirtellous. *Bracts* subpersistent, the lowermost not seen. *Flowers* ♂: pedicels 3.5–9 mm; sepals 2, ovate-elliptic to obovate, 3–7 × 2–4 mm, glabrous; petals wanting; stamens 6–9; filaments 0.2–1 mm, borne on a raised torus; anthers narrowly oblong-elliptic to obovate, 1.5–2.1 × 0.5–0.8 mm. *Flowers* ♀: pedicels 4–6 mm; bracteoles wanting; sepals 2, elliptic to obovate, 3.5–5 × 2.5–3 mm, glabrous; petals wanting; styles 3, 2.2 mm long, connate $\frac{2}{3}$ their length; stigmas lunate. *Capsules* with pedicels 9 mm long, trilocular with bipartite placentae, 6.5 mm long; locules externally appearing suborbicular, 5 × 5 mm; wings unequal, the largest asymmetrically triangular, 8 × 5.5 mm, the second and third asymmetrically triangular to lunate-triangular.

TYPE: MEXICO. VERACRUZ: El Vigía de Santiago Tuxtla, 650 m, 3 Apr 1965, Sousa 2255 (HOLOTYPE: MEXU; ISOTYPE: CAS).

PARATYPE: MEXICO. VERACRUZ: Mpio. Angel R. Cabada, Tecolapa, 18 Feb 1955, Kelly 935 (UCR).

Begonia sousae clearly belongs in section *Gireoudia* (Kl.) A. DC. because of its trilocular ovary with bipartite placentae and apetalous pistillate and staminate flowers. Like most species in section *Gireoudia* endemic to Mexico, *B. sousae* is very poorly collected. Leaves bearing adaxial submarginal bands of villi are uncommon in section *Gireoudia*. This character, coupled with sparingly hirtellous petiolar indument, small sepals, and few stamens, readily distinguishes *B. sousae* from other members of section *Gireoudia*.

It is with pleasure that I name this species in honor of its collector, Mario Sousa Sánchez, Director and Curator of the Herbario Nacional de México who has greatly facilitated my studies of Middle American Begoniaceae.

Begonia multistaminea Burt-Utley, sp. nov. (Fig. 2)

Rhizoma repens. Laminae obovatae vel suborbiculares (12) 18.5–33 × (6.6) 15–28 cm, 12–14-palmatinerves. Petioli sparsim puberuli. Stamina 78–98. Stigmata bicornuta.

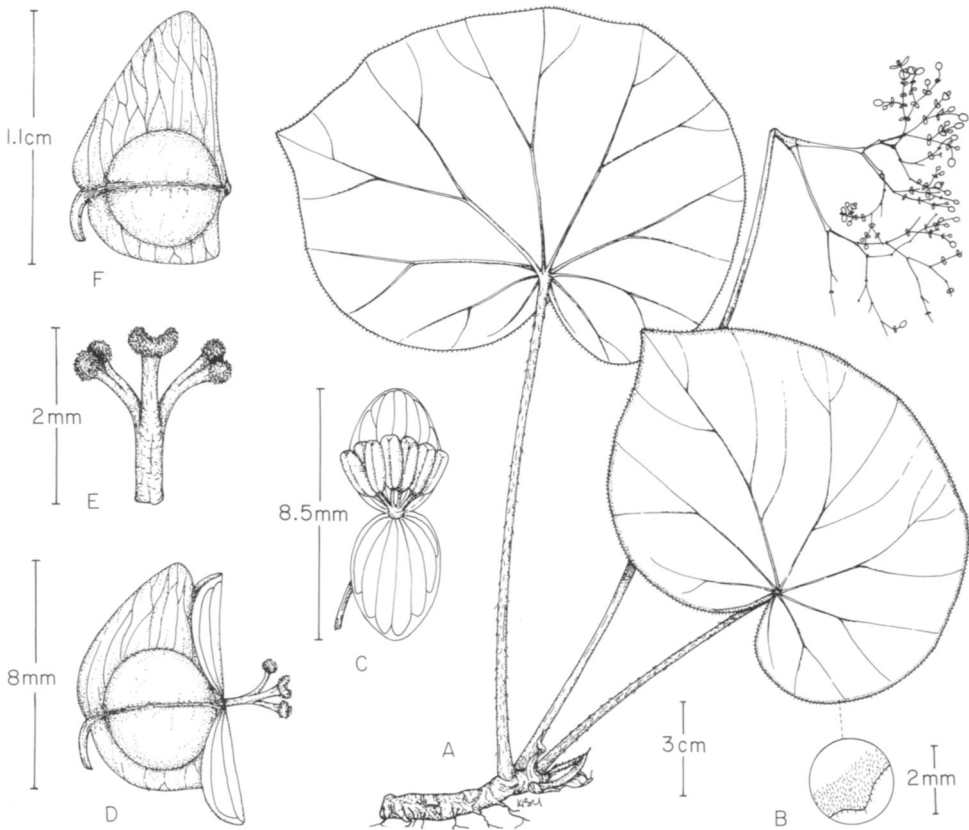


FIG. 1. *Begonia sousae* Burt-Utley. A. Habit. B. Detail of leaf margin showing submarginal band of villi. C. Staminate flower. D. Pistillate flower. E. Styles and stigmas. F. Capsule. (From Sousa 2255.)

Herbaceous perennial; *rhizome* repent, internodes elongate, 0.8–2.4 cm long \times 1.1–2 cm thick, glabrous to sparingly glandular. *Leaf blades* chartaceous, oblique, asymmetrically broadly obovate to suborbicular, (12) 18.5–33 \times (6.6) 15–28 cm, basally cordate, apically abruptly attenuate-acuminate, marginally often dentate to cuspidate at ends of major nerves and ciliate-denticulate, very sparingly puberulous above and beneath on principal nerves, 12–14-palmatinerved. *Petioles* (30) 44–62.7 \times 0.4–1 cm, very sparingly puberulous or glandular-puberulous with villi 1–2 mm long. *Stipules* persistent, cucullate, very broadly triangular, 0.8–1.1 \times 1.6–1.9 cm, strongly keeled. *Inflorescences* exceeding the foliage, symmetrical to asymmetrical, few- to many-flowered, 6–16 cm diam. *Peduncles* 46.8–76.5 \times 0.5–1 cm, glabrous. *Bracts* deciduous, the lowermost cucullate, broadly obovate, 2.5 \times 3.1 cm, glabrous. *Flowers* δ : pedicels 0.7–2 cm; sepals 2, broadly ovate-reniform, 0.5–1.1 \times 0.7–1.1 cm, white, glabrous; petals wanting; stamens 78–98; filaments 0.1–1 mm; anthers narrowly oblong-obovate, 1.5–2.5 \times 0.4–0.7 mm. *Flowers* f : pedicels 1.2–2.6 cm; bracteoles wanting; sepals transversely elliptic or reniform, 0.7–1 \times 1.1–1.4 cm, white, glabrous; petals wanting; ovary 0.6–1.1 cm long white to green-white, glabrous; styles 3, 2–3.5 mm long, connate to $\frac{2}{3}$ their length; stigmas bicornate. *Capsules* strongly nutant, with pedicels 2–3.8 cm long, trilocular with bipartite placentae, (1.1) 1.4–1.9 cm long; locules externally

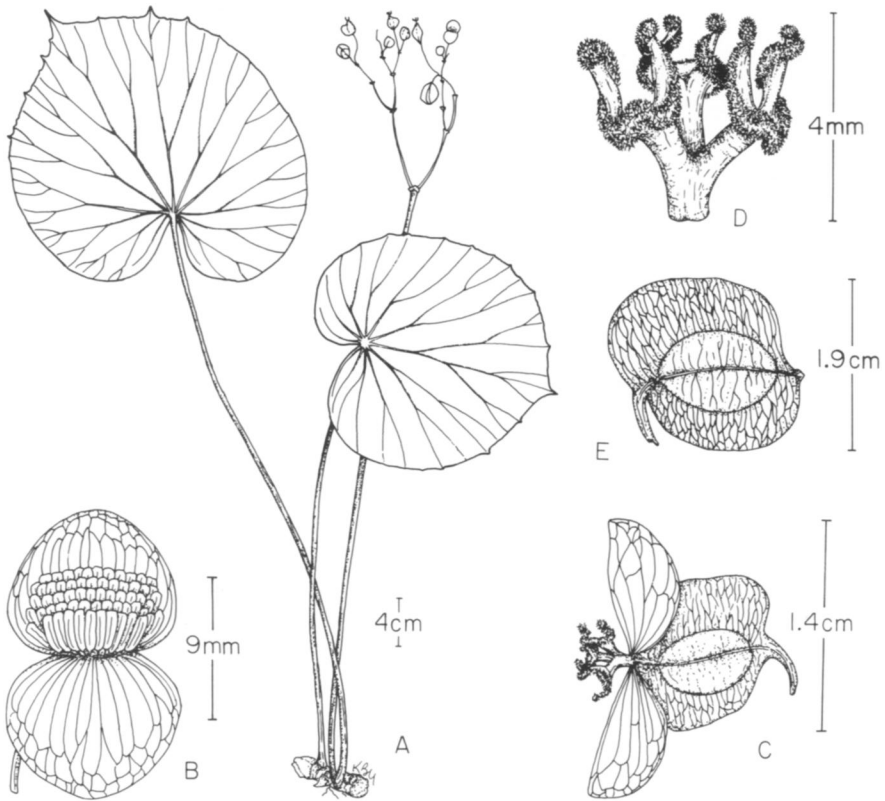


FIG. 2. *Begonia multistaminea* Burt-Utley. A. Habit. B. Staminate flower. C. Pistillate flower. D. Styles and stigmas. E. Capsule. (A–D from Utley & Utley 7064; E from Gold 321.)

appearing oblong to obovate, (0.9) 1.2–1.4 × 0.6–1 cm; wings unequal, the largest dolabriform to transversely oblong, 0.8–1.2 × 1.1–1.9 cm, the second and third lunate to lunate-triangular or marginiform.

TYPE: MEXICO. VERACRUZ: about 9.5 mi S of Yecuatla and 31.5 mi N of Hwy. 140 along road to Misantla, 1646 m, 11 Aug 1982, *Utley & Utley 7064* (HOLOTYPE: MEXU; ISOTYPES: CAS, DUKE, F, MICH, MO, NY, US).

PARATYPES: MEXICO. PUEBLA: cercanías de Atexcaco, 1200 m, *Gold 321* (MEXU—2 sheets). VERACRUZ: La Cima, Plan de las Hayas, Mpio. de Juchique Ferrer, 1700 m, *Hernández M. 1598* (MEXU—2 sheets); steep wet slopes 6.7 mi S of Yecuatla and 34.4 mi N of Hwy, 140 along road to Misantla, 1426 m, *Utley & Utley 7066* (GH, NOLS); Vaquería, Mpio. de Chiconquiaco, 1900 m, *Ventura A. 8963* (MEXU); Plan de Cedeño, Mpio. de Acajete, 1700 m, *Ventura A. 10314* (MEXU).

Begonia multistaminea, with trilocular ovary and apetalous pistillate and staminate flowers, belongs in section *Gireoudia*. Within the section it is readily distinguishable from all species but *B. fusca* Liebm. by very numerous stamens together with sinuate or vertically ridged placentae. This placental form is unusual in section *Gireoudia*, having been recognized in only two other species, *B. fusca* and *B. garagarana* C.DC., a Panamanian endemic. Although *B. multistaminea* and *B. fusca* have flowers with numerous stamens, the 78–98 stamens observed

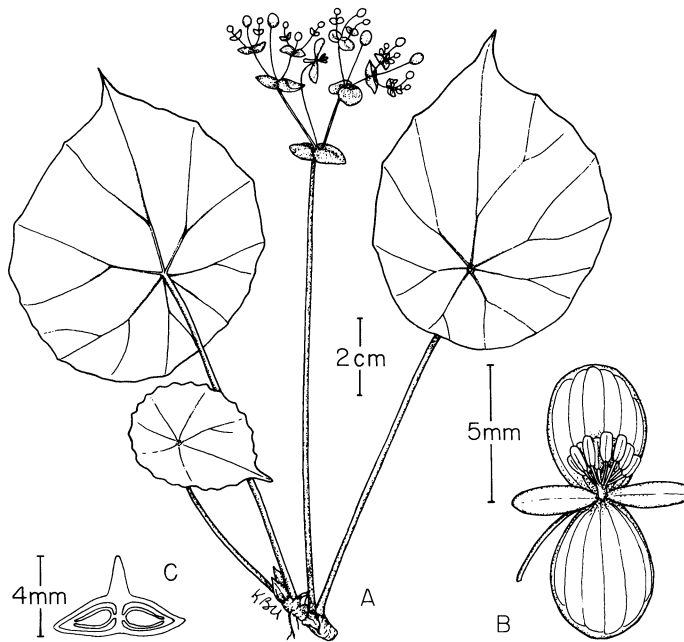


FIG. 3. *Begonia lyniceorum* Burt-Utley. A. Habit. B. Staminate flower. C. Cross-section through ovary. (From Wendt, Villalobos C. & Navarrete 2529.)

in *B. multistaminea* are not only more numerous than the 50–82 previously reported for the latter species (Burt-Utley, 1981) but also have the highest number known in the section. The largest of the three capsule wings of *B. multistaminea* also separates it from *B. fusca*. In *B. multistaminea* this wing is very shallow (0.8–1.2 cm high) and entire marginally, while in *B. fusca* it is 1.6–3.8 cm high and marginally ciliate. These two species also can be distinguished readily from each other by vegetative characters. *Begonia multistaminea* has 12–14-nerved blades that are very sparingly puberulous only on the major nerves while the 10–12-nerved blades of *B. fusca* are sparingly to moderately hirsute throughout. While petioles of *B. multistaminea* often appear glabrous, they are also sparingly puberulous. In contrast, *B. fusca* leaves have moderately to densely hirsute petioles.

Begonia lyniceorum Burt-Utley, sp. nov. (Fig. 3)

Laminae asymmetricè ovatae 5.5–11.8 × 4.3–8.3 cm, basi peltatae. Petioli sparsim glandulosi vel glabri. Inflorescentiae multiflorae. Florum ♂ sepala parva oblonga vel obovata 4.5–5.5 × 3–3.5 mm; stamina 11–20. Ovarium biloculare.

Herbaceous perennial; *rhizome* repent, internodes short, 9–11 mm long × 4–7 mm thick, glabrous. *Leaf blades* peltate, chartaceous, asymmetrically ovate, 5.5–11.8 × 4.3–8.3 cm, basally rounded, apically abruptly attenuate-acuminate, marginally crenate-dentate, glabrous above and beneath when fully expanded, radially 7-nerved. *Petioles* 7.7–14 cm × 1–2.5 mm, sparsely glandular but glabrate with age. *Stipules* deciduous, lanceolate-triangular, 4–6 × 2.5–3 mm, keeled. *Inflorescences* shorter than or equalling the foliage, symmetrically cymose, many-flowered. *Peduncles* 9.7–16.2 cm × 1.5–2 mm, glabrous. *Bracts* persistent, the lowermost broadly ovate to suborbicular, 4–7 × 4–6 mm. *Flowers* ♂: pedicels 1.9–2.3 cm;

sepals 2, oblong to obovate, $4.5-5 \times 3-3.5$ mm, glabrous; petals 2, linear, 3×0.9 mm; stamens 11-20; filaments 0.3-0.7 mm; anthers narrowly oblong to obovate, $1.2-1.5 \times 0.3-0.4$ mm. *Flowers* ♀: sepals 2; petals wanting; ovary bilocular with bipartite placenta; styles 3, mature flowers not seen and therefore their size unknown. *Capsules* not seen.

TYPE: MEXICO. VERACRUZ: Mpio. de Minatitlán, 6.9 km N de la terraceria La Laguna-Río Grande, sobre el camino nuevo a Ejido Belisario Domínguez, 120 m, 12 Jul 1980, *Wendt, Villalobos C. & Navarrete 2529* (HOLOTYPE: MEXU; ISOTYPES: CHAPA, GH, MO, NOLS).

Begonia lyniceorum belongs to section *Weilbachia* (Kl. & Oerst.) A.DC., distinguished by its bilocular ovary from other Middle American sections in which the ovary is typically trilocular. Because the pistillate material available is very immature, the stigmas are insufficiently developed to show unequivocally whether they are lunate or bicornute. Both stigma forms occur among species in section *Weilbachia*. In vegetative morphology *B. lyniceorum* is most similar to *B. calderonii* Standley, one of two other species in the section also characterized by peltate leaves. *Begonia lyniceorum* is readily distinguished from this latter taxon and from most other species in section *Weilbachia* by its glabrous, short internodes, petioles, and leaf blades. The rhizomes of *B. calderonii* frequently have elongate internodes (1-4 cm) which, like the petioles and lower leaf surfaces, are conspicuously villous. The small staminate sepals ($4.5-5 \times 3-3.5$ mm) and linear staminate petals of *B. lyniceorum* also separate it from *B. calderonii* whose staminate flowers have larger sepals ($7-12 \times 7-13$ mm) and no petals.

This species is named in recognition of the joint contribution of Dr. Lyman B. Smith, Botanist Emeritus of the Smithsonian Institution and Dr. Bernice G. Schubert of the Arnold Arboretum of Harvard University to Neotropical *Begonia* systematics.

Acknowledgments

I wish to acknowledge the support of the Herbario Nacional, Instituto de Biología, Universidad Nacional Autónoma de México for part of this study. I am deeply grateful to the curators of the following herbaria for the use of facilities and loan of specimens: CAS, CHAPA, MEXU and UCR.

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