
Five New Species of *Jaltomata* (Solanaceae) from Cajamarca, Peru

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ABSTRACT. Five new suffrutescent to shrubby *Jaltomata* Schlechtendal species (Solanaceae) of the department of Cajamarca, Peru, are described and illustrated. *Jaltomata contumacensis* S. Leiva & Mione has a light green, urceolate-tubular corolla and grows in the province of Contumazá between 2530 and 3000 m; *J. lanata* S. Leiva & Mione has a whitish purple to pale purple, short-tubular corolla and grows in the province of San Pablo between 1850 and 2400 m; *J. leivae* Mione has a red-violet, urceolate corolla containing red nectar and grows in the province of Contumazá between 2560 and 2650 m; *J. oppositifolia* S. Leiva & Mione has a white, broadly infundibular to rotate corolla and grows in province Chota between 2250 and 3090 m; and *J. yacheri* Mione & S. Leiva has a blue-purple, urceolate corolla and grows in province Hualgayoc at 3460 m. The fruits of two of these species are eaten by people.

Key words: Edible fruit, *Jaltomata*, red nectar, Solanaceae.

The species of *Jaltomata* Schlechtendal (Solanaceae) have simple, alternate (often geminate) leaves and 5-merous flowers having five lobes, or 10 if lobules are present. The corolla form is tubular, urceolate, crateriform, campanulate-rotate, or rotate depending on the species. The inflorescence is umbellate or, less commonly, cymose. The ovary has a basal disk, presumably the source of nectar that collects at the base of the corolla. Anthers dehisce longitudinally, and the filament is inserted on the bottom of the ventral face of the anther. The calyx is accrescent but never encloses the berry.

The genus *Jaltomata* includes ca. 50 species of herbs and shrubs, distributed from Arizona in the United States south to Bolivia, as well as in the

Greater Antilles (*J. antillana* (Krug & Urban) D'Arcy) and the Galápagos Islands (*J. werffii* D'Arcy). *Jaltomata* can be found throughout Andean Peru to about 4000 m of elevation; northern Peru is the center of diversity. The South American species are nearly all woody, have the full range of corolla forms described above, and nearly all produce orange or red berries. In contrast, the species of Mexico and Central America are herbaceous, have rotate corollas, and produce black or purple berries. In Mexico there are green-fruited morphs of two otherwise blackish purple-fruited species, *J. procumbens* (Cavanilles) J. L. Gentry (Williams, 1985) and *J. chihuahuensis* (Bitter) Mione & Bye (Mione & Bye, 1996).

This paper is a contribution to ongoing taxonomic studies of the genus (Leiva & Mione, 1999; Mione, 1999; Mione & Coe, 1996; Mione et al., 2000, 2004). In the descriptions, structures referred to as glands are 0.07–0.1 mm long and have a unicellular stalk and densely staining multicellular head (Mione & Serazo, 1999: 139). Branchlet hairs “are uniseriate, many-celled and dendroid, with branches emerging at different levels” (Seithe, 1979: 308) and have three or more branches. Forked hairs are also uniseriate and many-celled but have only two termini. Finger hairs are uniseriate and unbranched (Seithe, 1979). Stigmas were measured on pressed specimens, perpendicular to the style. During fieldwork in 1999, we collected the following five new species in the department of Cajamarca, Peru. Three of these were previously described (Leiva, 1998) but until now have not been validly published.

1. *Jaltomata contumacensis* S. Leiva & Mione, sp. nov. TYPE: Peru. Cajamarca: Prov. Contumazá, Bosque Cachil, betw. Cascas and Contumazá,

2740 m, 16 June 1999, S. Leiva G., T. Mione & L. Yacher 2356 (holotype, HAO; isotypes, F, MO, USN). Figure 1.

Frutex; laminae ad 8.7×5.3 cm, membranaceae, dendritici-piliferae pro maxima parte; inflorescentia 2(3)-flora; corolla urceolata-tubulosa, pallide viridis, limbus 13–17.5 mm, lobis 10; stamina 10–16 mm, antherae 2–2.75 mm; styli 8–21 mm.

Leaning shrub 0.7–4 m high; young axes green, angular, lanate to glabrate with mostly branchlet hairs and some interspersed finger hairs; woody stems to 2.3 cm diam. at base, terete, with lenticels, glabrous, light brown. *Leaves* alternate, often geminate, the blade ovate to lanceolate, membranous, to 8.7×5.3 cm, densely to sparsely pubescent on both faces, the apex acute, the base rounded, the margin entire to somewhat repand, ciliate; petiole to 2.1 cm. *Inflorescence* axillary, 2(3)-flowered and fruited; *peduncle* 15(–21) mm; *pedicel* 7–20 mm; both terete, green, and densely to sparsely pubescent with branchlet hairs. *Calyx* green, rotate to somewhat reflexed during anthesis, to 17 mm across, the lobes deltoid, adaxially glabrous, abaxially with a dense covering of mostly branchlet but some finger hairs, the margin ciliate; calyx at fruit maturity to 23 mm across. *Corolla* urceolate-tubular with a broad, slightly recurved 10-lobed limb, light green, the tube 10–11 mm long, abaxially sparsely pubescent with branchlet, finger, and forked hairs and abundant glands, the limb 13–17.5 mm across, with 5 green, narrowly triangular lobes 4×2.5 mm alternating with 5 lighter lobules, the margin ciliate; *stamens* 10–16 mm; filaments purple at base (not evident on pressed specimens), otherwise green, pubescent on proximal 20%–40% of the length with simple unpigmented hairs; *anthers* 2–2.75 mm, sometimes mucronate, exerted 1–8 mm beyond the mouth of the corolla; *style* 8–21 mm, pale green; *stigma* capitate, bilobed (often obscured by pressing), green, 0.5–1.1 mm, exerted to 5.8 mm beyond anthers; gynoecium glabrous except for stigma papillae 25–48 μ m long; disk broad, girdling base of ovary, the nectar usually translucent, sometimes orange. *Berries* subspherical, orange, to 13 mm across at maturity; *seeds* light brown, 1.38 – 1.74×1.17 – 1.32×0.45 – 0.54 mm, sub-reniform to sub-orbicular.

Jaltomata contumacensis is similar to *J. yacheri* Mione & S. Leiva (see below) and to *J. biflora* (Ruiz & Pavón) Benítez of the Department of Junín, Peru. *Jaltomata contumacensis* grows to 4 m high, bears predominantly branchlet hairs, and has light-colored anthers and conspicuous corolla lobules. In contrast, *J. biflora* grows to about 1 m high, bears predominantly gland-tipped finger hairs, and has purple

anthers and inconspicuous corolla lobules (Mione et al., 2001).

Distribution, ecology, and etymology. *Jaltomata contumacensis* grows in Peru, Department of Cajamarca, province Contumazá, between 2530 and 3000 m. It is abundant along streams and has been collected in the interior of forests. Sagástegui et al. (1995) listed this species among those of Bosque Cachil, a forest fragment. Flowering is in January, and both flowers and fruits were noted in March, April, and June. The specific epithet refers to the province of Contumazá.

Paratypes. PERU. **Cajamarca:** Prov. Contumazá, Bosque Cachil, 13 Apr. 1995, A. Sagástegui 15570 (F, HAO), 29 Jan. 1996, S. Leiva G. 1775 (HAO), 16 June 1999, T. Mione, S. Leiva & L. Yacher 656 (MO); arriba de Bosque Cachil, 28 Jan. 1996, S. Leiva G. 1762 (F, HAO); alrededores de Bosque Cachil, 28 Jan. 1996, S. Leiva 1766 (HAO); Ruta Contumazá–Cascabamba, 5 Apr. 1996, S. Leiva & A. Sagástegui A. 1825 (HAO), 5 Apr. 1996, S. Leiva & A. Sagástegui A. 1826 (HAO), 28 Mar. 1997, S. Leiva G., A. Sagástegui A. & V. Quipiscoa 1941 (HAO); Shamon (ca. Cascabamba), 13 Jan. 1996, A. Sagástegui A. & S. Leiva G. 15832 (HAO); ruta Pampa de La Sal–Lledén, 28 Mar. 1997, S. Leiva G., A. Sagástegui A. & V. Quipiscoa 1947 (F, HAO); alrededores de San Martín, 29 Mar. 1997, S. Leiva G., A. Sagástegui A. & V. Quipiscoa 1960 (F, HAO).

2. *Jaltomata lanata* S. Leiva & Mione, sp. nov.

TYPE: Peru. Cajamarca: Prov. San Pablo, Caserío El Sangal, 2220 m, en borde de carr., 18 June 1999, S. Leiva G., T. Mione & L. Yacher 2365 (holotype, HAO; isotypes, CCSU, CORD, F, HUT). Figure 2.

Frutex vel suffrutex; laminae ad 12.5×8 cm, membranaceae, glabrescentes vel piliferae ramosae vel simplices; inflorescentia 4- ad 8(13)-flora; corolla brevitybularis limbo rotato, albida ad pallida purpurea, faux quinque paribus macularum viridium, os tubi annulo purpureo instructum, limbus 7–11 mm, lobis 5; stamina 3.1–4.2 mm, antherae 1.3–1.5 mm; styli 3–4 mm.

Shrub or suffruticose, 0.80–1.2 m high; young axes angulate, green or brown, sericeous to lanate; woody stems brown, somewhat angular, to 1.5 cm diam. at base, sparsely pubescent to glabrate. *Leaves* alternate, distally geminate, the blade ovate or elliptic, to 12.5×8 cm, membranous, both faces glabrescent or pilose with both finger and branchlet hairs, the apex acute, the base rounded, the margin dentate to entire; petiole to 3 cm. *Inflorescence* axillary, 4- to 8(13)-flowered including buds; *peduncle* and *pedicel* both 4–7 mm, terete, green and lanate with both finger and branchlet hairs. *Calyx* green and broadly crateriform during anthesis, 7–8 mm across, the lobes deltoid, abaxially densely villous with branchlet and finger hairs, adaxially glabrous except

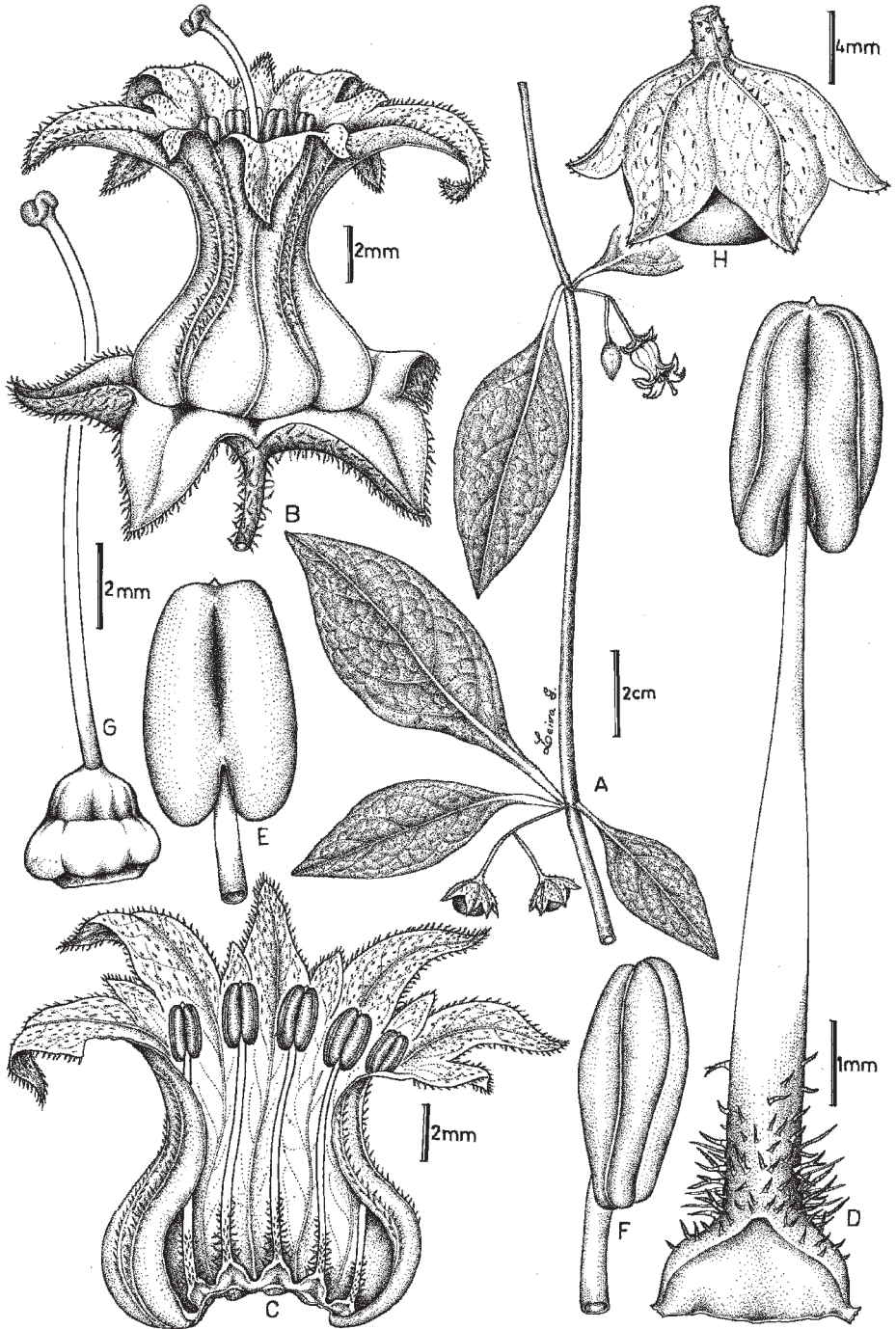


Figure 1. *Jaltomata contumacensis* S. Leiva & Mione. —A. Branch with leaves, inflorescences, and fruits. —B. Flower, lateral view. —C. Corolla, dissected to show the insertion of the stamens. —D. Stamen, ventral view. —E. Anther, dorsal view. —F. Anther, lateral view. —G. Gynoecium, including basal disk. —H. Berry with calyx, lateral view. Scale bar of D also applies to E and F. Drawn from A. Sagástegui et al. 15570 (HAO), by S. Leiva G.

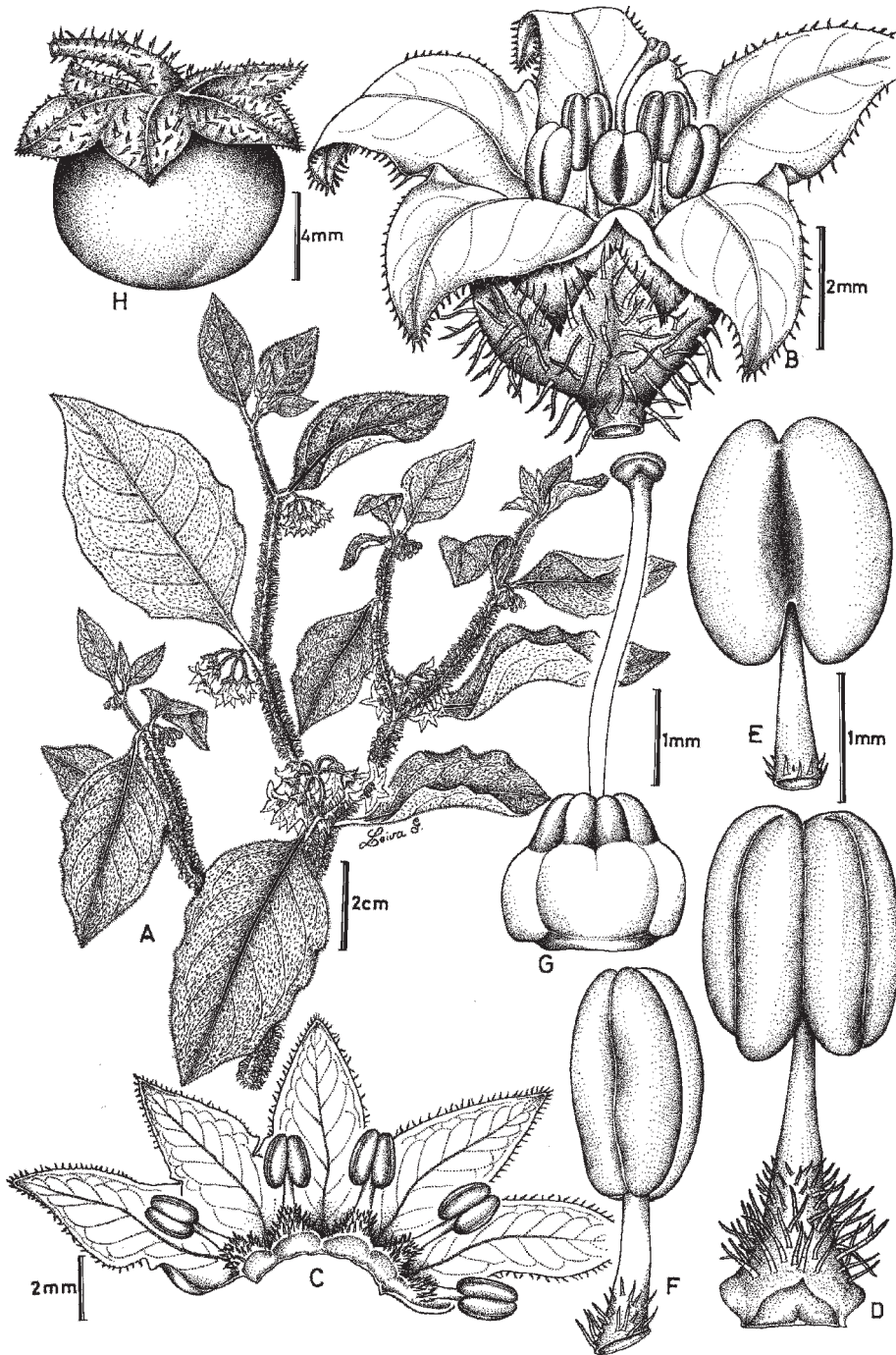


Figure 2. *Jaltomata lanata* S. Leiva & Mione. —A. Branch with leaves and inflorescences. —B. Flower, lateral view. —C. Corolla, dissected to show the insertion of the stamens. —D. Stamen, ventral view. —E, F. Anther with distal portion of filament, dorsal and lateral views, respectively. —G. Gynoecium, including basal disk. —H. Berry with calyx, lateral view. Scale bar of E also applies to D and F. Drawn from S. Leiva G. 1731 (HAO), by S. Leiva G.

for glands; calyx at fruit maturity green and to 10 mm across; *corolla* short-tubular with a 5-lobed, rotate limb, whitish purple to pale purple, the tube (obscured by pressing) 2.4×3.4 – 3.8 mm, within the tube 2 dark green maculae flank the radial vein extending to the tip of each corolla lobe, narrow purple ring at mouth of tube, the limb lacking lobules, 7–11 mm across, adaxially glabrous, abaxially sparsely pubescent with finger, forked, and branchlet hairs, the margin ciliate; *stamens* 3.1–4.2 mm; *filaments* somewhat purple at base, otherwise off-white, pubescent with unpigmented hairs along 40%–50% of the length; *anthers* yellow, 1.3–1.5 mm, exerted beyond mouth of corolla to 1 mm; *style* 3–4 mm, off-white; *stigma* capitate, bilobed, green, 0.45–0.75 mm, exerted beyond anthers 1.5 mm; gynoecium glabrous except for stigma papillae 30–35 μ m long; disk broad, girdling base of ovary. *Berries* subspherical, orange, to 7×9 mm at maturity; *seeds* 14 to 21 per berry, brown, alveolate, sub-reniform to sub-triangular, 1.5 – 1.59×1.2 – 1.29×0.45 – 0.48 mm.

Jaltomata lanata lacks gland-tipped hairs and has a corolla limb 7–11 mm across, stamens 3.1–4.2 mm long, and style 3–4 mm long. In contrast, the species to which it is most similar, *J. hunzikeri* Mione of Peru (Department Lima), is villous with gland-tipped hairs and has a corolla limb 16–17 mm across, stamens 4.8–7 mm long, and style 6–7.7 mm long.

Distribution, ecology, etymology, and uses. *Jaltomata lanata* is known only from Peru, Department Cajamarca, province San Pablo, between 1850 and 2400 m. It grows on roadsides and the edges of agricultural fields. Flowering is in April, May, and June, and fruits were observed in May and June. The specific epithet refers to the lanate young plant axes. The ripe berries have an agreeable flavor and are consumed by people (Leiva, 1998).

Paratypes. PERU. **Cajamarca:** San Pablo, S de San Pablo, 28 May 1994, S. Leiva G. 1731 (F, HAO); alrededores de San Pablo, 18 June 1994, A. Sagástegui A., S. Leiva G. & P. Lezama 15373 (F), 14 Apr. 1995, A. Sagástegui A., S. Leiva G., P. Lezama & R. Veneros 15605 (HAO); Caserío Sangal S de San Pablo, 15 Apr. 1995, A. Sagástegui A., S. Leiva G., P. Lezama & R. Veneros 15624 (CORD, F, HAO); San Pablo, Sangal-Puente Pucluch, 4 Apr. 1996, A. Sagástegui A., S. Leiva G. & E. Aquino 15861 (CORD, F, HAO); Caserío El Sangal, 18 June 1999, T. Mione, S. Leiva G. & L. Yacher 665 (MO).

3. *Jaltomata leivae* Mione, sp. nov. TYPE: Peru. Cajamarca: Prov. Contumazá, above Guzmango, in remnant patch of native vegetation in ravine along stream, 2650 m, 17 June 1999, S. Leiva G., T. Mione & L. Yacher 2360 (holotype, HAO; isotypes, CORD, F, MO). Figure 3.

Frutex vel suffrutex; laminae ad 11×5.3 cm, membranaceae, glabratae; inflorescentia (1)2(3)-flora; corolla urceolata, basi rubroviolacea limbus totus revolutus, 14 mm latus, lobis 10; stamina 11–14 mm, antherae 1.9–3 mm; styli 9–18 mm.

Suffrutescent or shrub, erect or sometimes leaning, to 2.5 m across when leaning on other vegetation; young axes angulate, green, glabrate with finger or branchlet hairs; woody stems to 2 cm diam. at base, nearly terete, glabrous with lenticels, brown. *Leaves* alternate, often geminate, the blade ovate to elliptical, to 11×5.3 cm, membranous, both faces glabrate, the youngest (smallest) leaves with finger or branchlet hairs, the apex acute, the base somewhat attenuate, the margin entire, sparsely ciliolate on older leaves; petiole to 17 mm. *Inflorescence* axillary, (1)2(3)-flowered; *peduncle* 1–9 mm, terete, green; *pedicel* 10–14 mm, terete; both sparsely to densely pubescent with finger and branchlet hairs. Flower buds dome-shaped at the apex and round in cross section. *Calyx* green, recurved at anthesis, 15 mm across, the lobes deltoid, adaxially glabrous except for abundant glands, abaxially pilose with both dentritic and less commonly forked or finger hairs and glands, the margin ciliolate; calyx at fruit maturity 26 mm across; *corolla* urceolate, the tube bright red-violet, glabrous within and 7 – 9×10 mm at base, with 5 cavities filled with red nectar, the abaxial face pilose on veins with branchlet and finger hairs, and abundant glands on the lobes, the limb completely revolute, light blue-purple to off-white, 14 mm across, 10-lobed, the adaxial face pilosulose with finger hairs 0.2–0.3 mm long having a bulbous terminal cell, the margin ciliate; *stamens* 11–14 mm; filaments off-white, pubescent on proximal 20%–25% of length with simple unpigmented hairs; *anthers* yellow prior to dehiscence, 1.9–3 mm, sometimes pubescent near sutures, exerted 6–7 mm beyond the mouth of the corolla; *style* 9–18 mm, green, with a few hairs 0.06 mm long distally; *stigma* capitate, somewhat bilobed, dark green, 0.4 mm, exerted 5.5 mm beyond the anthers and 12 mm beyond the mouth of the corolla, stigma papillae 25–30 μ m long; disk broad, girdling base of ovary. *Berries* subspherical, pale orange, to 16 mm diam. at maturity; *seeds* to 168 per berry, sub-triangular to reniform, compressed, alveolate, 1.59 – 1.8×1.23 – 1.47×0.42 – 0.48 mm.

Jaltomata leivae is similar to *J. ventricosa* (Baker) Mione of the department La Libertad, Peru. Both species have an urceolate corolla having a 10-lobed, revolute limb, abundant red to orange nectar showing through the corolla wall, exerted stamens and style, and a peduncle less than 1 cm long. *Jaltomata leivae* differs by having: (a) flower buds that are dome-shaped at the apex and round in cross section; (b)

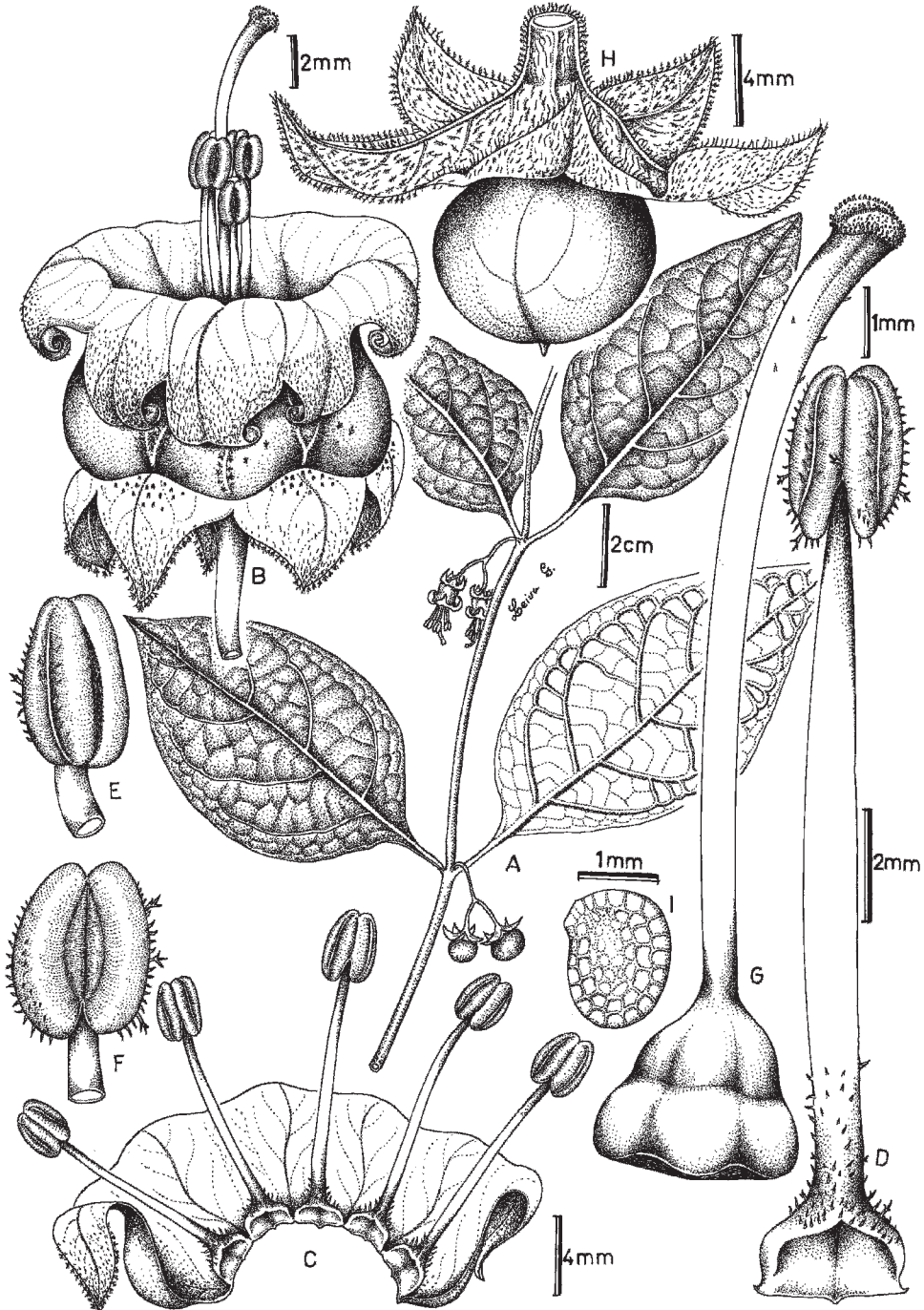


Figure 3. *Jaltomata leivae* Mione. —A. Branch with leaves, inflorescences, and fruits. —B. Flower, lateral view. —C. Corolla, dissected to show the insertion of the stamens. —D. Stamen, ventral view. —E, F. Anther with distal portion of filament, lateral-ventral and dorsal views, respectively. —G. Gynoecium. —H. Berry with calyx, lateral view. Scale bar of D also applies to E and F. Drawn from S. Leiva G. et al. 2360 (HAO), by S. Leiva G.

calyx lobes deltoid, wider than long, and recurved at anthesis; (c) calyx and corolla abaxially pubescent with branchlet hairs; (d) corolla lobes light blue-purple to off-white; and (e) hairs on no more than 25% of the filament, and hairs often present on the anther. In contrast, *J. ventricosa* has: (a) flower buds pointed at the apex and strongly 5-pointed in cross section; (b) calyx lobes narrowly triangular, longer than wide, and rotate at anthesis; (c) calyx and corolla abaxially glabrate; (d) corolla lobes off-white; and (e) hairs on 37% of the filament, and lacking on the anther.

Distribution, ecology, etymology, and local name. *Jaltomata leivae* is known only from Peru, department Cajamarca, province Contumazá, above the town of Guzmango in a ravine near a stream, between 2560 and 2650 m. This species flowers in April, May, and June, and mature fruit was noted during the type collection (June). The specific epithet was chosen by two of the authors to honor Segundo Leiva G. This species is known locally as “canamuela” (as noted on the specimen sheet *Leiva & Sagástegui 1839*).

Paratypes. PERU. **Cajamarca:** Prov. Contumazá, arriba de Guzmango, 24 Apr. 1995, *S. Leiva G. 1719* (CORD, F, HAO, MO), 31 May 1996, *S. Leiva G. & Sagástegui 1839* (F, HAO); above Guzmango, 17 June 1999, *T. Mione, S. Leiva G. & L. Yacher 660* (MO).

4. *Jaltomata oppositifolia* S. Leiva & Mione, sp. nov. TYPE: Peru. Cajamarca: Prov. Chota, Bosque el Pargo (betw. Llama & Huambos), 3050 m, 19 June 1999, *S. Leiva G., T. Mione & L. Yacher 2376* (holotype, HAO; isotypes, C, CORD, MO). Figure 4.

Frutex; laminae ad 4×1.8 cm, glabrae lucentes; inflorescentia 2(3)-flora; corolla late infundibulari-rotata, alba, faux quinque paribus macularum viridium instructa, 12–13 mm latus, lobis 10; stamina 5–6.5 mm, antherae 1.05–1.65 mm; styli 6.5–8 mm.

Shrub to 1.2 m high, leaning on other vegetation or erect; young axes nearly terete, purple. Woody stems terete, glabrous, to 2 cm diam., brown. *Leaves* usually geminate, the blade elliptic to lanceolate, to 4×1.8 cm, lustrous, coriaceous, glabrous, the apex acute, the margin entire and ciliolate; petiole 7–10 mm. *Inflorescence* axillary, with 2 flowers (3 including buds) per inflorescence; *peduncle* 8–17 mm, terete, purple, glabrous; *pedicel* 8–17 mm, somewhat angular, purple, glabrous. *Calyx* green and nearly rotate during anthesis, 6.5–8 mm across, the lobes deltoid, glabrous except for scattered glands on both faces, the margin ciliolate; calyx at fruiting to 17 mm across; *corolla* broadly infundibular to rotate, white with 2 green maculae flanking the radial vein extending to the tip

of each lobe, 12–13 mm across, 10-lobed: 5 lobes alternating with 5 lobules, the lobes triangular, adaxially glabrous on herbarium specimens but pilosulose with gland-tipped finger hairs 0.1 mm long on fresh specimens, abaxially with glands, the margin ciliate with finger hairs 0.5 mm long; *stamens* 5–6.5 mm; filaments off-white, pubescent on proximal 55%–70% of the length with unpigmented finger hairs; *anthers* yellow, 1.05–1.65 mm; *style* 6.5–8 mm, off-white; *stigma* capitate, shallowly bilobed (observed by pressing), green, 0.51–0.84 mm, exerted 2–2.4 mm beyond corolla; *gynoecium* glabrous except for stigma papillae 40 μ m long; disk girdling base of ovary. *Berries* subspherical, orange, to 12 mm across at maturity; *seeds* to 106 per fruit, $1.45 \times 1.15 \times 0.45$ mm.

Jaltomata oppositifolia is similar to *J. salpoensis* S. Leiva & Mione. Both species become woody with age; have somewhat small, lustrous, entire leaves, lustrous peduncles and pedicels, and a white corolla; and grow in northern Peru. *Jaltomata oppositifolia* has an upright habit, conspicuous corolla lobules, stamens 5–6.5 mm long, yellow anthers, and style 6.5–8 mm long. *Jaltomata salpoensis*, on the other hand, is prostrate and has a crateriform corolla that lacks lobules, stamens 2.5–3 mm long, white anthers, and style 2 mm long (Leiva & Mione, 1999).

Distribution, ecology, and etymology. *Jaltomata oppositifolia* is known from the type locality and from near the small town of Paraguay, both of Peru, department of Cajamarca, province Chota, between 2250 and 3090 m. This species grows in secondary growth and near streams but is not common. At the type locality it grows at the edge of one of the last remaining old-growth forests we saw in the region. This forest, Bosque El Pargo, was being cut for wood and agriculture when we visited in 1999. This species flowers and fruits in March, May, June, and August. The specific epithet derives from the apparent phyllotaxy.

Paratypes. PERU. **Cajamarca:** Prov. Chota, Bosque el Pargo (betw. Llama & Huambos), 14 Aug. 1994, *S. Leiva G., P. Chuna & J. Cadle 1523* (F, HAO), 18 Mar. 1997, *A. Sagástegui A., S. Leiva G. & V. Quipuzcoa 15996* (HAO), 19 June 1999, *T. Mione, S. Leiva G. & L. Yacher 674* (MO); a 1 km del poblado de Paraguay (betw. Querocoto & La Granja), 7 Aug. 1994, *S. Leiva G., P. Chuna & J. Cadle 1380* (CORD, F, HAO).

5. *Jaltomata yacheri* Mione & S. Leiva, sp. nov. TYPE: Peru. Cajamarca: Prov. Hualgayoc, near Hualgayoc, 3460 m, 18 June 1999, *T. Mione, S. Leiva G. & L. Yacher 670* (holotype, MO; isotypes, F, HAO). Figure 5.

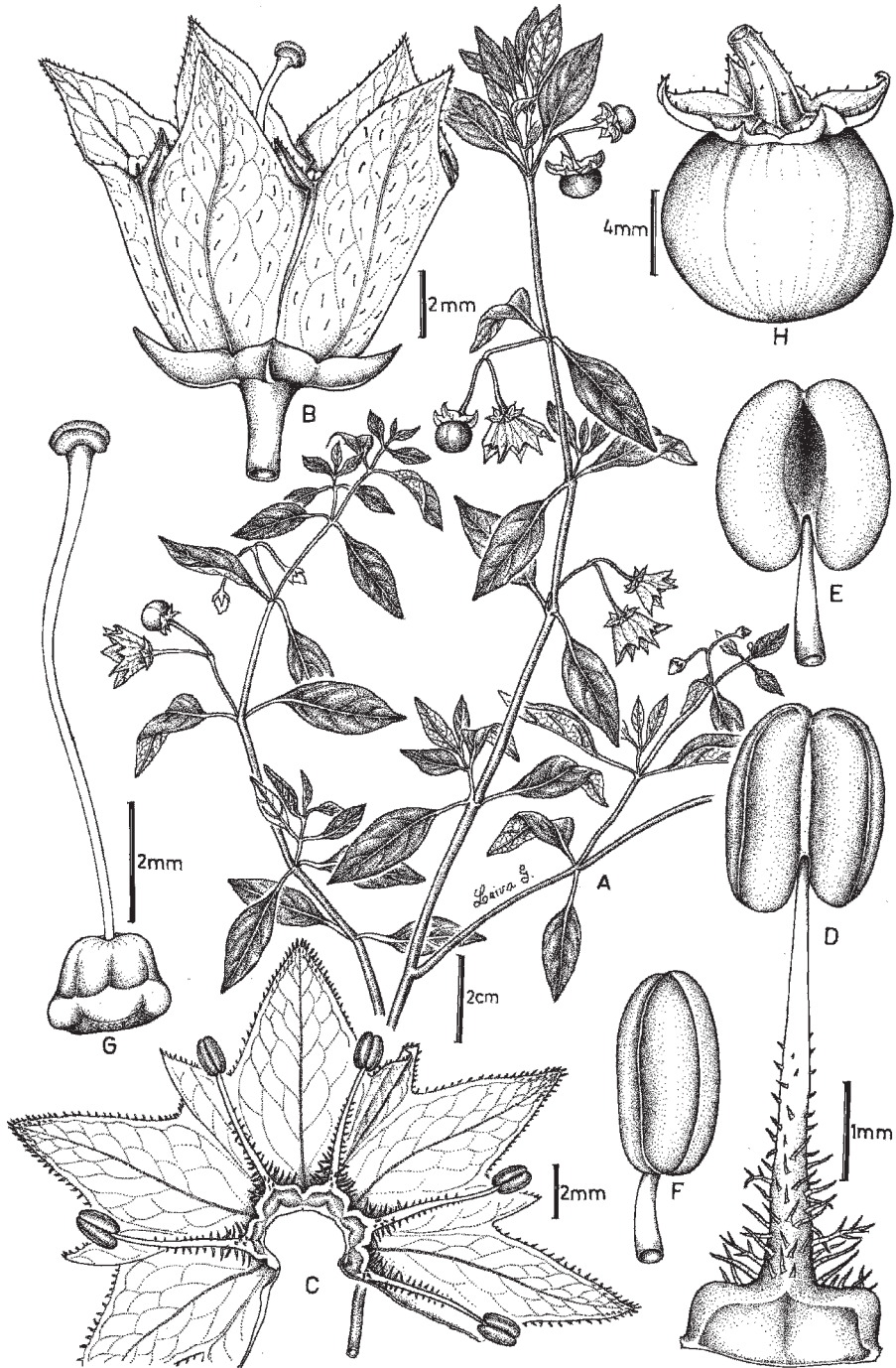


Figure 4. *Jaltomata oppositifolia* S. Leiva & Mione. —A. Branch with leaves, inflorescences, and fruits. —B. Flower, lateral view. —C. Corolla, dissected to show the insertion of the stamens. —D. Stamen, ventral view. —E. Anther, dorsal view. —F. Anther, lateral view. —G. Gynoecium, including the basal disk. —H. Berry with calyx, lateral view. Scale bar of D also applies to E and F. Drawn from S. Leiva G. et al. 1380 (HAO), by S. Leiva G.

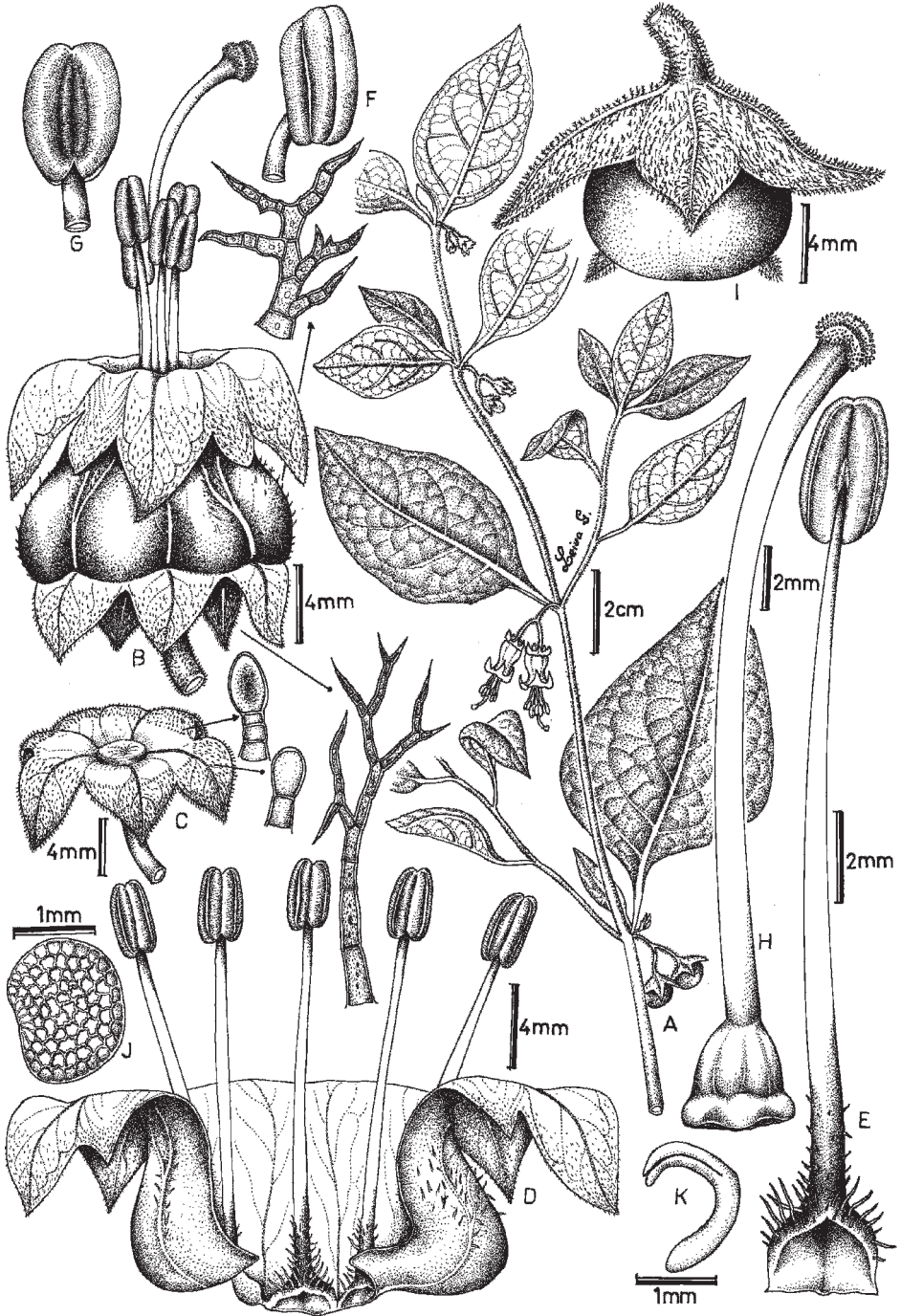


Figure 5. *Jaltomata yacheri* Mione & S. Leiva. —A. Branch with leaves, inflorescences, and fruits. —B. Flower, lateral view. —C. Calyx, oblique view. —D. Corolla, dissected to show the insertion of the stamens. —E. Stamen, ventral view. —F, G. Anther with distal portion of filament, lateral and dorsal views, respectively. —H. Gynoecium, including basal disk. —I. Berry with calyx, lateral view. —J. Seed. —K. Embryo of the seed. Scale bar of E also applies to F and G. Drawn from S. Leiva G. et al. 2372 (HAO), by S. Leiva G.

Suffrutex; laminae ad 8×4.6 cm, aliquantum coriaceae, piliferae simplices vel dendriticae; inflorescentia 2- ad 3(4)-flora; corolla urceolata, cyanea-purpurea, limbus 18–20(–25) mm latus, reflexus, lobis 10; stamina 13–17 mm, antherae 2.4–3.3 mm; styli 1.5–2 cm.

Suffrutescent, to 1.2 m high; young axes pilose and green; woody stems terete, glabrous, green. *Leaves* geminate, the blade ovate, to 8×4.6 cm, somewhat coriaceous, abaxially and adaxially pilose with hairs simple to branchlet, the apex acute, the base rounded to somewhat truncate, the margin entire, ciliate; petiole to 1.8 cm. *Inflorescence* axillary or less commonly arising from a stem dichotomy, 2- to 3-flowered (4-flowered including buds); *peduncle* 6–10 mm; *pedicel* 5–10 mm; both terete, green and lanate. *Calyx* green and reflexed at anthesis, to 18 mm across, the lobes triangular, abaxially velutinous with branchlet hairs, adaxially with glands, the margin ciliate; calyx at fruit maturity green and 18–20 mm across; *corolla* urceolate with a reflexed to revolute limb, bright blue-purple, the tube 8–13 mm long, glabrous within, the base 10–12 mm diam., with 5 cavities full of translucent nectar between the expanded bases of the stamens, abaxially with simple, forked, and branchlet hairs mostly on the main veins, the limb 18–20(–25) mm across including lobes, adaxially pilosulose with finger hairs 0.2–0.3 mm, the terminal cell of which is rounded and densely staining, 10-lobed with 5 lobes alternating with 5 lobules, all triangular, the margin ciliate; *stamens* 13–17 mm, varying in length within a flower prior to anther dehiscence; filaments dark purple at base, otherwise pale green, pubescent on proximal 20%–25% of the length with unpigmented simple hairs; *anthers* yellow, 2.4–3.3 mm, exerted 5–14 mm beyond the mouth of the corolla; *style* 1.5–2 cm, pale green; *stigma* capitate, bilobed, green, 0.84–1.5 mm, exerted 8–13 mm beyond the mouth of the corolla; *gynoeceium* glabrous except for stigma papillae 60–90 μm long; disk girdling base of ovary, nectar clear. *Berries* subspherical, orange, to 11 mm across at maturity, the style somewhat persistent. *Seeds* 55 to 108 per berry, reniform.

Jaltomata yacheri is similar to *J. contumacensis*. *Jaltomata yacheri* grows to 1.2 m high, has a bright blue-purple corolla, the corolla limb becomes revolute, the calyx is reflexed during anthesis, and the anthers are not mucronate. *Jaltomata contumacensis*, on the other hand, grows to 4 m high (with the support of other plants), has a light green corolla with a slightly recurved limb, the calyx is rotate during anthesis, and the anthers are sometimes mucronate.

Distribution, ecology, etymology, and uses. *Jaltomata yacheri* is known only from Peru, department

Cajamarca, province Hualgayoc, in the vicinity of the city of Hualgayoc, where it was locally common on the side of the road at 3460 m. The specific epithet was chosen by T. Mione and S. Leiva G. to honor Dr. Leon Yacher. Three locals told us that the mature berries are consumed uncooked.

Paratype. PERU. **Cajamarca:** Prov. Hualgayoc, near Hualgayoc, 18 June 1999, S. Leiva G., T. Mione & L. Yacher 2372 (CORD, HAO).

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Literature Cited

- Leiva G., S. 1998. Las Especies del Género *Jaltomata* Schlech. (Solanaceae: Solanaceae) del Norte del Perú. Master's Thesis, Universidad Nacional Mayor de San Marcos, Lima, Peru.
- & T. Mione. 1999. Dos nuevas especies de *Jaltomata* Schlechtendal (Solanaceae: Solanaceae) del Norte de Perú. *Arnaldoa* 6: 65–74.
- Mione, T. 1999. *Jaltomata* II: New combinations for five South American species (Solanaceae). *Brittonia* 51: 31–33.
- & R. Bye. 1996. *Jaltomata chihuahuensis* (Solanaceae): A new combination and observations on ecology and ethnobotany. *Novon* 6: 78–81.
- & L. A. Coe. 1996. *Jaltomata sagastegui* and *Jaltomata cajamarca* (Solanaceae), two new shrubs from Northern Peru. *Novon* 6: 280–284.
- & L. A. Serazo. 1999. *Jaltomata lojae* (Solanaceae): Description and floral biology of a new Andean species. *Rhodora* 101: 136–142.
- , S. Leiva G. & L. Yacher. 2000. Three new species of *Jaltomata* (Solanaceae) from Ancash Peru. *Novon* 10: 53–59.
- , D. Mugaburu & B. Connolly. 2001. Rediscovery and floral biology of *Jaltomata biflora* (Solanaceae). *Econ. Bot.* 55(1): 167–168.
- , S. Leiva G. & L. Yacher. 2004. *Jaltomata andersonii* (Solanaceae): A new species of Peru. *Rhodora* 106: 118–123.
- Sagástegui, A. A., S. Leiva G., P. Lezama A, N. Hensold & M. O. Dillon. 1995. Inventario preliminar de la flora del Bosque Cachil. *Arnaldoa* 3: 19–34.
- Seithe, A. 1979. Hair types as taxonomic characters in *Solanum*. Pp. 307–319 in J. G. Hawkes, R. N. Lester & A. D. Skelding (editors), *The Biology and Taxonomy of the Solanaceae*. Linnean Society Symposium Series No. 7. Academic Press, New York.
- Williams, D. E. 1985. Tres Arvenses Solanáceas Comestibles y su Proceso de Domesticación en el Estado de Tlaxcala, México. Master's Thesis. Institución de Enseñanza e Investigación en Ciencias Agrícolas, Chapingo, México.