12. ***Jacquemontia abutiloides*** Bentham, Botany of Voyage of *H. M. S. Sulphur*, 119. 1845. Type: Lower California, Bay of Magdalena, *Hinds s.n.* (K, holotype; see Raven, 1964).

Perennial vines or weak shrubs; stems slender and densely pubescent above, coarser, glabrescent, and somewhat woody below, to 3 m long, scrambling, trailing, or twining and climbing, with many short lateral branches, main stems radiating from a stout rootstock. Trichomes 3-armed, the arms ± equal or one up to twice as long as the others, 0.2–0.7 mm long, multangulate. Leaf blades ovate to broadly ovate, 2–5 (–8) cm long and 1.8–4.5 cm wide, often quite reduced on short lateral branches, pubescent above and below, the apices obtuse, acute, or rarely retuse, mucronate to acuminate or cuspidate, the bases cordate with a deep and wide sinus; petioles 1–3 (–4.5) cm long. Inflorescences (1-) 3- to 12-flowered, cymose, the dichasia once or twice compound; peduncles 2.5–8 (–13.5) cm long, exceeding the leaves, sometimes quite short near tips of lateral branches; pedicels 1–6 mm long; bracts linear, to 12 mm long. Flowers blue, often very numerous on plants; sepals unequal, the outer exceeding the inner, pubescent, slightly accrescent, the outer 2 ovate or narrowly ovate, slightly angular, 7–11 mm long and 3–6 mm wide, with attenuate apices, the inner ovate or broadly ovate, 5–7 mm long and 2.3–3.5 mm long, with abruptly attenuate apices; corollas broadly-funnelform or nearly rotate, entire, 1.5–2.2 cm long; stamens included, the filaments 7–9 mm long, the anthers 1.5–2.5 mm long; ovaries 1.5–2 mm long, a disk not discernable, the styles 6–7 mm long, exceeding the stamens, each stigma lobe broadly ovoid, 0.7–1.2 mm long. Capsules broadly ovoid, 5–6 mm long, partially enclosed by the sepals, opening by 8 valves. Seeds 2.7–3.5 mm long and 1.8–2.5 mm wide, lateral ridges absent or very narrow, the outer face rounded and humped, the surfaces minutely areolate and ruminate. Flowering from October to May and occasionally during the summer. 2*n*= 18 (Lewis, Stripling, & Ross, 1962).

*Jacquemontia abutiloides* is endemic to Baja California, extending from the vicinity of Calmallí south to Cape San Lucus (Map ---); one collection is known from Tiburon Island, Sonora. It is usually confined to the mainlands, rarely occurring on islands in the Gulf of California; conversely, a closely related species, *J. Eastwoodiana*, is common on the islands but rarely found on the mainland. *Jacquemontia abutiloides* prefers rocky slopes and is found on hillsides, in canyons, and along arroyos.

Illustration: Figure 11.

Representative Specimens: **Mexico.** Baja California (norte): N slope of Cerro Escondido, ca. 10 mi ENE of Santa Gertrudis, *Moran 11574* (UC); Calmallí, *Purpus 205* (G, UC); sandy arroyo, 5 mi W of Barril, *Wiggins 7833* (GH, MICH, NY, UC, US). Baja California Sur: San José del Cabo, *Anthony 364* (CAS, F, GH, K, MO, UC, US); Magdalena Bay, *Mason 1893* (CAS, UC, US); Arroyo del Cajón de Tecomajá, Sierra de la Giganta, SW of Puerto Escondido, alt 90–100 m, *Carter & Kellogg 2883* (MICH); Sierra de la Giganta, among granitic boulders, summit of Pilon de las Parras, W of Loreto, alt ca. 1110 m, *Carter & Sharsmith 4227* (GH, UC); near base of southernmost of Tres Virgenes volcanos, *Chambers 769* (UC); near S end of Vizaino Desert, about 15 mi N of San Ignacio, *Hammerly 103* (CAS, GH, US); on bluff overlooking La Paz Bay, about 15 mi W of La Paz, *Hammerly 220* (CAS, GH, US); Todos Santos, *Jones 24124* (ARIZ, F, GH, MICH, MO, NY, PH, UC); Ruffo Rancho Canyon, Cerralvo Island, *Moran 3632* (UC); rocky hillside above wash where it meets beach, 15.5 mi S of Todos Santos, *Porter 361* (CAS, GH); 23 miles E of San Ignacio, alt 1200 ft, *Shreve 7043* (ARIZ. F); arroyos 5–10 mi W of San Ignacio, *Wiggins 5441* (CAS, F, GH, MICH, NY, UC, US); granitic hills 3 miles N of El Barril along direct route to Bahia San Francisquito, alt. 500 ft, *Wiggins 16857* (MICH); Cape San Lucas, *Xanthus 82* (GH, NY, US). Sonora: El Sauz, SW side of Tiburon Island, alt 10 m, *Moran 8752* (MICH).

13. ***Jacquemontia Eastwoodiana*** I. M Johnston, Proceedings of the California Academy of Science IV. 12: 1133. 1924. Type: summit of Ildefonso Island, Gulf of California, *Johnston 3742* (CAS, holotype; isotypes GH, NY, US).

*J. abutiloides* var. *Eastwoodiana* (I. M. Johnston) Wiggins, Contributions from the Dudley Herbarium of Stanford University 4: 21. 1950.

Perennial vine or subshrubs; stems slender and densely pubescent above, woody and glabrescent below, upright, arching, trailing, twining, climbing, or prostrate, with numerous lateral branches. Trichomes 4–7-armed, the arms equal or one arm up to 3 times longer than the others, 0.1–0.4 mm long. Leaf blades ovate to broadly ovate, X–4.6 cm long and X–3.8 cm wide, reduced on lateral branches, densely pubescent, the apices acute, obtuse, or very rarely retuse, often mucronate, the bases cordate; petioles 3–7 (–17) mm long. Inflorescences with 1–3 flowers, cymose, the peduncles 0.3–7 cm long, usually exceeding leaves, the pedicels 1–3 mm long; bracts linear, to 5 mm long. Flowers blue, often very numerous on plants; sepals unequal, the outer exceeding the inner, densely pubescent, slightly accrescent, the outer 2 ovate or elliptic, 5.5–10 mm long and 4–7 mm wide, with acute or acuminate apices and narrowed, short-stipitate bases, the inner ovate, broadly ovate, or broadly elliptic, 4.5–6.4 mm long and 2.5–4.5 mm wide, with abruptly acuminate or abruptly acuminate apices; corollas funnelform, entire, 1.1–1.5 cm long; stamens included, the filaments 6–9 mm long, the anthers 1.7–2.2 mm long; ovaries 1.5–2.1 mm long, a disk faintly discernable, the styles 6–8 mm long, exceeding the stamens, each stigma lobe 0.5–1.4 mm long. Capsules broadly ovoid, 4–5 mm long, opening by 8 segments. Seeds 2.5–3 mm long and 2–2.4 mm wide, the outer 2 edges sometimes with a faint lateral ridges, the surfaces minutely areolate and ruminate. Flowering from November to May.

*Jacquemontia Eastwoodiana* is endemic to the eastern coast and adjacent islands of Baja California Sur (Map ---); Johnston (1924) said that what was undoubtedly (some word here) this species was seen on all the large islands from Carmen Island southward. Habitat information is sparse, but the species occurs most frequently on rocky slopes. This species and *J. abutiloides* are very closely related, differing in the shape of the sepal apices and the number of arms of the trichomes, and they appear to be largely allopatric. Felger and Lowe (1976) say that this species (as *J. abutiliodes* var. *eastwoodiana*) occurs in their “Riparian Desertshrub” and “Mixed Desertshrub” communities.

Illustration: Figure 11d.

Representative specimens: **Mexico.** Baja California Sur. Mainland: La Paz, *Jones 24083* (GH, MICH, MO); N of La Paz Port, 1.5 mi S of Pier, 3.1 mi NE on dirt road, *Reichenbacher 513 & Gallagher 99* (ARIZ); NE of Punta San Lorenzo, on NW end of peninsula, facing isla Espiritu Sando, 19km N of La Paz, *T.L. Burgess 6204 & R.M. Turner* (ARIZ). Isla Carmen: *Palmer 6* (GH, NY). Isla Danzante: near N end of island, *Carter & Sharsmith s.n*. (GH, UC). Isla Espiritu Santo: Bahia de San Gabriel, *Wiggins 15222* (ARIZ, GH). Isla Ildefonso: summit of island, *Johnston 3742* (CAS, GH, NY, UC, US); NW corner, alt 50m, *Hastings 71-10*8 (ARIZ). Isla Partida: cove near NW end, *Wiggins 16134* (MICH). Isla San Francisco: *Moran 3720* (MICH, UC, US). Isla San José: N side of Amartajada Bay near village, *Moran 3804* (UC). Isla San Marcos: mouth of canyon near middle, E side of Island, *Moran 3979* (UC). Isla Tortuga: SE rim of crater, *Johnston 3591* (A, CAS, GH, NY, UC, US).

14. ***Jacquemontia albida*** Wiggins & Rollins, Contributions from the Dudley Herbarium of Stanford University 3: 277. 1943. Type: Mexico. Sonora: along arroyo 1 mile NE of El Zapo, between Hermosillo & Tastiota, *Wiggins & Rollins 273*, (DS, not seen, holotype; isotypes GH, MO, NY, UC, US).

Vine; stems slender, scrambling or twining, with few lateral branches. Trichomes 3-armed, the arms equal, 0.4 mm long, porrect, very sparse. Leaf blades ovate, 3–8.5 cm long and 2–5 cm wide, the apices attenuate or acuminate, the margins entire or repand, the bases cordate; petioles 1.5–4.5 cm long. Inflorescences 2–5-flowered, distinctly dichotomously branched, simple or once compound; peduncles 5–13 cm long, exceeding the leaves; pedicels 1–2 cm long; bracts linear, to 5 mm long. Flowers white; sepals unequal, the outer exceeding the inner, glabrous, the outer 2 elliptic or broadly elliptic, 6–6.5 mm long and 3.5 mm wide, with acute or acuminate apices and slightly narrowed bases, the inner ovate, 5–5.5 mm long and 2–3 mm wide, with acute or short-attenuate apices; corollas funnelform, faintly 5-lobed, 2–2.5 cm long; stamens included, the filaments 8–11 mm long, the anthers 1.5–2 mm long; ovaries 1.5 mm long, with a basal disk, the styles 9–10 mm long, equaling or exceeding the stamens, each stigma lobe 0.7–1.2 mm long. Mature capsules and seeds not seen. Flowering collections known only in September.

--> **CHANGE** *Jacquemontia albida* is endemic to arroyos southwest of Hermosillo in the Sonoran Desert, Mexico. Shreve & Wiggins (1964) say that this species occurs southward to southern Sonora, but I have seen only two collections, both from near Hermosillo. The specimens from southern Sonora that Shreve and Wiggins considered to be *J. albida* are probably the related species, *J. polyantha*, which has outer sepals that are broadly ovate or ovate and pubescent instead of elliptic and glabrous. Habitat descriptions include dry level plain and riparian flood zone near sea level.

Illustration: Contributions from the Dudley Herbarium of Stanford University 3: pl. 64.

Specimens examined: **Mexico.** Sonora: 15 miles S of Hermosillo, twining vine under trees, mesquite bottomland, *Gentry 4565* (UC); along arroyo 1 mile NE of El Zapo, between Hermosillo & Tastiota, *Wiggins & Rollins 273* (GH, MO, NY, UC, US); about 2.2 miles NE of Hwy 15 (toward a microwave tower), about 6.9 miles SE of Cuidad Obregon, dry level plain, columnar cacti and small thorny trees dominant; common woody vine, without a thickened rootstock or milky sap, corolla white, *Stevens & Fairhurst 2049* (DUKE, MO); mouth of Arroyo Masiaca, Las Bocas on the Gulf of California, ca. 52 km (by air) S of Navojoa, 26° 35’ 55” N, 109° 20’ 04” W, near sea level, *Van Devender & Yetman 94-702* (ILLS);

?? Mpio. Huatabampo, coastal thorn scrub on flats 2.5 mi W of Hwy 15 on Hwy 176 to Huatabampo, ca 14 mi (airline) E of Huatabampo, 109° 24.5 W, 26° 50’ N, alt 50 m, *Sanders et al. 12673* (A).

?? Mpio. Navojoa, road junction to Las Bocas 2 km W of Hwy 15 on Hwy 176 to Huatabampo, 20 km E of Huatamampo, ca. 109° 25’ W, 26° 45’ N, alt 40 m, *Sanders et al. 13185* (A).

15. ***Jacquemontia cumanensis*** (Humboldt, Bonpland, and Kunth) O. Kuntze, Revisio Generum Plantarum 2: 441. 1891.

*Convolvulus cumanensis* Humboldt, Bonpland, and Kunth, Nova Genera Species Plantarum 3: 99. 1819. TYPE: Venezuela, Lagunae Chica, Gulfo de Cariaco, Prov. Cumanensis, *Humboldt & Bonpland* (P, not seen, holotype; photo, MO).

*C. ferrugineus* Vahl, Eclogae Americanae 1: 17. 1797, non *J. ferruginea* Choisy, Mémoires de la Société de Physique et d’Histoire Naturelle de Genève 8: 61. 1837. Type: American meridionali, *von Rohr s.n.* (C, holotype; IDC 2201, 13:16; isotype, BM).

*I. ferruginea* (Vahl) Roemer & Schultes in Linnaeus, Systema Vegetabilium 4: 240. 1819.

*I. cumanensis* (Humboldt, Bonpland, and Kunth) G. Don, A General History of the Dichlamydeous Plants 4: 273. 1838.

Perennial vines; stems coarse, slightly woody, densely pubescent, scrambling, climbing, or prostrate, with many many lateral branches. Trichomes 3-armed, the arms equal or slightly unequal, 0.3–0.4 mm long, multangulate. Leaf blades ovate or broadly ovate, 1.5–3 (–4.5) cm long and 1–2 (–3.5) cm wide, densely pubescent above and below, the apices acute to obtuse, mucronate, the margins slightly repand and undulate, the bases cordate; petioles 0.5–1.5 cm long. Inflorescences 1–12 flowered, cymose; peduncles 0.5–10 cm long, usually equaling or exceeding leaves; pedicels very short; bracts linear or narrowly elliptic, to 7 mm long. Flowers blue; sepals unequal, the outer exceeding the inner, densely pubescent, accrescent, the outer 2 broadly ovate, 5–8 mm long and 3–6 mm wide, with acute or acuminate apices and truncate, short-stipitate bases, the inner ovate, 4–5 mm long and 1.5–3 mm wide, with acuate or attenuate apices; corollas funnelform, faintly 5-lobed, 1.2–1.5 cm long; stamens included, the filaments 6–9 mm long, the anthers 1.5–2.5 mm long; ovaries 0.8–1.5 mm long, a small disk at the base, the styles 8–9 mm long, equaling or exceeding the stamens, each stigma lobe 0.6–1 mm long. Capsules broadly ovoid, 4.5–5 mm long, enclosed by the accrescent sepals, opening by 8 valves. Seeds 2–2.5 mm long and 1.5 mm wide, without lateral ridges, outer face rounded and faintly humped, the surfaces minutely areolate and verrucate-striate. Flowering from September to March (July).

*Jacquemontia cumanensis* occurs in Puerto Rico, the Virgin Islands, the Netherlands Antilles, and the northern coast of Venezuela from Cristóbal Colón west to the vicinity of Tovar. It occurs in rocky, arid habitats near the ocean, often within range of salt spray. The small leaves and dense pubescence are probably adaptations to its harsh environment, and the species evidently developed from *J. pentantha* by ecotype selection.

Illustration: Fig. 11.

Specimens Examined: **Netherlands Antilles.** Bonaire: *Boldingh f241* (NY). Curaçao: *Benzon 144-3505* (C); Rabritenberg, *Arnoldo-Broeders 3868* (A). St. Martin: *Boldingh 3374* (NY). **Puerto Rico.** Guánica: Guánica State Forest, 11 km E of Guánica on Highway 333, *Wadsworth 195* (WIS); Guánica State Forest, *Alain 9020* (IJ); Guánica, *Stevens & Hess* 3035 (NY), *Wagner 1351* (A); Guánica Insular Forest, W of Tamarindo Beach, *Liogier* 10605 (GH, IJ, NY, US); Lajas, *Vélez 1447* (A). PONCE: Ponce, *Underwood & Griggs 684* (NY). Vieques Island: Brigadier Point to Puerto Negro, *Shafer 2918* (CAS, NY, US). **Virgin Islands.** Little St. James: headland, *Britton & Shafer 184* (C, F, NY, US). Peter Island: *Britton & Shafer 857* (C, NY, US). St. Croix: E side of Cottongarden Point, *D’Arcy 4690* (FAU, MO, SIU); Cottongarden Point, *Fosberg 51372* (US); vicinity of East Point, *Proctor 20484* (A, IJ). St. John: Lamosure, *Britton & Shafer 622* (C, NY, US); Ram Head, *W. B. Robertson 20* (A). St. Thomas: *Oester s.n.* (C). Water Island: *Britton 298* (NY). Locality Unknown: Teyerkey, *Krebs s.n.* (C).

16. ***Jacquemontia mexicana*** (Loesener) Standley & Steyermark, Publications of the Field Museum of Natural History Botanical Series 23: 84. 1944.

*Aniseia mexicana* Loesener, Verhandlungen des Botanischen Vereins für die Provinz Brandenburg 58: 155. 1918. Type: Mexico. Chiapas: inter Tonalá et Tuxtla, prope Cuesta San Fernando, *Seler 1805* (B†, holotype; photos, F, MO, US).

Perennial vines; stems coarse, evidently suffruticose, woody below, scrambling, climbing, or prostrate, arising from a large rootstock, few lateral branches produced. Trichomes 3-armed, the arms equal to distinctly unequal, 0.3–0.7 mm long, multangulate. Leaf blades ovate or broadly ovate, 2.5–11.5 cm long and 1.5–8 cm wide, pubescent ( details ), the apices acute to attenuate, usually mucronate, the bases cordate; petioles 1–5 cm long. Inflorescences 3–12 flowered, loosely cymose, simple or compound; peduncles 3–22 cm long, exceeding the leaves, distinctly dichotomously branched at the apex; pedicels to 1 cm long; bracts linear or narrowly elliptic, to 1.2 cm long. Flowers white or blue and white; sepals unequal, the outer exceeding the inner, pubescent, accrescent, the outer 2 broadly ovate, 7–12 mm long and 6–9 mm wide, with acute or acuminate apices and cordate bases, the inner narrowly ovate, 5–6 mm long and 2 mm wide, with acuminate apices; corollas funnelform, entire, 1.4–3 cm long; stamens included, the filaments 4–15 mm long, the anthers 1–2.3 mm long; ovaries 1–1.5 mm long, a small disk at base, the styles 7–15 mm long, equaling or exceeding the stamens, each stigmatic lobe 1–1.5 mm long. Capsules globose, 3–3.5 mm in diameter, enclosed by accrescent sepals. Mature seeds not seen. Flowering from November to March.

*Jacquemontia mexicana* occurs along the western part of Central America from Chiapas, Mexico to Costa Rica at altitudes from less than 30 to over 400 meters (Map ---). Habitat information is sparse, but the species evidently occurs on dry unforested slopes. This species is similar to *J. Pringlei,* but differs in having 3-armed instead of 4-armed trichomes, smaller capsules, and laxer inflorescences that have more flowers.

Specimens examined. **Mexico**. Chiapis: inter Tonalá et Tuxtla, prope Cuesta San Fernando, *Seler 1805* (B+, photo MO). Oaxaca: 5.5km al S de el entronque de la carr. que va a Niltepec con el camino a Piedra larga, El entronque esta 10km al SE de la Ventosa, alt 100m, *Torres 4091* (MO). Sinaloa: About 2.6 mi from Hwy 15 along road to microwave tower, about 17 mi SE of Emcosa, common vine, without milky sap, with a slightly thickened and woody rootstock, otherwise herbaceous, corolla blue, *Stevens & Fairhurst 2042* (MO). **El Salvador.** La Union: Conchagua, Gulf of Fonseca, sandy loam soil, cultivated land, *Barclay 2603* (BM). Sonsonate: vicinity of Acjutla, dry thicket, alt 30 m or less, *Standley 2l978* (GH, NY, US); vicinity of San Antonio del Monte, dry slope, alt ca 250 m, *Standley 22143* (GH, NY, US). **Guatemala.** Santa Rosa: region of La Morenita, NE of Chiquimulilla, brushy hillside, alt ca 400 m, *Standley 78873* (F, US). **Nicaragua.** Carazo: ca. 3.3 km SE of Casares on road to Huehuete, SE of La Bocana Grande (estuary of Rio Grande), alt. 0-50 m, *Stevens 5208* (FAU); Route 2, Santa Teresa, shady clay bank, *Moore & Nichols 1321* (MO). Granada: Grenada, *Baker 70* (CAS, GH, MICH, MO, NY, UC), *844* (US); environs de Granada, haies, alt 40 m, *Lévy 441* (C, F, G); Granada, *Ørsted 12560* (C, US). Managua: Sierra de Managua, alt 600–900 m, exact locality unknown, *Garnier 104* (F); vicinity of Managua, *Garnier 266* (US); Las Maderas, “Aseses”, alt ca. 100 m, *Moreno 18740* (FAU); El Tamarindo, 3 km W of Cuesta el Coyol, alt ca. 300 m, *Moreno 22522* (FAU); Managua, near beach, Masachapa, *Nichols 1382* (MO). Rivas: San Juan del Sur, *Narvaez 1253* (MO). Department Unknown: *Ørsted 12653* (C), 12654 (US); anno 1853-56, *Wright s.n.* (GH, US). **Costa Rica.** Guanacaste: bosque humido, Santa Rosa National Park, *Janzen 10674A* (MO).

17. ***Jacquemontia oaxacana*** (Meisner) Hallier f., Botanische Jahrbücher für Systematik 16: 543. 1893.

*J. parviflora* Choisy var. *oaxacana* Meisner in Martius, Flora Brasiliensis 7: 297. 1869. Type: Mexico, Oaxaca, Cordillera, Nov.–April 1840, *Galeotti 1359* (W).

*Convolvulus polyanthus* sensu Martens & Galleotti, Bulletins de l’Académie Royal des Sciences et Belles-Lettres de Bruxelles 12: 259. 1845, non Schlechtendal & Chamisso, Linnaea 5: 117. 1830.

Perennial vine; stems coarse, slightly woody, to several m long, lateral branches frequent, short or elongated --> climbing, scrambling??? <--. Trichomes 3-armed, the arms + equal or one arm longer, to 0.4 mm long, multangulate. Leaf blades broadly ovate, 4–9.5 cm long and 2–6 cm wide, glabrescent to scattered-pubescent, the apices attenuate, the bases cordate; petioles 0.5–7 mm long. Inflorescences many-flowered, loosely cymose, the dichasia compound, the peduncles 5–24 cm long, exceeding the leaves, the primary pedicels 0.5–2 cm long; bracts linear, to 5 mm long. Flowers white or blue; sepals subequal, mostly glabrous, obovate-rhomboidal, 3–5 mm long and 2–3 mm wide, with obtuse and mucronate apices and slightly narrowed bases; corollas funnelform, entire, 1–2 cm long; stamens included, the filaments 6–10 mm long, the anthers 1.5 mm long; ovaries 1–1.5 mm long, a small disk at the base, the styles 7–9 mm long, exceeding the stamens, each stigma lobe 0.7–1.5 mm long. Capsules globose, 4.5–5 mm in diameter, opening by 8 valves. Seeds 2 mm long and 1.8–2 mm wide, the outer face rounded and humped, lateral ridges absent, the surfaces minutely areolate and sometimes slightly ruminate. Flowering from August to November.

*Jacquemontia oaxacana* is found in the states of Oaxaca, San Luis Potosi, and Veracruz, Mexico. Habitat information is very sparse. This species is related to *J. polyantha* and *J. pentantha.* but the subequal, mostly glabrous, rhomboid sepals are distinctive. Note: at least three different collections made by *Galeotti* were give the collection number of *1350*, as shown in the list of specimens given below.

Illustration: Figure 11 e, f.

Specimens examined: **Mexico**. Oaxaca: without locality, *Franco s.n.* (BM); anno 1842, *Franco 136* (W); without locality, *Galeotti 1350* (BR); Cordillera, *Galeotti 1359* (W); District of Tuxtepec, Chiltepec and vicinity, alt 20 m, *Martínez-Calderón 255* (A, UC, US), *280* (A, UC, US), *690* (MICH); District of Cuicatlan, Teutila, alt 3500 ft, *L. C. Smith 599* (GH). San Luis Potosi: Mex. highway 85, 13–15 mi SW of Tamazunchsle, alt 675–790 m, *Anderson & Laskowski 4040* (MICH). Veracruz: Tramo San Juliana Antigua, via N al Tampico, ca. 15 km N of Veracruz, ± 2 km N of La Antigua, Playa Chachihueca, *Austin & de la Puente 7482* (FAU); Cordillera, *Galeotti 1350* (G, K); Mirador, anno 1842, *Galeotti s.n.* (BR); Mirador, alt. 3000 ft, *Heller 14* (W); S of city of Veracruz, on Hwy 180 a few km S of its jct with the Hwy 140 bypass, alt 5 m, *Judziewicz 3198* (WIS); ca. 3 mi S of Veracdruz along Hwy 180 to Catemaco, sea level, *Lasseigne 4911* (WIS); Mirador, *Liebmann 12395* (C, F, MO, US); Mirador, alt ca 1000 m, *Ross 610* (L, NY); Cordoba, *Kerber 27* (BR, C, G, MICH, MO); Sta. Gertrudis, *Liebmann 12467* (C, US); Corral de Piedras, Zacuapan, *Purpus 7475* (GH, MO, NY, UC, US); El Fortin San Martin, rocky slopes, *Purpus 16262* (F); Buena Vista, municipio de Dos Ríos, alt. 250 m, *Ventura 2890* (F, MICH). State Unknown: *Galeotti 1350* (BR); *Liebman 12397* (C, US); *Muller 116* (NY); *Sessé et al..425* (*1658*) (F).

18. ***Jacquemontia pentantha*** (Jacquin) G. Don, A General History of the Dichlamydeous Plants 4: 283. 1838.

*Convolvulus pentanthos* Jacquin, Collectanea. 4: 210. 1791. Type: Hb. Jacquin, Hort. Schombr. (W, lectotype, selected by D’Arcy, 1970).

*C. azureus* L. Richard, Actes de la Sociéte d’Histoire Naturelle de Paris 1: 107. 1792. Type: Guyane- Francaise, anno 1792, *Leblond* (P-Herb. Lamarck, holotype,not seen; IDC 6207, 464: 9; isotype?, G), *non auct. pl*.

*C. nummularius* Vahl, Eclogae Americanae 2: 12. 1798. Type: *von Rohr s.n.* (C- Herb. Vahl, holotype; isotype C-Herb. Schumacher).

*C. violaceus* Vahl, Symbolae Botanicae 3: 29. 1794, *non* Sprengel in Linnaeus, Systema Vegetabilium 1: 599. 1824. Type: Habitat in Insula St. Crucis. *Dn. Rector West* (no specimen known).

*C. canescens* Humboldt, Bonpland, and Kunth, Nova Genera Species Plantarum 3: 99. 1819, *non* Roth, Novae Plantarum Species 107. 1821. Type: *Humboldt & Bonpland* (P-Herb. H.B.K., not seen; IDC 6209, 66: 19).

*J. violacea* (Vahl) Choisy, Mémoires de la Société de Physique et d’Histoire Naturelle de Genève 8: 61. 1837.

*J. violacea* var. *abbreviata* Choisy, Mémoires de la Société de Physique et d’Histoire Naturelle de Genève 8: 62. 1837. Based on *C. pentanthos* Jacquin.

*J. violacea* var. *canescens* (Humboldt, Bonpland, and Kunth) Choisy, Mémoires de la Société de Physique et d’Histoire Naturelle de Genève 8: 62. 1837.

*J. violacea* var. *rotundifolia* Choisy, Mémoires de la Société de Physique et d’Histoire Naturelle de Genève 8: 62. 1837. (No specimens cited or known).

*J. azurea* (L. Richard) Choisy, Mémoires de la Société de Physique et d’Histoire Naturelle de Genève 8: 62. 1837.

*Ipomoea canescens* (Humboldt, Bonpland, and Kunth) G. Don, A General History of the Dichlamydeous Plants 4: 273. 1838.

*J. violacea* var. *glabriuscula* Meisner in Martius, Flora Brasiliensis 7: 296.1869. Based on *C. pentanthos* Jacquin.

*J. violacea* var. *guatemalensis* Meisner in Martius, Flora Brasiliensis 7: 296. 1869. Type: Guatemala, *Friedrichstahl 1* (W).

*C. umbellatus* Sessé & Mociño, Flora Mexicana ed. 2, 32. 1894. Type: *Sessé et al.* (presumably MA, not seen).

*J. elongata* Britton, Bulletin of the Torrey Botanical Club 53: 470. 1926. Type: Trinidad, Manzanilla, *Britton 2191* (NY, holotype; isotype US).

*J. houseana* Standley, Publications of the Field Museum of Natural History Botanical Series 11: 140. 1932. Type: British Honduras, El Cayo, *Bartlett 12928* (F, holotype).

Perennial vines; stems woody below, to several m long, variously pubescent, numerous short lateral branches produced, main stems radiating from a stout rootstock. Trichomes 3-armed, the arms ± equal, multangulate, recurving. Leaf blades ovate, narrowly ovate, or broadly ovate, 3–7 (–10) cm long and 2–5 (–6) cm wide, the apices long attenuate to acute, the margins usually faintly repand and undulate, the bases cordate; petioles 0.3–10 cm long. Inflorescences with numerous flowers, compound, condensed-cymose; peduncles to 15 cm long, equaling or exceeding the leaves; pedicels 1–15 mm long; bracts linear, narrowly ovate, or narrowly elliptic, to 1 cm long and 0.5 cm wide. Flowers blue or lavender; sepals unequal, the outer exceeding the inner, glabrous to densely pubescent, prominently veined, slightly accrescent, the outer 2 narrowly to broadly rhomboid, rarely ovate, 4–10 mm long and 2.5–5 mm wide, with attenuate apices and narrowed, short stipitate bases, the inner narrowly to broadly ovate, 3–7 mm long and 2–3 mm wide, with acute to attenuate apices; corolla funnelform, entire, 1–2 cm long; stamens included, the filaments 4–11 mm long, the anthers 1–2.5 mm long; style 5–11 mm long, exceeding the stamens, ovary 0.8–2 mm long, a small disk at the base, each stigma lobe 0.5–2.5 mm long, often recurving. Capsules subglobose or broadly ovoid, 4–6 mm long, sometimes partially enclosed by the accrescent sepals, opening by 8 valves. Seeds 1.5–2.5 mm long and 1.5–2 mm wide, the outer face rounded and humped, narrow, irregular lateral ridges sometimes present on outer 2 margins, the surfaces minutely areolate and verrucate. Flowering nearly year-round.

*Jacquemontia pentantha* is a very common species in the West Indies, Mexico, Central America and northern South America (Map ---); it is rarely found in the Bahama Islands, (but, yet) does occur on the Florida Keys. *Jacquemontia pentantha* is also cultivated in Africa, India, and Malaysia. The species occurs in a variety of habitats... . It is morphologically quite diverse, particularly in the degree of compactness of the inflorescences and in the density of trichomes on the leaves and sepals. In Mexico and Central America (it, the species) appears to be at the center of a series of group of species that include *J. abutiloides, J. Eastwoodiana, J. albida, J. mexicana, J. oaxacana, J. pinetorum, J. polyantha, J. Pringlei, J. pycnocephala* and *J. Smithii*. The present treatment does not adequately cover the range of variation found in Mexico, and further studies are underway.

Some specimens from Puerto Rico and the Virgin Islands have leaves with rounded and mucronate apices. But normal leaves can occur on the same herbarium specimen.

LEAVES SMALL ( Virgin Islands: St. John, Cruz Bay Quarter, Center Line Road, km 2.2, *P. Acededo Rdgz. & A. Siaca* 4102 (MO), ibid, Center Line Road, km 1.8,  *P. Acededo Rdgz. & A. Siaca* 4100 (MO)

Chromosome number: *n* = 9. MEXICO. Quintana Roo: Cozumel Island, vicinity of San Miguel de Cozumel, *Lewis 6853*; plants grown from seed at MO; voucher specimens at MO. Other chromosome numbers reported for this species are 2*n* = 18 (16) and *n* = 9 (Sharma & Chatterji, 1957, as *J. violacea*), *n* = 9 (Raman & Kesavan, 1963, as *J. violacea*), *n* = 9 (Pal, 1964, as *J. violacea*), 2*n* = 20 (Jones, 1968), and *n* = 9 (Vij et al., 1977).

Illustrations: Figure 9; also color photograph in Rickett (1966).

Representative Specimens: **Anegada**:*D’Arcy 4911* (FAU, MO, SIU). **Anguilla**:*Boldingh 3544* (NY). **Antigua**: *Box 1047* (BM, MO, UC, US), *1039* (US). **Bahama Islands**. Cay Sal Bank: Anguilla Isles, *Wilson 8057* (F, MO, NY). **Barbados**:*Dash 322* (F, NY); *Proctor 25818* (A, IJ). **Barbuda**:*Box 646* (BM, US). **Cuba.** Camagüey: *Shafer 2452* (BM, F, GH, NY, US). Habana: *Wilson 1384* (CAS, F, K, NY, UC, W, US). Las Villas: *Britton & Wilson 5531* (NY). Matanzas: *Rugel 284* (GH, L, NY). **La Désirade**: central plateau, *Proctor 21266* (A). **Dominica**: *Stern & Wasshausen 2532* (IJ, US). **Dominican Republic.** Altagracia: *Augusto 513* (NY). Azua: *Rose et al. 4417* (C, US). Barohona: *Fuertes 1123* (GH, K, NY). DISTRITO NACIONAL: von TuEckgeim 251Q (BM, BR, F, GH, L, M, MO, NY, US, W). **Grenada**: *Howard 10689* (GH, IJ, NY). **The Grenadines.** Bequia: *Smith & Smith B4* (GH). Connouan Island: *Beard 1047* (GH, MO, NY, US). Mustique Island: *Smith 947* (NY). Union Island: *Howard 11018* (B, GH, IJ, NY). Tobago Cays: *A. C. Smith 10146* (A, IJ, NY, UC, US). **Guadeloupe.** Basse Terre: *Duss 2469* (F, NY, US). Grande Terre: *Crobsy & Crosby 4693* (MO). **Haiti.** Sud: *Ekman 2362* (A, F, GH, IJ, K, NY, US). **Iles des Saintes.** Terre de Haut: *Proctor 20080* (A, IJ). **Jamaica.** Clarendon: *Proctor 31125* (IJ). Hanover: 1-3-1891, *Hitchcock s.n.* (MO). Manchester: *Proctor 22892* (IJ). St. Elizabeth: *Stearn 844* (A, BM). St. James: *Proctor 24296* (BM, IJ). Westmoreland: *Harris 11817* (BM, F, K, MO, NY, US). **Marie Galante**:*Proctor 20252* (A, IJ). **Martinique**:*Hahn 938* (US), *938*(GH, K). **Montserrat**:*Shafer 307* (CM, F, NY, US). **Puerto Rico.** Aguadilla: *Britton & Britton 9271* (NY). Arecibo: *Britton & Cowell* 1965 (F, GH, NY, US). Guayama: *Britton et al. 5894* (NY). Humaco: *Britton & Shafer 1570* (NY, US). Mayagüez: *Britton & Cowell 4072* (F, GH, MO, NY, US). Ponce: *Sintenis 3160* (C, GH, K, US). San Juan: *Heller & Heller 315* (F, NY, US). Cayo Muertos: *Britton et al. 5024* (NY, US). Culebra Island: *Millspaugh 610* (F). Isla Mona: *Britton et al. 1712* (NY). Vieques Island: Shafer *2612* (CAS, NY, US). **St. Eustatius**:9 May 1885, *Suringar s.n*. (L). **St. Kitts**: *Britton & Cowell 350* (NY); *Proctor l8479* (A, IJ). **St. Lucia**:*Proctor 21672* (A, IJ). **St. Vincent**: *Cooley 8476* (GH, IJ). **Tobago**: B*roadway 3124* (F, MO, NY); *Broadway 9050* (A, BM, MO). **Little Tobago**:*Dinsmore JJD6* (WIS). **Virgin Islands.** St. Croix: *Benzon 1818* (C); *Ricksecker 196* (F, GH, MY, NY, UC). **St. John**: *Woodworth 31* (F), *74* (F), *90* (F). **St. Thomas**: *Eggers s.n*. (C); *Millspaugh 403* (F, NY). **Tortola**:*Fishlock 204* (F, GH, K, US). **United States.** Florida. Collier Co.: Big Cypress Swamp, along Florida Route 94, *Crane & Schoknecht s.n.* (ILLS). Monroe Co.: Pine Crest, edge of hammock, 9 September 1929, *O’Neill s.n.* (US); Cypress Lodge, Pine Crest, *Moldenke 341* (US); Bahia Honda Key, *Curtiss 5646* (G); Big Pine Key, *Eyles & Eyles 8189* (GH), *Killip 31453* (CAS, US); Crawl Keys, *Small & Carter 2960* (NY), 28–29 January 1909, *Small & Carter s.n.* (US); Fishbone Key, *Seibert 1334* (MO, UC); Indian Key, 14 December 1919, *Small & Britton s.n.* (GH); Islamorada Key, *Boom 38385* (L); Key Largo, 26 March 1939, *Beardslee s.n.* (DUKE); Key West, *Rugel 26* (BM, GH, MO, NY); Long Island, *Small 3894* (NY); Long Key, salt marsh, NW side of the, *Lakela 27941* (DEK); viaduct Lower Matecumbe, *Duckett 8144* (CAS, F, UC), *Moldenke 782* (PH, US); No-Name Key, *Curtiss 2170* (BM, CM, GH, L, M, PH, NY, US), *5631* (US); Plantation Key, *Deam 60508* (UC); Upper Matecumbe Key, *Pollard et al. 149* (BM, DUKE, F, G, NY, US, W). Palm Beach Co.: *Small & DeWinkeler 9662* (NY). **Mexico.** Chiapas: *Matuda 0986* (A, F, MO, NY). Chihuahua: *Gentry 1965* (F, GH, MO). Durango: *Hendricks 696* (MO). Michoacan: *Hinton 15318* (ARIZ, GH, NY, PH, US, W). Nuevo Leon: *Lacas 510* (F). Puebla: *Oliver et al.*  (F, MO). Quintana Roo: *Lewis 6853* (MO). San Luis Potosi: *King 3984* (F, NY, US, US). Sinaloa: *Rose et al. 13919* (NY, US). Yucatan: *Gaumer 917* (BR, F, MO, NY, US, W). **Belize.** El Cayo: *Chanek 217* (F, L); *Gentle 2274* (A, CM, F, MO); *Spellman 1358* (MO). **Costa Rica.** Puntarenas: *Allen 5945* (F); *Léon 798*. **El Salvador**.Moraxán: *Tucker 472* (F, NY, UC, US). Santa Ana: Standley *20355* (GH, NY, US). San Vincente: *Standley 21253* (GH, US). **Guatemala.** El Progresso: *Steyermark 43333* (F). Huehuetenango: *Steyermark 50774* (F, NY). Petén: *Ortíz 462* (MO). RETALHULEA: Standley 88588 (F). QUEZALTENANGO: Skutch 1348 (F, GH). SUCHITEPEQUEZ: Standley 2250 (CM, F, NY). **Honduras.** Morazán: *Molina l8687* (F, NY). **Nicaragua.** Granada: *Ørsted 12562* (C, F, US). Zelaya: *Molina 2425* (F, GH). **Panama**. Canal Zone: *Lewis et al. 45* (COL, DUKE, MO, SCA, UC). Coclé: *Burch et al. 1368* (MO, SCZ, UC). Darien: *Duke 10538* (MO). Herrera: *Burch et al. 1185* (COL, DUKE, MICH, MO, NY, SCA, UC). Los Santos: *Burch et al. 1218* (COL, DUKE, MO, SCZ, UC). Veraguas: *Tyson 6079* (MO).

19. ***Jacquemontia pinetorum*** Standley & Steyermark, Publications of the Field Museum of Natural History Botanical Series 22: 372. 1940. TYPE: Guatemala. Izabal: Open rocky places along road in pine forest, between Milla 49.5 and ridge 6 miles from Izabal, Montana del Mico, alt. 65–600 m, 1 April 1940, *Steyermark 38533* (F, holotype).

Perennial vine; stems coarse, densely pubescent, quite woody below, trailing or creeping with ascending tips, numerous lateral branches produced. Trichomes 3-armed, the arms + equal, multangulate. Leaf blades ovate, 2–5.5 cm long and 1.5–3.5 cm wide, densely pubescent, the apices acuminate, the margins faintly repand, the bases slightly to distinctly cordate; petioles 0.5–2 cm long. Inflorescences to 12-flowered, compactly cymose; peduncles Xmm long, equaling or exceeding the leaves, the pedicels Xmm long; bracts linear, to 4 mm long. Flowers blue or lavender-purple; sepals unequal, the outer exceeding the inner, densely pubescent, the outer 2 3.5–5 mm long and 2–4 mm wide with acute or abruptly short-acuminate apices, the inner ovate, 3 mm long and 1.5 mm wide, with acute apices; corollas funnelform, entire, 8–9 mm long; stamens included, the filaments 6 mm long, the anthers 1.5 mm long; style 6 mm long, exceeding the stamens, ovary 1 mm long, a small disk at the base, each stigma lobe 1 mm long. Capsules and mature seed not seen. Flowering collections known only from February and April.

*Jacquemontia pinetorum* is known only from the Depatment of Izabal in Guatemala (Map-- ). It is probably a species derived locally from the much more widespread *J. pentantha*, from which it differs by the very compact inflorescence, the elliptic to subcircular outer sepals, and the dense pubescence of the leaves and sepals.

Illustration: Figure 12g, h.

Specimens examined: **Guatemala.** Izabal: 1–5 km from Highway CA-9 on road to Mariscos, Lake Izabal, serpentine substrate, alt 0–600 m, *G. C. Jones et al. 3110* (F, IJ, MICH, NY, US); between Milla 49.5 and ridge 6 miles from Izabal, Montaña del Mico, alt 65–600 m, *Steyermark* *38533* (F); Mariscos, bordering Izabal Lake, on Plaza Dorada, in low forest, *Contreras 7559* (F).

20. **J*acquemontia*** ***polyantha*** (Schlechtendal & Chamisso) Hallier f., Botanische Jahrbücher für Systematik 16: 543. 1893.

*Convolvulus polyanthos* Schlechtendal & Chamisso, Linnaea 5: 117. 1830. Type: Mexico. Vera Cruz: Hacienda de la Laguna (5 leagues S and 1.5 leagues E of Serro de San Marco, a low truncated cone at the foot of Cofre de Perote, vicinity of Jalapa), *Schiede & Deppe 220*, (B†, holotype, not seen, photographs MO, US; isotypes BM, W).

*J. apiculata* House, Muhlenbergia 5: 66. 1909. Type: Mexico. Tamaulipas: vicinity of Victoria, alt 320 m, Palmer 117 (NY, holotype; isotypes CM, F, GH, MO, US).

Perennial vine; stems coarse, slightly woody, glabrescent, to several meters in length, short to elongated lateral branches produced frequently. Trichomes 3-armed, the arms + equal, multangulate, sometimes recurving. Leaf blades broadly ovate to subcircular, 3–7.5 (–11) cm long and 1–4.5 (–6.5) cm wide, scattered-pubescent, the apices attenuate, abruptly acuminate, or obtuse and mucronate, the margins faintly repand or undulate, the bases cordate with a shallow or pronounced sinus; petioles 1–3 (6.5) cm long. Inflorescences 7–many flowered, loosely cymose, the dichasia often compound; peduncles 4–15 cm long, exceeding the leaves, the pedicels 1–15 mm long; bracts linear, to 1 cm long. Flowers white, blue, or lavender; outer sepals exceeding the inner, the outer 2 broadly ovate or ovate, glabrous to scattered-pubescent, prominently veined 5–7 mm long and 2.5–5 mm wide, the apices acute, acuminate, or slightly attenuate apices, the bases narrowed to a short stipe; corollas campanulate, entire, 1.1–2.4 cm long; filaments 5–12 mm long, the anthers 1–2 mm long; ovary 0.8–1.7 mm long, a small disk at the base, the styles 6–11 mm long, exceeding the stamens, each stigma lobe 0.5–1.7 mm long. Capsules broadly ovoid, 5 mm long, partially enclosed by the sepals, opening by 8 valves. Seeds 3 mm long and 2.7 mm wide, without lateral ridges, the outer face rounded and humped, the surface minutely areolate and verrucate-striate. Flowering all year, most frequently collected from September to November.

*Jacquemontia polyantha* is found in the Sierra Madre Occidental, Sierra Madre Oriental, and Sierra Madre del Sur mountain ranges of Mexico (Map ---). It occurs most frequently in the Oak Forest Zone of Gentry (1942) and the Pine-Oak Forest of Leopold (1959, 1959) and Shelford (1963) at altitudes from 200 to 1500 meters; some collectors describe the habitat as “tropical deciduous forest”. Williams (1970) reported this species (as *J. apiculata*) from Guatemala, but I have seen no specimens from that country. **It may be that the specimen of J. mexicana from Guatemala was originally identified as J. apiculata – check specimen at the Field Museum.**

This species is very closely related to *J. pentantha*, differing in the more open cymes and the ovate outer sepals. Most of the species I now refer to *J. polyantha* were previously identified as *J. pentantha, J. pringlei, J. apiculata*, or *J. oaxacana*. Photographs of the holotype, *Schiede & Deppe 220* (B, specimen destroyed), give the locality "Hacienda de la Laguna." The exact location of this region was obtained from Schiede (1829, p. 232). Hallier annotated the type collection, indicating that *J. corymbulosa* Bentham and *J. guayaquilensis* Meisner were synonyms of *J. polyantha.* After examining types of all three names, I think that *J. guayaquilensis* is a synonym of *J. corymbulosa,* but that this species is distinct from *J. polyantha;* this is the same treatment adopted by Austin (1982a).

Illustration: Figure 11.

Specimens Examined: **Mexico.** Chihuahua: Guasaremos, Río Mayo, oak slope, *Gentry 1866* (F, UC). Colima: 3 km N of Ixtlahuacan, *Magallanes 2223* (FAU); mountain summits near pass ca 11 mi SSW of Colima on Manzanillo Rd, alt. 400–500 m, *McVaugh & Koelz 1075* (MICH). Guerrero: 16.6 km S of Rio Mezcala Bridge on Mexico City–Acapulco Hwy, *Doebley 504* (FAU); Pungarabato, district Coyuca, *Hinton et al. 6638* (F, GH, K, NY, PH, US), *6874* (ARIZ, F, GH, MO, NY); Chacamerito, district Coyuca, *Hinton et al. 8510* (GH, NY, PH, US); Puerto de Oro, district Mina, alt 500 m, *Hinton et al. 9814* (ARIZ, GH, K, NY, PH, NY, US, W).México: Chorrera, district Temascaltepec, alt 1230 m, *Hinton et al. 2177* (F, GH, K, NY, US); Valcán, district Temascaltepec, *Hinton et al. 8533* (MICH, NY, PH, US, W). Michoacan: Zitacuaro-Los Guajes, district Zitacuaro, alt 1300 m, *Hinton et al. 13216* (G, GH, K, MICH, MO, NY, PH, US). Oaxaca: ca 20 km W of Puerto Escondido on road to Pinotepa Nacional, alt less than 100 m, *Anderson & Anderson 5633* (MICH); N of Las Minas, cerca Tapanatepec, Rd Tuxtula–Juchitan, alt. 310 m, *Austin & de la Puente 7511* (FAU). Sinoloa: Mazatlán, 3 November 1893, *Brandegee s.n.* (UC); Cerro Colorado, vicinity of Cuîacan, 1 November 1904, *Brandegee s.n*. (UC); vicinity of Los Labrados, Labradas, *Ferris & Mexica 5190* (CAS, GH); Cerro Tecomate, W of Pericos, alt 100 ft, *Gentry 5771* (F, GH, MICH, MO, NY, UC); Los Labrados, alt 5 m, *Mexia 912* (BM, CAS, F, Gh, MO, NY, UC); El Fuerte, La Constancia, alt 20 m, *Ortega 5485* (GH, K, PH, US); Ymala, *Palmer 1275* (GH). Sonora: 15 miles SE of Guaymas, *Gentry 263* (F); Cuidad Obregón, *Gentry 264* (MICH); Cañon Estrella, district Alamos, *Gentry 354M* (MICH), *367M* (MICH), *378M* (MICH); Quiricoba, district Alamos, Tromiillo, *Gentry 830M* (MICH); Canyon Sapopa, Río Mayo, *Gentry 1081* (F, GH, MO); near Alamos, *Gentry 4761* (GH, MICH, MO, NY); Bacum Station, near Río Yaqui, Pacific slope, open places in chaparral, *Pennell 20216* (PH, US); Arroyo El Mentidero at the crossing of the El Chinal road, 11.5 km (by air) S of Alamos, 26° 54’ 55” N, 108° 55’ 05” W, alt 240 m, *Van Devender & Yetman 94-655* (ILLS); Teachive de Masiaca, Arroyo Masiaca, Numic. Navojoa, 26° 47’ 10”N, 109° 14’ W, alt 75 m, *Van Devender et al. 94-954* (ILLS); Arroyo el Mentidero at El Chinal road, 11.3 km S of Alamos, 26° 54’ 45” N, 108° 55’ 05” W, alt 240 m, *Van Devender et al. 95-1098* (ILLS). Tamaulipas: Sierra de Tamaulipas, region of Rancho Las Yucas, ca. 40 km NNW of Aldama, Municipio de Aldama, *Dressler 2359* (GH, MICH, MO, US); km 655, Highway Mexico to Loredo, damp roadside, *Langman 2857* (PH); vicinity of Victoria, alt ca. 320 m, *Palmer 117* (F, GH, MO, US); 10 km NW of El Progresso, which is 18 km NW of Ocampo, alt 1450 m, *Stanford et al. 997* (ARIZ, GH, MO, NY, US. Vera Cruz: hills near Jalapa, alt 4000 ft, *Pringle 8281* (BM, CM, F, G, GH, K, MO, NY, UC, US); Hacienda de la Laguna, vicinity of Jalapa, Schiede & Deppe 220 (BM, W). State Unknown: Chacalapa Estate, *Liebmann 12388* (C, F, US).

21. ***Jacquemontia Pringlei*** A. Gray, Proceedings of the American Academy of Arts and Sciences 17: 288. 1882. Type: Arizona, Santa Catalina Mountains, 15 May 1881, *Pringle 225* (GH, holotype).

*J. Pringlei* var. *glabrescens* A. Gray, Proceedings of the American Academy of Arts and Sciences 21: 402. 1886. Type: Mexico. Chihuahua: near Batopilas, *Palmer 107* (GH, lectotype; isolectotypes K, NY-2 sheets, PH, US).

*Montejacquia bifida* (Velloso) Roberty, Candollea 14: 33. 1952, *pro parte*.

Perennial, habit variable, usually a subshrub, a climbing vine with stems to 4 m long, or a prostrate, ground vine which may or may not twine, stems scattered pubescent, woody below, elongate lateral branches produced frequently. Trichomes 4- to 6-armed, the arms equal or slightly unequal, to 0.7 mm long, multangulate or + porrect. Leaf blades broadly ovate or ovate, 1.5–3 (–6.5) cm long and 1–2.5 (–4.8) cm wide, scattered pubescent, the apices acute, rarely obtuse or retuse, sometimes mucronate, the margins entire, the bases shallowly cordate or truncate; petioles 1–3 (–4.5) cm long. Inflorescences 1- to 7-flowered, loosely cymose; peduncles 1–11 cm long, exceeding the leaves; pedicels 1–10 mm long; bracts linear, to 6 mm long. Flowers pale lavender, yellowish-lavender, or white; sepals slightly unequal, the outer exceeding the inner, accrescent and then reddish-brown with very prominent veins, the outer 2 ovate or broadly ovate, pubescent, 5.5–9 mm long and 3.5–7 mm wide, the apices acute, the bases truncate or slightly cordate; corolla funnelform ?? or campanulate, entire (or very shallowly 5-angulate?); filaments 5–10 mm long, the anthers 1.7–2.2 mm long; styles 7–9.5 mm long, exceeding the stamens, ovary 1.3–1.6 mm long, with a thin disk at the base, each stigma lobe 0.5–1.5 mm long, sometimes slightly unequal. Capsules broadly ovoid, 5–6 mm long; enclosed by the accrescent sepals, opening by 8 valves. Seeds 2.5–3 mm long and 2–2.2 mm wide, without lateral ridges, the outer face rounded and humped, the surfaces minutely areolate and ruminate. Flowering from May to January.

*Jacquemontia Pringlei* is endemic to the Sonoran Desert, ranging from Prima Co., Arizona south to Las Mochis, Sinaloa, Mexico (Map --- ), occurring in oak woodlands and on basaltic hills and rocky cliffs mostly at altitudes between 2900 and 4500 feet. Kearney & Peebles 1(960) also report the species from “Tanque Verde, Santa Catalina, Tucson and Ajo mountains (Pima County, south end of Gila Mountains (Yuma County),” and they give the overall range of the species from southern Arizon to Central America; however, in my interpretation, all specimens from south of the Sonoran Desert that have been referred to this species are in fact *J. mexicana, J. oaxacana,* or *J. polyantha.* **[however, check Burgess & Martin 5693]**

Illustrations: Figure 10; colored photograph in Rickett (1970).

Specimens Examined: **Mexico.** Chihuahua: near Botopilas, *Palmer 248* (GH, US). Sinaloa: 2 mi E and 14 mi N of Los Mochis, *Waterfall 12806* (GH). Sonora: Ensenada Chica, 39 km W of Guaymas, SE-facing slope of igneous outcrops and colluvium on N side of beach, alt ca. 15 m, *Burgess & Martin 5693* (ILLS); Baviacora, W of Río de Sonora, *Drouet et al. 3625* (F); Guaymas, hills W of town, *Gentry 4679* (F, GH, MICH, MO, NY, PH, UC, US); Fronteras, *Hartman 9* (GH, US); Guaymas, *Jones 23136* (GH); hills near Guaymas, *Palmer 294* (BM, GH, NY, UC, US); northwestern mountains, 12 August 1884, *Pringle s.n.* (F, NY, US); Guaymas, *Rose 1265* (F, GH, US); Canada El Tetabejo, Sierra Libre; 28° 32’30” N, 110° 58’ 45” W, alt 300 m, *Van Devender et al*. 95-1039 (ILLS); near Mirimar, N of Guaymas, *Waterfall 12834* (GH, MICH); Valle de Teras, near La Angostura, *White 3550* (GH, MICH); 9 miles W of La Angostura, alt 2900 ft, *White 4038* (GH, MICH, US); 15 miles S of La Palma, between La Palma & Guaymas, *Wiggins & Rollins 222* (GH, MICH, MO, NY, UC, US, W); along Río Magdalen 8 mi E of junction of Cananea Road and Highway, *Wiggins 7060* (MICH). **United States**. Arizona. Cochise Co.: Chiricahua Mts., 20 July 1895, *Toumay s.n.* (NY, UC, US). Pima Co.: Santa Catalina Mountains, Catalina Hwy near mile post 3, N of entrance to Coronado National Forest, rocky crevices on roadside with Saguaro and Cercidium, *Austin & Austin 7591* (ILLS); 2 mi S of Molino Basin along Mt. Lemmon Highway, *Barr 61-179* (ARIZ); 2 mi below Molino Basin, General Hitchcock Highway, *Barr 62-466* (ARIZ); rocky slopes, Agua Caliente, *Bartram 344* (PH); Sabino Canyon, Santa Catalina Mountains, *Bartram 377* (PH); Soldier’s Canyon, alt 4000 ft, *Darrow 9-27-36* (ARIZ); Molina Bason, *Dudash 910* (ARIZ); Presumido Canyon about 0.5 mi W of Presumido Store, *Gilbertson & Mason 2950* (ARIZ); Ajo Mts, *Goodding 227G* (ARIZ); Sabino Canyon, Santa Catalina Mountains, *Harrison & Kearney 7241* (ARIZ, NY, US); near new Mt. Lemmon Road, alt 4500 ft, *Gould 3441* (ARIZ); Sabino Canyon, Santa Catalina Mountains, *Harrison & Kearney 7241* (ARIZ, NY, US); bluffs, Santa Catalina Mts, *Lemmon 3038 (*GH, K), August 1880, *s.n*. (MO, UC); Santa Catalina Mountains, 5 June 1882, *Pringle s.n.* (NY), 17 June 1884, *Pringle s.n.* (F, GH), 3 August 1884, *Pringle s.n.* (NY); alt. 3000 ft, 19 August 1903, *Jones s n.* (BM, CAS, G, GH, MO, NY, US); alt 4000 ft, 19 August 1903, *Jones s.n.* (US); Sabino Canyon, near Tucson, *Kearney & Peebles 10274* (ARIZ, CAS, UC), *10300* (ARIZ, L, MICH, US, US, W); Tanque Verde Mts, *Nichol s.n.*, 1 September 1939 (ARIZ); Santa Catalina Mts, alt 3500 ft, *Niering and Whittaker 292* (ARIZ); below Molino Basin, Santa Catalina Mountains, mesquite, palo verde association, alt 3900 ft, *Parker 8026* (ARIZ, CAS, NY, US); 2 miles below Federal prison camp headquarters, Santa Catlina Mts., alt. 4500 ft, *Parker 5866* (CAS, NY, US); Soldiers Canyon, *Thornber & Shreve 2708* (ARIZ); along Soldier’s Trail, Santa Catalina Mountains, *Thornber 4141* (ARIZ, NY); foothills, along Soldier’s Trail, *Thornber 5684* (ARIZ); Tucson Mountains, *Thornber s.n.*, 8 September 1903 (ARIZ); rocky foothill slopes along Soldier Canyon trail, *Thornber s.n.*, 14 August 1910 (ARIZ); end of Roger Road, Mincon Mountain foothills, E of Tucson, alt ca. 3200 ft, *Van Devender 85-180* (ARIZ). Yuma Co.: Gila Mountains, at S end, *Nichol s.n.,* 25 April 1938 (ARIZ).

22.  ***Jacquemontia pycnocephala*** Bentham, Botany of Voyage of *H. M. S. Sulphur,* 137. 1845. Type: Mexico. Acapulco, *Sinclair s.n.* (K, lectotype here selected; isolectotype BM, not seen).

*Thyella pycnocephala* (Bentham) House, Bulletin of the Torrey Botanical Club 33: 314. 1906.

Perennial vines, the stems slender??, variably pubescent, climbing or prostrate, radiating from a stout rootstock. Trichomes 3-armed, the arms + equal, to 0.6 mm long, multangulate to porrect. Leaf blades broadly ovate, 4–6.5 (–9.5) cm long and 2–4 (–5.5) cm wide, glabrate to densely pubescent, the apices acute, acuminate, or infrequently attenuate, the margins entire or undulate, the bases cordate; petioles 1–4.5 cm long. Inflorescences many-flowered, head-like cymes; peduncles

X–13.5 cm long, exceeding the leaves; pedicels very short, to 2 mm long; a secondary inflorescence sometimes arising from the pedicel of a primary inflorescence; bracts sepaloid, enclosing the inflorescence, broadly ovate, subcircular, or ovate, to 1.5 cm long and 1 cm wide, pubescent, the apices acute or acuminate, the bases truncate or cordate and stipitate. Flowers white, blue, or lavender; sepals slightly unequal, the outer exceeding the inner, mostly densely pubescent, the outer 2 ovate, 1–1.2 cm long and 5–7 mm wide, with acute or short-acuminate apices, the inner narrowly ovate to ovate, 6–10 mm long and 2–3 mm wide, with rostrate or acuminate apices; corollas campanulate, 1.7–2.7 mm long; filaments 8–11 mm long, the anthers 2.2–2.5 mm long; style 8.5–12 mm long, exceeding the stamens, ovary 1.4–1.7 mm long, with a disk at the base, each stigma lobe 1–1.7 mm long, sometimes slightly unequal. Capsules subglobose or broadly ovoid, 4 mm long, enclosed by the sepals and bracts, opening by 4 valves. Seeds 2–2.6 mm long and 1.5–2 mm wide, lateral ridges absent or present and very narrow, the outer face rounded and humped, the surfaces minutely areolate and ruminate or verrucate, sometimes only 1 or 2 mature seeds per capsule. Flowering from November to March.

*Jacquemontia pycnocephala* is endemic to the western slope of the Sierre Madre del Sur of Mexico (Map ---), where it is found from the chaparral at near sea level to the tropical deciduous forest zone at altitudes of about 400 meters.

Illustration: Figure 11.

The lectotype that I have selected was in Bentham’s herbarium. There are three pieces of plants on the sheet; the piece on the left is very pubescent and is evidently the plant Bentham used as the basis for his description. The date 1845 appears on the label, and this is the date the label was written, not the year of collection (see Rave, 1964). In his narrative of the voyage of the H.M.S. Sulphur, Belcher (1843, pp. 143–155) relates that the ship was in Acapulco from 12–19 January 1838. This species is readily recognized by the large sepaloid bracts that surround the head-like inflorescences.

Specimens Examined. **Mexico.** Guerrero: Acapulco, in cultivated lands, *Bailey 511* (MICH); hillside above Hornos Playa, 1 mi E of Acapulco, *Barkley 14122* (F); amongst shrubbery near Pie de la Cuesta, NW of Acapulco, *Barkley 14135* (A, CAS, F, MO, PH); on road from Acapulco to Puerto Marquez, alt. 200–300 ft, *Carlson 3038* (F); Acapulco, anno 1791, *Haenke 1410* (F), *1419* (F); chaparral, San Luis, district of Galeana, alt 14 m, *Hinton et al. 10872* (C, F, IJ, K, LE, M, MICH, MO, NY, UC, W); hills W of Acapulco, *Howell 8490* (CAS); hills E of Costa Verae–Acapulco, sunny rocky slopes, *Langman 3326* (PH); vicinity of Acapulco, *Palmer 215* (F, GH, MO, UC, US); Acapulco, anno 1838, *Sinclair s.n.* (K). Michoacan: Aquila, district of Coalcoman, woods, alt. 260 m, *Hinton et al. 12604* (K, NY, UC); ca. 32 km N of Playa Azul, region of Los Encinos, alt 1200–1500 ft, *King & Soderstrom 4981* (NY, UC, US).

23. ***Jacquemontia Smithii*** Robinson & Greenman, American Journal of Science and Arts III. 50: 160. 1896. Type: Mexico. Cuicatlan (Oaxaca), alt 1800 ft, 22 October 1894 *L.C. Smith 246* (GH, lectotype here selected).

Perennial herbs, suffruticose and quite woody at base, the stems procumbent or ascending to a height of 1 m, pubescent, much branched. Trichomes 4- to 6-armed, the arms slightly unequal, to 0.3 mm long but usually much shorter, porrect or sometimes multangulate. Leaf blades ovate, 2–3.5 (–5) cm long and 1–2 (–3.5) cm wide, pubescent, the apices obtuse or acute, mucronate, the margins entire, the bases cordate; petioles 0.4–1.5 cm long. Inflorescences 1- to 12-flowered, compactly cymose; peduncles 1–7 cm long, exceeding the leaves; pedicels to 7 mm long; bracts inconspicuous, 2–4 mm long. Flowers bright blue; sepals unequal, the outer exceeding the inner, pubescent, the outer 2 rounded-rhomboid, 5–7 mm long and 2.5–4 mm wide, with acuminate or short attenuate apices and narrowed bases, the inner elliptic or ovate, 4–6 mm long and 2.5–3.5 mm wide, with obtuse and mucronate to attenuate apices; corollas funnelform, faintly 5-lobed, 1.1–1.5 cm long; filaments 5–8 mm long, the anthers 1.5–2.5 mm long; style 6–8 mm long, exceeding the stamens, ovary 1.4–1.6 mm long, a small disk at the base, each stigma lobe 0.7–0.9 mm long. Capsules globose, partially enclosed by the sepals, opening by 8 valves. Seeds 3 mm long and 2 mm wide, without lateral ridges, the outer face rounded and humped, the surfaces minutely areolate and slightly radiating-striate. Flowering from June to November.

*Jacquemontia Smithii* is restricted to rocky, arid habitats in the Sierra Madre Oaxaca and associated ranges in southern Mexico, ranging from Tehuacan south to Tehuantepec at altitudes from 300 to 1000 meters (Map ---). According to Davis (1936), Lucius Chambers Smith, a Methodist missionary, accompanied C. G. Pringle by train to San Antonio near Tehuacan on 1 September 1894, where Pringle collected a number of specimens of this species, which were to become syntypes.

Illustration: NONE--see about adding to Fig. 11 or 12.

Specimens Examined. **Mexico.** Oaxaca: Tehuantepec, June 1906, *Gandoger s.n.* (MO); 6 mi. above Dominguillo, *Nelson 1600* (GH, US); Cuicatlán, alt 1800 ft, *L. C. Smith 246* (GH). Puebla: San Antonio, alt 2500 ft, *Pringle 4848* (BR, CM, G, GH, K, L, M, MO, NY, UC, US); Río de Santa Lucia, vicinity of San Luis Tultitlanapa, *Purpus 2564* (F, GH, NY, UC, US); Cerro de las Plumas, vicinity of San Luis Tultitlanapa, *Purpus 3366* (BM, F, GH, NY, UC, US); 10 mi. SW of Tehuacán, alt 5000 ft, *Ripley & Barneby 14717* (NY); Tehuacán area, W of Río Salado on and around Petlanco, *C. E. Smith et al. 3549* (F, GH, NY, US); Tehuacán area, near Tecomavaca, *C. E. Smith et al. 3750* (F, NY, US); Tehuacán area, around San Gabriel Chilac, *C. E. Smith et al. 4023* (F, GH, NY, US).

24. ***Jacquemontia confusa*** Meisner in Martius, Flora Brasiliensis 7: 294. 1869. Type: Brazil. Bahia, *Martius s.n.* (Mss. n. 2298) (M, lectotype here selected).

*J. mollissima* Standley, Journal of the Washington Academy of Sciences 16: 15. 1926. Type: Mexico. Chiapas, banks of creeks, Monserrate, *Purpus 47* (US, holotype; isotypes M, NY, UC).

Perennial vines; stems coarse, variably pubescent, woody below, branching frequently. Trichomes 4-armed (in Central America) or 3-armed (in South America), the arms unequal, long, multangulate. Leaves often confined to short lateral shoots, blades ovate, 2–5.5 cm long and 1–2.8 cm wide, pubescent above, less so below, the apices acute or acuminate, the margins slightly repand, the bases shallowly cordate; petioles 3–10 mm long. Inflorescences to 12-flowered, compactly cymose; peduncles very short and inflorescence appearing sessile; pedicels to 5 mm long; bracts inconspicuous. Flowers white; sepals subequal, elliptic, broadly elliptic, or subcircular, usually pubescent, 2.5–4 mm long and 1.5–3 mm wide, with obtuse apices; corollas campanulate, 5-lobed at the apices; filaments 7–10 mm long, the anthers 1.5 mm long; style 6–10 mm long, exceeding the stamens and often the corollas, the ovary 1.2–2 mm long, a small disk at the base, each stigma lobe

X long. Capsules broadly ovoid, 6 mm long, opening by 4 or 8 valves. Seeds 3.5 mm long and 2.5–3 mm wide, lacking lateral ridges, the outer face rounded and humped, the surfaces minutely areolate and ruminate. Flowering from September to March.

*Jacquemontia confusa* occurs disjunctly in Mexico and Honduras (Map ---) and in Venezuela and Brazil (also see Austin, 1982b). The species is unusual in that the populations in Mexico and Honduras have an indumentum of 4-armed trichomes while those in South America are 3-armed. The leaves, inflorescences, corollas, and fruits of *J. confusa* are very similar to those of the widespread *Convovulus nodiflorus* Dessrousseaux (*J. nodiflora* (Dessrousseaux ) G. Don). The stigmas of *J. confusa* are the typical “tongue-shaped” *Jacquemontia* type while those of *C. nodiflorus* are filiform; also, in Mexico and Honduras, fruiting specimens of *J. confusa* can be distinguished from *C. nodiflorus* by the 4-armed instead of 3-armed trichomes.

Illustrations: Figure 12d; also Meisner in Martius, Fl. Brasil. 7: pl. 106. 1869.

Specimens Examined. **Mexico.** Chiapas: banks of creeks, Monserrate, *Purpus 47* (*10047*) (M, NY, UC, US). Oaxaca: Tomellin Cañon, alt 3000 ft, *Pringle 7013* (GH, MICH, US); Santa Catarina, *Rose & Rose 11367* (NY, US); Jayacaltan, alt 4000 ft, *A L. Smith 872* (GH); 34 miles by road N of Telixtlahuaca on road to Cuicatlán, alt 1400 m, *Anderson & Anderson 5327* (MICH). Puebla: Comecallo, NE de Ajalpan, munic. Ajalpan, *Tenorio* *12063* (ARIZ). **Honduras.** El Paraíso: Colinas rocosa y Quebrada Las Lajas al Este de Yuscarán, alt 700 m, *Molina 13189* (F, NY).

25. ***Jacquemontia ciliata*** Sandwith, Bulletin of Miscellaneous Information Kew 1930: 156. 1930. Type: Trinidad, in open places on the outskirts of Irois Forest, 25 Jan 1925, *Broadway 6178* (K, holotype; isotypes BM, K (2-sheets), MO).

Perennial vines; stems slender, pubescent, climbing to a height of several meters, branching infrequently, the branches elongate. Trichomes 3-armed, the arms unequal, multangulate and often recurving, those of upper leaf surfaces very unequal with one arm to 0.6 mm long. Leaf blades ovate or narrowly ovate, 3.5–9 cm long and 2–6 cm wide, pubescent or glabrescent, the apices acute to attenuate, the margins slightly repand, the bases cordate; petioles 1.2–6.5 cm long. Inflorescences few- to many-flowered, condensed to slightly lax cymes; peduncles 4–18 cm long, exceeding the leaves; pedicels 2–10 mm long; bracts linear, 1–5 mm long. Flowers white, blue, or lavender; sepals slightly unequal, the inner exceeding the outer, elliptic or ovate, the apices obtuse or acutish, the margins ciliate with simple trichomes to 0.5 mm long; corolla campanulate, entire. Capsules subglobose, 4–6 mm long, partially enclosed by the sepals. Seeds 2.5–3 mm long and 2–2.5 mm wide, the outer 2 margins with a narrow, irregular ridge to 0.1 mm wide, the outer face rounded and humped, the surfaces minutely areolate and faintly verrucate-rugose. Flowering from October to March.

*Jacquemontia ciliata* has two varieties, which superficially look quite different from each other, but they differ primarily in the size of the flowers.

Key to the varieties of *Jacquemontia ciliata*

1. Corollas 0.9–1.5 cm long; sepals 4.5–5 mm long; leaves conspicuously pubescent. var.*ciliata*.

1. Corollas 2.5–5.8 cm long; sepals 6–9 mm long; leaves mostly glabrescent. var. *Nelsonii*.

25a. ***J. ciliata*** Sandwith var. ***ciliata***

Leaf blades conspicuously pubescent above and below. Peduncles X cm long. Sepals 4.5–5 mm long; corolla 2.5–5.8 cm long; style X long; filaments X long, the anthers X long; style X long.

Varietas *ciliata* occurs in Central America (Map ---), Venezuela, French Guiana, Brazil, and Peru (see Austin, 1982b).

Illustration: Figure 12 c.

Specimens Examined: **Trinidad**:Irois Forest, *Broadway 6178* (BM, K). **Nicaragua.** Bluefields: El Recreo, *Long 89* (F). **Costa Rica.** Puntarenas: along Río Sonador, near Panamerican Highway, El General Valley, alt 600 m, *Williams et al. 28741* (WIS); between Río Convento and Río Sonador, El General Valley, alt ca. 500 m, *Willams et al. 24272* (F, US, W). San Jose: El General Valley, La Palma, 5 km SW of San Isidro El General, alt 600–700 m, *Molina et al. 18008* (GH); El General and vicinity, alt 600 m, *Pittier 10518* (BR, US), *Skutch 3063* (GH, K, MO, NY, US), *Skutch 4076* (A, MO, NY, US), *Skutch 4834* (F, US); Las Vuetlas, *Tonduz 12821* (K, MICH, US). **Panama.** Canal Zone: Las Cruces, alt 20–100 m, *Pittier 2619* (F, US). Bocas del Toro: Water Valley, vicinity of Chiriquí Lagoon, *von Wedel 1491* (GH, US), *1563* (GH, MO, US), *1776* (GH, MO, US). Coclé: above La Pintada, peak to E of Llano Grande-Toabré highway, alt 1400-1900 ft, D’Arcy & Sytsma 14692 (FAU).

25 b. ***J. ciliata*** var*.* ***Nelsonii*** (House), K. R. Robertson, *comb. et stat. nov.*

*J. Nelsonii* House, Muhlenbergia 5: 67. 1909. Type: Mexico. Oaxaca: road between Nopal and Mixistepec, alt 800–4000 ft, 5 Mar 1895, *Nelson 2442* (US, holotype).

Leaf blades glabrescent above and below (CHECK TYPE). Peduncles 1 cm long. Sepals 6–9 mm long; corolla 2.5–5.8 cm long; filaments X long, the anthers X mm long; style X long.

Varietas *Nelsonii* is restricted to Mexico (Map ---).

Specimens Examined. **Mexico.** Colima: 500 mn E of El Sauz, 9-10 km NE of Minatitlan, Munic. Minatitlan, Guzman & Guevas 1100 (WIS). Guerrero: Guadalupe, Montes de Oca, *Hinton 9778* (K); Balcon, Montes de Oca, *Hinton 11575* (K); Botella, *Langlaseé 654* (GH, US). Michoican: Huizontla, Distr. Coalcoman, *Hinton 16009* (MICH); Villa Victoria, Distr. Coalcoman, *Hinton 12302* (K), *12312* (K, MICH). Oaxaca: road between Nopala and Mixistepec, alt 800–4000 m, *Nelson 2442* (US). State Unknown: El Calabazal [either Guerrero or Michoacan], alt 140 m, *Langlassé 446* (GH, US).

26. ***Jacquemontia sphaerostigma*** (Cavanilles) Rusby, Bulletin of the Torrey Botanical Club 26: 151. 1899.

*Convolvulus sphaerostigmus (ma??)* Cavanilles, Icones et Descriptiones Plantarum 5: 54. pl. 481. 1799. Type: Mexico: “Habitat in Mindanao, floret Decembri; et in diversorio vulgo del Alto Camaron Regni mexicani ubi floret April et Mayo. Vidi siccum in eodem herbario” (MA, syntypes, not seen; fragment at F).

*C. apocynoides* Schlechtendal & Chamisso, Linnaea 5: 117. 1830. Type: Mexico. Vera Cruz: Hacienda de la Laguna, *Schiede & Deppe* (B+ or HAL, not seen).

*J. hirsuta* Choisy, Mémoires de la Société de Physique et d’Histoire Naturelle de Genève 8: 63. 1837. *nom. illegit.*, based on *C*. *sphaerostigmus* Cavanilles.

*C. coeruleus* Martens & Galeotti, Bulletins de l’Académie Royal des Sciences et Belles-Lettres de Bruxelles 12: 254. 1845, *non* Schumacher. Type: Mexico, Zacuapan et de Mirador, *Galeotti 1359* (BR, holotype; isotypes G, K, W).

*J apocynoides* (Schlechtendal & Chamisso) Urban, Symbolae Antillanae 8: 560. 1921.

*J. viscidulosa* Hoehne, Anexos das Memórias do Instituto deButantan, Secçaão de Botânica 1: 51. pl. 7. 1922. Type: Brazil. Mato Grosso: Porto Esperanca, *Kuhlman 1272* (SP, holotype, not seen; isotype LIL, not seen).

*J. agricola* Rusby, Memoirs of the New York Botanical Garden 7: 337. 1927. Type: Bolivia, a weed in cultivated ground, at Canamina, alt 4000 ft, *Rusby 80* (NY, holotype).

Annual vines, stems slender, hirsute, climbing or scrambling, lateral branches frequently produced, main stems arising from a slender taproot. Trichomes of 3 types—uniseriate with a globose gland, 3-armed and very small with + equal multangulate arms, and 3-armed with 1 arm to 2 mm long and much longer than others. Leaf blades narrowly ovate or ovate, 1–6 cm long and 0.5–3 cm wide, pubescent above and below, the apices acuminate or attenuate, the margins entire, the bases shallowly cordate or sometimes truncate; petioles 3–16 mm long. Inflorescences 3- to 20-flowered, subumbellate/cymose; peduncles to 15 cm long, exceeding the leaves; pedicels almost absent or to 1 cm long; bracts linear or very narrowly ovate, to 1 cm long. Flowers blue or violet; sepals subequal with the inner slightly shorter than the outer, very narrowly ovate to lanceolate, 4–10 mm long and 1–3 mm wide, hirsute, the apices attenuate; corolla campanulate, slightly 5-lobed, 7–11 mm long; filaments 7–11 mm long, the anthers 1–1.5 mm long; style 5–6 mm long, exceeding the stamens, ovary 1 mm long, >>disk??<< , each stigma lobe 0.3 mm long. Capsules subglobose or oblate, partially enclosed by the sepals, opening by 4–8 valves. Seeds 1.5–2 mm long and 1.4–1.6 mm wide, without lateral ridges, the outer face rounded and humped, the surfaces minutely areolate and verrucate. Flowering year long, but most frequently collected from September to February.

*Jacquemontia sphaerostigma* is very widespread, occurring from Mexico southward through Central America (Map ---) to Columbia, Peru, Bolivia, Venezuela, and Brazil; it also occurs on Hispanola. The species seems to prefer rocky soil in open places at altitudes between 250 and 1000 meters. Specimens of this species are frequently identifed as *J. azurea* or *J hirsuta*. The type of the former is referable to *J. pentantha,* and the latter is an illegitiment name. O’Donell (1960b) was the first to consistently use the proper combination for this species.

Illustrations: Figure 12e, f; also see Austin (1975), Rusby (1899), Meisner in Martius (1869, pl. 1101).

Specimens Examined. **Dominican Republic**. Libertador: Loma de Cabrera, *Howard 12542* (A). Santo Domingo: Cordillera Central, Villa Altagracia, *Ekman 11247* (F, GH, US). **Haiti**:Massif de la Selle, *Ekman 7717* (A); Massif de la Hotte, *Ekman 7249* (IJ, NY, US). **Mexico.** Chiapas: San Quintin, Río Jataté, *Breedlove 9159* (F); 6.5 km N of Tuxtla Gutiérrez along Mexican Highway 190, Mun. Terán, alt 600 m, *Breedlove 20091* (MICH); Agvacate Palenque, *Matuda 3763* (A, MICH). Guerrero: Zihuaquio, Mina, *Hinton 9718* (GH, NY, US); Valecitos, Montes de Oca, *Hinton 11615* (GH, K, NY, PH, US). Jalisco: fields above barranca, near Expeniensia, *Langman 3131* (PH). Mexico: Salitre Cañitas, Temascaltepec, *Hinton 4704* (F, GH, K, MICH, MO, NY, US); Pungarancho, Temascaltepec, *Hinton* *5124* (MICH); Ipericones, Temascaltepec, *Hinton 8541* (ARIZ, GH, NY, PH, US, W). Michoacan: Acahuato, Apatzingan, *Leavenworth & Hoogstraal 1665* (F, GH, MO). Mexico: 8 km W of Tejupilco, at km 108 along Hwy 134 between Temescaltepec and Epazotes, Munic. Temescaltepec, alt 1500 m, *Solheim & Benz 1035* (WIS). Nayarit: ca. 6 km N of Compostela, alt ca. 900 m, *Dieterle 3894A* (MICH); mts 9 mi N of Compostela, alt 100–1200 m, *McVaugh 16566* (MICH). Vera Cruz: Mata Obscura, Mun. Totutla, *Rzedowski 7082* (MICH); Wartenberg, near Tantoyuca, *Ervenderg 157b* (GH, PH); Mirador, Linden 1117 (MICH), *Liebmann 12490* (C, UC), *Ross 663* (L). Yucatán: Uxman, *Steere 2067* (MICH). **Belize**: Cayo: vic of Millionario, alt 1800 ft, *Gentry 7718* (FAU); Augustine, Mountain Pine Ridge, *Hunt 292* (BM), *Bartlett 11824* (MICH). **Costa Rica.** Alajuela: Carrillos de Poas, *Brenes 14590* (F, NY). Cartago: Paraíso, *León* 1970 (M). San José: vicinity of El General, *Skutch 4090* (MO, NY). **El Salvador.** Santa Ana: vicinity of Santa Ana, *Standley 20354* (GH, US). **Guatemala.** Alta Verapaz: vicinity of caves SW of Lanquín, *Steyeemark 44060* (F, NY). Chiquimula: between Chiquiula and La Laguna, *Steyermark 30695* (F). Huehuetenango: Cerro Victoria, across river from Finca Rafael, *Steyermark 49570* (F). Petén: Tikal, Parque Nacional, *Ortíz 265* (MO); Bejuco, *Ortíz 645* (MO). **Honduras.** Olancho: trail from Catacamas to Loma Pelona, N of Catacamas, *Standley 18299* (F). **Panama.** Coclé: Penonome and vicinity, *Williams 67* (NY). Panamá: Tumba Muerto Road, near Panama, *Standley 29778* (C, US).

27. ***Jacquemontia agrestis*** (Choisy) Meisner in Martius, Flora Brasilensis 7: 306. 1869.

*Convolvulus agrestis* Choisy in De Candolle, Prodromus Systematis Naturalis Regni Vegetabilis 9: 405. 1845. Type: Brazil. Bahia: St. Francisc. prope Joazeiro, *Martius* (M, holotype).

*J. Palmeri* S. Watson, Proceedings of the American Academy of Arts and Sciences 24: 63. 1889. Type: Mexico. Sonora: in shade in the mountains about Guaymas, *Palmer 221* (US, holotype; isotypes C, GH, K, NY, UC).

*C. secundiflorus* Fernald, Proceedings of the American Academy of Arts and Sciences 33: 90. 1897. Type: Mexico. Guerrero: vicinity of Acapulco, *Palmer 32* (GH, holotype; isotype MO).

*J. pauciflora* Brandegee, University of California Publications in Botany 4: 384. 1913. Type: Mexico. Vera Cruz: Baños del Carrizal, *Purpus 6139* (UC, holotype; isotypes F, GH, MO, NY, US).

*J. Palmeri* var. *varians* Brandegee, Zoe 5: 170. 1903. Type: Mexico. Baja California: W slopes of Cape Region Mountains, anno 1902, *Brandegee s.n.* (UC holotype; isotype US).

*J. diantha* Urban, Symbolae Antillanae 9: 243. 1924. Type: Cuba. Oriente: Guantánamo, U. S. Naval Station, near the target practice, *Ekman 10180* (S, holotype, not seen; isotypes F, G, NY).

*J. secundiflora* (Fernald) O’Donell, Lilloa 23: 467. 1950.

*J. guatemalensis* Standley & Steyermark, Publications of the Field Museum of Natural History Botanical Series 23: 84. 1944. Type: Guatemala. Chiquimula: creeping among grasses on slopes of grassy plains about Chiquimula, alt 400 m, *Steyermark 30066* (F, holotype).

Annual vines, rarely becoming perennial, stems slender, pilose; young plants erect from a slender taproot, lateral branches later arising from near base of plant and stems of mature plants climbing or decumbent; main stems few-branched. Trichomes usually of 3 kinds—uniseriate with a globose gland, 3-armed with ± equal multangulate arms, and 3-armed with 1 arm to X mm long and much longer than the others; most plants with all 3 trichome types, occasional plants lacking glandular, or, very rarely, stellate trichomes. Leaf blades narrowly ovate to ovate, 1–5.5 cm long and 0.5–3.5 cm wide, pubescent, the apices acute to acuminate, rarely obtuse, the margins slightly repand and undulate, the bases cordate or subtruncate. Inflorescences 2- to 6-flowered, loosely cymose; peduncles 1–8 cm long, >>exceeding the leaves??; pedicels 3–15 mm long??<<; bracts linear, inconspicuous. Flowers blue; sepals subequal or the inner 2 shorter, ovate, narrowly ovate, or lanceolate, 3.5–6.5 mm long and 1–3 mm wide, glandular and/or stellate pubescent, the apices attenuate; corolla campanulate to subrotate, slightly 5-lobed, 6–12 mm long; filaments 3.5–7 mm long, the anthers to 1 mm long; style 3–5.5 mm long, exceeding the stamens, the ovary 1 mm long, each stigma lobe to 0.5 mm long. Capsules subglobose, 4–5 mm in diameter, partially enclosed by the sepals, opening by 4–8 valves. Seeds 2–3 mm long and X mm wide, the outer 2 margins with a narrow lateral ridge to X mm wide, the outer face rounded and humped, the surfaces minutely areolate and strongly verrucate. Flowering mostly from September to March.

*Jacquemontia agrestis* is widespread, occurring commonly from Arizona through Mexico to Honduras, evidently becoming rare in Nicaragua and Panama, with one collection each from Cuba, Bonaire, and Curaçao (Map ---); the species also occurs in South America in Venezuela, Columbia, Ecuador, Brazil, and Argentina (see Austin, 1975, 1982a, 1982b; O’Donell, 1950). **Habitats include shady understory of tropical deciduous forest......**

Illustrations: Figure 12a, b.

In previous taxonomic treatments, those specimens with glandular pubescence are often identified as *Jacquemontia secundiflora* while those with only stellate trichomes are referred to as *J. agrestis* or *J. Palmeri*. Although this pubescence difference is striking on many specimens, there is much variation, and I do not feel that taxonomic recognition of the extremes is warranted. Choisy (1837) called these plants *J. azurea* (Richary) Choisy, and numerous others have followed his example. However, the type of *Convolvulus azureus* Richard is referable to *J. pentantha* (Jacquin) G. Don (see O’Donell, 1950).

Specimens Examined. **Cuba.** oriente: Guantánamo, U. S. Naval Station, *Ekman 10180* (F, G, NY). ADD BONAIRE, CURAÇAO.

**United States. --->> ADD ALL FROM THESIS** Arizona. Pima Co.: Baboquivari Canyon, *Kearney & Peebles 14987* (ARIZ, CAS, GH, NY, UC, US, W). **Mexico**: Baja California Sur: San José del Cabo, *Brandegee 401* (F, GH); El Taste, 12 September 1893, *Brandegee s.n.* (UC); W slope of Cape Region Mts., November 1902, *Brandegee s.n*. (UC, US); 1 mile N of Triunfo, alt 1100 ft, *Gould 12133* (MICH); 2.5 miles above Las Animas, *Hammerly 306* (CAS); Cape St. Lucas, *Xanthus s.n.* (GH). Durango: Sierra Tres Picos, *Gentry 5328* (ARIZ, GH, NY). Guerrero: Chacamerito, Coyuca, *Hinton 8507* (F, GH, MO, PH, NY, US); Gayunce, Mina, *Hinton 9508* (ARIZ, F, GH, MICH, MO, NY, US); Puerto de Oro, Mina, *Hinton 9810* (GH, NY, US); vicinity of Acapulco, *Palmer 32* (GH, MO). Jalisco: along road from Sierra de los Corales, Munic. Tecalitlán to Tepalcatepec, Michoicán, alt ca. 500 m, *Dieterle 3039* (MICH); valley of Río las Juntas, 10–13 km SE of El Tuito, Mun. Cabo Corrientes, alt 250–330 m, *McVaugh 25458* (MICH); Tequila, *Pringle 5479* (GH); Bolaños, *Rose 2940* (NY, US); 4.5 miles S of El Rincón, alt 300–350 m, *McVaugh 21058* (MICH). Nayarit: trail from Yxtlan to San Marcos, *Mexia 835* ( BM, CAS, F, GH, MICH, MO, NY, UC, US ), *Mexica 835b* (CAS, UC); 9 miles N of Compostela, *McVaugh & Koelz 489* (MICH); 28 km NW of Tepic (Munic. Tepic) along Highway 15,near El Jigote, alt 100 m, Solheim, Benz, & Santana 957 (WIS). Oaxaca : Picacho, San Geronimo, *Purpus 6827* (BM, F, GH, MO, NY, UC, US). Mexico: Ixtapan, Temascaltepec, *Hinton 2474* (GH, K, NY); Salitre, Temascaltepec, *Hinton 2524* (G, GH, K, MO, NY). Sinaloa: Cerro Colorado, vicinity of Culicán, 1 November 1904, *Brandegee s.n*. (UC), 3 November 1904, *Brandegee s.n.* (UC); Rosario, 19.1 mi E of Río Concordia, alt. 3000 ft, *Breedlove 1632* (MICH); without locality, *Ortega 869* (K). Sonora: Cañon Estrella, *Gentry 342M* (MICH); Quiricoba, *Gentry 763M* (MICH); near Alamos, *Gentry 4759* (GH, MICH, MO, NY); Guaymas, *Palmer 221* (C, GH, K, NY, UC, US); Pichequata Canyon, Rancho la Sierrita (=R. El Nigrito), east slopes of the Dierra de Alamos, ca*.* 6 km (by air) SSW of Alamos, 26° 59’ N, 108° 57’ 50” W, alt 925 m, *Wiens & Meyer (Van Devender # 94-522)* (ILLS); 21 miles S of Moctezuma, *Wiggins 7452* (GH, MICH, US); 11 miles S of Noria, between Nogales and Hermosillo, *Wiggins & Rollins 76* (GH, MICH, MO, NY, UC, US). Tamaulipas: Sierra de San Carlos, El Rosario, alt 2200 ft, *Bartlett 10862* (MICH). Vera Cruz: Baños del Carrizal, *Brandegee 6139* (F, GH, MO, NY, UC, US); La Ceiba, munic. Puente Nacional, *Ventura 7938* (ARIZ); El Mirador, munic. Tlaltetela, *Ventura 8844* (ARIZ); Remudadero, *Purpus 8853* (ARIZ, UC). Yucatan: Tekas, *Gaumer 1224* (F); Chichankanab, *Gaumer 2267* (F, GH, L, MO, NY). **Guatemala**. Chiquimula: Moñtana Castilla, 3 miles s of Quezaltepeque, *Steyermark 31340* (F, MICH). Jutiapa: hills between Jutiapa and Plan de Urrutia, *Standley 75601* (F); Cerro Colorado, W of Jutiapa, *Standley 76175* (F). Zacapa: Baños de Santa Marta, N of Zacapa, *Standley 73942* (F); vicinity of Zacapa, *Standley 74199* (F, NY); lower slopes of Sierra de las Minas, *Steyermark 29517* (F, US). **Honduras.** Comayagua: El Banco, *Rodriguez 2356* (F). El Paraíso: Quebrada El Muro, *Standley 29272* (F). Morazán: Río de la Orilla, *Molina 2514* (BM, F, GH, US); region of Río de la Orilla, SW of El Zamorano, *Standley 22092* (F), *Standley 23807* (F); vicinity of El Zamorano, *Standley 12877* (F); Cerro Majicoran, drainage of Río Yeguare, *Williams 16936* (F, GH, MO) . **Nicaragua**: Zelaya: Rio Punta Gorda, Atlanta, 2 km S of Carolina del Sur, alt ca. 60 m, *Moreno & Sandino 11878* (FAU). Department unknown: probably in the Sierra de Managua, *Garnier s.n.* (F). **Panama.** Los Santos: Managre Beach, 5 mi SE of Chitré, *Tyson et al. 2824* (MO).

28. ***Jacquemontia tamnifolia*** (L.) Grisebach, Flora of the British West Indian Islands, 474. 1862.

*Ipomoea tamnifolia* Linnaeus, Species Plantarum 1: 162. 1753. Type: Illustration in Dillenius, Hortus Elthamensis, p. 428, t. 318 f. 414. 1732 taken as the type.

*Convolvulus capitatus* Dessrousseaux in Lamarck, Encyclopédie Méthodique Botanique 3: 554. 1791. Type: Senegal, Goeffrory (P-Herb. Jussieu, not seen).

*C. ciliatus* Vahl, Eclogae Americanae 2: 13. 1798. Type: “Cajenna,” *von Rohr* (C; IDC 2201. 12: 16).

*C. tamnifolia* (L.) G. F. W. Meyer, Primitiae Florae Essequeboensis, 95. 1818.

*C. guieensi*s, Schumacher, Berskrivelse af Guineiske Planter, p. 90. 1827. Type: Ghana, *Thonning* (C-Herb. Schumacher, holotype; also 2 sheets at C marked Herb. Hornemman).

*J. capitata* (Dessrousseaux ) G. Don, A General History of the Dichlamydeous Plants 4: 283. 1838.

*I. guineensis* (Schumacher) G. Don, A General History of the Dichlamydeous Plants 4: 269. 1838.

*Thyella tamnifolia* Rafinesque, Flora Telluriana 4: 84. 1838.

*I. capitata* (Dessrousseaux ) Choisy in De Candolle, Prodromus Systematis Naturalis Regni Vegetabilis 9: 365. 1845.

*C. pycnanthus* Choisy in De Candolle, Prodromus Systematis Naturalis Regni Vegetabilis 9: 365. 1845. Type: Sudan. Kordofan, Hogel, *Kotschy 212* (G, holotype; isotypes K, M).

*C. praelongus* S. Moore, Transactions of the Linnaean Society of London Botany 4: 403. 1895. Type: Brazil. *Moore 1101a* (BM, holotype, not seen).

*J. macrocephala* Brandegee, Zoe 5: 219. 1905. Type: Mexico. Sinaloa: vicinity of Culiacan, 5 Nov 1904, *Brandegee s.n.* (UC, holotype; isotypes GH, US).

*T. macrocephala* (Brandegee) House, Muhlenbergia 5: 68. 1909.

*J. Rondonii* Hoehne, Anexos das Memórias do Instituto deButantan, Secçaão de Botânica 1(6): 53. pl. 8. 1922. Type: Brazil. Matto Grosso: Serra dos Pacahas-Novos, Rondonia, em a regiao do Cautario Grande, *Kuhlmann* (“*General Rondon*”) *2263* (RB, not seen) CHECK COLLECTOR.

*J. mattogrossensis* Hoehne, Anexos das Memórias do Instituto deButantan, Secçaão de Botânica 1(6): 54. pl. 9. Type: Brazil. Matto Grosso: Porot Esperanca, sul de Matto-Grosso, *Kuhlmann 1273* (RB, not seen).

[*Volubilis carolinensis tamnifolia subhirsuto* Dillineus, Hortus Elthamensis, p. 428. t. 318, f. 410. 1732. ]

Annual vines; stems slender, sericeous and/or hirsute; young plants erect with one main stem from a slender taproot, often flowering when only a few dm high, mature plants with several elongate, climbing or rarely decumbent lateral branches. Trichomes either 2-armed, T-shaped with usually very unequal arms, the longer arm to 3 mm long, or simple and to 3 mm long; tannish, yellowish, or ferrugineous. Leaf blades ovate or broadly ovate, 2–16 cm long and 1–12 cm wide, glabrescent to sparingly sericeous or pilose above and below, the apices acuminate or acute, the margins slightly repand and often ciliate, the bases cordate; petioles 1–9 cm long, glabrescent or sericeous. Inflorescences many-flowered, densely capitate cymes, few flowers open at a time; peduncles 2–18 cm long, equaling or exceeding the leaves, sericeous below, hirsute above; pedicel of central flower ca. 1 mm long, other pedicels shorter; outer 2 bracts foliaceous, opposite, enclosing the inflorescence, 1.5–4 cm long and 0.5–2 cm wide, the inner bracts lanceolate, 0.8–1.5 cm long and 0.5–3 mm wide, all hirsute, ciliate, ferrigineous when dry. Flowers blue; sepals subequal or the inner slightly shorter, lanceolate or very narrowly ovate, 5–12 mm long and 1–2 mm wide, hirsute, ciliate, ferrugineous when dry, the apices long tapering; corolla funnelform, 9–15 mm long, entire; filaments 6–8 mm long, exceeding the style, anthers 0.6–1.3 mm long; style 4.5–5.5 mm long, each stigma lobe flattened ovoid, 0.5 mm long. Capsules subglobose, 4–6 mm long, light brown, enclosed by the bracts and sepals, opening by 8 valves. Seeds 2–2.8 mm long and 2–2.5 mm wide, the outer face rounded and humped, mostly light brown or orange-brown, the surfaces faintly verrucate or verrucate-rugose, the margins without wings or the verrucae fused slightly in places to form a very narrow, irregular wing. Flowering from August to February.

*Jacquemontia tamnifolia* is the most widespread species of the genus, occurring evidentally natively in both the Old and New Worlds: in the southeastern United States (sometimes occurring as seasonal weeds along railroads as far north as Missouri and Illinois); the West Indies; Mexico; Central America; South America (Columbia, Venezuela, Guyana, Surinam, French Guiana, Ecuador, Peru, Brazil, Argentina, and Paraguay); eastern, western, and southern Africa, Madagascar, and the Mascarene Islands (Map --- ). It is usually found in disturbed habitats and becomes a weed in fields and along roadsides. This species is quite distinct from the other species of *Jacquemontia*. House (1906) resurrected the genus *Thyella* Rafinesque to include species previous referred to as *Jacquemontia* that have capitate inflorescences, and this species is the type species of *Thyella*. However, *Thyella* as delimited by House is not a natural genus. The stigma, pollen, and trichome characters of *J. tamnifolia* are clear indications that this species properly belongs to *Jacquemontia*. Two other species included by House in *Thyella* have been placed in the new genus *Odonellia* Robertson (Robertson, 1982).

Illustrations: Figure 13; O’Donell (1960); Standley & Williams (1970).

Chromosome Number: 2*n* = 18. Guyana: vicinity of Georgetown, near airport, *Robertson & Austin 285.* Plants grown from seed at MO; voucher specimens at MO. Other reports giving the same chromosome number are: Miege (1960), Jones (1968), and Smith (1966).

Representative Specimens: **United States.** Alabama. Lee Co. Auburn, *Earle & Earle 59* (GH, MO, US). Arkansas. Sivier Co.: Locksburg, *Demaree 9923* (GH, MO, UC, US). Florida. Gadsden Co.: near Chattahoochee, *Curtiss 5995* (G, GH, MO, UC, US). Santa Rosa Co.: E edge of Milton, off S side of U.S. 90, *Wilhelm & Blackmon 5765* (MOR). Walton Co.: 1.1 mile NE of Darlington along C-2, *Persson34-4-78* (MOR). Georgia. Wilcox Co.: 12 miles NW of Abbeville, *Wilbur & Webster 2712* (GH, NY, US). Illinois. Grundy Co.: Mazon Farmer’s Co., on E side of railroad tracks, Gardner, 15 October 1972, *Schulenberg & Lace s.n.* (MOR). Louisiana. Caldwell Parish: W of La. 846 and N of Richmond community Road, about 8 miles NNW of Columbia, *Thomas 108,706* (MOR); Cameron Parish: around maintenance shed at Lacassine National Wildlife Refuge Headquarters, S of La. 3056 and Lowry, *Dutton & Taylor 185 & 5305* (MU); La Fourche Parish: Raceland Junction, *Ewan 18876* (GH, MO); Lincoln Parrish: Ruston, between Tech Drive and Louisiana 818, *Tyler 7*5 (WIS); Ouachita Parish: clearcut W of La. 557 just N of Caldwell Parish line, S of Cypress and Luna, *Taylor et al. 5214* (MU). Webster Parish: 5 miles SW of Sibley, along roadside Webster Parigh Highway 152, *Randle 71* (MU). Mississippi. Copiah Co.: Barlow, *Demaree 36175* (GH). Missouri. St. Louis Co.: St. Louis, railroad yard, *Muehlenbach 3188* (MO). North Carolina. Columbus Co.: Nakina, anno 1929, *Schallert s.n*. (CAS). Pennsylvania: Erie Co.: Car works yard, *J. Y. Kuhn s.n.*, 29 Sept. 1914 (CM). South Carolina. Beaufort Co.: 1.9 mile W of Co. Rt. 111 on Co. Rt. 33, *Ahles & Bell 18001* (GH, NY). Texas. Sabine Co.: Sabinetown, *Parks 1329* (MO). Virginia. James Co.: ca. 5 miles W of Toano, *Menzel 349* (GH). **Cuba.** Isla de Pinos: vicinity of San Pedro, *Britton et al. 14470* (CM, F, GH, MO, NY, US). Las Villas: La Magdalena, Cauamas, *Baker 2539* (CAS, F, NY, US). Oriente: Peninsula de Cabo Cruz, *Ekman 16144* (F, NY). Pinar del Rio: Laguna Javero and vicinity, *Shafer 10780* (F, MO, NY, US). **Dominican Republic.** Dajabón: Cerro de Chacuey, *Liogier 16244* (NY). Santo Domingo: vicinity of Ciudad Trujillo, *Allard 14662* (GH, MO, NY, US). **Dominica**:*Eggers 642* (BR, G, GH, UC). **Guadeloupe**:Sta. Marie, Stehle 1607 (GH, US); Sta. Rosa, *Stehle 2766* (US). **Puerto Rico.** Mayagüez: Cabo Rojo, *Sintenis 692* (BM, F, G, MO, NY, US); 5 miles N of Mayagüez, *Heller 4400* (F, US). Río Piedras: *J.R. Johnston 1119* (NY). San Juan: Santurce, *Heller 6437* (GH, MO). **Mexico.** Chiapas: Agvacate Palenque, *Matuda 3813* (A, F, K, NY). Guerrero: Vallecitos, Montes de Oca, *Hinton 11435* (GH, K, NY, US). Jalisco: along road from Sierra de los Corales, mun. de Tecalitlán, to Tepalcatepec, alt. ca. 500 m, *Dieterle 3038* (MICH). Mexico: Palmar, Temascaltepec, *Hinton 6715* (BM, G, GH, K, US). Oaxaca: Chiltepec and vicinity, *Martínez-Calderón* 165 (A, UC, US). Tamaulipas: 3 miles NE of Tampico, *Waterfall & Wallis 14657* (F). Vera Cruz: Zacuapan, *Purpus 7777* (GH, MO, UC, US). Yucatan: Buena Vista Xbac., *Gaumer 1121* (A, BM, BR, C, CAS, F, GH, MO, US). **Guatemala.** Chiquimula: llanos around Ipala, *Steyermark 30333* (F). Jutiapa: *Standley 74932* (F). **Belize**:Stann Creek District, Stann Creek Valley, *Gentle 2659* (A, F, NY, US). **El Salvador.** Santa Ana: vicinity of Santa Ana, *Standley 20386* (GH, US). **Honduras.** Choluteca: vicinity of Choluteca, *Standley 24563* (F). Morazán: Zamorano, *Williams & Molina 10776* (A, F, MO). **Panama.** Canal Zone: C2, E of Ft. Clayton, *Harvey 5104* (F). Panama: Bejuco, *Allen 977* (F, GH, MO). San José Island: near main beach, *Erlanson 148* (GH, NY).