

STUDIES IN NEOTROPICAL APOCYNACEAE II:
A REVIEW OF THE GENUS *FERNALDIA*

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ABSTRACT. A synopsis of the three species of *Fernaldia*, a genus of Neotropical Apocynaceae restricted to Central America, is presented here. A summary of descriptive morphology, specific relationships, and synonymy is provided.

Key Words: Gentianales, Apocynaceae, Apocynoideae, *Fernaldia*, Neotropics

Fernaldia Woodson is a genus of vines characterized by eglandular leaves that lack colleters along the midrib adaxially, sepals with a single colleter within, racemose inflorescence, corolla tube without annular corona or free corona lobes within, and corolla lobes usually villose adaxially. The genus was first proposed by Woodson in 1932 in honor of Merrit Lyndon Fernald (1873–1950), of the Gray Herbarium (GH), Harvard University. It occurs from Mexico to northern Panama. Despite their ornamental and edible features, these plants are rarely collected and very few herbarium specimens exist. *Fernaldia* was last treated by Woodson (1936), when two species were known. Several new names for species or varieties have been published since then, but no recent revision exists. Therefore, a revision of the genus is presented here. A key to the species, along with descriptions, illustrations, and citations of selected specimens are given below. Specimens from St. Petersburg (formerly Leningrad), Russia (LE), cited here were examined at the Missouri Botanical Garden (MO), where some material is on loan.

NOTEWORTHY MORPHOLOGICAL FEATURES

Sepals. In *Fernaldia*, the sepals are further solitary, truncate, and sometimes very deeply lacerate apically (Figure 1). The sepals are characterized by having a single colleter within adaxially. Within the subfamily Apocynoideae, the sepal colleters can be a very helpful character to distinguish genera.

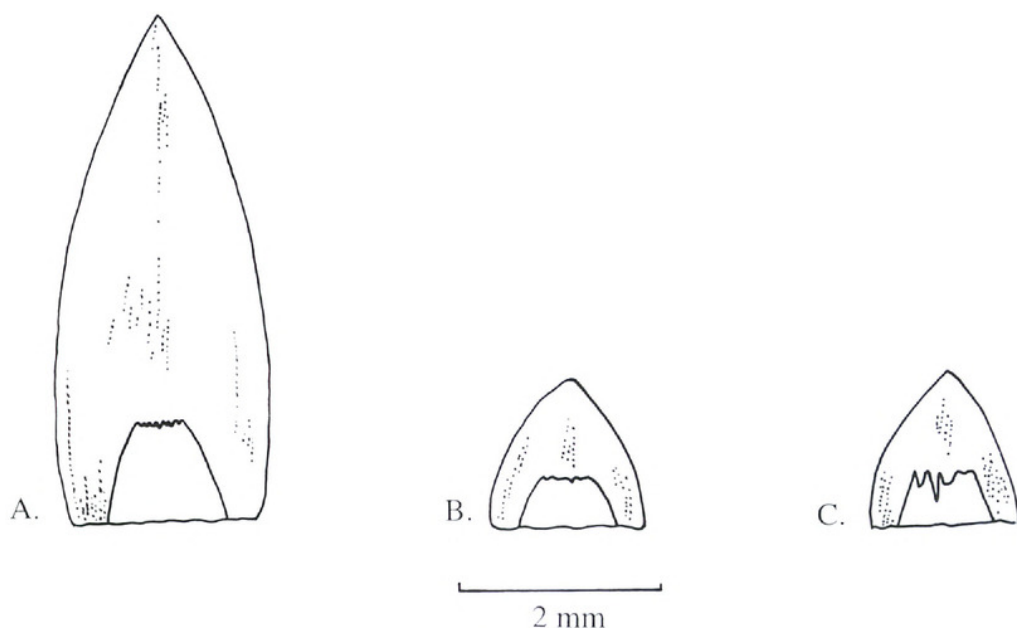


Figure 1. *Fernaldia* sepals. A. *F. speciosissima* (Morales 7131, INB); B. *F. pandurata* (Morales 3074, INB); C. *F. asperoglottis* (Mexia 8751, INB).

Corolla pubescence. When Woodson described *Fernaldia* (1932), one of the features mentioned by him to distinguish the genus was the conspicuously arachnoid-villous corolla lobes. After careful field study of the three species of the genus, it is suitable to note that the pubescence is restricted mostly to the corolla throat and just at the base of the lobes. The hairs are long (2–3 mm), always conspicuous in fresh material, and invariably white to greenish-white. In related genera (e.g., *Echites*, *Temnadenia*), the upper part of the corolla tube and the mouth are glabrous to glabrate, and never with long hairs.

Following Morales (1999), in the key and species descriptions in this paper, the lower part of the corolla tube is measured from the base of the corolla up to the position where it is expanded abruptly (stamens attachment). The length of the upper part is measured from this point to the base of the lobes.

Anthers. The anther shape in *Fernaldia* is a very important feature to recognize this genus from other closely related genera such as *Echites* and *Temnadenia*. In *Fernaldia*, the anther auricles are usually obtuse to almost rounded basally, while in the other genera the auricles are conspicuously acute to acuminate; only *F. pandurata* (Alph. de Candolle) Woodson has auricles very shortly and broadly acute. However, the most striking difference is the

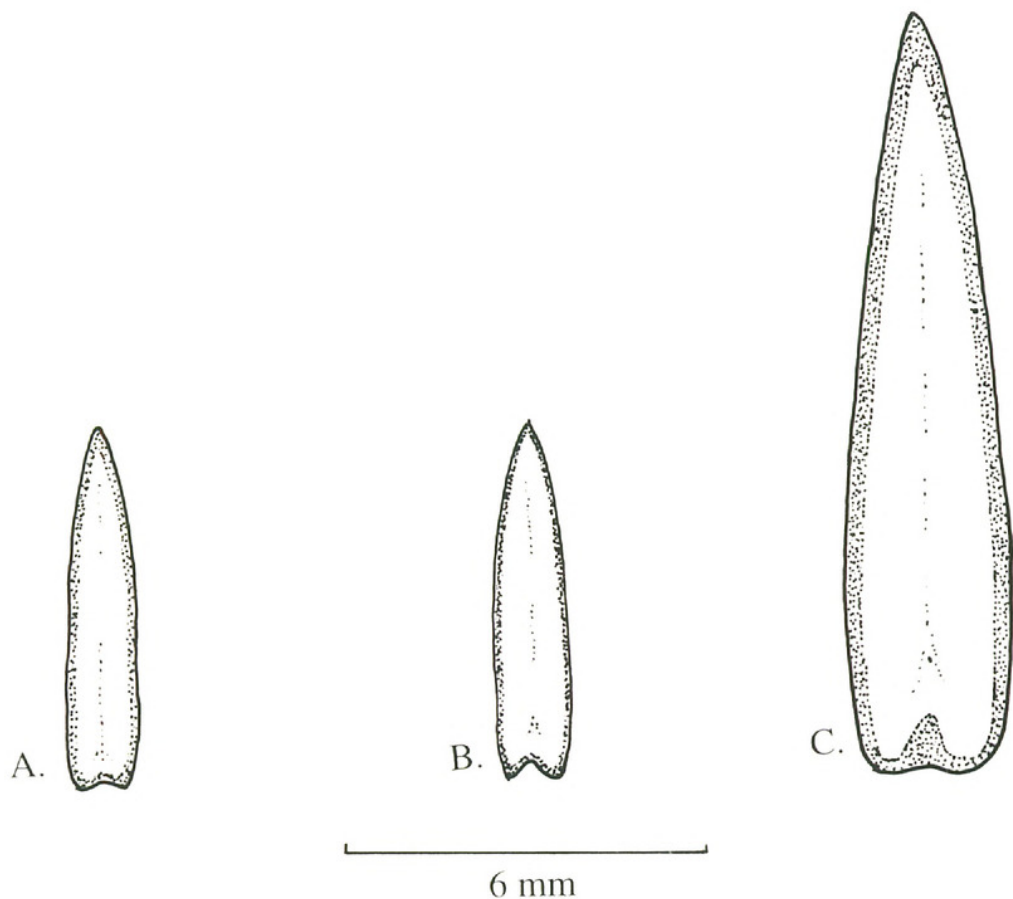


Figure 2. *Fernaldia* anthers. A. *F. asperoglottis* (Mexia 8751, INB); B. *F. pandurata* (Morales 3074, INB); C. *F. speciosissima* (Morales 7131, INB).

presence of a hyaline border in the anthers of *Fernaldia* (Figure 2), a character never present in the three other related genera.

TAXONOMIC TREATMENT

Fernaldia Woodson, Ann. Missouri Bot. Gard. 19: 48. 1932. TYPE: *F. pandurata* (Alph. de Candolle) Woodson.

Echites P. Browne, Civ. Nat. Hist. Jamaica. 182. 1756, in part.

Mandevilla Lindl., Edward's Bot. Reg. 26: t. 7. 1840, in part, *nom. cons.*

Amblyanthera Müll. Arg., Fl. Bras. (Martius) 6(1): 141. 1860, in part.

Urechites Müll. Arg., Bot. Zeitung (Berlin) 18: 22. 1860, in part.

Angadenia Miers, Apocyn. S. Am. 173. 1878, in part.

Suffrutescent lianas. Stems terete to subterete, glabrous or glabrate to very minutely and variously puberulent; nodes with few intrapetiolar conical to conical-fusiform inconspicuous colleters.

Leaves opposite, petiolate, petiole slightly fused at the base; blade glabrous or glabrate to variously puberulent beneath, eglandular, without basal colleter adaxially. Inflorescence racemose, axillary, usually many-flowered, very minutely puberulent to glabrous or glabrate, pedunculate, bracts scarious, inconspicuous. Sepals 5, essentially equal, very slightly imbricate basally, with a single colleter within, truncate, entire to variously and very minutely erose or fimbriate; corolla infundibuliform, glabrous or glabrate to very minutely and variously puberulent without, the lobes variously pubescent adaxially (very rarely almost glabrous in *Fernaldia pandurata*) with long white hairs, sometimes these restricted mostly to base of the lobe or around the corolla mouth; tube straight, without annular corona or free corona lobes within, the limb 5-parted, actinomorphic, dextrorsely convolute; stamens 5, included, inserted in the upper part of the corolla tube; anthers connivent and adnate to the pistil head, conformed by 2 parallel, uniformly fertile thecae borne adaxially near the apex of an enlarged, peltate connective; auricles almost inconspicuous, broadly rounded basally; carpels 2, united at the apex; pistil head fusiform or subcapitate; ovules numerous, several-seriate, borne on an axile, biseriate placenta; disk annular, usually 5-lobed. Follicles 2, apocarpous, continuous, glabrous to glabrate, dehiscing along the ventral suture; seeds numerous, dry, truncate, comose apically, usually minutely rugose.

The genus comprises three species, ranging from Mexico to northern Panama.

KEY TO THE SPECIES OF *FERNALDIA*

1. Lower part of the corolla tube 2–5 mm long; corolla lobes 8–12 × 7–9 mm 1. *F. asperoglottis*
1. Lower part of the corolla tube 18–30 mm long; corolla lobes 9–24 × 9–15 mm (2)
2. Peduncles 2–4.5 cm; upper part of the corolla tube 10–15 mm long; anthers 5–6 mm long; dry forest 2. *F. pandurata*
2. Peduncles 15–23 cm; upper part of the corolla tube 19–24 mm long; anthers 11.5–12.5 mm long; wet forest 3. *F. speciosissima*
1. *Fernaldia asperoglottis* Woodson, Ann. Missouri Bot. Gard. 26: 96. 1939. TYPE: MEXICO. Guerrero: Sierra Madre del Sur, N

of Río Balsas, 5 Nov 1937 (fl), *Mexia* 8751 (HOLOTYPE: MO!; ISOTYPES: ARIZ not seen, CAS!, F!, G!, GH!, NY!, photograph Field negative 56468 at INB *ex* F!). Figure 3.

Liana; branchlets sparsely puberulent to glabrate; nodal collectors inconspicuous or absent, only intrapetiolar collectors present. Leaves: petiole (0.3–) 0.6–2.1 cm; blade 1.8–8 (–11) $\times$ 0.8–6.8 cm, membranaceous, ovate, narrowly ovate to elliptic, caudate-acuminate at the apex, obtuse, attenuate to obscurely cordate basally, glabrate above; densely puberulent to glabrate beneath, more rarely glabrous. Inflorescence lax, longer than the subtending leaves, many-flowered, puberulent; peduncle 2–16 (–20) cm; pedicels 4–9 mm; bracts 1.5–2 $\times$ 1 mm, scarious; sepals 1–1.5 $\times$ 1–1.5 mm, ovate to narrowly ovate, acute, sparsely puberulent, collectors ca. 0.5 mm long, variously erose apically to conspicuously lacerate; corolla white to white-yellow, sparsely puberulent to glabrate without; lower part 2–5 $\times$ 2–3 mm; upper part broadly conical to conical-campanulate, 9–19 $\times$ 7–12 mm in diameter at the orifice; lobes 8–12 $\times$ 7–9 mm, obovate to narrowly-obovate, spreading; anthers 4.5–6 mm, glabrous; ovary 1.5–2 mm, glabrous; style head ca. 1.5 mm; disk ca. 1.5 mm long, annular, irregularly lobed. Follicles 20–23 $\times$ 0.5–0.6 cm, smooth and glabrate; seeds 1–1.2 $\times$ 0.2 cm, rugose, very minutely and inconspicuously puberulent, coma 3–3.5 cm, creamish.

DISTRIBUTION AND PHENOLOGY. This species is restricted to Mexico, in Guerrero, Michoacán, and Mexico states, at 200–1350 m. *Fernaldia asperoglottis* flowers September to March. Fruits are borne from October to April.

Fernaldia asperoglottis is distinguished from other species in the genus by having a conspicuously short corolla tube. Furthermore, the corolla lobes are shorter than in any of the other species, only 8–12 mm long. This species may also resemble some species of the genus *Mandevilla*, more specifically the complex around *M. convolvulacea* (Alph. de Candolle) Hemsl. and *M. andrieuxii* (Müll. Arg.) Hemsl., with which it shares a similar leaf shape and inflorescence structure. However, *F. asperoglottis* is easily recognized by its eglandular leaves, without collectors along the midrib adaxially.

SPECIMENS EXAMINED: MEXICO. Guerrero: Temascaltepec, Guayabal, 11 Feb

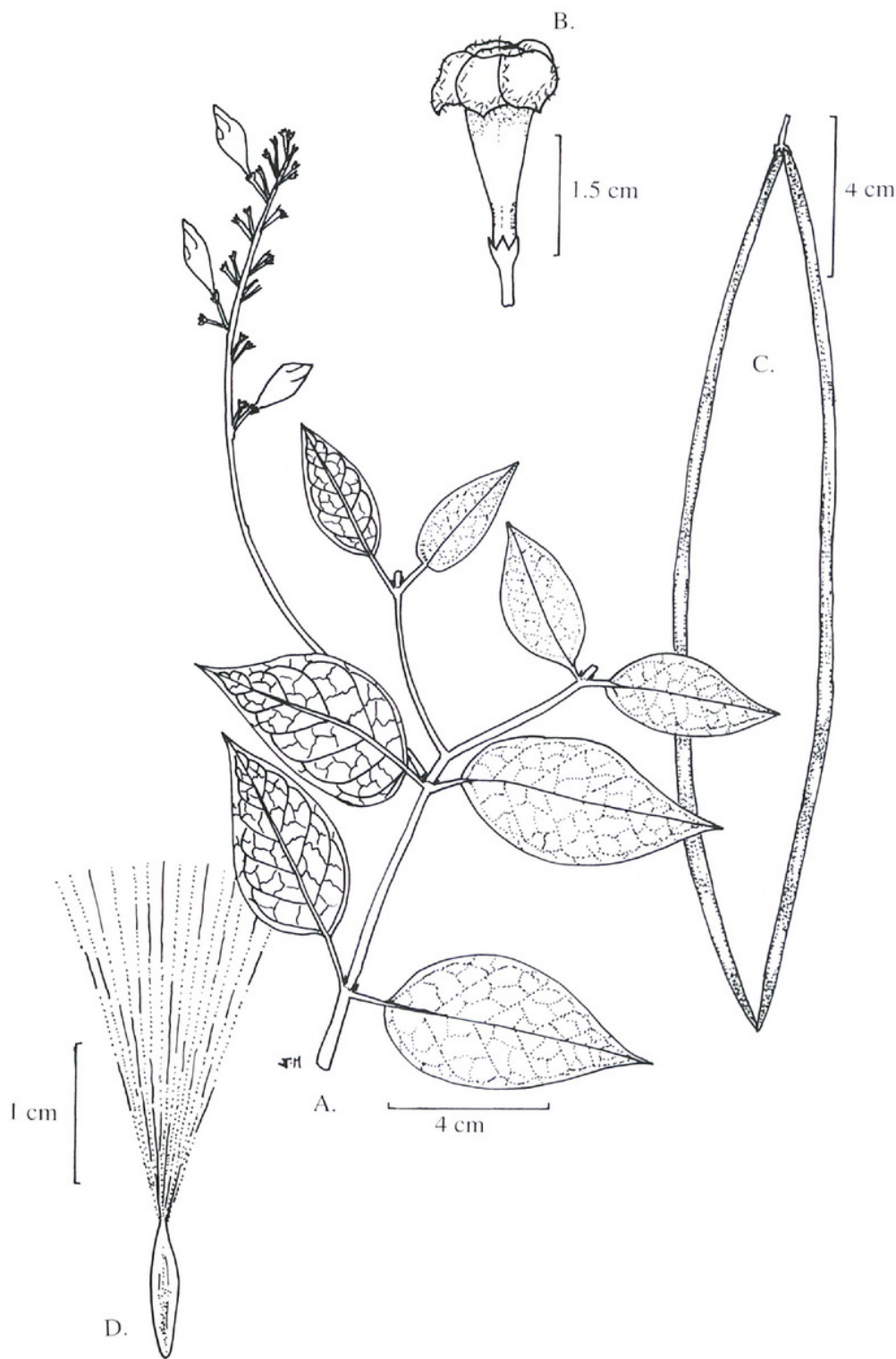


Figure 3. *Fernaldia asperoglottis* (Mexia 8751, MO). A. Habit. B. Calyx and corolla. C. Fruits. D. Seed.

1933 (fl, fr), *Hinton* 3372 (κ [2 sheets]); Pungarabato, Coyuca, 23 Feb 1934 (fr), *Hinton* 5683 (κ [2 sheets]); Temascaltepec, Guayabal, 16 Jan 1935 (fl, fr), *Hinton* 7239 (κ [2 sheets]); Coyuca, Quebradas, 22 Jan 1935 (fr), *Hinton* 7261 (κ [2 sheets]); Placeres, Cigarillo, 11 Mar 1936 (fl, fr), *Hinton* 9786 (κ); N of La Unión, road to Coahuayatlá, 24 Oct 1983 (fl), *Soto & Nuñez* 6067 (MEXU, MO). Mexico: San Antonio Tlatlaya, 25 Jan 1953 (fl), *Matuda et al.* 28003 (MEXU, MO); between Sultepec and Amatepec, 31 Dec 1953 (fl), *Matuda* 30097 (MEXU, MO); Los Bejucos, Tejupilco, 27 Aug 1954 (fl), *Matuda et al.* 31389 (MEXU, MO); Oztoloapan, Valle del Bravo, 5 Sep 1954 (fl), *Matuda et al.* 31416 (MEXU, MO); La Junta, Valle del Bravo, 11 Sep 1954 (fl), *Matuda et al.* 31649 (MEXU, MO). Michoacán: Tuzantla-Paso Tierra Caliente, 10 Mar 1938 (fl, fr), *Hinton* 13308 (κ, MO, NY); Ajuage, Apatzingán, 13 Oct 1939 (fl), *Hinton* 15329 (G, K, NY, P); Puente Las Pilas, road Zitácuaro-Huetamo, 3 Dec 1983 (fl), *Lott* 2157 (INB, MEXU, MO); SW of La Huacana, 31 Dec 1977 (fr), *Soto* 592 (MEXU, MO); NW of La Eréndina, road to Casácuaro, 6 Sep 1981 (fl), *Soto* 3016 (MEXU, MO); San Jerónimo, road Huetamo San Jerónimo, 8 Oct 1981 (fl), *Soto* 3227 (MEXU, MO); Tumbiscatio, road Nueva Italia Playa Azul, 28 Oct 1981 (fl, fr), *Soto* 3586 (MEXU, MO).

2. *Fernaldia pandurata* (Alph. de Candolle) Woodson, Ann. Missouri Bot. Gard. 19: 48. 1932. Figure 4.

Echites pandurata Alph. de Candolle, Prodr. (DC.) 8: 458. 1844. *Amblyanthera pandurata* (Alph. de Candolle) Müll. Arg., Linnaea 30: 448. 1860. *Angadenia pandurata* (Alph. de Candolle) Miers, Apocyn. S. Am. 182. 1878. TYPE: MEXICO. Oaxaca: San Dionicio, Aug 1832 (fl), *Andrieux* 245 (LECTOTYPE selected here: G-DC!; ISOLECTOTYPES: K!, photograph Field negative 7559 at FI, INB!, MO!, NY!, US ex G-DC!).

Urechites karwinskii Müll. Arg., Linnaea 30: 440. 1860. TYPE: MEXICO. Tamaulipas?: "Huefulta," 1841–1842 (fl), *Karwinsky* 474 (LECTOTYPE selected here: LE!).

Echites barbata Sessé & Moc., Naturaleza (Mexico City), Ser. 2, 2 (App.): 45. 1893, non Desvaux ex Hamitten 1825, nec. D. Dietrich 1839. TYPE: MEXICO: Data lacking (fl in August), *Sessé y Lacasta & Moçino* 5671 (HOLOTYPE: MA not seen; ISOTYPE: FI!).

Mandevilla velutina K. Schum. in Engl. & Prantl, Nat. Pflanzenfam. 4(2): 171. 1895. TYPE: COSTA RICA. Data lacking (fl), *Hoffmann* 710 (HOLOTYPE: B-destroyed, photograph Field negative 4533 at FI, INB!, MO!, US!); COSTA RICA. Guanacaste: Nandayure, Pacífico Norte, Bejuco, Cerro La Picuda, 24 Aug 1994 (fl), *Estrada & Rodríguez* 193 (NEOTYPE selected here: INB!; ISONEOTYPES: CR!, MO!).

Mandevilla potosina Brandegee, Univ. Calif. Publ. Bot. 4: 276. 1912. TYPE: MEXICO. San Luis Potosí: Rascón, Aug 1911 (fl, fr), *Purpus* 5408 (HOLOTYPE: UC!; ISOTYPES: FI, BM!, MO!, NY!, photograph Field negative 56477 at INB ex FI!).

Echites pinguifolia Standl., Publ. Field Columbian Mus., Bot. Ser. 8(1): 35. 1930. TYPE: MEXICO. Yucatán: Izamal, 1895 (fl, fr), *Gaumer* 815 (HOLOTYPE: FI; ISOTYPE: MO!; photograph Field negative 56462 at INB ex FI!).

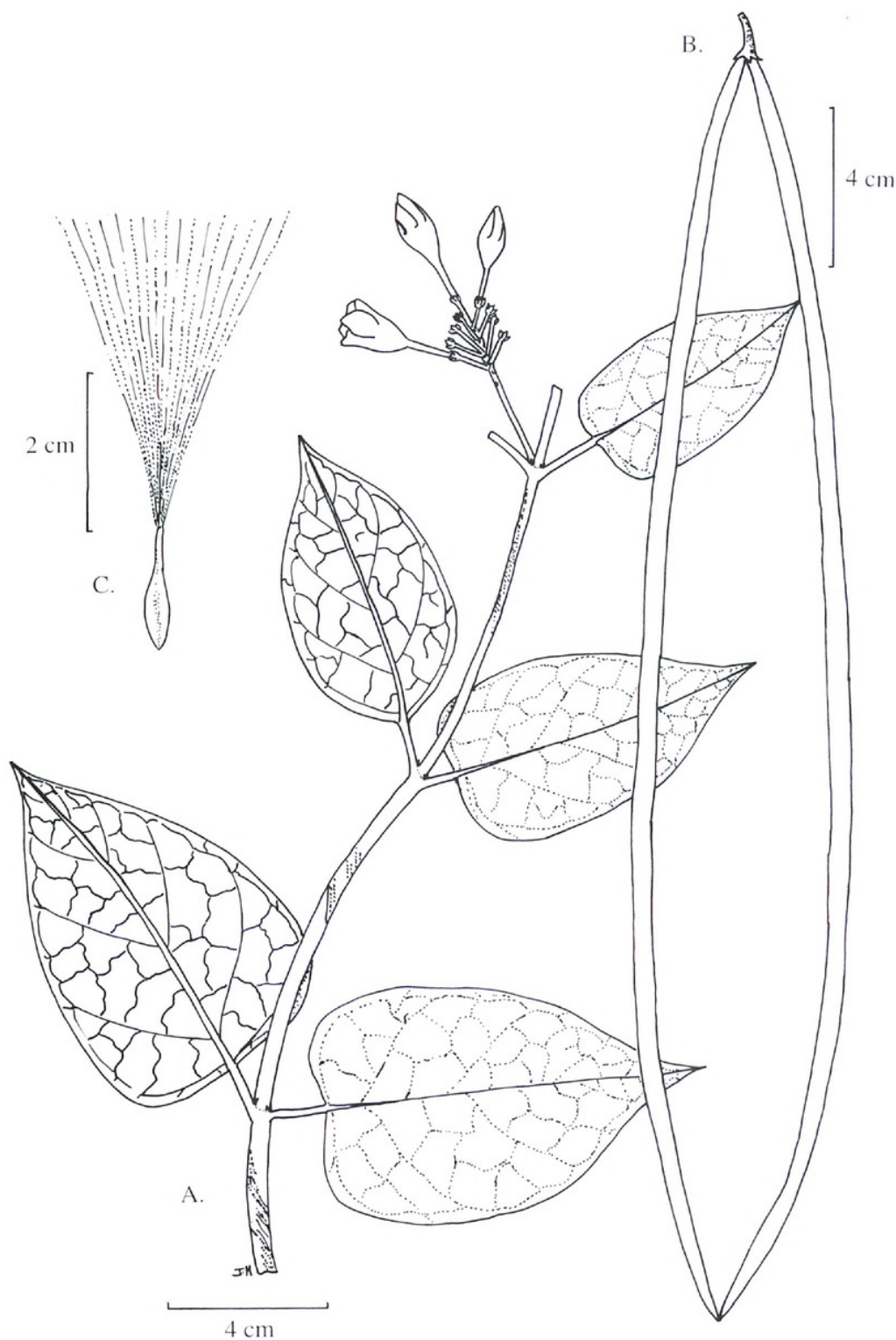


Figure 4. *Fernaldia pandurata* (Morales 3074, INB). A. Habit; B. Fruits; C. Seed.

Fernaldia brachypharynx Woodson, *syn. nov.*, Ann. Missouri Bot. Gard. 19: 380. 1932. TYPE: GUATEMALA. Along the road from Escuintla to the port of San José de Guatemala, 23 Aug 1860 (fl), *Hayes s.n.* (HOLOTYPE: GH!).

Fernaldia pandurata var. *glabra* Ant. Molina, Ceiba 3: 95. 1952. *Fernaldia glabra* (Ant. Molina) Lundell, Wrightia 5: 256. 1976. TYPE: HONDURAS. Cortés: faldas de la Montaña Santa Ana, Río Santa Ana, 6 Dec 1950 (fl), *Molina 3640* (HOLOTYPE: EAP!; ISOTYPES: FI, photograph Field negative 56469 at INB ex FI!).

Liana; branchlets sparsely puberulent to glabrate; nodal collectors inconspicuous or absent, only intrapetiolar collectors present. Leaves: petiole 0.9–4 cm; blade 5–14 (17) $\times$ 4–11 cm, membranaceous, ovate, ovate-elliptic, narrowly elliptic to variously pandurate, acuminate to caudate-acuminate at the apex, rounded, obtuse to obscurely cordate basally, glabrous to glabrate above, densely puberulent to glabrate or more rarely glabrous beneath. Inflorescence agglomerate, usually shorter than the subtending leaves, rarely longer, few- to many-flowered, glabrate to very minutely and densely puberulent; peduncle 2–4.5 cm; pedicels 4–12 mm; bracts 1.5–3 $\times$ 1–1.5 mm, scarious; sepals 1.5–3 $\times$ 1.5 mm, ovate to narrowly ovate, acute, very minutely and sparsely puberulent, collectors ca. 0.5 mm long, apex variously lacerate; corolla white to greenish-white or creamish, glabrous to glabrate or very sparsely and minutely puberulent to glabrate without; lower part 18–22 $\times$ 2–3 mm; upper part conical, more rarely broadly conical, 10–15 $\times$ 8–11 mm in diameter at the orifice; lobes 9–14 $\times$ 9–11 mm, obovate to narrowly-obovate, spreading and distally reflexed; anthers 5–6 mm, glabrous to glabrate, rarely minutely puberulent; ovary 1.5–2 mm, glabrous; style head ca. 2.5 mm; disk 1–1.5 mm long, 5-lobed to variously lobed. Follicles 21–36 $\times$ 0.5–0.6 cm, rugose, glabrous to glabrate; seeds 1.4–1.6 $\times$ 0.2 cm, minutely rugose, coma 4–4.5 cm, creamish.

DISTRIBUTION, PHENOLOGY, AND LOCAL NAMES. México to northwestern Costa Rica, mostly in dry forest or in open and second-growth forest, 0–1200 m. Flowering June to December. Fruiting March to January. Known locally as Loroco (Jutiapa, Guatemala; Cortez, Honduras; Ahuachapán, El Salvador).

The available specimens of *Fernaldia pandurata*, the most common and widespread species, show that leaf shape and pubescence are morphological features that are highly variable within this taxon. Although there are slight differences scattered

throughout the plant's geographic range, they are mostly sporadic in occurrence and do not merit taxonomic recognition. Within the Apocynaceae subfamily Apocynoideae, the acceptance of species defined only by pubescence is unwarranted (Morales 1997, 1999). Therefore, *F. pandurata* var. *glabra* and the subsequent combination based on this name are not recognized here.

Fernaldia brachypharynx is here considered a synonym of *F. pandurata*, showing only slight differences in corolla length. Additional specimens examined since Woodson's monograph reveal that this feature is variable within the geographical range.

In northern Mesoamerica, the flowers of this species have been used as a flavoring for rice (Woodson 1936). For further references, see the work of Morton et al. (1990).

Mandevilla velutina K. Schum. is neotypified here. No other duplicates were found in BM, C, or K, where Hoffmann specimens are located.

SPECIMENS EXAMINED: COSTA RICA. Guanacaste: Cañas, La Pacífica, 10 Nov 1969 (fl, fr), *Daubenmire* 256 (E USJ), 2 Mar 1970 (fl, fr), *Daubenmire* 592 (E USJ); Finca La Pacífica, 3 Sep 1972 (fl), *Heithaus* 350 (MO); Parque Nacional Palo Verde, 30 July 1994 (fl, fr), *Morales* 3074 (INB); La Pacífica, NW of Cañas, 20 Nov 1972 (fl), *Opler* 1568 (CR, E MO [2 sheets]); Palo Verde National Park, 11 Dec 1996 (fl, fr), *Rodríguez et al.* 1829 (INB, MO); Palo Verde, 7 Sep 1973 (fl, fr), *Solomon* 611 (CR, E USJ).

EL SALVADOR. Ahuachapán: San Benito, E of San Alfonso, El Imposible, 12 Jun 1993 (fl), *Sandoval & Sandoval* 1309 (B, LAGU, MO); El Imposible National Park, San Alfonso, 10 Jul 1990 (fl), *Sermeno* 232 (B, LAGU, MO).

GUATEMALA. Chiquimula: between Ramírez and Cumbre de Chiquimula, 15 Oct 1940 (fl), *Standley* 74496 (E MO). Jutiapa: vicinity of Jutiapa, 1940 (fl), *Standley* 75297 (E MO). Petén: exact locality lacking, 12 Aug 1967 (fl), *Contreras* 7008 (K, LL). Santa Rosa: vicinity of Chiquimula, 1940 (fr), *Standley* 79683 (E MO).

HONDURAS. Cortés: Santa Ana mountain, Río Santa Ana, 6 Dec 1950 (fl), *Molina* 3640 (BM, EAP, MO). Morazán: Villa San Roque, Sep 1948 (fl), *Standley* 26257 (BM, F).

MEXICO. Chiapas: near Chiapilla, 14 Nov 1980 (fl), *Breedlove* 47493 (MO); along the road from Acala to Venustiano Carranza, 25 Oct 1966 (fl), *Laughlin* 2669 (MO); Ocozocoautla, 19 Sep 1988 (fl), *Reyes & Urquijo* 1015 (BM, MEXU). Guerrero: Sierra Madre, 8 Nov 1898 (fl, fr), *Langlassé* 597 (G [3 sheets], K, P); Acapulco, Oct 1894 – Mar 1895 (fl), *Palmer* 259 (K). Jalisco: Tonalá, La Cruz, Barranca de la Cruz, 9 Jan 1975 (fr), *Díaz* 5484 (ENCB, INB). Nayarit: SE of Ahuacatlán, 2 Jan 1986 (fr), *Téllez* 9371 (INB, MEXU). Oaxaca: exact locality lacking, 1834 (fl), *Andrieux* 246 (G-DC, K); W of Tuxtepec, along road to Ixcatlán, 7 Aug 1971 (fl), *Stevens* 1391 (MO). San Luis Potosí: Tamazunchale, 7 Oct 1937 (fl), *Taylor* 479 (MO, TEX). Tamaulipas: Sierra de Tamauli-

pas, region of Rancho Las Yucas, NNW of Aldama, 27 Jul 1957 (fl), *Dressler* 2037 (MO). Veracruz: Laguna Encantada, NE of San Andrés Tuxtla, 2 Nov 1971 (fr), *Beaman* 5225 (MEXU, MO); El Salto de Eyiplanta, near Sihuapan, 9 Oct 1974 (fl), *Calzada* 1567 (MO); Baños del Carrizal, Aug 1912 (fl), *Purpus* 6020 (BM, MO); Baños del Carrizal, Aug 1912 (fl), *Purpus* 6232 (MO). State unknown: Boca del Monte, date lacking (fl), *Andrieux s.n.* (G); 1833 (fl), *Andrieux* 399 (G, K). Data lacking: (fl), *Coulter* 958 (K [2 sheets]); *Sessé y Lacasta & Moçino* 5080, (MA; photograph Field negative 41240 at INB).

NICARAGUA. Boaco: San José de los Remates, N of Teustepe, Cerro Alegre, 10 Oct 1982 (fl), *Sandino* 3680 (MO). Chinandega: along road Somotillo – Cinco Piños, 11 Oct 1993 (fr), *Rueda & Dolmus* 1170 (MO); Volcán San Cristobal, N of Chinandega, 23 Aug 1984 (fl), *Soza & Grijalva* 166 (MO). Estelí: San Juan de Limay, Valle La Cascada, 1 Sep 1980 (fl), *Moreno* 1893 (MO); Paso León a Estelí, 23 Oct 1983 (fl), *Moreno* 22321 (MO). León: La Paz Centro, road to Momotombo, 13 Jul 1981 (fl), *Moreno* 9834 (MO); along Río Sinecapa, 15 Sep 1977 (fl), *Stevens* 3865 (MO); S of Estelí, road to Estanzuela, 11 Aug 1978 (fl), *Stevens* 9960 (MO). Matagalpa: Ranchería, NE of Muy Muy, 20 Aug 1984 (fl), *Moreno* 24434 (MO). Nueva Segovia: N of edge of Ocotol, Quebrada El Nancital, 7 Aug 1977 (fl), *Stevens* 3057 (BM, MO). Rivas: Isla Ometepe, Volcán Concepción, San José del Sur, 12 Dec 1984 (fl), *Robledo* 1566 (MO); SE of San Juan del Sur, NW of Río La Flor, Playa El Coco, 11 Sep 1977 (fl), *Stevens* 3865 (BM, MO).

3. *Fernaldia speciosissima* Woodson, Ann. Missouri Bot. Gard. 26: 300. 1939. TYPE: PANAMA. Chiriquí: Río Chiriquí to Remedios, 11 Jul 1938 (fl), *Woodson et al.* 1179 (HOLOTYPE: MO!, photograph at INB!). Figure 5.

Liana; branchlets glabrous; nodal colleters inconspicuous, ca. 1 mm long. Leaves: petiole 2.5–6 cm; blade 9.5–14 × 4–10 cm, membranaceous, elliptic to broadly elliptic, glabrous, shortly acuminate to caudate-acuminate at the apex, obtuse to rounded basally. Inflorescence lax, longer than the subtending leaves, many-flowered, glabrous; peduncle 15–23 cm; pedicels 10–18 mm; bracts 1.5–2.5 × 1 mm, scarious; sepals 3–5 × 1.5–2 mm, ovate, acute to obtuse, glabrous; colleters ca. 1 mm long, apex scarcely and very minutely fimbriate; corolla creamish to creamish-white, glabrous; lower part 20–30 × 1.5–2 mm; upper part 20–30 × 6–8 mm in diameter at the orifice; lobes 19–24 × 10–15 mm, obovate to narrowly-obovate, spreading and somewhat reflexed; anthers 11.5–12.5 mm, glabrous; ovary 3 mm long, glabrous; style head ca. 3 mm; disk ca. 1 mm long, inconspicuously 5-lobed. Follicles 33–34 × 0.6–0.7 cm, smooth, glabrous to glabrate; seeds unknown.

DISTRIBUTION, HABITAT, AND PHENOLOGY. This species is restricted

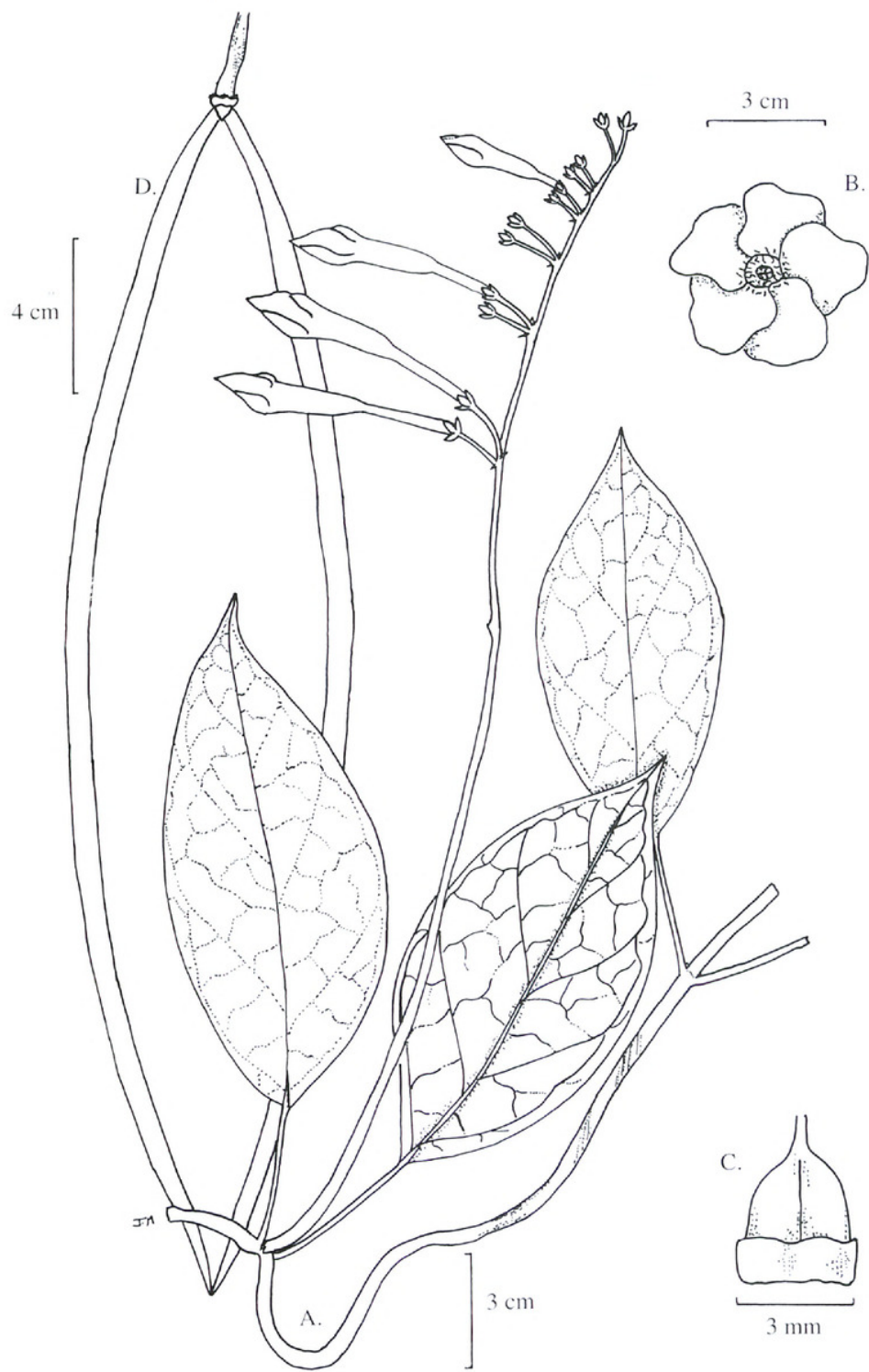


Figure 5. *Fernaldia speciosissima* (Morales 7131, INB). A. Habit; B. Corolla lobes; C. Ovary and disk; D. Fruits.

to wet forest or seasonal wet forest in southwestern Costa Rica and northwestern Panama, at 90–600 m. Until recent flowering collections from Costa Rica were made, the species was known only from the type collection. *Fernaldia speciosissima* flowers in July and fruits from December to January.

Fernaldia speciosissima was described by Woodson based on just three fallen corollas found in Chiriquí, Panama in 1938. Although he was exasperated to base a new species on such limited material, Woodson (1939) said that “The anthers, stigma and arachnoid internal villosity of the corolla are all unmistakable characters,” which was nicely confirmed with the Costa Rican flowering material.

The flowers are very fragrant, with a smell similar to crushed fig leaves (*Ficus carica* L., Moraceae), and upon tasting they produce a very sweet flavor. However, none of the local people from the collection locality know of any use for the plant.

SPECIMENS EXAMINED: COSTA RICA. San José: Acosta, Fila Aguabuena, Río Tiquires, on road to Zoncuano, 11 Jul 1999 (fl), *Morales 7131* (CR, INB, MO, K).

PANAMA. Panamá: SE side of Madden Lake, near Puente Natural, 1 Jan 1975 (fr), *Nee & Hansen 14056* (MO).

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APPENDIX 1
INDEX TO NAMES IN SYSTEMATIC TREATMENT

Accepted names in italics.

Amblyanthera

A. pandurata (Alph. de Candolle) Müll. Arg. (= *F. pandurata*)

Angadenia

A. pandurata (Alph. de Candolle) Miers (= *F. pandurata*)

Echites

E. barbata Sessé & Moç. (= *F. pandurata*)

E. pandurata Alph. de Candolle (= *F. pandurata*)

E. pinguifolia Kunth Standl. (= *F. pandurata*)

Fernaldia

F. asperoglottis Woodson

F. brachypharynx Woodson (= *F. pandurata*)

F. pandurata (Alph. de Candolle) Woodson

F. speciosissima Woodson

Mandevilla

M. potosina Brandege (= *F. pandurata*)

M. velutina K. Schum. (= *F. pandurata*)

Urechites

U. karwinskii Müll. Arg. (= *F. pandurata*)

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