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# Taxonomic and Distributional Notes on Neotropical *Justicia* (Acanthaceae)

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Three species of *Justicia* are newly described as *J. chimalapensis*, *J. novogaliciana*, and *J. wendtii*. All are endemic to Mexico. Macromorphological and palynological aspects of these species are considered in an attempt to elucidate the subgeneric affinities of each. The new name, *J. isthmensis*, is proposed for the Panamanian species originally described as *Chaetochlamys panamensis*. The geographic distribution of *J. candelariae* is extended into Panama.

*Justicia* L. is the largest genus of Acanthaceae with estimates of up to 600 species worldwide. Numerous genera in which Neotropical species have been treated are now included within an expanded circumscription of *Justicia* (Graham 1988; Daniel 1990, 1995a); these include *Beloperone* Nees, *Chaetothylax* Nees, *Chaetochlamys* Lindau, *Ixtlania* M. E. Jones, *Jacobinia* Nees, *Neohallia* Hemsl., *Siphonoglossa* Oerst., and *Tabascina* Baill. Additional Neotropical genera that are currently recognized, but insufficiently studied, will likely be added to this growing list.

Graham (1988) presented the most recent and comprehensive infrageneric classification of *Justicia* to date. Although her treatment, based on and encompassing 295 species, provides a useful starting point for additional work on the genus, numerous Neotropical species cannot be classified in any of the subgeneric taxa recognized (e.g., Daniel 1990, 1993b, 1995a, 1998; Durkee and McDade 1996). Additional systematic studies of *Justicia* and its allies are greatly needed.

Seventy-eight species of *Justicia* are known from Mexico (Daniel 1993a) and approximately 100 species are known from the Mesoamerican region (Durkee and Daniel, unpublished). Numerous collections from Mexico and Central America do not correspond to any of these species and many of them undoubtedly represent undescribed taxa. Several of these are described below and, where possible, their subgeneric affiliations are noted. In addition, a new name is proposed for a species previously treated in *Chaetochlamys* and the distributional range of *J. candelariae* is expanded to Panama.

## NEW SPECIES DESCRIPTIONS

### *Justicia wendtii* T. F. Daniel, sp. nov.

Fig. 1

TYPE. — MEXICO. **Veracruz**: Mpio. Minatitlán, 13.7 km E de La Laguna, sobre terracería a Uxpanapa, luego 7.2 km N sobre camino nuevo a Belisario Domínguez, 130 m, lat. 17°20.5'N, long. 94°23'W, 21 March 1981, T. Wendt, A. Villalobos C., and I. Navarrete 3031 (holotype: CAS!; isotypes: CAS!, CHAPA, MEXU, TEX).



Herbae perennes usque ad 7 dm altae. Folia petiolata, laminae ovato-ellipticae vel ellipticae, 60–120 mm longae, 24–51 mm latae, 2–3-plo longiores quam latiores. Inflorescentia floribus in spicas (vel paniculas spicarum) terminales vel axillares; dichasia subopposita vel alterna, sessilia, uniflora. Bracteae aliquando  $\pm$  heteromorphae, obovatae vel oblanceolatae vel lineari-ellipticae, 3.3–8.5 mm longae, 1–2.5 mm latae, pagina abaxialis pubescens trichomatibus eglandulosis et glandulosis. Flores sessiles. Calyx 5-lobus, 3–4.5 mm longus, lobis subaequalibus vel inaequalibus. Corolla viridi-alba labio infero purpureo-notato, 7–8.5 mm longa, extus pubescens trichomatibus glandulosis (aliquando sparsis) et eglandulosis. Stamina thecis 0.8–1.2 mm longis, impariter insertis, theca infera basi calcarata. Capsula 7–8 mm longa, pubescens trichomatibus eglandulosis et glandulosis.

Erect to decumbent perennial herbs to 7 dm tall. Young stems subterete to subquadrate, pubescent with retrorsely appressed eglandular trichomes 0.2–0.4 mm long, trichomes  $\pm$  evenly disposed or concentrated in 2 lines. Leaves petiolate, petioles to 35 mm long, blades ovate-elliptic to elliptic, 60–120 mm long, 24–51 mm wide, 2.0–3.0 times longer than wide, acute to acuminate at apex, acute to subattenuate at base, adaxial surface glabrous, abaxial surface pubescent along major veins with antrorse to antrorsely appressed eglandular trichomes to 0.3 mm long, margin entire to subsinuate. Inflorescence of axillary and terminal pedunculate dichasiate spikes (or panicles of spikes) to 85 mm long (including peduncles and excluding flowers), spikes 6–9 mm in diameter (excluding flowers) near midpoint of fertile portion, spikes and/or panicles near shoot apex sometimes subtended by greatly reduced leaves and collectively forming an open terminal compound panicle, axillary spikes (or panicles of spikes) alternate to opposite, 1 per axil, peduncles to 40 mm long, pubescent with flexuose to retrorse eglandular trichomes to 0.4 mm long, rachis of panicles (if present) pubescent like peduncles, rachis of spikes evenly pubescent with erect to flexuose (and sometimes with some appressed trichomes near base of rachis) eglandular and glandular trichomes 0.05–0.2 mm long; dichasia subopposite to alternate, 1-flowered, 1 per axil, sessile. Bracts subopposite to alternate, sometimes somewhat heteromorphic (i.e., sterile bracts sometimes somewhat smaller than fertile bracts), obovate to oblanceolate, 3.3–8.5 mm long, 1–2.5 mm wide, acute to rounded at apex, abaxial surface pubescent like rachis of spike, margin ciliate with trichomes like those of abaxial surface and with scattered flexuose eglandular trichomes to 0.3 mm long as well. Bracteoles obovate to oblanceolate to linear-elliptic, 2.7–7.3 mm long, 0.7–1.2 mm wide, pubescent like bracts. Flowers sessile. Calyx 5-lobed, 3–4.5 mm long, lobes lance-subulate, subequal to unequal, 2.6–4 mm long, 0.4–0.6 mm wide, abaxially pubescent like bracts. Corolla greenish cream with purplish markings on lower lip, 7–8.5 mm long, externally pubescent with eglandular and glandular (sometimes sparse) trichomes 0.05–0.1 mm long, tube cylindric, 4–4.8 mm long, 1.5–1.7 mm in diameter near midpoint, upper lip 2.5–4 mm long, emarginate, lobes 0.2–0.4 mm long, lower lip 3.5–4.5 mm long, lobes 1–1.7 mm long, 0.7–2 mm wide. Stamens inserted near apex of corolla tube, 3.3–3.4 mm long, filaments glabrous, thecae 0.8–1.2 mm long (including basal appendage), unequal, parallel, unequally inserted (overlapping by up to 0.2 mm), dorsally pubescent (especially upper theca) with eglandular trichomes, lower theca with a prominent basal appendage 0.3–0.4 mm long; pollen 3-aperturate, 6-pseudocolpate (i.e., apertures flanked on each side by both a continuous band of exine and a pseudocolpus), exine reticulate. Style 4.5–5.5 mm long, sparsely pubescent with antrorse eglandular trichomes, stigma 0.1–0.2 mm long, only one lobe evident. Capsule 7–8 mm long, externally pubescent with erect glandular and erect to flexuose to retrorse eglandular trichomes 0.05–0.1 mm long, stipe 2.6–3.5 mm long, head subspheric to subellipsoid, 4–4.8 mm long. Seeds 4, lenticular, 1.9–2.3 mm long, 1.7–2.2 mm wide, surfaces minutely rugose and sparsely pubescent with apically branched eglandular trichomes 0.05–0.1 mm long, margin entire, conspicuously ciliate with apically branched trichomes.



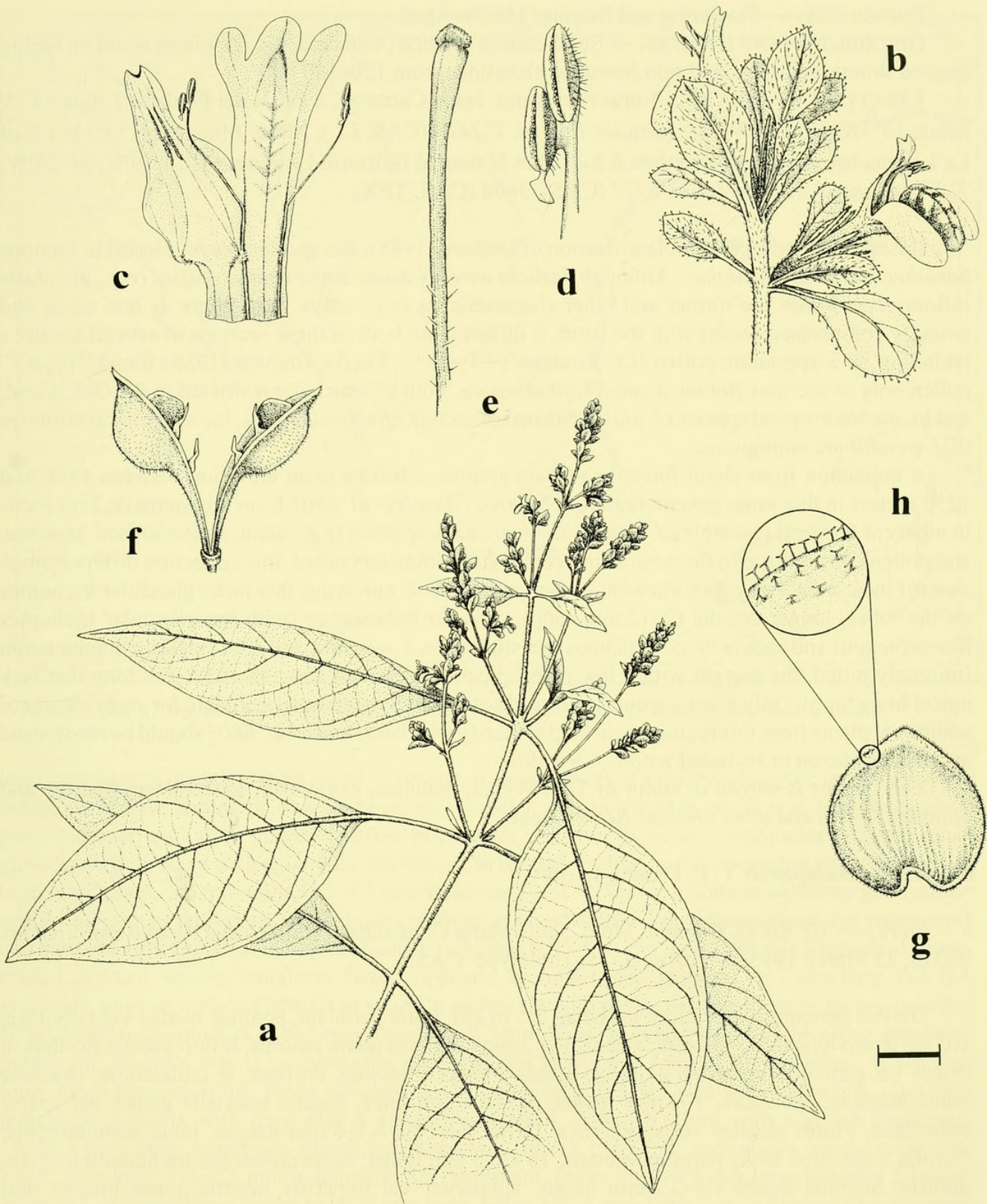


FIGURE 1. *Justicia wendtii*. a. habit (Wendt et al. 3031); b. inflorescence nodes (Wendt et al. 3031); c. corolla opened lengthwise showing stamens (Wendt and Hernandez 6727); d. apex of stamen with bithecous anther (Wendt and Hernandez 6727); e. apex of style and stigma (Wendt and Hernandez 6727); f. capsule (Vazquez T. et al. V-2413); g. seed (Vazquez T. et al. V-2413); h. seminal surface (Vazquez T. et al. V-2413). Scale: a, bar = 15 mm; b, bar = 2.1 mm; c, bar = 1.6 mm; d, bar = 0.57 mm; e, bar = 0.5 mm; f, bar = 2 mm; g, bar = 0.7 mm; h, bar = 0.37 mm. Drawn by Jenny Speckels.



PHENOLOGY. — Flowering and fruiting: March–April.

DISTRIBUTION AND HABITAT. — Southeastern Mexico (Veracruz, Fig. 2); plants occur on highly karsted limestone in lowland rain forests at elevations from 120–130 m.

PARATYPES. — MEXICO. **Veracruz:** Mpio. Jesús Carranza, 2 km N del Poblado 2, Ejido F. J. Mina, 17°16'N, 94°40'W, *M. Vázquez T. et al. V-2413* (CAS, LL); Mpio. Minatitlán, 13.7 km E of La Laguna toward Uxpanapa, then 6.5–7.2 km N toward Belisario Domínguez, 17°19'N, 94°24'W, *T. Wendt and H. Hernández G. 6727* (CAS), *5606* (CAS, TEX).

Based on the infrageneric classification of Graham (1988), this species “keys” closest to sections *Sarotheca* and *Plagiacanthus*. Although *Justicia wendtii* shares some characteristics (e.g., glandular inflorescence) with the former and other characteristics (e.g., calyx lobes more or less equal and strongly compressed seeds) with the latter, it differs from both of these sections in several features, including its 3-aperturate pollen (i.e., Graham’s “Type 1”; Fig 3). Graham (1988) found “Type 1” pollen only in sections *Betonica* and *Rhaphidospora*, both of which are restricted to the Old World, and in one Neotropical species (*J. alainii* Stearn) of section *Drejerella*. Thus, the subgeneric affinities of *J. wendtii* are ambiguous.

A collection from cloud forest habitat on granitic substrate at an elevation between 1150 and 1250 meters in this same general region of Mexico (*Wendt et al. 6803* from the Sierra de Tres Picos in adjacent Oaxaca) resembles *J. wendtii* in most characteristics (e.g., habit, inflorescence, stamens, and pollen). In addition to the contrasting ecological parameters noted, this collection differs from *J. wendtii* most notably by its somewhat longer calyx (4.5–6 mm long) that lacks glandular trichomes on the lobes, longer corolla (9–12 mm long), capsular pubescence (with the glandular trichomes inconspicuous and sessile vs. conspicuous and stipitate in *J. wendtii*), and seed surface ornamentation (minutely pitted, the margin with a few inconspicuous trichomes less than 0.05 mm long that lack apical branching). Only a few capsules and seeds of this collection were available for study. Study of additional plants from this region might help to clarify whether *Wendt et al. 6803* should be recognized as a distinct taxon or included within *J. wendtii*.

The species is named in honor of Tom Wendt, botanical explorer in southeastern Mexico and collector of this and other unusual Acanthaceae.

***Justicia chimalapensis* T. F. Daniel, sp. nov.**

TYPE. — MEXICO. **Oaxaca:** Mpio. Santa María Chimalapa, camino hacia Arroyo San Vicente, 990 m, 23 March 1995, *E. Torres B. 536* (holotype: CAS!).

Herbae perennes vel frutices usque ad 1.5 m alti. Folia petiolata, laminae ovatae vel ellipticae, 105–210 mm longae, 33–93 mm latae, 2.3–3.2-plo longiores quam latiores. Inflorescentia floribus in spicas vel paniculas spicarum axilares; dichasia alterna, sessilia, uniflora, et unilateralia. Bracteae homomorphae, subulatae, 1–2 mm longae, 0.3–0.4 mm latae, pagina abaxialis glabra vel sparse pubescens. Flores sessiles vel subsessiles. Calyx 5-lobus, 4.5–6 mm longus, lobis homomorphis. Corolla viridi-alba labiis purpureo-notatis, 16–20.3 mm longa, extus pubescens trichomatibus glandulosis. Stamina thecis 1.8–2.2 mm longis, subpariter vel impariter insertis, theca inferna basi calcarata. Capsula pubescens trichomatibus glandulosis.

Erect perennial herbs or shrubs to 1.5 m tall. Young stems multiridged with shallow and somewhat undulating ridges, glabrous, ± conspicuously constricted just above nodes. Leaves petiolate, petioles to 33 mm long, blades ovate to elliptic, 105–210 mm long, 33–93 mm wide, 2.3–3.2 times longer than wide, ± abruptly acuminate to acuminate-caudate at apex, acute to ± abruptly attenuate at base, surfaces glabrous or with antrorse eglandular trichomes on midvein adaxially (at





FIGURE 2. Map of Mexico showing the distributions of *Justicia chimalapensis*, *J. novogaliciana*, and *J. wendtii*.

least near base of blade), margin entire to sinuate. Inflorescences of axillary subsessile to short-pedunculate dichasiate spikes or basally branched panicles of spicate axes to 50 mm long (including peduncles and excluding flowers), spikes or panicles opposite, 1 per axil, peduncles to 3 mm long, glabrous or pubescent with eglandular trichomes, bracts subtending panicle branches (= inflorescence bracts) subulate, 1.5 mm long, 0.3–0.5 mm wide, rachis of spikes or spicate axes nearly glabrous or evenly pubescent with erect to flexuose glandular trichomes to 0.2 mm long (glandular pubescent) and antrorse eglandular (at least proximally) trichomes 0.05–0.1 mm long; dichasia alternate, 1-flowered, 1 per axil, sessile, unilateral. Bracts opposite, homomorphic, subulate, 1–2 mm long, 0.3–0.4 mm wide, abaxial surface glabrous or sparsely pubescent with trichomes like those of rachis, eciliate. Bracteoles lance-subulate, 1.8–2 mm long, 0.3–0.7 mm wide, abaxial surface glabrous or glandular pubescent. Flowers sessile to subsessile (i.e., pedicels to 0.5 mm long). Calyx 5-lobed, 4.5–6 mm long, lobes homomorphic, lance-subulate, 3.3–4.5 mm long, 0.5–0.7 mm wide, abaxially glandular pubescent. Corolla with long axis  $\pm$  vertically oriented, greenish white with purplish markings, 16–20.3 mm long, externally glandular pubescent, tube  $\pm$  cylindric, subsaccate below midpoint, 10–12 mm long, 1.7–2.5 mm in diameter near midpoint, upper lip 6–9.3 mm long, apically 2-lobed, lobes 0.1–0.5 mm long, lower lip 6–9 mm long, lobes 1.3–2 mm long, 1.6–2.5 mm wide. Stamens inserted below midpoint of corolla tube, 12–16 mm long, filaments glabrous distally, pubescent with eglandular trichomes near base, thecae 1.8–2.2 mm long (including basal appendage), subequal, subparallel, subequally to unequally inserted (overlapping by up to 1.8 mm), upper theca dorsally pubescent with eglandular trichomes to 0.05 mm long, lower theca glabrous and with a prominent basally papillose basal appendage 0.3–0.5 mm long; pollen 2-aperturate, apertures flanked on each side by 1 row of insulae (peninsulae sometimes present as well), exine reticulate; 2 staminode-like



thickenings or pouchlike protrusions of corolla present at point of insertion of filaments, these pubescent with eglandular trichomes. Style 15–15.5 mm long, pubescent with eglandular trichomes, stigma 0.2–0.3 mm long, only 1 lobe evident. Capsule (immature) 5.5 mm long, externally sparsely pubescent with glandular trichomes to 0.05 mm long.

PHENOLOGY. — Flowering: March–April. Immature fruits present in March.

DISTRIBUTION AND HABITAT. — Mexico (Oaxaca, Fig. 2), in the Isthmus of Tehuantepec; plants occur in cloud forest (bosque mesofilo de montaña) at elevations from 990 to 1200 m.

PARATYPE. — MEXICO. **Oaxaca**: Mpio. Santa María Chimalapa, Sierra de Tres Picos, ca. 1.5 km W of Cerro Piicotzuc, ca. 17.5 km SSE of La Laguna, Veracruz, 17°07'30"N, 94°27'55"W, *T. Wendt et al.* 6830 (TEX).

This species cannot be readily affiliated with any one of the subgeneric taxa recognized by Graham (1988). Its pollen ("Type 5" of Graham 1988; Fig. 3) is characteristic of several of her sections, as well as numerous species of uncertain affinities. Like several other species of *Justicia* (i.e., *J. chol* T. F. Daniel, *J. costaricana* Leonard, and *J. nevlingii* Wassh. and T. F. Daniel; see Wasshausen and Daniel 1995), *J. chimalapensis* has two pubescent, staminode-like thickenings adjacent to the point of insertion of the filaments in the corolla tube. These thickenings form two conspicuous, pouchlike protrusions of the corolla into the tube. *Justicia chimalapensis* differs from all of these species by having homomorphic bracts. It appears unlikely that these staminode-like thickenings represent a synapomorphy uniting these taxa because they differ in numerous macromorphological and micromorphological attributes. Wasshausen and Daniel (1995) summarized the differences among the species with heteromorphic bracts.

*Wendt et al.* 6830 lacks the conspicuous glands on the inflorescence rachises and bracteoles (although a few glands are present on these structures), but otherwise resembles the holotype.

The name of this species is derived from the municipality in which it was collected.

***Justicia novogaliciana* T. F. Daniel, sp. nov.**

TYPE. — MEXICO. **Jalisco**: Sierra de Manantlán Occidental, slopes of La Calera, just NW of KM 188 on Autlán-Manzanillo hwy (Mex. 80), 9 km NNE of La Resolano (Casimiro Castillo) and ca. 16 km SE of Autlán, 19°40'N, 104°24'–25'W, 11 March 1992, *H. Iltis, L. Guzmán H., and B. Benz* 31028 (holotype: WIS!; isotype: CAS!).

Frutices usque ad 2 m alti. Folia petiolata, laminae ovatae vel ellipticae (vel obovato-ellipticae), 18–82 mm longae, 10–32 mm latae, 1.3–3-plo longiores quam latiores. Inflorescentia floribus in dichasia axillaria; dichasia alterna vel opposita, sessilia vel pedunculata, (1–) 5-multiflora. Flores subsessiles vel pedicellati. Calyx pariter 4-lobus vel impariter 5-lobus, 4–5.5 mm longus. Corolla aurantiaca vel rubens, 23–33 mm longa, extus pubescens trichomatibus glandulosis et eglandulosis. Stamina thecis 2–2.5 mm longis, subpariter insertis, basi ecalcaratis. Capsula 20 mm longa, pubescens trichomatibus glandulosis et eglandulosis.

Shrub to 2 m tall. Young stems striate with alternating light green and darker green-brown lines, subquadrate to subhexagonal, ( $\pm$  evenly to) bifariously pubescent with (flexuose to) retrorse eglandular trichomes 0.3–0.8 mm long (trichomes sparse,  $\pm$  unifarious, or merely concentrated in 2 lines on some internodes). Leaves petiolate, petioles to 9 mm long, blades ovate to elliptic (to obovate-elliptic), 18–82 mm long, 10–32 mm wide, 1.3–3 times longer than wide, (rounded to) acute to acuminate (to apiculate) at apex, (rounded to) acute to subattenuate at base, surfaces pubescent with flexuose eglandular trichomes to 0.5 mm long, trichomes concentrated along major veins, margin entire to subsinuate. Inflorescence of axillary sessile to pedunculate dichasia to 50 mm long (including



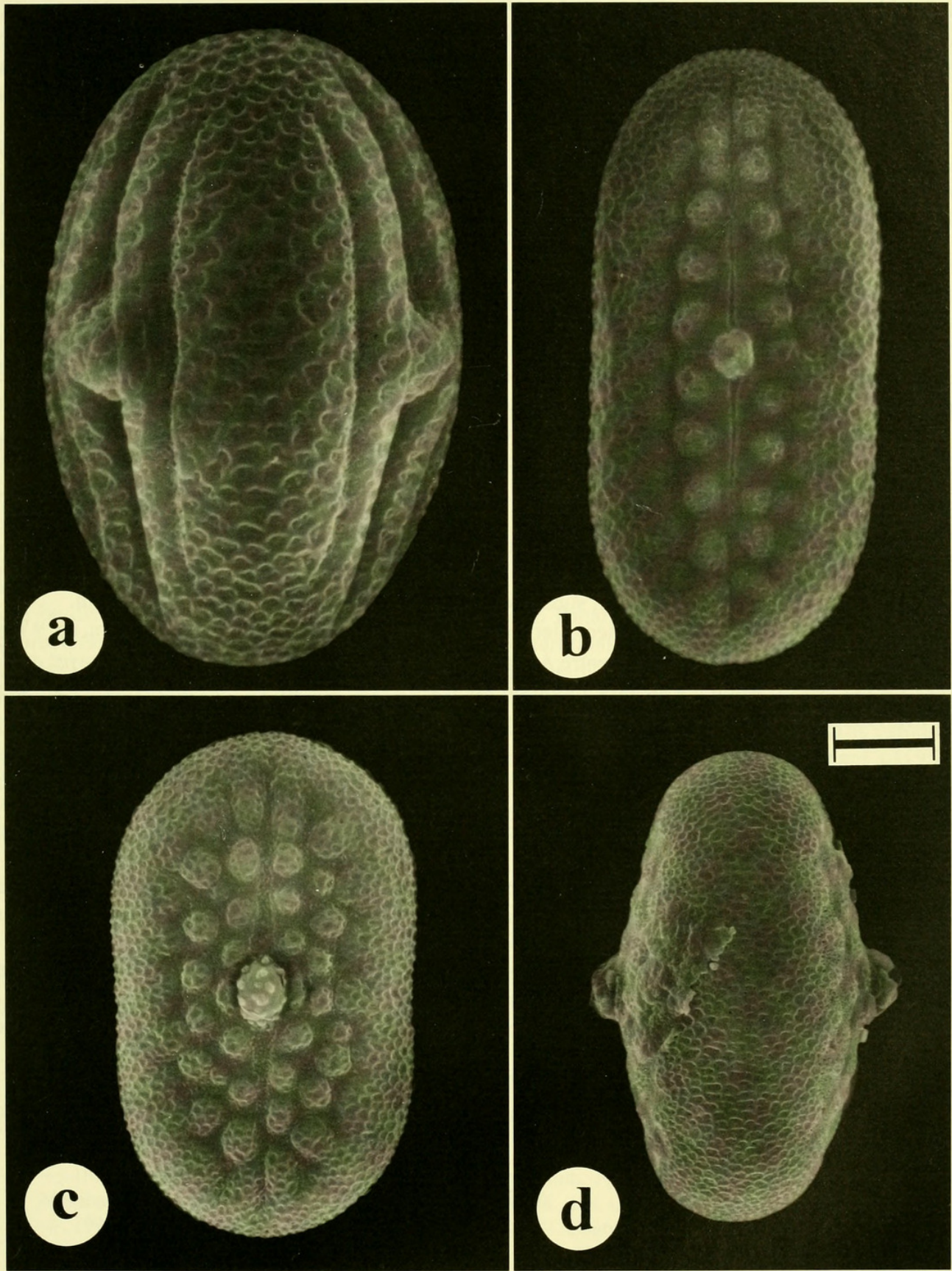


FIGURE 3. Scanning electron micrographs of pollen. a. *Justicia wendtii* (Wendt et al. 3031), interapertural view. b. *J. chimalapensis* (Torres B. 536), apertural view. c. *J. novogaliciana* (Iltis et al. 31028), apertural view. d. *J. novogaliciana* (Iltis et al. 31028), interapertural view. Scale for a = 5  $\mu$ m; scale for b–d = 10  $\mu$ m.



peduncle and excluding flowers), dichasia alternate or opposite, (1–) 5–many-flowered, 1 per axil, sessile or pedunculate, peduncles to 2.5 (–22) mm long, pubescent with flexuose to retrorse to antrorse eglandular trichomes. Bracteoles lance-subulate to triangular-subulate, 1.7–2.5 mm long, 0.4–0.8 mm wide, abaxial surface pubescent with erect to flexuose to antrorse eglandular (and sometimes glandular) trichomes 0.1–0.3 mm long. Flowers subsessile to pedicellate, pedicels to 3 mm long. Calyx equally 4-lobed or unequally 5-lobed, 4–5.5 mm long, 4 lobes similar, subulate, equal, 3–4.5 mm long, 0.5–0.9 mm wide, abaxially pubescent with erect to antrorse eglandular (and sometimes glandular) trichomes 0.1–0.2 mm long, 5th lobe (if present) 2.5 mm long, 0.1–0.2 mm wide. Corolla orange to red, 23–33 mm long, externally pubescent with erect to flexuose glandular and eglandular trichomes 0.1–0.4 mm long, tube gradually expanded distally, 12–18 mm long, 2.5–4 mm in diameter near midpoint, upper lip 11–16 mm long, apically entire, lower lip 11–14 mm long, lobes 1.2–3 mm long, 1.5–3 mm wide. Stamens inserted near apex of corolla tube, 8–20 mm long, filaments glabrous, thecae 2–2.5 mm long, subequal, sagittate, subequally inserted, dorsally glabrous, lacking basal appendages; pollen 2-aperturate, apertures flanked on each side by 2 rows of insulae (peninsulae sometimes present as well), exine reticulate. Style 23–31 mm long, sparsely pubescent near base with antrorse eglandular trichomes, stigma 0.1 mm long, only 1 lobe evident. Capsule 20 mm long, externally pubescent with erect (to retrorse) glandular and eglandular trichomes 0.05–0.1 mm long, stipe 8 mm long, head subellipsoid, 12 mm long. Seeds 4, sublenticular, 3.5 mm long, 3.5 mm wide, surfaces tuberculate.

PHENOLOGY. — Flowering: January–March and July; fruiting: March.

DISTRIBUTION AND HABITAT. — Western Mexico (Jalisco and Guerrero, Fig. 2); plants occur in tropical deciduous forests and tropical subdeciduous forests at elevations from 780–1650 m.

PARATYPES. — MEXICO. **Jalisco**: Sierra de Manantlán Occidental, Arroyo La Calera, ca. 9 km N de Casimiro Castillo en el camino entre Autlán y la costa, 19°41'N, 104°25'W, *E. Judziewicz et al.* 5117 (WIS); Mpio. Autlán, Rancho Chiquihuitlán, 6 km O de Autlán, *E. Lott and A. Solís M.* 443 (CAS). **Guerrero**: 24 km N de Valle de Zaragoza, *E. Martínez S. and J. Soto N.* 3710 (CAS).

This species is not readily assignable to any one of the subgeneric taxa proposed by Graham (1988). Its pollen (Fig. 3) conforms to “Type 7” (Graham 1988), which occurs in numerous sections. *Justicia novogaliciana* differs from all of these sections in the structure of its inflorescence and in various other characters.

The few known collections of *Justicia novogaliciana* show variation in several features. *Martínez S. and Soto N.* 3710 from Guerrero differs from the collections from Jalisco by having both glandular and eglandular trichomes on the secondary peduncles, pedicels, bracteoles, and calyx. In the specimens from Jalisco these structures have only eglandular trichomes. *Lott and Solís M.* 443 differs from the other collections by its more or less evenly pubescent internodes and long-pedunculate (i.e., peduncles 5–22 mm long) dichasia that comprise a single flower. In the other collections, the internodes are generally bifariously pubescent and the dichasia are sessile or short-pedunculate (i.e., peduncles to 2.5 mm long) with five or more flowers.

This species is named for the old Spanish province of Nueva Galicia, from which the type and most other collections were taken.

## A NEW NAME

*Justicia isthmensis* T. F. Daniel, nom. nov.

*Justicia panamensis* (Lindau) V. A. W. Graham, Kew Bull. 43:605. 1988; non *J. panamensis* Durkee (as “panamense”) (1978).



*Chaetochlamys panamensis* Lindau, Repert. Spec. Nov. Regni Veg. 11:124. 1912. TYPE. — PANAMA. "Ad solum araneosum ad rivos et ad umbrosas vias prope Alhaguella et Las Cruces 30–100 m" (from protologue), Jan–Feb 1911, *Pittier* 2338 (syntype: B?, destroyed), *Pittier* 2614 (syntype: B?, destroyed). [Graham (1988) noted that *Pittier s.n.* from the Chagres Valley at BM was an isosyntype; additional isosyntypes are likely at US].

*Chaetochlamys* Lindau was included within *Justicia* by Graham (1988). The combination *J. panamensis* (Lindau) V. A. W. Graham (Graham 1988) is a later homonym of *J. panamensis* Durkee (Durkee 1978). Thus, a new name is needed in *Justicia* for the former species. The epithet selected refers to the Isthmus of Panama.

#### A RANGE EXTENSION

##### *Justicia candelariae* (Oerst.) Leonard

PANAMA. **Veraguas:** región de la Yeguada, Cerro Cristal, 1360 m, 19 February 1987, *M. Correa et al.* 4842 (PMA).

This species is reported to occur in Mexico, Guatemala, Belize, Honduras, and Costa Rica (Daniel 1995b). The collection noted above represents the first known occurrence of the species in Panama. Twenty-five species of *Justicia* are now known from Panama (Daniel and Wasshausen 1990; Daniel and McDade 1995), making it the largest genus of Acanthaceae in that country. *Justicia candelariae* can be distinguished from other species of the genus in Panama by the following combination of characters: petioles glandular abaxially, inflorescence of terminal and subterminal pedunculate spikes, bracts ovate to elliptic to obovate and 3–4 mm wide, calyx with 4 similar lobes and a reduced posterior lobe, corollas whitish marked with maroon and 7–10.5 mm long, thecae dorsally pubescent and lacking basal appendages, and capsules 5–6 mm long and externally pubescent. Intraspecific variation and interspecific relationships of this species were discussed by Daniel (1995b). Leonard's (1958) description of *J. chlorostachya* from Colombia does not seem to differ significantly from that of *J. candelariae* from Chiapas, Mexico (Daniel 1995b). However, I have not studied specimens attributed to the former species.

#### ACKNOWLEDGMENTS

I thank Tom Wendt, Emily Lott, and Ted Cochrane for sending me collections of Acanthaceae; Mireya Correa and William Trauba for logistical assistance in the field; Darrell Ubick for assisting with the scanning electron microscope; and Jenny Speckels for illustrating one of the species.

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