

MEXICAN ACANTHACEAE: KEY TO GENERA AND CATALOG OF SPECIES WITH VOUCHERED OCCURRENCES BY STATE

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Abstract. This taxonomic summary of Mexican Acanthaceae includes a brief discussion of the family in Mexico, a key to currently recognized genera, and a listing of all currently recognized species with their distributions in the country documented by a vouchered occurrence for each state from which they are known. Three hundred and ninety-seven native and naturalized species in 39 genera are currently recognized. Of the genera, 36 are native and three are non-native and naturalized. Of the 390 native species, 246 species (63%) are currently treated as endemic to Mexico. Oaxaca has the most species (151) and the most endemic species (22) of Acanthaceae among Mexican states. New species and new distribution records continue to be encountered in many portions of the country.

Key words: taxonomic summary, native species, naturalized species, endemics

Resumen. Este resumen taxonómico de las Acanthaceae mexicanas incluye una breve descripción de la familia en México, una clave para los géneros actualmente reconocidos y una lista de todas las especies reconocidas, con su distribución en el país documentada mediante un registro de ocurrencia para cada estado donde se conocen. Se reconocen actualmente 397 especies nativas y naturalizadas, pertenecientes a 39 géneros. De estos géneros, 36 son nativos y tres son exóticos y naturalizados. De las 390 especies nativas, 246 (63%) se consideran endémicas de México. Oaxaca tiene el mayor número de especies (151) y especies endémicas (22) de Acanthaceae entre los estados mexicanos. Se siguen encontrando nuevas especies y nuevos registros de distribución en diversas partes del país.

Palabras claves: resumen taxonómico, especies nativas, especies naturalizadas, endémicas

With more than 4,000 species in 191 genera worldwide, the monophyletic Acanthaceae (Lamiales) are among the most taxonomically rich, geographically widespread, and morphologically and ecologically diverse families of flowering plants (Manzitto-Tripp et al., 2022). Although most species occur in the tropics, several genera have diversified in temperate regions of both the Old World (e.g., *Strobilanthes* Blume) and the New World (e.g., *Ruellia* L.), and large numbers of taxa occur in both wet (e.g., rainforest) and dry (e.g., desert) biotic communities. Major centers of taxonomic richness, diversity, and endemism include Madagascar, tropical Africa, Andean South America, Brazil, Mexico/Central America, and southern and southeastern Asia. Growth forms include herbs, shrubs, trees, mangroves, vines, and lianas. Based on molecular phylogenetics and morphology, Acanthaceae are currently classified as comprising four subfamilies divided into 10 tribes and 19 subtribes (Manzitto-Tripp et al., 2022). The family is particularly well known for displaying numerous types of pollen (e.g., Daniel, 1998; Scotland and Vollesen, 2000), floral aestivation patterns (e.g., Manzitto-Tripp et al., 2022, Fig. 5), and corolla forms (e.g., Daniel, 1993a, Fig. 19.1; Manzitto-Tripp et al., 2022, Figs. 1 and 2), many of which characterize species, genera, or higher taxa.

Acanthaceae include numerous ornamental (e.g., Beddome, 1908; Cullen et al., 2000) and traditionally used (e.g., ethnopharmacological) medicinal plants (e.g., Zakaria et al., 2020), as well as species containing various bioactive compounds of potential use in modern medicine (e.g., Udupa et al., 2025).

The list below of currently accepted genera and species of native and naturalized Acanthaceae in Mexico reveals 39 genera encompassing 397 species. Thus, Mexico appears to have the fifth richest assemblage of acanthaceous species among the world's nations—after Brazil (537; Re flora, 2025), Madagascar (510; Phillipson et al., 2022), Tanzania (474; Vollesen, 2008; Darbyshire et al., 2010), and India (472; Karthikeyan et al., 2009). In addition to the currently recognized species, at least eight new species have been detected; these are in various stages of preparation for publication and are not considered here. The infrafamilial classification of Mexican genera is shown in Fig. 1. Of the 39 genera, 36 are native in Mexico and three are naturalized there (*Hypoestes* Sol. ex R.Br., *Sanchezia* Ruiz & Pav., and *Thunbergia* Retz.). Seven of the native genera are endemic to Mexico: *Aphanosperma* T.F. Daniel, *Chalarothyrsus* Lindau, *Gypsacanthus* E.J. Lott, V. Jaram. & Rzed., *Holographis* Nees, *Hoverdenia* Nees, *Mexacanthus* T.F.

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Daniel, and *Mirandea* Rzed. At least two other genera, *Chileranthemum* Oerst. and *Louteridium* S. Watson, are nearly endemic to the country, with most or all of their species occurring in Mexico. Other genera that attain their greatest diversity in Mexico include *Bravaisia* DC., *Carlownrightia* A. Gray, *Henrya* Nees ex Benth., and *Tetramerium* Nees. Of the 397 species, 390 are treated as native and seven are naturalized non-natives (i.e., *Hygrophila corymbosa* (Blume) Lindau, *H. polysperma* (Roxb.) T. Anderson, *Hypoestes phyllostachya* Baker, *Sanchezia parvibracteata* Sprague & Hutch., *S. oblonga* Ruiz & Pav., *Thunbergia alata* Bojer ex Sims, and *T. fragrans* Roxb.). Of the 390 native species, 246 species (63%) are currently known to be endemic to Mexico. Non-native Acanthaceae that are cultivated in Mexico, some of which can persist at former cultivation sites but are not currently known to have become naturalized, include: *Acanthus mollis* L., *Crossandra* spp., *Graptophyllum pictum* (L.) Griff., *Justicia carnea* Lindl., *Megaskepasma erythrochlamys* Lindau, *Pachystachys lutea* Nees, *Thunbergia erecta* (Benth.) T. Anderson, *T. grandiflora* Roxb., and *T. laurifolia* Lindl.

The country’s relatively large size (ca. 1,964,375 sq. km, nearly half of which lies within the tropics), diversity of both wet and dry biotic communities, and rugged topography, likely account for the richness, diversity, and endemism of the Acanthaceae in Mexico. Individual species usually occur in several biotic communities, and the community with the greatest number of species in Mexico appears to be tropical deciduous forest. While species occur at elevations from sea level to 2,830 meters, most are restricted to elevations below 2,000 meters. Although Acanthaceae occur in all 32 Mexican states (Table 1), those with the greatest numbers of species occur in the southern tropical regions containing extensive areas of both wet and dry biotic communities and broad elevational ranges (i.e., Oaxaca, Chiapas, Guerrero; Fig. 2). Oaxaca is the richest state in both numbers of occurrences (151) and endemic species (22) of Acanthaceae. Chiapas has the largest number of species known only from that state in Mexico. This is undoubtedly due primarily to its location next to Guatemala, with which it shares many otherwise Central American species. With only four rather common and widely distributed natives, Tlaxcala has the

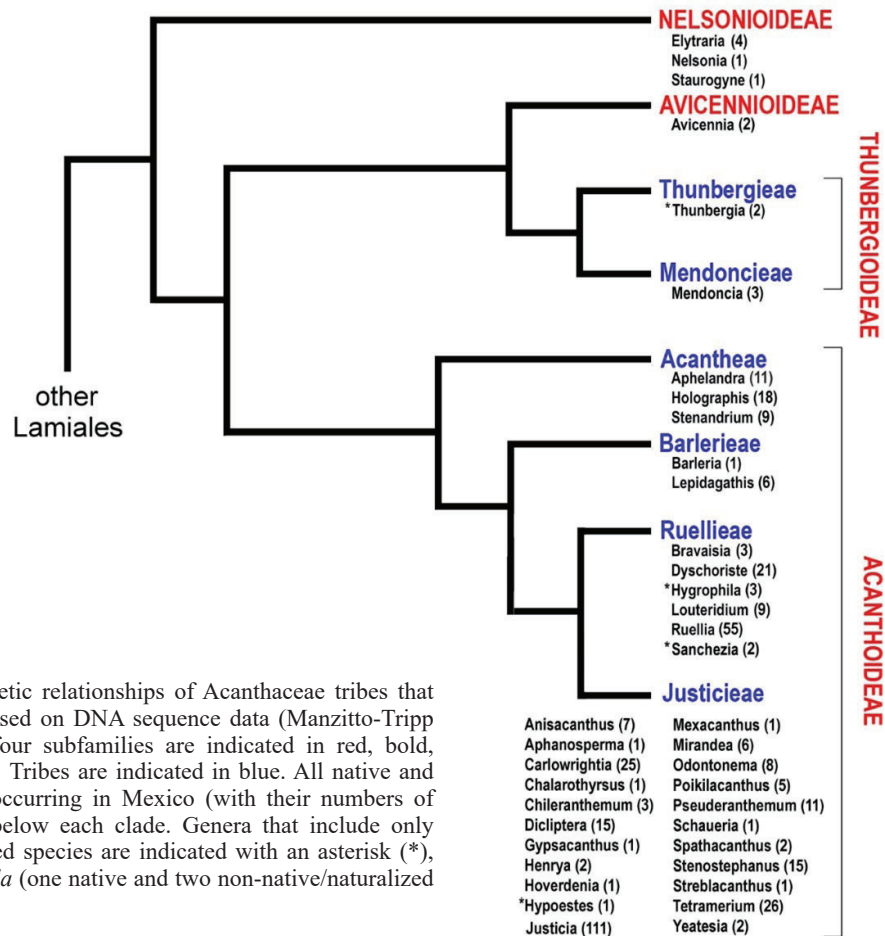


FIGURE 1: Phylogenetic relationships of Acanthaceae tribes that occur in Mexico, based on DNA sequence data (Manzitto-Tripp et al., 2022). The four subfamilies are indicated in red, bold, and capitalized type. Tribes are indicated in blue. All native and naturalized genera occurring in Mexico (with their numbers of species) are listed below each clade. Genera that include only non-native/naturalized species are indicated with an asterisk (*), except for *Hygrophila* (one native and two non-native/naturalized species).

Mexican State	Number of Species	Number of Species Known Only from State	Endemic Species
Oaxaca	151	22	22
Chiapas	134	40	16
Guerrero	112	16	15
Veracruz	106	8	7
Jalisco	88	5	5
Michoacan	86	9	9
Puebla	79	1	1
Mexico	61	2	2
Hidalgo	55	3	3
Queretaro	54	1	1
San Luis Potosí	54	1	1
Nayarit	53	1	1
Tamaulipas	51	9	7
Durango	45	3	3
Sinaloa	45	1	1
Morelos	45	0	0
Colima	43	1	1
Sonora	41	1	1
Guanajuato	38	1	1
Tabasco	37	1	1
Zacatecas	37	0	0
Coahuila	36	6	3
Chihuahua	35	2	2
Yucatan	35	1	1
Nuevo Leon	34	3	3
Campeche	30	0	0
Quintana Roo	30	2	2
Baja California Sur	27	6	6
Aguascalientes	20	0	0
Ciudad de Mexico	10	0	0
Baja California	9	0	0
Tlaxcala	4	0	0

TABLE 1: Mexican states with the number of species of native and naturalized Acanthaceae, the number of species known only from each state in Mexico, and the number of species endemic to each state.

fewest acanthaceous species among Mexican states. Reasons for this may include that state's relatively high elevation with few biotic communities rich in Acanthaceae and/or a lack of extensive collecting activities there. Observations from Tlaxcala on iNaturalist (2025) reveal two of the four occurrences of Acanthaceae for which I have seen no voucher collections. They also reveal other cultivated Acanthaceae in the state, some of which may be naturalized (i.e., *Hypoestes phyllostachya*, *Justicia spicigera* Schltdl., *Ruellia simplex* C. Wright, and *Thunbergia alata*). The nine species with known occurrences in 20 or more of the 32 Mexican states are likely the most widely distributed Acanthaceae in the country. At least six of these are known to be weedy and can form extensive populations: *Dyschoriste hirsutissima* (Nees) Kuntze, *Elytraria imbricata* (Vahl) Pers., *Henrya insularis* Nees ex Benth., *Ruellia blechum* L., *R. simplex*, and *Tetramerium nervosum* Nees. The other three are *Justicia carthaginensis* Jacq., *Pseuderanthemum praecox* (Benth.) Leonard, and *Stenandrium dulce* (Cav.) Nees.

MATERIALS AND METHODS

This listing of all currently accepted genera and species of native and naturalized Acanthaceae in Mexico results from studies of the family over the past 48 years in the field and in herbaria in the United States, Mexico, Central America, and Europe. The 58 herbaria housing the voucher specimens cited below are listed in the acknowledgments. These ongoing investigations, which have resulted in generic monographs, taxonomic revisions, and regional floristic accounts, have all been leading toward a comprehensive taxonomic account of Mexican Acanthaceae that includes nomenclature (type data and synonymies), keys to taxa, descriptions of genera and species, ecological data (biotic communities of occurrence, elevational ranges, flowering and fruiting phenologies, etc.), cultural data (local names and uses), and appropriate discussions of various issues for most taxa. Much of the list below has been taken from the larger data set assembled to date. That information has been updated and augmented so that numerous ongoing scientific projects of Mexican botanists, students, and governmental personnel have access to a current listing of this large and important family that is categorized and vouchered by state.

The catalog below documents occurrences by state(s) and cites a single voucher that has been personally verified in almost all cases. Where no known specimens exist, a few vouchers are based on images that can be identified on the very useful iNaturalist (2025) website. Clarifications and/or discussions of taxonomic or other issues, when appropriate, follow the voucher citations. Intraspecific taxa of note are also mentioned in the discussions. In general, the choice and order of priorities for citing vouchers by state are: (1) the type collection if collected in the state; (2) the only collection known that I have seen from the state (or

rarely only an image of such); (3) another collection I have seen and verified; (4) a collection widely distributed via duplicates that I have verified; and (5) a verified specimen from an herbarium with significant collections of Mexican Acanthaceae (e.g., CAS/DS, ENCB, IEB, MEXU, TEX/LL, US). When types of species described from Mexico are not listed, either the type locality remains undetermined as to the state, the type is an illustration, or typification is currently being studied but remains to be resolved.

In some genera, the list includes one or more names in current use for which types or other specimens have been seen, but have not been sufficiently studied to render an informed taxonomic disposition (e.g., *Dicliptera floribunda* Eastw.). These are identified as such. The list does not include numerous unresolved names for which types have not been determined, seen, or located (mostly older names that have not been used in recent times, e.g., *Dicliptera ehrenbergii* Lindau, *Ruellia rubicaulis* Cav.). Some of these latter names are based on types that were either destroyed (and duplicates have not been located), not cited in protologues, or in such poor condition that they are not readily assignable to a species. Those that are currently being studied are noted in the appropriate discussions. For example, numerous types of Acanthaceae were destroyed at B. Duplicates have been located for several of these, but lectotypes have yet to be designated for all of them. Others will require lectotypification or neotypification following studies in herbaria where the pertinent specimens reside.

The information and taxonomic framework used in this listing are current and resolved as much as possible. Recent and ongoing studies using molecular phylogenetic data to better understand the taxonomic relationships within and among numerous genera treated here reveal that traditional generic circumscriptions have been and will continue to be altered. For example, preliminary molecular phylogenetic studies (e.g., using Sanger sequencing data) indicate that some currently recognized genera (e.g., *Carlwrightia*, *Justicia* L., *Mirandea* Rzed., and *Yeatesia* Small) are not monophyletic (e.g., Kiel et al., 2017; McDade et al., 2018). Studies using next-generation DNA data will likely refine and improve upon the preliminary data, and taxonomic alterations will undoubtedly follow.

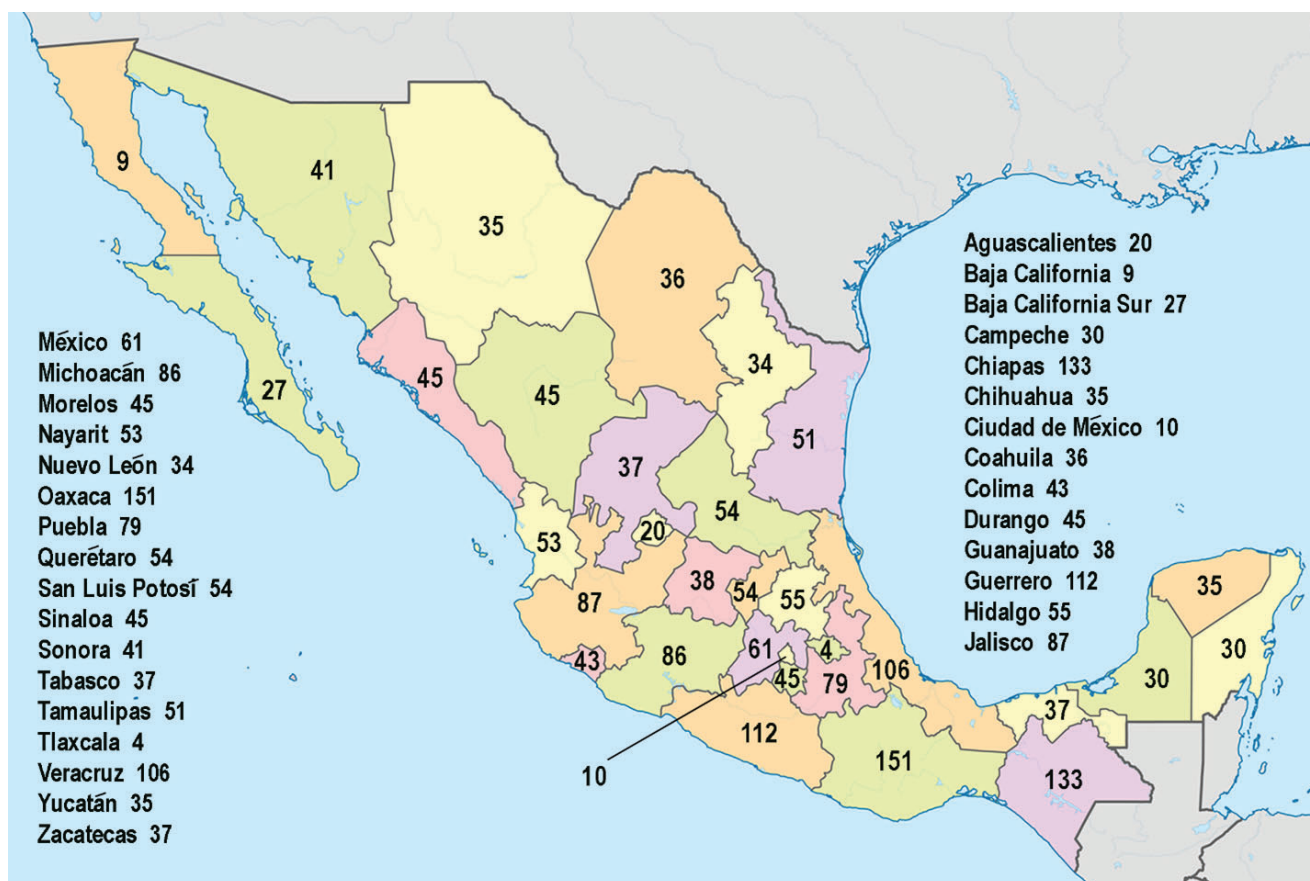


FIGURE 2: Map of Mexico showing the 32 states and the number of species (native and naturalized) of Acanthaceae in each. Map source: Gabomiranda, CC BY-SA 4.0 (<https://creativecommons.org/licenses/by-sa/4.0>), via Wikimedia Commons.

KEY TO GENERA OF NATIVE AND NATURALIZED ACANTHACEAE IN MEXICO

The following key is based on studies to date of all currently accepted species of Mexican Acanthaceae. Images that portray some of the macro- and/or micromorphological characteristics used therein (mostly flowers and pollen), and that represent all 39 genera of Mexican Acanthaceae, can be found among several publications (Daniel, 1998, 2004, 2010, 2013a, 2016, 2024; Daniel and Denham-Logsdon, 2025; Daniel and Lott, 1993; Daniel and McDade, 2014; Daniel and Rodríguez, 2016; Daniel et al., 2021; Daniel et al., 2024).

- 1a. Fruits drupaceous or if capsular, then lacking a prominent hook-shaped retinaculum (modified funiculus) subtending each seed (in *Avicennia*, capsule leathery and containing a single seed); cystoliths absent. 2
- 1b. Fruits consisting of explosively dehiscent capsules with a prominent, hook-shaped retinaculum (modified funiculus) subtending each seed (if retinacula malformed or indistinct as in *Aphanosperma* and *Chalarothyrsus*, then with multiple seeds partially fused to and permanently retained in woody capsule valves); cystoliths present or absent. 7
- 2a. Herbaceous twining vines or lianas; fruits drupaceous (fleshy); pollen spherical, 5- (6-) brevicolpate. ***Mendoncia***
- 2b. Erect to spreading annual or perennial herbs or herbaceous twining vines; fruits capsular (woody or leathery); pollen otherwise. 3
- 3a. Mangrove trees or shrubs with erect, aerial roots (pneumatophores) up to 4 dm high under and/or beyond the canopy; capsules leathery, tardily and non-explosively dehiscent; seeds 1 per capsule, germinating and remaining inside the capsule until after the fruit dehisces or falls (i.e., plants cryptoviviparous); coastal areas (e.g., mangals, estuaries) ***Avicennia***
- 3b. Herbs, shrubs, trees, or twining vines, pneumatophores absent; capsules woody and explosively dehiscent; seeds 2 to many per capsule, not cryptoviviparous; not restricted to coastal areas. 4
- 4a. Herbaceous twining vines; corollas with left-contort aestivation; stamens 4; capsules with a prominent sterile beak longer than the fertile and ± globose base; calyces 10–17-lobed; seeds 2–4 per capsule, 4–5 mm long; pollen spiraperturate ***Thunbergia***

- 4b. Erect or spreading perennial herbs; corollas with descending-cochlear aestivation; stamens 2; capsules \pm ellipsoid to ovoid, fertile from near base to near apex or mostly in basal 2/3 of capsule, lacking a prominent sterile beak longer than fertile portion; calyces 5-lobed; seeds more than 4 per capsule (up to 20+), 0.3–1.2 mm long; pollen 3-aperturate (3-colpate to 3-colporate) 5
- 5a. Leaves usually alternate or clustered in pseudowhorls; inflorescences borne on peduncles covered with spirally arranged and clasping scales; floral bracts coriaceous to sclerophyllous; calyx lobes with veins of abaxial surface obscured or not evident; stigma inconspicuously and scarcely lobed (if at all), $>$ 5 times the width of the style, folded over and enclosing anthers in undisturbed flowers, unfolding and becoming erect when touched (touch-sensitive); seeds lacking hygroscopic trichomes *Elytraria*
- 5b. Leaves opposite; inflorescences sessile or borne on naked peduncles; floral bracts membranaceous; calyx lobes with veins of abaxial surface evident to prominent; stigma 2- (4-) lobed, lobes \leq the width of the style, erect or spreading but not folded over and enclosing anthers (not touch-sensitive); seeds with hygroscopic trichomes 6
- 6a. Bracteoles absent; inflorescences dense, cylindrical spikes; floral bracts closely imbricate throughout, broadly ovate to broadly elliptic; calyx 3.5–4 mm long; corollas externally glabrous; androecia of 2 stamens *Nelsonia*
- 6b. Bracteoles present; inflorescences loose to dense, non-cylindrical spikes; floral bracts not imbricate (usually at least proximally) and only loosely to closely imbricate distally, elliptic; calyx 4.7–6.3 mm long; corollas externally pubescent with inconspicuous trichomes to 0.1 mm long; androecia of 4 stamens *Staurogyne*
- 7a. Cystoliths absent; stamens 4, anthers monothealous; pollen 3-colpate (inaperturate and conspicuously gemmate in some *Stenandrium dulce*) 8
- 7b. Cystoliths present; stamens 2 or if 4, then at least 2 stamens with anthers bithealous; pollen otherwise 10
- 8a. Plants acaulescent to subcaulescent (leaves clustered at or near the ground) or caulescent perennial herbs to 5.5 dm tall; corollas usually \pm subactinomorphic (zygomorphic in *Stenandrium chameranthemoides*, *S. nanum*, and *S. subcordatum*); anthers included in corolla tube (not visible or only apex visible at mouth of throat); style and stigma included in corolla tube, stigma asymmetrically funnelliform *Stenandrium*
- 8b. Plants caulescent perennial herbs or shrubs to 4 (–8) m tall; corollas zygomorphic; anthers usually partially or completely exerted from corolla tube; part of style and stigma exerted from corolla tube, stigma 2-lobed or funnelliform 9
- 9a. Leaves opposite (rarely subopposite) or quaternate; bracts entire and usually green; corollas often with colored linear nectar guides, 6.5–24 (–40 in *Holographis haenkeana* and *H. velutiflora*, both of which have quaternate leaves) mm long; staminal filaments often entirely included in corolla tube; pollen with colpi sometimes expanded or bifurcating toward poles, interapertural exine homogeneously sculptured *Holographis*
- 9b. Leaves opposite (rarely subopposite); bracts entire or dentate, green or variously colored; corollas rarely with colored linear nectar guides, 30–85 mm long; at least distal portion of staminal filaments usually exerted from corolla tube; pollen with colpi usually narrowed (neither expanded nor bifurcating) toward poles, interapertural exine usually heterogeneously sculptured *Aphelandra*
- 10a. Calyces 3-lobed; corollas mostly nocturnal, 38–72 mm long, throat prominently gibbous-saccate ventrally, forming a large and nectariferous pouch; pollen pantoforate *Louteridium*
- 10b. Calyces 2-, 4-, or 5-lobed; corollas otherwise (or if as described above, then calyx 5-lobed, e.g., some *Ruellia*); pollen not pantoforate 11
- 11a. Calyces deeply 4-lobed (sometimes \pm 5-lobed in *Lepidagathis alopecuroidea*), lobes heteromorphic with outer (anterior and posterior) lobes larger than inner (lateral) lobes, anterior lobe apically 2-fid (or more deeply 2-cleft in *L. alopecuroidea*); corollas with quincuncial aestivation; pollen 3-colporate to 3-colpoidorate, coarsely reticulate, reticulum often heterobrochate, lumina psilate or containing bacula, clavae, and/or gemmae 12
- 11b. Calyces 2-, 4-, or 5-lobed, lobes sometimes heteromorphic, but not as described above, anterior lobe entire (except in *Spathacanthus*); corollas with left-contort or ascending-cochlear aestivation; pollen otherwise 13
- 12a. Inflorescences of dense 4-sided spikes, 20–50 mm in diameter (measured flat and excluding flowers); bracts with margin subdentate to dentate; calyces with anterior and posterior lobes with dentate margins bearing teeth to 2.5 mm long; corollas lemon yellow (usually drying dark purple or blackish), upper lip erect (at ca. 90° angle from corolla tube), deeply 4-lobed, lower lip 1-lobed; seeds 4.5–6.5 mm long, pubescent with appressed hygroscopic trichomes to 1 mm long *Barleria*
- 12b. Inflorescences of loose to dense unilateral to \pm 2-sided spikes (or racemes) 20–25 mm in diameter (measured flat and excluding flowers) or of axillary dichasia (*Lepidagathis danielii*), or of dense and cylindrical spikes 8–15 mm in diameter (measured flat and excluding flowers; *L. alopecuroidea*); bracts with margin entire; calyces with anterior and posterior lobes with entire margins; corollas red, reddish, or white with pinkish markings (in *L. alopecuroidea*), upper lip \pm hooded and arching forward (not angled upward from corolla tube), shallowly 2-lobed, lower lip deeply 3-lobed; seeds 1–4.8 mm long, pubescent with appressed hygroscopic (not verified for *L. uxpanapensis*) trichomes 0.05–0.4 mm long
- Lepidagathis***
- 13a. Corollas with left-contort aestivation, tube with a filament curtain (i.e., proximal flanges of tissue that partition the corolla tube internally into one or more nectar compartments); stamens 4 (2 in *Sanchezia*); seeds pubescent with hygroscopic trichomes (sometimes restricted to margin in *Ruellia*, and completely absent in *Bravaisia* and *Sanchezia*) 14
- 13b. Corollas with ascending-cochlear aestivation, tube lacking a filament curtain; stamens 2 (4 in *Chalarothyrsus*, *Hygrophila corymbosa*, *H.*

- costata*, and *Streblacanthus*); seeds usually lacking trichomes (if present, then not hygroscopic, except in *Henrya insularis*, *Hygrophila* spp., *Justicia laevilinguis*, and potentially a few other species of *Justicia* for which seeds remain unknown) 18
- 14a. Large shrubs or trees; calyx lobes overlapping one another; seeds glabrous; pollen loxodicolporate (i.e., with one apertural face rotated 90° with respect to the other), interapertural regions (mesocolpia) polypseudocolpate 15
- 14b. Perennial herbs or shrubs; calyx lobes not overlapping one another; seeds pubescent with hygroscopic trichomes (restricted to margin in some *Ruellia*); pollen otherwise 16
- 15a. Corollas ± cylindric with lobes of limb tightly recoiled, yellow or yellowish orange, lacking discolorous markings; androecia of 2 stamens and 2 staminodes; non-native *Sanchezia*
- 15b. Corollas with a funnellform tube and widely spreading (not recoiled) limb, white to pinkish purple with discolorations of yellow, purple, and/or brown internally; androecia of 4 stamens and 0 staminodes; native. *Bravaisia*
- 16a. Thecae basally appendaged (awns or mucros); calyx tubes with elongate hyaline regions below sinuses; seeds (= number of retinacula) 2–4; pollen 3-colporate to 3-porate, ora/pores flanked by protruding exine (“sexine lips”), interapertural regions (mesocolpia) microverrucate to microechinate and sometimes also microfoveolate, multistriate with 4–12 pseudocolpi. *Dyschoriste*
- 16b. Thecae lacking basal appendages; calyx tube with or without hyaline regions below sinuses; seeds (= number of retinacula) 4–40; pollen otherwise. 17
- 17a. Plants aquatic or hygrophilous; calyx tubes with or lacking hyaline regions below sinuses, when present, these often rupturing at maturity; corollas white, pinkish, or purplish, 4.5–16.5 mm long, limb strongly zygomorphic (bilabiate), lower lip often with colored and textured herring-bone patterning; pollen (3-) 4-colporate, interapertural regions (mesocolpia) each with (2) 3 or 4 (6) pseudocolpi *Hygrophila*
- 17b. Plants neither aquatic nor especially hygrophilous; calyx tubes lacking hyaline regions below sinuses, and not rupturing there at maturity; corollas purple, blue-purple, pink, red, yellow, greenish, or white, usually > 15 mm long, limb subactinomorphic to weakly bilabiate, lower lip not with colored and textured herring-bone patterning; pollen 3-porate (rarely 3-syncolporate), lacking pseudocolpi *Ruellia*
- 18a. Calyces spathe-like, comprising 2 large and partially fused lobes, 1 apically entire to minutely 2-lobed, the other apically entire to minutely 3-lobed; capsules 40–62 mm long *Spathacanthus*
- 18b. Calyces not spathe-like, not comprising 2 large lobes as described above; capsules 3–30 mm long (except 33–52 mm long in *Justicia borraerae* and *J. totonaca*) 19
- 19a. Stamens 2 or 4; retinacula malformed, indistinct, or not evident in capsule valves; seeds malformed, partially fused to and permanently retained in capsule valves 20
- 19b. Stamens 2; retinacula hook-shaped and conspicuous in capsule valves; seeds neither malformed nor partially fused to capsule valves, typically flung from retinacula upon explosive dehiscence of capsule 21
- 20a. Stamens 4; leaves usually sessile and amplexicaulis at base; corolla uniformly red to orange-red, ± funnellform, tube gradually expanded from base and longer than limb; capsule clavate, base of stipe glabrous, fertile portion ellipsoid to obovoid and ± rounded at apex, not reflexed at maturity *Chalarothyrsus*
- 20b. Stamens 2; leaves petiolate, blades acute to truncate to subcordate at base; corolla cream with a white chevron outlined and streaked with maroon on upper lip, ± pseudopapilionaceous, tube subcylindric and shorter than limb; capsule wedge-shaped, base of stipe densely pubescent with apically hooked (uncinate) trichomes, fertile portion triangular, truncate to emarginate and widest at apex, reflexing during maturation and upside-down at maturity *Aphanosperma*
- 21a. Anthers 1-theccous 22
- 21b. Anthers 2-theccous (proximal theca sterile and appendage-like in *Streblacanthus* and some *Justicia*, e.g., *J. teletheca*) 23
- 22a. Leaf blades beset with pink and/or white spots or irregular regions; bracteoles in 2 pairs, outer pair forming an involucre, partially connate proximally for less than half their length; corollas resupinate (i.e., tube twisted 180° with 3-lobed lip uppermost); pollen 3-colporate, 6-pseudocolpate *Hypoestes*
- 22b. Leaf blades entirely green; bracteoles in 1 pair, neither forming an involucre nor connate; corolla not resupinate (i.e., tube not twisted and 3-lobed lip, when evident, lowermost); pollen 2-porate. *Stenostephanus*
- 23a. Calyces 4-lobed; corollas subsalverform, purplish, 36–37 mm long; anthers with thecae superposed, distal theca fertile and dorsally pubescent, proximal theca abortive, sterile, and appendage-like; seeds ca. 5 mm in diameter; pollen 3-colporate, 6-pseudocolpate
- Streblacanthus***
- 23b. Plants not with the above combination of characters 24
- 24a. Androecia of 2 stamens and 2 staminodes; flowers often heterostylous. 25
- 24b. Androecia of 2 stamens and 0 staminodes; flowers not heterostylous 27
- 25a. Corollas ± salverform, tube cylindric (or often tapered distally and expanded just below limb), longer than limb, limb ± rotate and subactinomorphic, upper lip divided nearly to or to base (division of upper lip: length of upper lip = 0.9–1) (if chasmogamous flowers absent, then with budlike cleistogamous flowers) *Pseuderanthemum*
- 25b. Corollas not salverform, tube funnellform (expanded distally), shorter or longer than limb, limb conspicuously zygomorphic (bilabiate), upper lip not as deeply divided (division of upper lip: length of upper lip = 0.1–0.6) (cleistogamous flowers rarely, if ever, present) 26

- 26a. Corollas blue-purple to purple or pinkish with white region spotted with maroon on lower lip or white with maroon spots on lower lip, tube 5–11 mm long, tube: lower lip of limb = 0.5–1.3 (–1.5) *Chilanthium*
- 26b. Corollas red, yellow, white, pinkish, or purple, sometimes with various discolorations on limb, tube 6.5–30 mm long, tube: lower lip of limb = 1–9.7 (–13) *Odontonema*
- 27a. Young stems ± distinctly hexagonal in cross-section; inflorescence units of axillary bracteate cymes bearing 1 or more sessile and/or pedunculate cymules; cymules consisting of 1 or more flowers subtended by an involucre of 2 or more pairs of bracteoles; outer pair of cymule bracteoles conspicuous and larger than inner pair(s); capsules with retinacula separating from inner wall at maturity and protruding prominently from each valve of capsule, mature capsules also ruptured near base of distal fertile portion; corollas resupinate 180° or 360° in some species, not resupinate in others; pollen 3-colporate, 6-pseudocolpate *Dicliptera*
- 27b. Young stems terete to quadrate in cross-section; inflorescence various, but not as described above (if cymules, as described above, present, as in some *Justicia* [e.g., *J. borraera*, *J. cymulifera*], then with capsules and pollen not as described above); capsules with retinacula remaining attached to inner wall at maturity (or separating slightly near base of fertile portion in *Henrya* and *Tetramerium*, but not protruding prominently from each valve of capsule), mature capsules not or barely ruptured near base of distal fertile portion; corollas not resupinate; pollen various 28
- 28a. Flowers nototribic (i.e., stamens usually near upper lip of corolla with anthers dehiscing toward lower lip) 29
- 28b. Flowers sternotribic (i.e., stamens usually near lower lip of corolla with anthers dehiscing toward upper lip) or pleurotribic (i.e., stamens ± centrally located between upper and lower lips with anthers dehiscing toward central axis of flower and each other) 34
- 29a. Upper lip of corolla rugulate (i.e., with a stylar furrow; absent only in a few species of unresolved generic affinity, currently treated in *Justicia*); anthers with thecae of a pair parallel to perpendicular, equally to unequally inserted to superposed on filament, and lacking basal appendages or with one or both appendaged at base; pollen 2–5 (6?)-aperturate 30
- 29b. Upper lip of corolla not rugulate; anthers with thecae of a pair parallel to subsagittate, equally to subequally inserted on filament, and lacking basal appendages; pollen 3-aperturate. 31
- 30a. Leaves sometimes anisophyllous at a node; corollas red to pink (color unknown in *Poikilacanthus capitatus*), large (39–75 mm long), and with upper lip generally conspicuously arching; pollen (4-) 5- (6?) aperturate, with exine of subcircular to polygonal insulae consisting of gemmate regions enclosed by thick, smooth muri, insulae either distinct or linked into loops and bands *Poikilacanthus*
- 30b. Leaves rarely anisophyllous at a node; corollas of various colors (including red and pink), small to large (3–75 mm long), and with upper lip rarely conspicuously arching; pollen 2–4-aperturate, exine various, but not as described above. *Justicia*
- 31a. Corollas yellow, tube with narrow proximal portion cylindrical and abruptly expanded distally into a broadly triangular and ± saccate throat, linear distance between tip of upper lip and farthest tip of lower lip on fully open corolla (22–) 31–35 mm (measured flat); anther thecae 4.8–6 mm long; capsules 15.5–25 mm long *Hoverdenia*
- 31b. Corollas blue to purple to pink (or if yellow, then tube gradually expanded distally), throat neither broadly triangular nor saccate, linear distance between tip of upper lip and farthest tip of lower lip on fully open corolla 5–20 mm (measured flat); anther thecae 1.2–3.8 mm long; capsules 7–16 mm long. 32
- 32a. Corollas 8–21 mm long, tube 5–10 mm long *Mirandea*
- 32b. Corollas 22–39 mm long, tube 14–27 mm long. 33
- 33a. Bracts linear-lanceolate to lanceolate-subulate, 1.2–2.2 mm wide; corollas yellow; calyces 10–25 mm long; southern Mexico. . . *Schaueria*
- 33b. Bracts deltate to broadly ovate to ovate-elliptic to lanceolate-ovate, 5–18 mm wide; corollas blue, pale purple to pinkish; calyces 1.5–10 mm long; northern Mexico *Yeatesia*
- 34a. Flowers pleurotribic (i.e., anthers dehiscing toward each other); corollas with lower lip neither conduplicate nor cuplike (i.e., neither enclosing nor subtending stamens); seeds usually 2 per capsule 35
- 34b. Flowers sternotribic (i.e., anthers dehiscing toward upper lip); corollas with lower lip sometimes conduplicate or cuplike (and enclosing or subtending stamens); seeds 2–4 per capsule. 36
- 35a. Leaves sessile to subsessile, cordate to auriculate-clasping at base (distal leaves sometimes ± truncate); calyx lobes obovate to oblanceolate to elliptic to linear to linear-lanceolate, pubescent with eglandular trichomes; corollas cream with maroon markings, 6.5–11 mm long; pollen 3-colporate, 6-pseudocolpate; southern Mexico. *Gypsacanthus*
- 35b. Leaves petiolate, acute to attenuate at base; calyx lobes subulate, pubescent with glandular and eglandular trichomes; corollas bicolorated with upper lip red and lower lip yellow, 17–26 mm long; pollen 2-colporate, 4-pseudocolpate; west-central Mexico. *Mexacanthus*
- 36a. Either bracts or bracteoles conspicuous and concealing calyx; capsules 3.5–9.5 (–12) mm long, septa with attached retinacula separating slightly from inner wall of mature capsules near base of fertile portion; seeds 0.8–2.8 (–3.4) mm long 37
- 36b. Neither bracts nor bracteoles conspicuous or concealing the calyx; capsules (6–) 7–26 mm long, septa with attached retinacula remaining attached to inner wall of mature capsules; seeds (2–) 2.5–8 mm long 38
- 37a. Bracts conspicuous, usually larger than inconspicuous bracteoles; bracteoles of a pair subtending flowers either not fused or connate at base up to 1 mm; seeds 4 (rarely fewer) per capsule, glabrous; pollen with colpi narrow, not exceeding width of centrally positioned ora *Tetramerium*
- 37b. Bracts usually less conspicuous and shorter than prominent bracteoles; bracteoles of a pair subtending flowers fused along on one side

from base to near to apex (forming a subcylindric to obovoid floral involucre); seeds 2 per capsule, glabrous (*H. tuberculospema*) or pubescent with hygroscopic trichomes (*H. insularis*); pollen with colpi broad, far exceeding width of centrally positioned ora *Henrya*
 38a. Corollas red, orange (rarely yellowish), or pinkish, (24–) 30–65 mm long, tube gradually (or sometimes ± abruptly) expanded distally, (11–) 14–31 mm long, upper lip without prominent discoloured nectar guides, lower-central lobe linear to strap-shaped, usually conspicuously recurved to recoiled; stamens (10.5–) 19–30 (–40) mm long, thecae red or reddish, (2.2–) 2.5–4.8 mm long; capsules (12–) 14–26 mm long; shrubs to 4 or more meters tall *Anisacanthus*
 38b. Corollas white, cream, yellow, blue, purple, or pinkish, 5.5–20 (–27) mm long, tube cylindric to subcylindric (not conspicuously expanded distally), 1.5–9 (–13) mm long, upper lip usually with prominent discolorations (i.e., yellow, maroon, and/or purple nectar guides), lower-central lobe ovate to elliptic to obovate, extending straight forward (and ± conduplicate), curved to 90° downward, or slightly recurved; stamens 3.3–9 (–10.5) mm long, thecae yellowish, golden yellow, maroon, or purple, 0.5–1.9 (–3) mm long; capsules 6–16 mm long; perennial herbs less than 1 m tall or shrubs to 2 m tall. *Carlwrightia*

CATALOG OF GENERA AND SPECIES OF MEXICAN ACANTHACEAE

In the following list, genera, species, and Mexican states are organized alphabetically. The generic name is followed by the number of its species in Mexico and the number of its species endemic to Mexico. Species names are followed by the number of Mexican states in which a voucher has been identified. When known, types of species are listed for the state from which they were collected. An asterisk (*) before a generic or specific name indicates a taxon endemic to Mexico. A dagger (†) before a generic or specific name indicates a non-native naturalized taxon.

ANISACANTHUS Nees (7 species, 3 endemic).

***Anisacanthus andersonii** T.F. Daniel (2)—Chihuahua (*Bye et al. 9195*, MEXU); Sonora (*McCarten & Bittman 2690*, ARIZ-holotype).

***Anisacanthus junceus** (Torr.) Hemsl. (3)—Coahuila (*Henrickson 13066*, CAS); Durango (*R. Torres C. 16727B*, MEXU); Zacatecas (*Hinton et al. 23186*, MEXU).

Typification of this species is currently being studied. Daniel and Henrickson (1982) cited “Chihuahua: 1881, Pringle s.n. (GH).” I have not seen this specimen at GH (nor is it listed on their website), and it is possible that this citation was erroneous. There is a collection of *A. thurberi* from Arizona (*Pringle s.n.*, collected in 1881), but Pringle did not collect in Chihuahua until 1885 (Davis, 1936), and no subsequent collections of *A. junceus* from Chihuahua have been seen. Thus, unless the species can be documented from the state, it is here excluded as occurring in Chihuahua.

Anisacanthus linearis (S.H. Hagen) Henrickson & E.J. Lott (3)—Chihuahua (*Chiang C. et al. 8990A*, MEXU); Coahuila (*Henrickson & Lee 17457*, TEX); Nuevo León (*LeSueur 451*, TEX).

Anisacanthus puberulus (Torr.) Henrickson & E.J. Lott (5)—Chihuahua (*Gregg 504*, NY-lectotype); Coahuila (*Chiang et al. 7555a*, LL); Durango (*González 4081*, CAS); Jalisco (*Bauml & Voss 1447*, CAS); Zacatecas (*Rzedowski 8745*, TEX).

***Anisacanthus pumilus** (Dietr.) Nees (13)—Aguascalientes (*Siqueiros 2633*, HUAA); Chihuahua (*Gregg 587*, NY); Guanajuato (*Rzedowski 39643*, IEB); Hidalgo (*González Q. 2292*, DS); Jalisco (*Lott & Magallanes 770*, MEXU); México (*Daniel & Denham-Logsdon 12602*, CAS); Michoacán (*Escobedo 2273*, IEB); Morelos (*Lorence 5019*, MEXU); Oaxaca (*Jurgensen 496*, K); Puebla (*Jiménez 1550*, IEB); Querétaro (*Argüelles 3073*, IEB); San Luis Potosí (*Parry & Palmer 706½*, MO); Zacatecas (*Rodríguez-Pérez 7361*, HZAC-image).

Typification of this species is currently being studied. Due to the absence of morphological distinctions, *Anisacanthus tulensis* Greenm. is here treated as a synonym of *A. pumilus*.

Anisacanthus quadrifidus (Vahl) Nees (14)—Aguascalientes (student collection *91*, HUAA); Coahuila (*Palmer 719*, NY); Guanajuato (*Ventura & López 8421*, CAS); Hidalgo (*Daniel & Baker 3741*, ASU); Jalisco (*Lott et al. 2046*, MEXU); México (*Matuda et al. 29509*, MEXU); Nuevo León (*Daniel & Baker 3682*, MO); Oaxaca (*Purpus 3018*, US); Puebla (*Lott & Wendt P-35*, TEX); Querétaro (*Rzedowski 47457*, IEB); San Luis Potosí (*García et al. 1297*, MEXU); Tamaulipas

(*Henrickson & Hess 19232*, TEX); Veracruz (*Nee & Taylor 26627*, F); Zacatecas (*Henrickson 23038*, MEXU).

The type of this species was based on plants cultivated in Madrid originating from an unknown locale in Mexico (“nova Hispana”). Lectotypification of this species is currently being studied. Henrickson (1986) recognized four varieties of *Anisacanthus quadrifidus*: var. *quadrifidus*, var. *brevilobus* (Hagen) Henrickson, var. *potosinus* Henrickson, and var. *wrightii* (Torr.) Henrickson. Their ultimate taxonomic status requires further investigation.

Anisacanthus thurberi (Torr.) A. Gray (2)—Chihuahua (*Ferguson et al. 2591*, CAS); Sonora (*Gentry 1309*, ARIZ).

***APHANOSPERMA** T.F. Daniel (1 species, 1 endemic)

***Aphanosperma sinaloense** (Leonard & Gentry) T.F. Daniel (3)—Baja California Sur (*Daniel et al. 6866*, CAS); Sinaloa (*Gentry 7111*, US-holotype); Sonora (*Van Devender et al. 93-1494*, ARIZ).

APHELANDRA R. Br. (11 species, 5 endemic)

Aphelandra aurantiaca Lindl. (5)—Chiapas (*Breedlove & Daniel 71287*, CAS); Oaxaca (*Martínez C. 397*, MEXU); Puebla (*Vázquez T. 1462*, XAL); Tabasco (*Magaña & S. Zamudio 987*, MO); Veracruz (*Martínez C. 1774*, MEXU).

Aphelandra gigantiflora Lindau (2)—Chiapas (*Breedlove & Almeda 60161*, CAS); Oaxaca (*Torres C. et al. 4307*, MEXU).

***Aphelandra guerrerensis** Wassh. (3)—Guerrero (*Hinton et al. 11199*, US-holotype); México (*López Patiño et al. 8262*, CODAGEM); Oaxaca (*Daniel & Ton 6156*, CAS).

Taxonomic resolution among plants treated as this species in México and Oaxaca requires additional study.

Aphelandra heydeana Donn. Sm. (1)—Chiapas (*Fryxell & Lott 3341*, CHAPA).

***Aphelandra hintonii** Wassh. (1)—Michoacán (*Hinton et al. 16049*, US-holotype).

***Aphelandra lineariloba** Leonard (5)—Colima (*McVaugh 26224*, MICH); Guerrero (*Mexia 8952*, UC); Jalisco (*Diaz L. 9406*, ENCB); México (*Hinton et al. 7412*, K-holotype); Michoacán (*McVaugh 22609*, MICH).

***Aphelandra madreensis** Lindau (6)—Colima (*Sanders et al. 10297*, RSA); Guerrero (*Langlassé 806*, P-lectotype); Jalisco (*Daniel 5276*, CAS); Michoacán (*Hinton et al. 12675*, US); Nayarit (*McVaugh & Koelz 758*, MICH); Sinaloa (*Gentry 5655*, ARIZ).

Aphelandra scabra (Vahl) Sm. (10)—Campeche (*Martínez S. 2977*, MEXU); Chiapas (*Breedlove & Daniel 70909*, CAS); Guerrero (*Torres C. et al. 1857*, CHAPA); Oaxaca (*Martínez C. 254*, MEXU); Puebla (*Caamaño Onofre 6638*, HUAP-image); Quintana Roo (*Téllez & E. Cabrera 3026*, MEXU); Tabasco (*Menéndez et al. 400*, XAL); Tamaulipas (*Richardson 946*, TEX); Veracruz (*Ventura A. 12101*, MEXU); Yucatán (*Steere 2151*, MO).

Aphelandra schiedeana Schltld. & Cham. (3)—Chiapas (*Matuda 126*, MEXU); Oaxaca (*MacDougall H151*, NY); Veracruz (*Schiede 118*, M-lectotype).

Aphelandra speciosa Brandege (1)—Chiapas (*Purpus 6955*, UC-holotype).

***Aphelandra wendtii** T.F. Daniel (3)—Chiapas (*Breedlove 47343*, CAS); Tabasco (*Gilly & Hernández X. 399*, GH); Veracruz (*Daniel & Wendt 5813*, CAS-holotype).

AVICENNIA L. (2 species)

Avicennia bicolor Standl. (1)—Chiapas (*Matuda 16353*, US).

Avicennia germinans (L.) L. (17)—Baja California (*Moran 12625*, SBBG-image); Baja California Sur (*Johnston 4089*, CAS); Campeche (*Cabrera & de Cabrera 13345*, MEXU); Chiapas (*Rico-Gray & Espejel 298*, MEXU); Colima (*Miranda Moreno & López Reyna 1127*, MEXU); Guerrero (*Diego 4161*, FCME); Jalisco (*Rzedowski 14605*, DS); Michoacán (*Guerrero C. 676*, XAL); Nayarit (*Castillo C. 5818*, MEXU); Oaxaca (*Velázquez R. et al. 265*, MEXU); Quintana Roo (*Velázquez R. et al. 265*, MEXU); Sinaloa (*Van Devender et al. 2000-28*, NY); Sonora (*Reina G. & Van Devender 96-635*, MEXU); Tabasco (*Magaña 1499*, MEXU); Tamaulipas (*Mora O. & Mora L. 5450*, MEXU); Veracruz (*Palestina et al. 1460*, XAL); Yucatán (*Tapia M. 1508*, MEXU).

BARLERIA L. (1 species)

Barleria oenotheroides Dum. Cours. (18)—Campeche (*Zamora C. & Hernández T. 4425*, MEXU); Chiapas (*Breedlove & T. Daniel 71185*, CAS); Colima (*Sanders et al. 10285*, CAS); Durango (*González 1226*, CAS); Guerrero (*Hinton et al. 11739*, CAS); Jalisco (*Pringle 4587*, MEXU); México (*Matuda et al. 27510*, MEXU); Michoacán (*Daniel & M. Butterwick 3253*, CAS); Morelos (*Pringle 6162*, MO); Nayarit (*Jones 23048*, CAS); Oaxaca (*Martínez C. 444*, MEXU); Quintana Roo (*Darwin 2460*, CICY); San Luis Potosí (*Soto N. et al. 7121*, MEXU); Sinaloa (*Gentry 5182*, DS); Tabasco (*Magaña & S. Zamudio 816*, MEXU); Tamaulipas (*Martínez 588*, TEX); Veracruz (*Ventura A. 16606*, XAL); Yucatán (*Carnevali & J. Tapia M. 6571*, CAS).

BRAVAISIA DC. (3 species)

Bravaisia berlandieriana (Nees) T.F. Daniel (5)—Campeche (*Carnevali et al. 6136*, MEXU); Quintana Roo (*Daniel 10293*, CAS); Tabasco (*Vela G. 3046*, ENCB); Veracruz (*Berlandier 108*, G-holotype); Yucatán (*Durán et al. 3331*, CICY).

Bravaisia grandiflora Donn. Sm. (1)—Chiapas (*Daniel & Bartholomew 4998*, CAS).

Bravaisia integerrima (Spreng.) Standl. (9)—Chiapas (*Martínez S. 11652*, MEXU); Colima (*Rzedowski 15397*, ENCB); Guerrero (*Daniel & Bartholomew 4925*, CAS); Jalisco (*Puga 2916*, IBUG); Michoacán (*McVaugh 22884*, MICH); Nayarit (*Cházaro B. & Romero 8476*, XAL); Oaxaca (*Cedillo T. 736*, MEXU); Tabasco (*Magaña & Zamudio 128*, MEXU); Veracruz (*Wendt et al. 3114*, CAS).

The sole record of this species from Yucatán (i.e., *Johnson s.n.*, NY) most likely pertains to its occurrence in Tabasco; see Standley (1930, pp. 166-167).

CARLOWRIGHTIA A. Gray (25 species, 16 endemic)

***Carlowrightia albiflora** T.F. Daniel (1)—Tamaulipas (*Daniel 276*, MICH-holotype).

Carlowrightia arizonica A. Gray (19)—Baja California (*Harbison 41674*, DS); Baja California Sur (*Carter et al. 5799*, UC); Chiapas (*Breedlove 48715*, CAS); Chihuahua (*Henrickson & Lee 15833*, MEXU); Coahuila (*Daniel 694*, MICH); Colima (*McVaugh 24994*, MICH); Durango (*González & Rzedowski 2400*, MEXU); Guerrero (*Mexia 8914*, US); Jalisco (*Daniel 1148*, MICH); México (*Daniel 1231*, MICH); Michoacán (*Hinton 16195*, US); Morelos (*Castro T. 322*, MEXU); Nayarit (*Chiang C. & Flores F. 1073*, MEXU); Oaxaca (*Daniel 1254*, MICH); Puebla (*Cavender s.n.*, MICH); San Luis Potosí (*Daniel 330*, MICH); Sinaloa (*Rose et al. 13490*, GH); Sonora (*Felger et al. 17833*, ARIZ); Zacatecas (*Enriquez E. 808*, MEXU).

***Carlowrightia fuertensis** T.F. Daniel (1)—Sinaloa (*Rose et al. 13585*, US-holotype).

***Carlowrightia hapalocarpa** B.L. Rob. & Greenm. (2)—San Luis Potosí (*Pringle 5471*, GH-holotype); Tamaulipas (*García-Morales 3452*, ITCV-image).

- ***Carlowrightia henricksonii** T.F. Daniel (1)—Tamaulipas (*Johnston & Crutchfield 5357*, US-holotype).
- Carlowrightia hintonii** T.F. Daniel (1)—Guerrero (*Hinton 11326*, GH-holotype).
- ***Carlowrightia huicholiana** T.F. Daniel (3)—Jalisco (*Bauml & Voss 1406*, CAS-holotype); Nayarit (*Carrillo-Reyes et al. 10524*, IBUG); Zacatecas (*Carrillo-Reyes & Barba 1629*, RSA).
- ***Carlowrightia lesueurii** Henrickson & T.F. Daniel (1)—Chihuahua (*LeSueur 864*, UC-holotype).
- Carlowrightia linearifolia** (Torr.) A. Gray (2)—Chihuahua (*Johnston 8013*, LL); Coahuila (*Johnston et al. 9188*, LL).
- ***Carlowrightia mcvaughii** T.F. Daniel (4)—Guerrero (*Daniel & Lott 3321*, ASU); Jalisco (*McVaugh 20105*, MICH-holotype); Michoacán (*Steinmann 4724*, IEB); Nayarit (*Feddema 401*, MICH).
- Carlowrightia mexicana** Henrickson & T.F. Daniel (1)—Coahuila (*Henrickson & Lee 16013*, TEX-holotype).
- Carlowrightia myriantha** (Standl.) Standl. (3)—Campeche (*Cabrera & de Cabrera 2448*, MEXU); Quintana Roo (*Téllez & Cabrera 1947*, MEXU); Yucatán (*Gaumer et al. 23557*, F-holotype).
- ***Carlowrightia neesiana** (S. Schauer) T.F. Daniel (16)—Aguascalientes (*de la Cerda L. & García R. 1117*, IEB); Durango (*Breedlove & Almeda 58941*, CAS); Guanajuato (*Galván & Galván 3699*, IEB); Guerrero (*Daniel 1205*, MICH); Hidalgo (*Daniel 417*, MICH); Jalisco (*Daniel 1117*, MICH); México (*Denham-Logsdon 3225*, CAS); Michoacán (*Guevara & Montañez 14141*, IEB); Morelos (*Dunn & Dunn 18626*, ENCB); Nuevo León (*Carlson 2703*, US); Oaxaca (*Daniel 1264*, MICH); Puebla (*Purpus 4631*, UC); Querétaro (*González 283*, IEB); San Luis Potosí (*Purpus 4891*, MO); Tamaulipas (*von Rozynski 239*, F); Zacatecas (*Rodríguez-Pérez et al. 1552*, HZAC-image).
- A lectotype (*Aschenborn 237* at GZU) was designated for this species by Daniel (1984). Neither the state nor the locality in Mexico of that collection was identified.
- ***Carlowrightia ovata** A. Gray (1)—Chihuahua (*Pringle 695*, GH-holotype).
- Carlowrightia parviflora** (Buckley) Wassh. (9)—Aguascalientes (*Cabrera 684*, HUAA); Coahuila (*Daniel 899*, MICH); Durango (*Herrera A. 719*, IEB); Guanajuato (*Zamudio R. 5936*, IEB); Hidalgo (*Daniel 420*, MICH); Nuevo León (*Johnston & Graham 4620*, TEX); Querétaro (*Rzedowski 50016*, IEB); San Luis Potosí (*Daniel 838*, MICH); Tamaulipas (*Daniel & Baker 3701*, ASU).
- ***Carlowrightia parvifolia** Brandegee (1)—Coahuila (*Purpus 4751*, UC-holotype).
- ***Carlowrightia pectinata** Brandegee (9)—Baja California Sur (*Brandegee 452*, UC-holotype); Colima (*Daniel & Butterwick 3249*, CAS); Durango (*González & Rzedowski 2999*, MEXU); Guerrero (*Cruz 6764*, FCME); México (*Hinton 2990*, GH); Morelos (*Colunga 30*, FCME); Oaxaca (*Calzada et al. 18228*, MEXU); Sinaloa (*Daniel 1046*, MICH); Sonora (*Steinmann 1299*, ARIZ).
- ***Carlowrightia pringlei** B.L. Rob. & Greenm. (2)—Oaxaca (*Pringle 6261*, GH-holotype); Puebla (*Rzedowski 12118*, ENCB).
- ***Carlowrightia purpurea** T.F. Daniel (1)—San Luis Potosí (*Daniel 351*, MICH-holotype).
- Carlowrightia serpyllifolia** A. Gray (4)—Chihuahua (*Johnston et al. 9749*, LL); Coahuila (*Pringle 218*, GH-holotype); Durango (*Anderson & Anderson 5232*, MICH); Zacatecas (*Johnston et al. 7908*, LL).
- Carlowrightia texana** Henrickson & T.F. Daniel (5)—Chihuahua (*Daniel 600*, MICH); Coahuila (*Pinkava et al. 13053*,

ASU); Nuevo León (*Johnston & Graham 4596*, TEX); San Luis Potosí (*Daniel 873*, MICH); Sonora (*Reina G. & Van Devender 98-1700*, CAS).

Carlowrightia torreyana Wssh. (2)—Coahuila (*Daniel 723*, MICH); Nuevo León (*Harmon & Dunn 5524*, ENCB).

***Carlowrightia trichocarpa** T.F. Daniel (1)—Tamaulipas (*Daniel 260*, MICH-holotype).

***Carlowrightia venturae** T.F. Daniel (1)—Guanajuato (*Ventura V. & López P. 9336*, IEB-holotype).

***Carlowrightia yucatanensis** T.F. Daniel (1)—Yucatán (*Daniel, Carnevali & J. Tapia 10320*, MEXU-holotype).

***CHALAROTHYRSUS** Lindau (1, 1 endemic)

***Chalarothyrsus amplexicaulis** Lindau (5)—Colima (*Padilla Velarde 1767*, CHAPA [not seen], fide Padilla Velarde et al., 2008); Guerrero (*Langlassé 698*, B-holotype, destroyed); Jalisco (*Daniel & Bartholomew 4842*, CAS); México (*Hinton et al. 7384*, GH); Oaxaca (*Campos V. & Ramamoorthy 1271*, MEXU).

CHILERANTHEMUM Oerst. (3 species, 2 endemic)

***Chileranthemum lottiae** T.F. Daniel (2)—Guerrero (*Paray 2857*, ENCB-holotype); Jalisco (*Lott et al. 3794*, MEXU).

Chileranthemum pyramidatum (Lindau) T.F. Daniel (3)—Chiapas (*Breedlove & Daniel 70767*, CAS); Oaxaca (*Rivera H. et al. 1879*, MEXU); Veracruz (*Castillo C. et al. 18337*, XAL).

***Chileranthemum trifidum** Oerst. (4)—Hidalgo (*Hernández M. & Hernández V. 4184*, MEXU); Oaxaca (*Cruz E. et al. 2877*, MEXU); Puebla (*Campos V. et al. 252*, MEXU); Veracruz (*Liebmann 10636*, C-type).

DICLIPTERA Juss. (15 species, 9 endemic)

***Dicliptera anomala** Leonard (3)—Chiapas (*Langman 3826*, US); Oaxaca (*Castillo T. & Torres C. 1147*, MEXU); Veracruz (*Williams 8308*, F-holotype).

Dicliptera brachiata Spreng. (4)—Nuevo León (*Thompson 290*, TEX); San Luis Potosí (*Pringle 5104*, MEXU); Tamaulipas (*Bartlett 11152*, DS); Veracruz (*Orcutt 3008*, DS).

The taxonomic status of Mexican plants treated here as *Dicliptera brachiata* remains to be fully resolved. Collections from Tamaulipas (including *Bartlett 11152*) were treated by Daniel et al. (2021) as pertaining to *D. sumichrastii*. These authors noted that the collections cited from that state were somewhat intermediate between *D. brachiata* and *D. sumichrastii* (see below under *D. sumichrastii*). Additional studies suggest that some of those collections (and others, including *Orcutt 3008* from Veracruz) might be better treated as representing the former species.

***Dicliptera floribunda** Eastw. (1)—Durango (*Palmer 73*, GH-holotype-image).

The taxonomic status of this species remains unresolved.

***Dicliptera haenkeana** Nees (8)—Colima (*Daniel 5290*, CAS); Guerrero (*Seler & Seler 4234*, DS); Jalisco (*Lott & Dávila 2722*, MEXU); México (*Hinton 2498*, US); Michoacán (*Steinmann 3892*, MEXU); Morelos (*Fernández N. 4607*, MEXU); Puebla (*Cuizar N. & Ramos M. 2530*, MEXU); Zacatecas (*Enriquez E. & Balleza C. 1728*, MEXU).

Specimens of the type, a collection of T. Haenke from an unknown state in Mexico, are present in several European herbaria.

***Dicliptera inaequalis** Greenm. (14)—Aguascalientes (*García Regalado 5170*, HUAA); Colima (*Daniel et al. 6267*, CAS); Guanajuato (*Rzedowski 39615*, IEB); Guerrero (*Steinmann et al. 4125*, CAS); Hidalgo (*Robinson 85-11-2*, USF); Jalisco (*Daniel & Bartholomew 4860*, CAS); México (*Matuda et al. 30339*, MEXU); Michoacán (*Soto N. et al. 8193*, CAS); Morelos (*Pringle 9665*, GH-holotype); Nayarit (*Palmer 2001*, US); Oaxaca (*Calzada 22372*, MEXU-image); Puebla (*Miranda 2473*, MEXU); Querétaro (*Lott & Wendt P-147*, CAS); Zacatecas (*McVaugh 25728*, MICH).

Plants currently treated with this name represent a morphologically diverse assemblage that possibly includes several unnamed taxa.

Dicliptera membranacea Leonard (4)—Chiapas (*Ventura & López 4394*, CAS); Guerrero (*Soto Núñez et al. 12374*, CAS); Jalisco (*Anderson & Anderson 5984*, MICH); Oaxaca (*Campos V. & Reyes 1431*, MEXU).

This species shows similarities to both *Dicliptera imbricata* Leonard in Costa Rica and to some plants treated as *D. sumichrastii*, if it is distinct from either.

***Dicliptera nervata** Greenm. (6)—Colima (*Daniel et al. 6282*, CAS); Jalisco (*Mexia 1110*, DS); Michoacán (*Provance 9999*, UCR [not seen]); Morelos (*Pringle 9664*, GH-lectotype); Nayarit (*Daniel 2029*, ASU); Sinaloa (*Van Devender et al. 2007-200A*, CAS).

***Dicliptera novogaliciana** T.F. Daniel (4)—Colima (*Daniel 2109*, ASU); Jalisco (*Daniel 2106*, CAS-holotype); Michoacán (*Hinton et al. 15913*, US); Sinaloa (*Beltrán et al. 715*, MEXU).

***Dicliptera peduncularis** Nees (13)—Aguascalientes (*García 4107*, IEB); Ciudad de México (*Ventura A. 3141*, MEXU); Guanajuato (*Ventura & López 9884*, CAS); Hidalgo (*Hernández M. & Hernández M. 6479*, MO); Jalisco (*Pringle 5311*, MEXU); México (*Ventura V. 1700*, CAS); Michoacán (*Daniel et al. 3294*, ASU); Oaxaca (*Daniel & Acosta C. 6210*, CAS); Puebla (*Orcutt 2154*, DS); Querétaro (*Argüelles 3162*, MEXU); San Luis Potosí (*Rzedowski 5759*, IEB); Veracruz (*Vázquez B. 861*, XAL); Zacatecas (*González-Gallegos & González-Elizondo 2014*, MEXU).

Typification of *Dicliptera peduncularis* is currently being studied. This often weedy species likely occurs in additional states. Indeed, images on iNaturalist (<https://www.inaturalist.org/observations/71444458>) from a public park in Cd. Durango, Durango potentially pertain to a native or naturalized (if not planted there) occurrence of it in that state.

Dicliptera resupinata (Vahl) Juss. (13)—Baja California (*Rebman 17233*, SD-image); Baja California Sur (*Daniel & Butterwick 6868*, CAS); Chihuahua (*Smith 3952*, MEXU); Colima (*Orcutt 4527*, MEXU); Durango (*Bravo B. 1736*, MEXU); Guerrero (*Calónico Soto 19377*, FCME); Jalisco (*Calónico Soto 7809*, MEXU); México (*Matuda et al. 27556*, MEXU); Michoacán (*Torres C. & Ramírez de T. 13527*, IEB); Nayarit (*Benítez P. 3682*, MEXU); Sinaloa (*Gentry 6598*, GH); Sonora (*Van Devender et al. 93-52*, ARIZ); Zacatecas (*Enriquez et al. 1304*, MEXU).

Typification of this species was discussed by Daniel (1997).

Dicliptera sciadephora Donn. Sm. (2)—Chiapas (*Breedlove 49624*, CAS); Oaxaca (*Velasco G. et al. 303*, MEXU).

Dicliptera sexangularis (L.) Juss. (12)—Campeche (*Cabrera & de Cabrera 2192*, MEXU); Chiapas (*Breedlove 41577*, DS); Hidalgo (*Gimate L. 900*, NLU); México (*Daniel & Denham-Logsdon 12601*, CAS); Oaxaca (*Galeotti 923*, K); Puebla (*Ramírez C. 14*, MEXU); Querétaro (*Zamudio 6255*, IEB); Quintana Roo (*Gaumer 1759*, F); San Luis Potosí (*Tenorio L. & Hernández M. 41*, MEXU); Tamaulipas (*King 3794*, US); Veracruz (*Ventura A. 10896*, XAL); Yucatán (*Gaumer 413*, F).

Typification of this species was discussed by Daniel (1995) and Jarvis (2007).

***Dicliptera sumichrastii** Lindau (4)—Oaxaca (*Munn-Estrada & Mendoza 1875*, MEXU); Puebla (*Ledesma C. et al. 22320*, MEXU); Tamaulipas (*Martínez Martínez & Borja Luyando F-1972*, TEX); Veracruz (*Sumichrast 1898*, B-holotype,

destroyed).

As tentatively treated here, and pending ongoing studies of *Dicliptera*, this name is applied to a diverse assemblage of plants that show morphological similarities to others in Mexico and Central America some of which have been identified as *D. acuminata* var. *spicata* Nees, *D. antidysenterica* Molina R., *D. brachiata*, or *D. imbricata* Leonard.

***Dicliptera thlaspioides** Nees (8)—Guerrero (*Breedlove 35983*, CAS); Jalisco (*McVaugh 21199*, MICH); México (*Matuda et al. 32117*, ENCB); Michoacán (*Torres C. & Ramírez de T. 13658*, IEB); Morelos (*Berlandier 1013*, G-holotype); Nayarit (*McVaugh & Koelz 737*, MICH); Oaxaca (*Daniel 1292*, CAS); Zacatecas (*Enriquez E. & Balleza C. 1724*, MEXU).

Dicliptera unguiculata Nees (4)—Chiapas (*Breedlove & Bourell 67433*, CAS); Guerrero (*Wagenbreth 843*, MEXU); Oaxaca (*Daniel & Acosta C. 6211*, CAS); Veracruz (*Ventura A. 10937*, MEXU).

DYSCHORISTE Nees (21 species, 13 endemic)

Several species of *Dyschoriste* remain poorly circumscribed with plants morphologically intermediate among many of them. Molecular phylogenetic studies using a dense sampling of plants in these taxa will hopefully provide insights into their taxonomic status. At present, the identities of numerous specimens from various states remain unresolved.

***Dyschoriste angustifolia** (Hemsl.) Kuntze (4)—Colima (*Orcutt 6605*, DS); Jalisco (*Solis M. 3370*, MEXU); México (*Matuda et al. 31062*, MEXU); Michoacán (*Daniel 5310*, CAS).

The locality of the holotype (*Ghiesbreght s.n.* at K) is not known with certainty. Daniel (1993b) discussed why it was not likely from Oaxaca, but rather from Michoacán or a nearby state.

Dyschoriste capitata (Oerst.) Kuntze (3)—Chiapas (*Laughlin 1002*, US); Oaxaca (*Liebmann 10648*, C-holotype); Veracruz (*Ventura A. 16916*, XAL).

Dyschoriste cinerascens (Henrickson & Hilsenb.) T.F. Daniel (5)—Chihuahua (*Chiang et al. 8965*, LL [not seen], fide Henrickson, 1999); Coahuila (*Gentry & Engard 23228*, CAS); Durango (*Daniel 213*, CAS); Nuevo León (*Lane & Leidig 2883*, TEX [not seen], fide Henrickson det.); San Luis Potosí (*Luckow 2688*, MEXU).

Henrickson (1999) treated this taxon and determined some of the collections cited above as *Dyschoriste schiedeana* var. *cinerascens* Henrickson & Hilsenb. Turner (2003) recognized that taxon as *D. linearis* var. *cinerascens* (Henrickson & Hilsenb.) B.L. Turner, and Daniel (2013b) provided a rationale for elevating it to specific rank.

Dyschoriste crenulata Kobuski (2)—Nuevo León (*Langman 2983*, US-image); Tamaulipas (*Nelson 6604*, GH-holotype).

Henrickson's (1999) report of this species in Coahuila was based on *Warnock & Barkley 14806* at F and TEX. He annotated the specimen at TEX as "cf. *crenulata*." Turner subsequently annotated that specimen as "*Dyschoriste linearis* var. *schiedeana* (Nees in DC.) B.L. Turner > *cinerascens*." The taxonomic status of that collection is unclear, but it does not show the conspicuously crenate leaf margins that occur (at least distally) in *D. crenulata*.

Dyschoriste decumbens (A. Gray) Kuntze (10)—Aguascalientes (*Hernández 239*, MEXU); Baja California Sur (*Moran 7392*, DS); Chihuahua (*Tenorio L. & Romero de T. 1614*, CAS); Coahuila (*Jones 374*, POM-image); Durango (*Weber 24*, DS); Guanajuato (*Mora Benítez 783*, MEXU); Hidalgo (*Hernández M. 3302*, MEXU); San Luis Potosí (*Fryxell 78040*, CAS); Sonora (*Van Devender et al. 97-786*, CAS); Zacatecas (*Balleza C. et al. 19614*, MEXU).

***Dyschoriste greenmanii** Kobuski (3)—Coahuila (*Warnock & Barkley 14590-M*, TEX); Nuevo León (*Starr & Gass 86023B*, CAS); Tamaulipas (*Palmer 492*, US-holotype).

Dyschoriste hirsutissima (Nees) Kuntze (20)—Aguascalientes (*Siqueiros 2744*, HUAA); Chiapas (*Breedlove & Smith*

31275, DS); Chihuahua (*Bye 3184*, TEX); Colima (*Lott & Magallanes 931*, MO); Durango (*González & Bonilla 2948*, IEB); Guanajuato (*Galván & Galván 2396*, IEB); Guerrero (*Hinton et al. 11573*, MO); Hidalgo (*Ehrenberg 1223*, B-holotype, destroyed, fragment and photo: MO); Jalisco (*Daniel & Ton 6076*, CAS); México (*Matuda et al. 31908*, MEXU); Michoacán (*Martínez L. 203*, IEB); Morelos (*Calzada & Rico 24306*, TEX); Nayarit (*Téllez V. 9406*, MO); Oaxaca (*Pringle 6053*, MO); Puebla (*Salinas T. & Dorado R. F-3047*, MEXU); Sinaloa (*Gentry 5776*, MO); Sonora (*Van Devender et al. 96-3*, ARIZ); Tamaulipas (*McDonald 1052*, TEX); Veracruz (*Ventura A. 9322*, MO); Zacatecas (*Enríquez E. & Balleza C. 1436*, MEXU).

***Dyschoriste jaliscensis** Kobuski (1)—Jalisco (*Pringle 5481*, GH-holotype).

Dyschoriste linearis (Torr. & A. Gray) Kuntze (2)—Coahuila (*Marsh 174*, TEX); Nuevo León (*Frye & Frye 2460*, DS).

***Dyschoriste mcvaughii** T.F. Daniel (1)—Jalisco (*McVaugh 12187*, MICH-holotype).

***Dyschoriste microphylla** (Cav.) Kuntze (14)—Aguascalientes (*Cowan 4026*, MEXU); Ciudad de México (*Ventura A. 3464*, MEXU); Colima (*Burch 5140*, USF-image); Durango (*Breedlove & Anderson 63141*, CAS); Guanajuato (*Rzedowski 41633*, IEB); Hidalgo (*Ventura A. 56*, CAS); México (*García P. 658*, MEXU); Michoacán (*Ibarra Manríquez & Cornejo Tenorio 4993*, MEXU); Morelos (*Orcutt 2414*, DS); Puebla (*Née s.n.*, holotype-MA); Querétaro (*Argüelles 1385*, MEXU); San Luis Potosí (*Torres C. & Bárcenas 14555*, MEXU); Tlaxcala (*Vibrans 7260*, MEXU); Zacatecas (*Davidse & Davidse 9998*, MEXU).

This species was noted to occur in Oaxaca (*Aragón et al. 472*) by Aragón-Parada et al. (2021), but that specimen has not been located to verify its identification. Daniel (2016) treated *Provance 5144* from Aguascalientes as *Dyschoriste microphylla*. The identity of that collection is here treated as unresolved. Distinctions between *D. microphylla* and *D. schiedeana* are noted below under the latter species.

***Dyschoriste novogaliciana** T.F. Daniel (4)—Durango (*Tenorio L. 8399*, CAS); Jalisco (*Mexia 1798*, CAS); Nayarit (*Daniel 2051*, CAS-holotype); Sinaloa (*Gentry 5546*, DS).

***Dyschoriste pinetorum** Kobuski (2)—Jalisco (*Gregory & Eiten 210*, MEXU); Michoacán (*Pringle 4134*, GH-holotype).

The collection from Jalisco appears to be the first record for this species in that state. The species shows similarities to *Dyschoriste capitata* and possibly represents more northerly occurrences of that species.

***Dyschoriste poliodes** Leonard & Gentry (1)—Nuevo León (*Gentry 6721*, US-holotype).

Henrickson (1999) recognized the nominate and two additional varieties of this species, all from Nuevo León: *Dyschoriste poliodes* var. *poliodes*, var. *glabra* Henrickson, and var. *obispoensis* Henrickson. Although the two additional varieties appear to be distinct from the nominate variety (and from one another), it is not clear why they pertain to a single species. Resolutions of their status and the status of this species might benefit from comprehensive molecular studies.

***Dyschoriste pringlei** Greenm. (2)—Jalisco (*Pringle 2907*, GH-lectotype); Nayarit (*McVaugh et al. 15144*, MICH).

***Dyschoriste purpusii** Kobuski (3)—Oaxaca (*Tenorio L. et al. 9254*, MEXU); Puebla (*Purpus 2362*-MO-holotype); Querétaro (*Rzedowski 53153*, CAS).

Daniel (1999) recognized this species, but with reservations as to its status. Daniel & Acosta Castellanos (2003) included it in an overly broad concept of a variable *Dyschoriste microphylla* based on plants appearing to be intermediate in morphological characters between them. It is treated here as distinct pending molecular studies of the genus in North America.

Dyschoriste quadrangularis (Oerst.) Kuntze (8)—Chiapas (*Breedlove & Daniel 70826*, CAS); Guanajuato (*Ventura &*

López P. 8782, IEB); Nuevo León (*Chase 7790*, MO); Oaxaca (*Weiss 675*, TEX); Querétaro (*López 94*, IEB); San Luis Potosí (*Rzedowski 24699*, MEXU); Tamaulipas (*Hinton et al. 24842*, MEXU); Veracruz (*Liebmann 10649*, C-syntypes).

Typification of this species is currently being studied.

***Dyschoriste rosei** Kobuski (3)—Durango (*Rose 2259*, US-holotype); Jalisco (*Rose 3581*, US); Nayarit (*Norris & Taranto 14251*, MICH).

***Dyschoriste saltuensis** Fernald (4)—Guerrero (*Palmer 506*, GH-holotype); Jalisco (*Daniel & Bartholomew 4866*, CAS); Michoacán (*McVaugh et al. 22628*, MICH); Oaxaca (*Trujillo V. 1106*, CAS).

***Dyschoriste schiedeana** (Nees) Kuntze (12)—Coahuila (*Daniel 902*, CAS); Durango (*Bravo Bolaños 1021*, MEXU); Guanajuato (*Ventura & López 9408*, IEB); Hidalgo (*Ehrenberg s.n.*, B-syntype, destroyed); México (*Matuda 32443*, MEXU); Nuevo León (*Sharp 45725*, MEXU); Puebla (*Breedlove 69488*, CAS); Querétaro (*González P. 709*, CAS); San Luis Potosí (*Daniel & Baker 3720*, CAS); Tamaulipas (*Stanford et al. 759*, DS); Veracruz (*Schiede 122-B*-syntype, destroyed, photo: MO); Zacatecas (*Henrickson 6688*, MEXU).

Henrickson (1999) proposed a broader circumscription of this species that includes several varieties, some of which pertain to previously and/or currently recognized species. Plants showing morphological intermediacy between *Dyschoriste microphylla* and *D. schiedeana* appear to be frequent. The following key attempts to distinguish specimens of these species:

- 1a. Leaves linear to narrowly elliptic to oblanceolate (or proximal pairs sometimes obovate), 2–4 (–7) mm wide, length:width = (2.4–) 4–12, apex acute, surfaces pubescent *D. schiedeana*
 1b. Leaves obovate to broadly elliptic to subcircular, (3–) 5–15 mm wide, length:width = 1.2–3.3, apex rounded to obtuse to acute, surfaces glabrous or nearly so *D. microphylla*

Dyschoriste xylopoda Kobuski (16)—Aguascalientes (*McVaugh 18282*, MICH); Chiapas (*Breedlove 52053*, CAS); Chihuahua (*Gentry 1564*, MO); Durango (*Mendía 119*, CAS); Guerrero (*Monroy de la R. 367*, CAS); Jalisco (*Pringle 4442*, MO-holotype); México (*Hinton 1287*, US); Michoacán (*Steinmann & Soto Núñez 3593*, IEB); Morelos (*Pringle 13838*, F); Nayarit (*Téllez V. et al. 10746*, CAS); Oaxaca (*Hernández Pérez et al. 88*, MEXU); Puebla (*Miranda 3571*, MEXU); Sinaloa (*Marin SF-25*, UCR); Sonora (*Pennell 19615*, US); Veracruz (*Bourgeau 2903*, P); Zacatecas (*Enriquez E. 22*, IBUG).

Daniel (1995) treated plants pertaining to this species from Chiapas as *Dyschoriste ovata* (Cav.) Kuntze, and included a discussion of why that name likely pertains to a species of *Ruellia*.

ELYTRARIA Michx. (4 species, 2 endemic)

Elytraria bromoides Oerst. (12)—Campeche (Álvarez et al. 9500, MEXU); Chiapas (*Breedlove 27420*, DS); Coahuila (*Wynd & Mueller 286*, GH); Hidalgo (*Moore 3040*, GH); Nuevo León (*Weaver 563*, GH); Oaxaca (*Campos V. 3699*, MEXU); Querétaro (*Fernández N. 3398*, NY); Quintana Roo (*Gaumer 1833*, GH); San Luis Potosí (*Fryxell & Anderson 3482*, CAS); Tamaulipas (*Daniel & Baker 3683*, ASU); Veracruz (*Liebmann 10757*, C-lectotype); Yucatán (*Cabrera & de Cabrera 11242*, CAS).

Elytraria imbricata (Vahl) Pers. (28)—Aguascalientes (*Martinez R. 1298*, IEB); Baja California (*Díaz Luna 7875*, TEX); Baja California Sur (*Daniel & Butterwick 6837*, CAS); Campeche (*Chan 4305*, MEXU); Chiapas (*Breedlove 47158*, CAS); Chihuahua (*Pringle 333*, RSA); Coahuila (*Chiang et al. 9642*, MEXU); Colima (*Vázquez V. 395*, MEXU); Durango (*García 316*, CAS); Guanajuato (*Ventura & López 7141*, IEB); Guerrero (*Hinton et al. 5669*, MEXU); Hidalgo (<https://mexico.inaturalist.org/observations/70629569>); Jalisco (*Daniel & Bartholomew 4820*, CAS); México (*Matuda et al. 27407*, MEXU); Michoacán (*Torres & Ramírez 13751*, CAS); Morelos (*Castro T. 219*, MEXU); Nayarit (*Téllez V. 12650*, MICH); Oaxaca (*Salinas T. et al. 7067*, MEXU); Puebla (*Vidaña R. 120*, IEB); Querétaro (*Zamudio R. 3319*, IEB);

Quintana Roo (*Gaumer et al. 1590*, CAS); Sinaloa (*Daniel & Butterwick 3201*, CAS); Sonora (*Jones 22576*, MEXU); Tabasco (*M.J.P. 74*, ENCB); Tamaulipas (*Johnston 4939A*, TEX); Veracruz (*Ventura A. 12111*, MEXU); Yucatán (*Darwin & Sundell 2061*, MEXU); Zacatecas (*Anderson & Anderson 5277*, MICH).

***Elytraria macrophylla** Leonard (4)—Hidalgo (*Castro-Castro 735*, IBUG); Querétaro (*Carranza 3101*, IEB); San Luis Potosí (*Kenoyer 856*, F-holotype); Tamaulipas (*Puig 4154*, MEXU).

***Elytraria mexicana** Fryxell & S.D. Koch (9)—Colima (*Daniel 5284*, CAS); Guerrero (*Koch & Fryxell 83103*, CHAPA-holotype); Jalisco (*Fernández N. 2576*, MEXU); México (*Hinton 2616*, NY); Michoacán (*Daniel & Butterwick 3263*, CAS); Morelos (*Schiefer 202*, GH); Querétaro (*Zamudio & Carranza 6485*, IEB); San Luis Potosí (*Rzedowski 8010*, ENCB); Zacatecas (*Rodríguez-Pérez et al. 1546*, HZAC-image).

***GYP SACANTHUS** E.J. Lott, V. Jaram. & Rzed. (1 species, 1 endemic)

***Gypsacanthus nelsonii** E.J. Lott, V. Jaram. & Rzed. (4)—Guerrero (*Cruz 7248*, MEXU); Morelos (*Ramírez R. 1316*, MEXU); Oaxaca (*Daniel 8357*, CAS); Puebla (*Rzedowski 36533*, ENCB-holotype).

HENRYA Nees ex Benth. (2 species, 1 endemic)

Henrya insularis Nees ex Benth. (23)—Aguascalientes (*Guerra 58*, MEXU); Baja California Sur (*Moran 7454*, SD); Chiapas (*Breedlove 9102*, DS); Chihuahua (*Bye et al. 9228*, MEXU); Colima (*Lott & Magallanes 924*, MEXU); Durango (*Lundell 13004*, LL); Guanajuato (*González L. 42*, IEB); Guerrero (*Mexia 8939*, US); Jalisco (*Daniel & Butterwick 3274*, CAS); México (*Hinton et al. 5756*, GH); Michoacán (*Germán et al. 391*, MEXU); Morelos (*Castro Trejo 515*, MEXU); Nayarit (*Daniel 2041*, ASU); Oaxaca (*Morton & Makrinius 2673*, US); Puebla (*Seigler et al. 13050*, MEXU); Querétaro (*Carranza et al. 4544*, IEB); San Luis Potosí (*Hansen et al. 3847*, WIS); Sinaloa (*Pérez 20*, MEXU); Sonora (*Wiggins 11665*, DS); Tamaulipas (*Dressler 2426*, MO); Veracruz (*Chiang 402*, MEXU); Yucatán (*Gaumer 1713*, F); Zacatecas (*Enriquez E. & Balleza C. 1451*, MEXU).

The type of this primarily Mexican species is an illustration (Daniel 1989).

***Henrya tuberculosperma** T.F. Daniel (7)—Guerrero (*Martínez S. & Soto 3621*, MEXU); Jalisco (*McVaugh 11946*, MICH-holotype); México (*López Patiño et al. 6315*, CODAGEM); Michoacán (*Ramos & Martínez S. s.n.*, MEXU); Morelos (*Estrada 984*, MEXU); Nayarit (*Cuevas G. et al. 645*, IBUG); Sinaloa (*Marín M76-79*, ARIZ).

***HOLOGRAPHIS** Nees (18 species, 18 endemic)

***Holographis anisophylla** T.F. Daniel (3)—Colima (*Miranda 9052*, MEXU-holotype); Jalisco (*Muñoz et al. 21*, MEXU); Michoacán (*Trejo 1755*, MEXU).

***Holographis argyrea** (Leonard) T.F. Daniel (1)—Guerrero (*Lundell 12603*, US-holotype).

***Holographis caput-medusae** T.F. Daniel (1)—Guerrero (*Daniel & Bartholomew 4918*, CAS-holotype).

***Holographis ehrenbergiana** Nees (8)—Guanajuato (*Ventura & López 9021*, MEXU); Hidalgo (*Ehrenberg 1224*, B-holotype, destroyed); Nuevo León (*Kruckeberg 4857*, MICH); Oaxaca (*Tenorio L. & Kelly 21437*, MEXU); Puebla (*Salinas T. et al. 5566*, MEXU); Querétaro (*Rzedowski 46770*, CAS); San Luis Potosí (*Palmer 4*, US); Tamaulipas (*Johnston & Crutchfield 5593*, TEX).

***Holographis haenkeana** (Nees) T.F. Daniel, McDade & Kiel (4)—Guerrero (*Cruz 6834*, MEXU); México (*Hinton 2971*, US); Michoacán (*Hinton et al. 13486*, GH); Morelos (*Miranda 3807*, MEXU).

***Holographis hintonii** (Leonard) T.F. Daniel (2)—Guerrero (*Hinton et al. 5956*, K-holotype); Michoacán (*Steinmann*

3904, IEB).

***Holographis ilicifolia** Brandegee (2)—Coahuila (*Purpus 1327*, UC-holotype); Durango (*Correll & Johnston 21435*, LL).

***Holographis leticiana** T.F. Daniel (1)—Oaxaca (*Torres C. et al. 637*, MEXU-holotype).

***Holographis lizethiae** Cruz Durán & J. Jiménez Ram. (1)—Guerrero (*Cruz D., Fuentes & Sánchez 8242*, FCME-holotype).

***Holographis pallida** Leonard & Gentry (2)—Sinaloa (*Gentry 7022*, MICH-holotype); Sonora (*Daniel et al. 8510*, CAS).

***Holographis parayana** Miranda (2)—Chiapas (*Miranda 6812*, MEXU-holotype); Oaxaca (*Campos V. & Reyes 1476*, MEXU).

***Holographis peloria** (Leonard) T.F. Daniel (5)—Durango (*Palmer 392*, US-holotype); Guanajuato (*González-Gallegos et al. 2927*, IEB); México (*Denham-Logsdon 3261*, MEXU); Nayarit (*Téllez V. & Miller 10628*, MEXU); Zacatecas (*Taylor & Taylor 6297*, NY).

***Holographis pueblensis** T.F. Daniel (1)—Puebla (*Purpus 3346*, UC-holotype).

***Holographis tamaulipica** T.F. Daniel (1)—Tamaulipas (*Palmer 135*, GH-holotype).

***Holographis tolantongensis** T.F. Daniel (1)—Hidalgo (*Hernández M. & Tenorio L. 6948*, MEXU-holotype).

***Holographis velutifolia** (House) T.F. Daniel (2)—Oaxaca (*Nelson 1887*, GH-holotype); Puebla (*Salinas T. et al. 4779*, MEXU).

***Holographis virgata** (Harv. ex Benth. & Hook.f.) T.F. Daniel (3)—Baja California (*Johnston 3509*, CAS); Baja California Sur (*Daniel et al. 2453*, ASU); Sonora (*Coulter 603*, K-type).

In addition to the nominate subspecies, this also includes *Holographis virgata* subsp. *glandulifera* (Leonard & C.V. Morton ex Wiggins) T.F. Daniel and subsp. *glandulifera* var. *palmeri* (Rose) T.F. Daniel (Daniel, 1997).

***Holographis websteri** T.F. Daniel (3)—Campeche (*Webster & Lynch 17724*, DAV-holotype); Quintana Roo (*Simá et al. 2396*, CICY); Yucatán (*Daniel et al. 10272*, CAS).

***HOVERDENIA** Nees (1 species, 1 endemic)

***Hoverdenia speciosa** Nees (4)—Hidalgo (*Ehrenberg 1248*, B-holotype, destroyed); Querétaro (*Rzedowski 53367*, IEB); San Luis Potosí (*Maury 7151*, MEXU); Tamaulipas (*González M. et al. 2823*, MEXU).

HYGROPHILA R. Br. (3 species, 2 naturalized)

†**Hygrophila corymbosa** (Blume) Lindau (1)—Tamaulipas (*Mora-Olivo 15620*, UAT-image).

This species is native in Asia and naturalized in Mexico.

Hygrophila costata Nees & T. Nees (4)—Chiapas (*Ventura & López 1354*, MO); Guerrero (*González Flores 446*, MEXU); Oaxaca (*Solano 4296*, MEXU); Veracruz (*Wendt & Villalobos C. 3527*, MEXU).

†**Hygrophila polysperma** (Roxb.) T. Anderson (1)—Tamaulipas (*Mora-Olivo 1582*, MEXU).

This species is native in Asia and naturalized in Mexico.

†**HYPOESTES** Sol. ex R.Br. (1 species, 1 naturalized)

†**Hypoestes phyllostachya** Baker (17)—Chiapas (*Breedlove & Daniel 70764*, CAS); Ciudad de México (<https://www.inaturalist.org/observations/59621006>); Colima (<https://www.inaturalist.org/observations/242993700>); Guanajuato (<https://www.inaturalist.org/observations/242993700>); Guerrero (*Tripp et al. 1220*, CAS); Hidalgo (*Gimate L. 776*, MO); Jalisco (*Sandoval H. 15*, IBUG); México (*López S. & Hernández J. 1221*, MEXU); Michoacán (*Daniel 9910*, CAS); Morelos (<https://www.inaturalist.org/observations/8736921>); Nayarit (<https://www.inaturalist.org/observations/42313563>); Oaxaca (*Acosta C. 1245*, MO); Puebla (*Ledesma C. & Sotero H. 21166*, MEXU); Querétaro (*Servín 902*, IEB); San Luis Potosí (<https://www.inaturalist.org/observations/133324276>); Sinaloa (<https://www.inaturalist.org/observations/13693059>); Veracruz (*Rosas R. 118*, MEXU).

This species is native in Madagascar. It is widely cultivated and readily becomes naturalized in tropical and subtropical regions. In addition to the vouchered occurrences and iNaturalist observations noted above (i.e., those appearing to represent naturalized occurrences), additional images on iNaturalist (2025) that pertain to this species have been recorded from the following states: Aguascalientes, Durango, Nuevo León, Tabasco, Tamaulipas, Tlaxcala, and Zacatecas. Most of these latter observations are from populated areas and appear to represent cultivated plants.

JUSTICIA L. (111 species, 74 endemic)

***Justicia adenothyrsa** (Lindau) T.F. Daniel (2)—Guerrero (*Langlassé 902*, F-lectotype); Oaxaca (*McVaugh 22258*, MICH).

***Justicia alanae** T.F. Daniel (2)—Puebla (*Toriz A., Campos V., Vega T. & Tenorio L. 298* (holotype: MEXU-image); Veracruz (*Ventura A. 797*, MEXU).

***Justicia alopecuroidea** T.F. Daniel (1)—Guerrero (*Daniel & Bartholomew 4980*, CAS-holotype).

Justicia americana (L.) Vahl (1)—Coahuila (*Carranza & Ramírez C-3341*, MEXU).

***Justicia amplifolia** T.F. Daniel (2)—Puebla (*Amith & Mendoza 1419*, CAS); Veracruz (*Liebmann (Liebm. Pl. Mex. Nr.) 10666*, C-lectotype).

***Justicia angustiflora** D.N. Gibson (1)—Oaxaca (*Liebmann (Liebm. Pl. Mex. Nr.) 10623*, C-lectotype).

Justicia aurea Schldl. (10)—Chiapas (*Breedlove 50749*, CAS); Hidalgo (*Romero L. & Basilio G. 11-97-10*, USF); Jalisco (*Ramírez D. et al. 5627*, XAL); México (*López Patiño 1832*, CODAGEM); Michoacán (*Ramírez-Amezcuca & Steinmann 1236*, IEB); Oaxaca (*Hernández G. 497*, MO); Puebla (*Campos V. et al. 154*, MEXU); Querétaro (*Rubio 2480*, IEB); San Luis Potosí (*Puig 5238*, P); Veracruz (*Schiede s.n.*, B-type).

Although this often cultivated species is native in southern Mexico, some of the collections listed here may represent naturalized or cultivated occurrences that are not indicated as such by their collectors. The presumed holotype at B was destroyed; a lectotype has yet to be designated from among duplicates at HAL and P.

***Justicia austrocapensis** T.F. Daniel (1)—Baja California Sur (*Brandege 456*, UC-lectotype).

Justicia bartlettii (Leonard) D.N. Gibson (2)—Chiapas (*Martínez S. 17738*, MEXU); Veracruz (*Wendt et al. 2855*, MEXU).

Daniel's (1995) indication of an occurrence of this species in Oaxaca appears to have been erroneous; although the species likely occurs in the northeasternmost part of that state, no specimens from there have been located.

Justicia borraeae (Hemsl.) T.F. Daniel (4)—Chiapas (*Ghiesbreght 722*, K-holotype); Oaxaca (*Wendt et al. 4437*, MO); Puebla (*Vera Santos 3697*, MICH); Veracruz (*Rosas R. 1062*, MEXU).

***Justicia brandegeana** Washh. & L.B. Sm. (8)—Guerrero (*Suastegui G. 15124*, FCME); Hidalgo (*Estrada s.n.*, MEXU); Morelos (*Gómez-Pompa 1708*, XAL); Nuevo León (*Lacas 183*, F); Oaxaca (*Ghiesbreght 21*, K); Querétaro (*Loredo 67*, CAS); San Luis Potosí (*Purpus 5263*, UC-holotype); Tamaulipas (*Palmer 332*, GH).

Collections from states listed above appear to represent either native or naturalized occurrences. This species is commonly cultivated and collections noted or suspected as such from other states (e.g., Veracruz) are frequent.

Justicia breedlovei T.F. Daniel (1)—Chiapas (*Breedlove 56242*, CAS-holotype).

Justicia breviflora (Nees) Rusby (8)—Campeche (*Gutiérrez B. 5112*, CICY); Chiapas (*Linden 184*, K-holotype); Guerrero (*Ryan & Floyd 35*, CAS); Hidalgo (*Romero L. & Basilio G. 5-98-3*, USF); Morelos (*Fröderström & Hultén 1053*, S); Oaxaca (*Torres C. et al. 2455*, MEXU); Tabasco (*Ventura A. 20171*, CAS); Veracruz (*Wendt et al. 3042*, MEXU).

Reevaluation of collections from Jalisco and Michoacán listed by Daniel (2024) as *Justicia breviflora* possibly represent a taxonomically unresolved taxon and are currently under study.

Justicia californica (Benth.) D.N. Gibson (4)—Baja California (*Wiggins 4397*, DS); Baja California Sur (*Hinds s.n.*, K-holotype); Sinaloa (*Vega A. & Gutiérrez G. 9877*, MEXU); Sonora (*Felger et al. 85-580*, ARIZ).

Justicia campechiana Standl. ex Lundell (4)—Campeche (*Lundell 1126*, F-holotype); Chiapas (*Breedlove 50937*, CAS); Quintana Roo (*Cabrera C. 9938*, MEXU); Yucatán (*Covich 6747*, MEXU).

In addition to the nominate subspecies, Daniel (2007) recognized *Justicia campechiana* subsp. *vestita* T.F. Daniel.

***Justicia canbyi** Greenm. (7)—Guanajuato (*Ventura V. & López P. 6380*, IEB); Hidalgo (*Breedlove 69292*, CAS); Nuevo León (*Canby 187*, GH); Querétaro (*Rzedowski 43133*, IEB); San Luis Potosí (*Daniel 355*, CAS); Tamaulipas (*Nelson 6650*, GH-syntype); Veracruz (*Castillo C. et al. 17564*, XAL).

Justicia candelariae (Oerst.) Leonard (4)—Chiapas (*Breedlove 67008*, CAS); Oaxaca (*Campos 1931*, MEXU); Puebla (*Conradt 211*, MEXU); Veracruz (*Purpus 5956*, UC).

Justicia candicans (Nees) L.D. Benson (18)—Aguascalientes (*Rosales 3857*, MEXU); Baja California Sur (*Moran 18787*, SD); Chihuahua (*Bye et al. 9229*, MEXU); Colima (*Daniel & Butterwick 3239*, CAS); Durango (*González & Rzedowski 1605*, IEB); Guanajuato (*Rzedowski 51775*, IEB); Guerrero (*Calónico Soto 18756*, MEXU); Jalisco (*Sanders et al. 11166*, MO); México (*Hinton 5190*, US-image); Michoacán (*Pérez C. & García L. 2020*, IEB); Morelos (*Lyonnet 1173*, MEXU); Nayarit (*Flores F. & Tenorio L. 1511*, IEB); Oaxaca (*Galeotti 911*, K-holotype); Puebla (*Daniel 8355*, CAS); Querétaro (*Rzedowski 39670*, IEB); Sinaloa (*Daniel 5179*, CAS); Sonora (*Wiggins 7151*, DS); Zacatecas (*Enríquez E. 293*, MEXU).

As treated here, this species comprises a diverse (especially with respect to size and shape of bracts, bracteoles, and calyx lobes) assemblage of plants, including those previously treated as *Jacobinia mexicana* Seem., *Justicia mexicana* Rose, and *Jacobinia roseana* Leonard. Molecular phylogenetic studies should help to resolve taxonomic boundaries in this species complex.

Justicia carthaginensis Jacq. (23)—Aguascalientes (*García R. 5069*, HUAA); Chiapas (*Daniel 1280*, CAS); Chihuahua (*Gentry 1877*, MEXU); Ciudad de México (*García P. 442*, CAS); Durango (*Tenorio L. et al. 4204*, MEXU); Guanajuato (*Ventura & López 8729*, CAS); Guerrero (*Pringle 10145*, CAS); Hidalgo (*Daniel & Baker 3743*, CAS); Jalisco (*Lott et al. 614*, CAS); México (*Matuda et al. 31586*, MEXU); Michoacán (*Steinmann 2707*, CAS); Morelos (*Flores F. 70*, MEXU); Nayarit (*Flores-Franco et al. 2993*, MEXU); Oaxaca (*Liebmann 10687*, C-holotype); Puebla (*Lott & Wendt P-119*, CAS); Querétaro (*Rubio 2118*, CAS); San Luis Potosí (*García P. et al. 1246*, CAS); Sinaloa (*Daniel 1042*, CAS); Sonora (*Daniel 9771*, CAS); Tabasco (*Cowan 1588*, MEXU); Tamaulipas (*Mora-Olivo 5676*, MEXU); Veracruz (*Ventura A. 9060*, MEXU); Zacatecas (*Anderson et al. 12632*, CAS).

Spelling of the epithet of *J. carthaginensis* varies among publications. The type was collected near Cartagena, Colombia. As pointed out by Nicholas Turland (in litt.), the original spelling in the protologue (Jacquin, 1760) is correct in spite of his subsequent use of “carthagenensis,” because “the city of Cartagena in Spain, after which the Colombian city was named, was Cathago or Cathago Nova in Latin, the genitive of which is Carthaginis, hence Jacquin’s *carthaginensis*.” As treated here, this species with pink to purplish corollas is highly variable in numerous characters (e.g., pubescence; size and shape of leaves, bracteoles, calyces, corollas; and capsule size). Mexican plants have been previously treated under the taxonomic synonyms *Justicia caudata* A. Gray and *J. pacifica* (Oerst.) Hemsl. (e.g., Daniel, 1995, 2004, 2011). *Daniel et al.* 3292 from Colima was treated as *J. pacifica* by Daniel (2024); it is here included below under a similar species, *J. periplocifolia*. The collections cited above from Chihuahua, Tamaulipas, and Veracruz, as well as other collections from western Mexico (e.g., Jalisco), are somewhat intermediate between *J. carthaginensis* and *J. periplocifolia* in several characters. Another similar species, but with red corollas, *J. sphaerosperma* Vahl (see below) has also been confused with *J. carthaginensis*. A key to these three species in Mexico is provided below:

- 1a. Corollas red; 30–49 mm long; basal appendage of proximal anther theca 0.2–0.5 mm long *J. sphaerosperma*
 1b. Corollas pink to pink–purple, 11–32 (–38) mm long; basal appendage of proximal anther theca 0.4–1 mm long 2
 2a. Anther thecae 1.2 mm long, superposed on filament with a gap between them 0.2–0.5 mm long (rarely unequally inserted and overlapping by up to 0.2 mm), distal theca (and connective) dorsally pubescent with eglandular trichomes; bracteoles 0.2–0.5 mm wide; calyces 4.5–7.5 mm long, lobes 3.5–6.5 mm long; corollas 11–18 mm long
 *J. periplocifolia*
 2b. Anther thecae 1.6–3.5 mm long, unequally inserted on filament, overlapping by 0.1–1 mm (rarely superposed with a gap < 0.1 mm long), distal theca (and connective) glabrous; bracteoles 0.7–1.6 mm wide; calyces 7–11 mm long, lobes 6.5–10 mm long; corollas (15–) 17–32 (–38) mm long *J. carthaginensis*

***Justicia chimalapensis** T.F. Daniel (1)—Oaxaca (*Torres B. 536*, CAS-holotype).

***Justicia chol** T.F. Daniel (2)—Chiapas (*Breedlove 49836*, CAS-holotype); Tabasco (*Cowan & Magaña 3138*, CAS).

***Justicia chrysocephala** (Hook.f.) T.F. Daniel (2)—Oaxaca (*Croat & Hannon 63269*, MO); Veracruz (*Castillo C. 348*, XAL).

This name recently replaced *Justicia ardens* T.F. Daniel, and the presumed holotype (at K) is a specimen of a plant cultivated in England from materials received from an unknown locale in Mexico (Daniel, 2017).

Justicia clinopodium A. Gray ex Greenm. (5)—Chiapas (*Breedlove 47048*, CAS); Guerrero (*Hinton et al. 10523*, K); México (*Hinton 1084*, MO); Oaxaca (*Reyes S. 1728*, MEXU); Veracruz (*Mueller 1321*, NY).

Typification of this species is currently being studied.

***Justicia coahuilana** T.F. Daniel (1)—Coahuila (*Johnston 7162*, GH-holotype).

Justicia cobensis Lundell (2)—Yucatán (*Rico-Gray 727*, MEXU); Quintana Roo (*Lundell & Lundell 7642*, MICH-holotype).

This species is tentatively recognized as distinct from both *Justicia breviflora* and *J. campechiana*, but additional studies are needed to assess its taxonomic status. An unseen specimen from Campeche (*Álvaro M. 3410*) was reported as this species by Carnevali Fernández-Concha et al. (2024), but neither that specimen nor an image of it online have been located. Similar plants are also known from Belize.

Justicia comata (L.) Lam. (8)—Chiapas (*Purpus 6659*, UC); Guerrero (*Calónico S. 335*, MEXU); Oaxaca (*Martínez C. 184*, CAS); Puebla (*Ledesma C. 21403*, US); San Luis Potosí (*Alcorn 2837*, TEX); Tabasco (*Davidse et al. 29534*, MO); Veracruz (*Martínez C. 2065*, CAS); Yucatán (*Ortiz & Palma 2796*, UADY-image seen).

- ***Justicia cuicatlana** T.F. Daniel (1)—Oaxaca (*Salinas T. & Petterssen 4710*, MEXU-holotype).
- ***Justicia cuixmalensis** T.F. Daniel & E.J. Lott (1)—Jalisco (*Lott et al. 3733*, CAS-holotype).
- ***Justicia cymulifera** T.F. Daniel (1)—Veracruz (*Wendt et al. 4103*, CAS-holotype).
- ***Justicia decurvata** Hilsenb. (1)—Durango (*Henrickson 12422A*, TEX-holotype).
- ***Justicia dendropila** T.F. Daniel (1)—Quintana Roo (*Daniel 10287*, MEXU-holotype).
- ***Justicia durangensis** (Henrickson & Hilsenb.) T.F. Daniel (1)—Durango (*Henrickson 12422B*, TEX-holotype).
- Justicia eburnea** D.N. Gibson (1)—Chiapas (*Breedlove 33217*, DS).
- ***Justicia edgarcabrerae** T.F. Daniel, Carnevali & Tapia (1)—Quintana Roo (*Cabrera & Durán 624*, CAS-holotype).
- Justicia fimbriata** (Nees) V.A.W. Graham (4)—Chiapas (*Breedlove 49679*, CAS); Oaxaca (*Torres C. & Martínez S. 11044*, CAS); Tabasco (*Linden 178*, K-holotype); Veracruz (*Nee 29973*, F).
- ***Justicia fulvicoma** Schldtl. & Cham. (10)—Guanajuato (*Ventura & López 8788*, IEB); Guerrero (*Soto-Núñez & Sousa S. 13657*, MEXU); Hidalgo (*González Q. 3229*, MEXU); México (*Paray 3076*, ENCB); Nuevo León (*Pringle 2548*, GH); Oaxaca (*Salas et al. 7528*, MEXU); Querétaro (*López Ch. 447*, IEB); San Luis Potosí (*Purpus 5262*, UC); Tamaulipas (*Stanford et al. 956*, DS); Veracruz (*Schiede & Deppe 1160*, B-holotype, destroyed).
- ***Justicia gonzalezii** (Greenm.) Henrickson & Hiriart (3)—Guerrero (*Contreras J. 2210*, FCME); Oaxaca (*Conzatti & González 1231*, GH-lectotype); Puebla (*Lott & Wendt P-36*, MEXU).
- ***Justicia guerrerensis** T.F. Daniel (1)—Guerrero (*Peña 47*, FCME-holotype).
- ***Justicia henricksonii** T.F. Daniel (3)—Coahuila (*Johnston 8324*, GH-holotype); San Luis Potosí (*Shreve & Tinkham 9631*, GH); Zacatecas (*Villarreal & Vázquez A. 6160*, IEB).
- ***Justicia heterophylla** Schldtl. & Cham. (2)—Puebla (*Cházaro & Hdz. de Cházaro 4078*, MEXU); Veracruz (*Schiede s.n.*, HAL-holotype).
- ***Justicia hians** (Brandege) Brandege (1)—Baja California Sur (*Brandege s.n.*, UC-holotype).
- ***Justicia hilsenbeckii** T.F. Daniel (9)—Durango (*Ortega 4261*, US); Guerrero (*Hinton 9813*, K); Jalisco (*Solis-Magallanes 3397*, MEXU); Michoacán (*Daniel et al. 3312*, CAS); Morelos (*Flores-Morales & Cerros-Tlatilpa 316*, HUAP-image); Oaxaca (*Torres C. et al. 761*, MEXU); Puebla (*McVaugh 22485*, MICH-image); Sinaloa (*Gentry 5099*, CAS-holotype); Sonora (*Van Devender et al. 93-1508*, CAS).
- ***Justicia hintoniorum** G.L. Nesom (1)—Nuevo León (*Hinton et al. 20354*, TEX-holotype).
- ***Justicia huacanensis** T.F. Daniel & V.W. Steinm. (2)—Guerrero (*Koch et al. 87205*, TEX); Michoacán (*Steinmann 3024*, IEB-holotype).
- Justicia inaequalis** Benth. (1)—Chiapas (*Matuda 3990*, MEXU).
- ***Justicia insolita** Brandege (1)—Baja California Sur (*Brandege s.n.*, UC-holotype).

In addition to the nominate subspecies, this also includes *Justicia insolita* subsp. *tastensis* (Brandege) T.F. Daniel (Daniel,

1997).

***Justicia ixtlania** T.F. Daniel (5)—Durango (*González & Rzedowski 2425*, CIIDIR-image); Jalisco (*Daniel 2070*, ASU); Michoacán (*Carranza & Steinmann 6315*, IEB); Nayarit (*Jones 23534*, POM-holotype); Sinaloa (*Reina G. et al. 2007-97*, MEXU).

The occurrence in Durango noted above is a new distribution record for that state.

***Justicia jitotolana** T.F. Daniel (1)—Chiapas (*Thorne & Lathrop 41662*, DS-holotype).

Justicia kanal T.F. Daniel (3)—Chiapas (*Breedlove & Bourell 68262*, CAS); Tabasco (*Ruiz P. et al. 8429 (=Calderón 24)*, HUAA); Veracruz (*Wendt et al. 3032*, CAS).

***Justicia karsticola** T.F. Daniel (1)—Veracruz (*Wendt et al. 2994*, CAS-holotype).

Justicia laevilinguis (Nees) Lindau (4)—Campeche (*Matuda 3888*, MEXU); Chiapas (*Gutiérrez B. & Balam 6565*, MEXU); Tabasco (*Cowan & Magaña 2876*, MEXU); Veracruz (*Ventura A. 7071*, IEB).

***Justicia leonardii** Wash. (9)—Coahuila (*Marsh 1076*, TEX); Guanajuato (*Pérez & Zamudio 3562*, IEB); Guerrero (*Ramírez S. 60*, MEXU); Hidalgo (*Hernández M. & Tenorio L. 6943*, MO); Nuevo León (*Pringle 2543*, MO); Querétaro (*Carranza et al. 4536*, IEB); San Luis Potosí (*Parry & Palmer 704*, MO); Tamaulipas (*Palmer 58*, GH); Veracruz (*Palmer 358*, MO).

Typification of *Justicia leonardii* is currently being studied. This species is often confused with the morphologically similar *J. spicigera*. It tends to have more densely pubescent leaves, usually lacks minute glands on the proximal external surface of the corolla, and its leaves do not exude a pinkish blue dye in water.

***Justicia leucothamna** (Standl.) T.F. Daniel, Carnevali & Tapia (2)—Campeche (*Martínez S. et al. 30861*, MEXU); Yucatán (*Gaumer 1242*, F-holotype).

Justicia lindeni (Nees) J.F. Macbr. (3)—Chiapas (*Breedlove 50439*, CAS); Tabasco (*Linden 182*, K-holotype); Veracruz (*Wendt et al. 4110*, CAS).

***Justicia linearis** B.L. Rob. & Greenm. (3)—Durango (*Walker 81H31*, ARIZ); San Luis Potosí (*Pringle 5038*, GH-holotype); Tamaulipas (*Hiriart V. et al. 166*, MEXU).

Justicia longii Hilsenb. (2)—Baja California (*Rebman 25137*, SD-image); Sonora (*Schott III no. 3 (Mex. Bound. Surv. 726)*, NY-holotype).

***Justicia lucindae** T.F. Daniel & V.W. Steinm. (1)—Michoacán (*Steinmann 1699*, IEB-holotype).

***Justicia lundellii** Leonard (3)—Campeche (*Lundell 935*, US-holotype); Quintana Roo (*Téllez & Cabrera 1186*, MO); Yucatán (*Ramírez et al. 820*, MEXU).

Justicia luzmariae T.F. Daniel, Carnevali & Tapia (2)—Campeche (*Chan 4572*, MO); Quintana Roo (*Daniel, Carnevali & Tapia Muñoz 10315*, MEXU-holotype).

Justicia macrantha Benth. (1)—Chiapas (*MacDougall s.n.*, US).

***Justicia madrensis** T.F. Daniel (1)—Chiapas (*Breedlove 38656*, DS-holotype).

***Justicia masiaca** T.F. Daniel (2)—Sinaloa (*Rose et al. 13501*, US); Sonora (*Daniel et al. 2546*, CAS-holotype).

- ***Justicia matudae** T.F. Daniel (3)—Guerrero (*González F. 370*, FCME); México (*Matuda et al. 31440*, MEXU-holotype); Michoacán (*Hinton et al. 15189*, US).
- ***Justicia maya** T.F. Daniel (1)—Chiapas (*Breedlove & Daniel 71004*, CAS-holotype).
- ***Justicia medranoi** Henrickson & Hiriart (1)—Hidalgo (*Hiriart et al. 157*, MEXU-holotype).
- ***Justicia mexiae** T.F. Daniel (1)—Guerrero (*Mexia 8732*, MO-holotype).
- ***Justicia mirandae** T.F. Daniel (1)—Chiapas (*Breedlove 50163*, CAS-holotype).
- Justicia multicaulis** Donn. Sm. (1)—Chiapas (*Breedlove 56528*, CAS).
- ***Justicia nana** (Nees) Lindau (1)—Hidalgo (*Ehrenberg 1005*, B-destroyed, photo: F, fragment: GZU).
- ***Justicia nelsonii** (Greenm.) T.F. Daniel (1)—Nayarit (*Nelson 4246*, GH-holotype).
- ***Justicia nevlingii** Wassh. & T.F. Daniel (2)—Chiapas (*Breedlove 35058*, DS); Veracruz (*Dorantes et al. D-2799*, US-holotype).
- ***Justicia novogaliciana** T.F. Daniel (2)—Guerrero (*Martínez S. & Soto N. 3710*, MEXU); Jalisco (*Iltis et al. 31028*, WIS-holotype).
- ***Justicia oaxacana** (Greenm.) T.F. Daniel (2)—Oaxaca (*Conzatti & González 1230*, GH-holotype); Puebla (*Miranda 2562*, MEXU).
- ***Justicia olmeca** T.F. Daniel (2)—Oaxaca (*Ibarra M., Meave del Castillo & Vargas 3742*, MEXU-holotype); Veracruz (*Vázquez B. & Hernández L. 44*, XAL).
- ***Justicia palmeri** Rose (1)—Baja California Sur (*Palmer 97*, US-type).
- ***Justicia paucifolia** T.F. Daniel (2)—Oaxaca (*Panero & Calzada 4039*, TEX); Puebla (*Purpus 5850*, UC-holotype).
- Justicia pectoralis** Jacq. (6)—Chiapas (*Martínez S. 18386*, MEXU); Guerrero (*Velasco 40308*, CAS); Oaxaca (*Rivera H. et al. 1433*, SERO); Puebla (*Márquez et al. 785*, MO); Tabasco (*Magaña A. 52*, CAS); Veracruz (*Nee & Taylor 29800*, F).
- Although this species was previously indicated to occur in San Luis Potosí (*Alcorn 2739*, US) and Yucatán (*Sabas Flores s.n.*, F) by Daniel (1995), the only specimens of it encountered to date from those states were noted to have been cultivated or introduced.
- Justicia periplocifolia** Jacq. (7)—Colima (*Daniel et al. 3292*, CAS); Guerrero (*Daniel & Ton 6138*, CAS); Jalisco (*Lott 2412*, CAS); Michoacán (*Soto Núñez et al. 11235*, CAS); Nayarit (*Van Devender & Van Devender 94-54*, CAS); Oaxaca (*Sánchez Martínez et al. 430*, MEXU); Sinaloa (*González Ortega 6622*, DS).
- This species shows many similarities to *Justicia carthaginensis* (see above). Plants with some morphological characters apparently intermediate between the two taxa are known in western Mexico.
- ***Justicia phlebodes** Leonard & Gentry (5)—Chihuahua (*Bye 3441*, COLO); Durango (*Acevedo & Bayona 350*, CAS); Nayarit (*Croat 45204*, MO); Sinaloa (*Gentry 5652*, US-holotype); Sonora (*Jenkins et al. 92-99*, ARIZ).
- Justicia pilosella** (Nees) Hilsenb. (13)—Chihuahua (*Reveal & W. Hess 3009*, MEXU); Coahuila (*Pringle 9027*, MEXU); Durango (*Sanders et al. 6752*, CAS); Guanajuato (*Ventura V. & López P. 9525*, IEB); Hidalgo (*González Q. 3199*,

MEXU); Nuevo León (*Pringle 2515*, MEXU); Oaxaca (*Martínez 202*, MEXU-image); Puebla (*Breedlove 69493*, CAS); Querétaro (*Carranza G. 734*, IEB); San Luis Potosí (*Torres C. 17091*, MEXU); Tamaulipas (*Medrano et al. 13856*, MEXU); Veracruz (*Gutiérrez B. & Montoya 1834*, MEXU); Zacatecas (*Wagner & Brown 3987*, MO).

As treated here, this species includes plants sometimes referred to *Justicia turneri* Hilsenb.

Justicia pringlei B.L. Rob. (6)—Chiapas (*Breedlove & Strother 46783*, CAS); Guanajuato (*Rzedowski 41722*, IEB); Jalisco (*Pringle 2967*, GH-syntypes); México (*Hinton 5122*, GH); Michoacán (*Hinton 13244*, GH); Oaxaca (*Álvarez 1111*, GH).

***Justicia purpusii** (Brandege) D.N. Gibson (1)—Baja California Sur (*Purpus 552*, UC-holotype).

Justicia ramosa (Oerst.) V.A.W. Graham (9)—Campeche (*Martínez S. et al. 31992-A*, MEXU); Chiapas (*Breedlove 42341*, DS); Chihuahua (*Bye 3599*, COLO); Guerrero (*Rico A. et al. 434*, MEXU); Nuevo León (*Tirado 22*, MEXU); Oaxaca (*Pringle 6279*, US); Puebla (*Liebmann 10748*, C-lectotype); Quintana Roo (*Gaumer 1682*, F); Yucatán (*Carnevali et al. 6010*, MEXU).

Plants with some characters intermediate between *Justicia ramosa* and *J. hilsenbeckii* are not uncommon.

***Justicia rzedowskii** (Acosta) T.F. Daniel (1)—Chiapas (*Ventura & López 1074*, ENCB-holotype).

***Justicia salasiae** T.F. Daniel & E.J. Lott (1)—Oaxaca (*Daniel, Lott & Salas M. 11890*, MEXU-holotype).

***Justicia salma-margaritae** Acosta (1)—Oaxaca (*Acosta C. 3208*, OAX-holotype).

***Justicia salviiflora** Kunth (16)—Chiapas (*Miranda 6830*, MEXU); Chihuahua (*Bye et al. 9226*, CAS); Colima (*Sanders et al. 10746*, MO); Durango (*Acevedo & Bayona 359*, IEB); Guerrero (*Hinton et al. 14090*, MO); Jalisco (*Mexia 1866*, CAS); México (*Daniel et al. 12322*, CAS); Michoacán (*Hinton et al. 12873*, MO); Morelos (*Croat & Hannon 65764*, MO); Nayarit (*Daniel & Bartholomew 4724*, CAS); Oaxaca (*Rico A. et al. 590*, MO); Puebla (*Caamaño Onofre & González Alcantar 7690*, HUAP); Sinaloa (*Gentry 5617*, DS); Sonora (*Gentry 3624*, ARIZ); Tamaulipas (*Mora-López et al. 268*, XAL); Zacatecas (*Enríquez E. & Balleza C. 1449*, MEXU).

The occurrence noted above for Puebla appears to represent a new distribution record for that state. Plants from Chiapas show some morphological differences to those from other states and may represent a different, taxonomically unresolved species.

***Justicia santelisiana** Acosta & T.F. Daniel (1)—Oaxaca (*Tenorio L. & Torres C. 5503*, CAS-holotype).

Justicia soliana Standl. (1)—Chiapas (*Laughlin 2565*, DS).

Justicia sonora Wassh. (2)—Sinaloa (*Gentry 14312*, US); Sonora (*Van Devender s.n.*, US-holotype).

Justicia sphaerosperma Vahl (7)—Campeche (*Cabrera C. & de Cabrera 14387*, MEXU); Guerrero (*Ladd O. et al. 259*, CAS); Jalisco (*Daniel 1077*, CAS); México (*Hinton 2159*, K); Michoacán (*Tripp & Tripp 182*, MEXU); Quintana Roo (*Cowan & Cabrera 5084*, CAS); Yucatán (*Lundell & Lundell 7938*, DS).

Mexican plants of this red-flowered species have previously been included with taxa pertaining to *Justicia carthaginensis* (see above). A good discussion of the taxonomic confusion surrounding these species was provided by Carnevali Fernández-Concha et al. (2024), which included a new species, *J. cardinalis* Carnevali & Duno, from the Yucatán Peninsula. The characters used to distinguish their species of plants from that region overlap with those from plants of *J. sphaerosperma* in the West Indies, South America, and elsewhere in Mexico.

Justicia spicigera Schtdl. (18)—Baja California Sur (*Carter 2710*, UC); Campeche (*Zamora C. & Hernández T. 4414*,

MEXU); Chiapas (*Breedlove 9431*, CAS); Guerrero (*Langlassé 926*, GH); Jalisco (*De Niz L. et al. 143*, WIS); México (*Hinton et al. 340*, K); Michoacán (*Hinton et al. 12991*, F); Morelos (*Hernández 6376*, MEXU); Nayarit (*Palmer 1987*, F); Oaxaca (*Hernández G. 995*, MEXU); Puebla (*López Francisco & Gorostiza Salazar 74014*, MEXU); Querétaro (*Hernández M. et al. 9302*, MEXU); Quintana Roo (*Ucan et al. 978*, MEXU); San Luis Potosí (*Carranza Álvarez s.n.*, MEXU); Tabasco (*Hormia 174*, US); Tamaulipas (*Croat & Hannon 62973*, MEXU); Veracruz (*Schiede 77*, MO-lectotype-image); Yucatán (*Gaumer 24178*, F).

This species, often known as “muicle” or “muitle,” is cultivated throughout Mexico for medicinal and/or ornamental purposes. Collections are sometimes noted to be both cultivated and occurring outside of cultivation in disturbed and natural areas. Specimens cited above were not noted to be cultivated and possibly represent either native or naturalized occurrences. Daniel and Acosta Castellanos (2003) indicated that some collections from natural habitats in at least Chiapas, Oaxaca, and Veracruz likely represent native occurrences. Distinctions between *Justicia spicigera* and *J. leonardii* are noted above under the latter species.

***Justicia stellata** (B.L. Rob. & Greenm.) T.F. Daniel (1)—Jalisco (*Pringle 4573*, GH-holotype).

***Justicia tabascina** T.F. Daniel (1)—Tabasco (*Linden s.n.*, P-holotype).

***Justicia teletheca** T.F. Daniel (2)—Chiapas (*Breedlove 56314*, CAS-holotype); Oaxaca (*Daniel et al. 11795*, CAS).

***Justicia tenera** (Turrill) D.N. Gibson (4)—Guanajuato (*Ventura V. & López P. 7637*, IEB); Hidalgo (*Fernández 2649*, IEB); Querétaro (*Rubio 2770*, IEB); San Luis Potosí (*Pringle 3933*, GH).

The protologue includes gatherings on two different dates. Lectotypification of this species is currently being studied.

Justicia tianguensis T.F. Daniel (1)—Chiapas (*Breedlove 7365*, DS-holotype).

Justicia tinctoriella Bennet & Raizada (1)—Chiapas (*Croat & Hannon 64775*, MO).

This species was previously treated by Daniel (1995) as *Justicia colorifera* V.A.W. Graham, a later nom. nov. for plants originally treated as *Sericographis tinctoria* Oerst.

***Justicia torresii** T.F. Daniel (1)—Oaxaca (*Torres C. & Cortes A. 11472*, CAS-holotype).

***Justicia totonaca** T.F. Daniel (1)—Veracruz (*Acevedo R. & Acosta P. 109*, MEXU-holotype).

***Justicia turipachensis** T.F. Daniel (1)—Chiapas (*Breedlove 31242*, CAS-holotype).

***Justicia tuxtensis** T.F. Daniel (1)—Veracruz (*Ibarra M. & Sinaca C. 3372*, MEXU-holotype).

***Justicia uxpanapensis** T.F. Daniel (1)—Veracruz (*Vázquez et al. 839*, MEXU-holotype).

Justicia valvata T.F. Daniel (1)—Veracruz (*Dorantes et al. D-3538*, CAS-holotype).

***Justicia veracruzana** T.F. Daniel (3)—Hidalgo (*Hernández M. & Rodríguez B. 5616*, MEXU); Puebla (*López Francisco & Gorostiza Salazar 74568*, MEXU); Veracruz (*Liebmann s.n. (10674)*, C).

Typification of this species is currently being studied.

Justicia warnockii B.L. Turner (2)—Chihuahua (*Wendt & Lott 86*, TEX); Coahuila (*Johnston 8205*, LL).

***Justicia wendtii** T.F. Daniel (1)—Veracruz (*Wendt et al. 3031*, CAS-holotype).

***Justicia wilburii** T.F. Daniel (3)—Guerrero (*Hinton et al. 14090*, MICH); Jalisco (*McVaugh et al. 22939*, MICH); Michoacán (*Daniel & Steinmann 11919*, CAS-holotype).

The occurrences of this species in Guerrero and Jalisco were discussed by Daniel et al. (2024).

***Justicia zamudioi** T.F. Daniel (1)—Querétaro (*Zamudio 6814*, IEB-holotype).

***Justicia zapoteca** T.F. Daniel (1)—Oaxaca (*Daniel, Lott, Pascual & Salas M. 11898*, MEXU-holotype).

***Justicia zopilotensis** Henrickson & Hiriart (3)—Guerrero (*Miranda 4311*, MEXU-holotype); Oaxaca (*Calzada et al. 18283*, MEXU); Puebla (*McVaugh 23998*, MICH).

LEPIDAGATHIS Willd. (6 species, 4 endemic)

The Mexican species of *Lepidagathis* were formerly treated under *Lophostachys* Pohl and *Teliostachya* Nees.

Lepidagathis alopecuroidea (Vahl) Nees (5)—Chiapas (*Martínez S. 18315*, MEXU); Oaxaca (*Croat 47920*, MO); Puebla (*Cornejo T. et al. 2598*, MEXU); Tabasco (*Puig 730*, MEXU); Veracruz (*Vera S. 2830*, MEXU).

***Lepidagathis chiapensis** (Acosta) Kameyama (1)—Chiapas (*Fernández 2400*, ENCB-holotype).

***Lepidagathis danielii** Cruz Durán & J. Jiménez Ram. (2)—Guerrero (*R. Cruz D. 6888*, FCME-holotype); México (*Matuda et al. 30688*, MO).

Lepidagathis guatemalensis (Donn. Sm.) Kameyama (2)—Chiapas (*Alvarado C. et al. 1146*, MEXU); Oaxaca (*Pascual 1018*, MEXU).

***Lepidagathis soconuscana** (T.F. Daniel) Kameyama (1)—Chiapas (*Boege 1086*, GH-holotype).

***Lepidagathis uxpanapensis** (Acosta) Kameyama (2)—Oaxaca (*Croat & Hannon 63248*, MO); Veracruz (*Dorantes 3963*, ENCB-holotype).

LOUTERIDIUM S. Watson (9 species, 6 endemic)

***Louteridium brevicalyx** A.T. Richardson (1)—Michoacán (*Hinton et al. 15825*, US-holotype).

***Louteridium dendropilosum** T.F. Daniel (1)—Oaxaca (*Daniel, Sánchez & Pascual 11784*, MEXU-holotype).

Louteridium donnell-smithii S. Watson (1)—Chiapas (*Breedlove 33282*, DS).

***Louteridium koelzii** Miranda & McVaugh (2)—Jalisco (*McVaugh & Koelz 1507*, MICH-holotype); Michoacán (*McVaugh 24740*, MICH).

Louteridium mexicanum (Baill.) Standl. (5)—Chiapas (*Breedlove & Almeda 58020*, CAS); Oaxaca (*Croat & Hannon 63176*, MO); Puebla (*Caamaño O. 6602*, HUAP-image); Tabasco (*Hernández & Espejo 139*, MEXU); Veracruz (*Linden s.n.*, P-holotype-see Daniel & Tripp 2018).

***Louteridium parayi** Miranda (2)—Chiapas (*Paray & Miranda 7834*, MEXU-holotype); Veracruz (*Daniel & Wendt 5804*, CAS).

Louteridium purpusii Brandegees (1)—Chiapas (*Purpus 6969*, UC-holotype).

***Louteridium rzedowskianum** T.F. Daniel (1)—Guerrero (*Kruse 1380*, ENCB-holotype).

***Louteridium tamaulipense** A.T. Richardson (1)—Tamaulipas (*Richardson 1388*, TEX-holotype).

MENDONCIA Vell. ex Vand. (3 species)

Mendoncia guatemalensis Standl. & Steyerl. (3)—Chiapas (*Ton 5975*, MEXU); Oaxaca (*Hernández G. 1140*, MEXU); Veracruz (*Cedillo T. 3327*, MEXU).

Mendoncia lindavii Rusby (1)—Chiapas (*Martínez S. et al. 25386*, XAL).

Mendoncia retusa Turrill (2)—Chiapas (*Matuda 16603*, MEXU); Veracruz (*Ibarra M. & Sinaca C. 1981*, MEXU).

***MEXACANTHUS** T.F. Daniel (1 species, 1 endemic)

***Mexacanthus mcvaughii** T.F. Daniel (4)—Colima (*McVaugh 23016*, MICH-holotype); Jalisco (*Lott 2363*, MEXU); Michoacán (*Miller et al. 441*, MO); Nayarit (*Van Devender & Van Devender 94-23*, CAS).

***MIRANDEA** Rzed. (6 species, 6 endemic)

***Mirandea andradenia** T.F. Daniel (1)—Tamaulipas (*Daniel & Baker 3393*, NY-holotype).

***Mirandea grisea** Rzed. (4)—Coahuila (*Estrada et al. 20677*, CFNL-image); Durango (*López et al. 307*, MEXU); San Luis Potosí (*Rzedowski 9464*, MEXU-holotype); Tamaulipas (*González M. et al. 8213*, MEXU).

***Mirandea huastecensis** T.F. Daniel (1)—Nuevo León (*Daniel 252*, MICH-holotype).

***Mirandea hyssopus** (Nees) T.F. Daniel (2)—Hidalgo (*Ehrenberg 1061*, B-holotype, destroyed, photo: F); Querétaro (*Zamudio & Zamudio 10263*, IEB).

***Mirandea nutans** (Nees) T.F. Daniel (2)—Hidalgo (*Ehrenberg 1060*, PR-lectotype); Querétaro (*Rzedowski 53366*, IEB).

***Mirandea sylvatica** Acosta (4)—Chiapas (*Breedlove 34899*, DS); Oaxaca (*Hernández G. 1119*, MEXU); Tabasco (*Ventura 20168*, ENCB-holotype); Veracruz (*Vázquez et al. 329*, MEXU).

Molecular phylogenetic data (Kiel and McDade, 2014) suggest that this species does not pertain to *Mirandea*. Its ultimate taxonomic disposition remains to be determined.

NELSONIA R. Br. (1 species)

Nelsonia canescens (Lam.) Spreng. (3)—Chiapas (<https://www.inaturalist.org/observations/205710859>); Guerrero (*Velasco G. 40332*, FCME); Jalisco (<https://www.inaturalist.org/observations/284743840>).

Most New World occurrences of this species appear to be introduced. Whether all Mexican populations of it are native or introduced and naturalized (as the occurrences from Chiapas and Jalisco appear to be, based on their occurrences in or near urban locales) remains to be determined (see Daniel and McDade, 2014). Most collections from Guerrero appear to be from natural habitats and are tentatively treated as likely native.

ODONTONEMA Nees (8 species, 3 endemic)

Odontonema albiflorum Leonard (1)—Chiapas (*Téllez & Villaseñor 6634*, MEXU).

***Odontonema auriculatum** (Rose) T.F. Daniel (6)—Colima (*Palmer 1323*, US-syntypes); Guerrero (*Daniel & Bartholomew 4913*, CAS); Jalisco (*Van Devender & Van Devender 94-18*, CAS); Michoacán (*Hinton et al. 15812*, US); Nayarit (*Tenorio L. et al. 15565*, MEXU); Oaxaca (*Galeotti 510K*, BR).

Odontonema callistachyum (Schltdl. & Cham.) Kuntze (12)—Chiapas (*Martínez S. et al. 3220*, MEXU); Guerrero (*Daniel 5368*, CAS); Hidalgo (*Daniel & Bartholomew 5079*, CAS); Jalisco (*Dieterle 3990*, MICH); Michoacán (*Hinton et al. 12585*, US); Nuevo León (*Croat & Hannon 65513*, MO); Oaxaca (*Galeotti 510N*, BR); Puebla (*González Q. 777*, MICH); Querétaro (*Zamudio 6273*, IEB); San Luis Potosí (*King 4430*, US); Tabasco (*Ventura A. 21464*, MEXU); Veracruz (*Schiede s.n.*, B-type, destroyed).

Typification of this species is currently being studied.

Odontonema cuspidatum (Nees) Kuntze (14)—Chiapas (*Matuda 149*, MEXU); Guanajuato (*Santillán I. 397*, IEB); Guerrero (*Langlassé 974*, F); Hidalgo (*Estrada 163*, HUAP-image); Jalisco (*Montoya M. B. 16*, IBUG); Morelos (*Halbinger 42*, GH); Nuevo León (*Villarreal et al. 6766*, MEXU); Oaxaca (*Jürgensen 985*, K-lectotype); Puebla (*Amith & Salazar O. 80197*, CAS); Querétaro (*Rubio 892*, IEB); San Luis Potosí (*Alcorn 3328*, MEXU); Sonora (*Jenkins & Yetman 91-115*, ARIZ); Tabasco (*Ventura A. 20601*, MEXU); Veracruz (*Martínez C. 1724*, MEXU).

Some of the collections noted above (e.g., from Hidalgo and Sonora) possibly represent naturalized occurrences of this often cultivated Mexican native (see Daniel, 2004).

***Odontonema glaberrimum** (M.E. Jones) V.M. Baum (5)—Chiapas (*Breedlove & Thorne 30601*, DS); Durango (*Breedlove 24506*, CAS); Nayarit (*Jones 22976*, POM-holotype); Oaxaca (*Pérez-García & Reyes R. 975*, SERO); Sinaloa (*Gentry 5482*, MEXU).

Odontonema glabrum Brandegees (1)—Chiapas (*Purpus 7286*, UC-holotype).

***Odontonema mortonii** V.M. Baum (2)—Guerrero (*Aguilar J. 583*, MEXU); Oaxaca (*Morton & Makrinius 2356*, US-holotype).

Odontonema tubaeforme (Bertol.) Kuntze (5)—Campeche (*Martínez S. et al. 30157*, MEXU); Chiapas (*Daniel & Bartholomew 4991*, CAS); Quintana Roo (*Téllez & Cabrera 2449*, MEXU); Tabasco (*Cowan et al. 2853*, MEXU); Yucatán (*Covich 6743*, MEXU).

POIKILACANTHUS Lindau (5 species, 4 endemic)

***Poikilacanthus capitatus** (Leonard) Ramamoorthy (1)—México (*Hinton 1354*, K-holotype).

***Poikilacanthus foliosepalus** T.F. Daniel (1)—Oaxaca (*Hernández O. 326*, MEXU-holotype).

Poikilacanthus macranthus Lindau (2)—Chiapas (*Daniel & A. Ton 6180*, CAS); Oaxaca (*Maya J. 2131*, MEXU).

***Poikilacanthus novogalicianus** T.F. Daniel (2)—Colima (*McVaugh 15759*, MICH-holotype); Michoacán (*Steinmann 4540*, IEB).

Daniel's (2013a) report of an occurrence of this species in Oaxaca was erroneous. That collection (*Torres C. et al. 5257*) pertains to *Poikilacanthus pochutlensis* T.F. Daniel (Daniel, 2017).

***Poikilacanthus pochutlensis** T.F. Daniel (1)—Oaxaca (*Torres & Martínez 4907*, FCME-holotype).

PSEUDERANTHEMUM Radlk. (11 species, 6 endemic)

Pseuderanthemum alatum (Nees) Radlk. (13)—Campeche (*Cabrera & de Cabrera 6963*, MEXU); Chiapas (*Voorhies*

& Sánchez 71-17, DS); Guerrero (*Langlassé 417*, US); Hidalgo (*Ehrenberg 1167*, B-type, destroyed, fragment: GZU); Jalisco (*McVaugh 20906*, MICH); Michoacán (*Hinton 16014*, US); Oaxaca (*Cortes & Torres C. 31*, NY); Querétaro (*Carranza G. 935*, IEB); Quintana Roo (*Carnevali et al. 6310*, MEXU); San Luis Potosí (*Lundell & Lundell 7258*, MICH); Tamaulipas (*Fryxell 3770*, NY); Veracruz (*Purpus 6109*, US); Yucatán (*Lundell 1055*, F).

Pseuderanthemum cuspidatum (Nees) Radlk. (5)—Chiapas (*Breedlove 28442*, DS); Hidalgo (*Alcántara Ayala & Mayorga Saucedo 3417*, MEXU); Oaxaca (*Hernández G. 423*, MEXU); Puebla (*Ventura A. 8659*, ENCB); Veracruz (*Ventura A. 10450*, ENCB).

The broad circumscription of this species by Daniel (1995) included morphologically diverse plants that possibly represent more than one taxon.

****Pseuderanthemum fasciculatum*** (Oerst.) Leonard (3)—Chiapas (*Daniel 5875*, CAS); Morelos (*Lyonnet 550400014*, MEXU-699625); Veracruz (*Liebmann 10654*, C-holotype).

The status of this species remains unresolved. Another specimen of *Lyonnet 550400014* from Morelos at MEXU appears to be *P. praecox*.

****Pseuderanthemum floribundum*** T.F. Daniel (1)—Oaxaca (*Daniel 5381*, CAS-holotype).

****Pseuderanthemum guerrerense*** Cruz Durán & S. Valencia (1)—Guerrero (*Monroy 77*, FCME-holotype).

****Pseuderanthemum hirsutum*** (Leonard) T.F. Daniel (1)—México (*Hinton et al. 5318*, K-holotype).

****Pseuderanthemum hispidulum*** (Nees) Radlk. (6)—Chiapas (*Breedlove 49803*, CAS); Guerrero (*Rzedowski 27009*, ENCB); México (*Daniel & Denham 12320*, CAS); Oaxaca (*Mendoza Osorio 689*, MEXU); Querétaro (*Fernández N. 2372a*, MEXU); Veracruz (*Galeotti 929*, K-holotype).

****Pseuderanthemum pihuamoense*** T.F. Daniel (3)—Colima (*Daniel et al. 6283*, CAS); Jalisco (*McVaugh 24459*, MICH-holotype); Michoacán (*García & Costea 9645*, CIMI-image).

Pseuderanthemum praecox (Benth.) Leonard (22)—Aguascalientes (*Cabrera 400*, HUAA); Chiapas (*Breedlove 49935*, CAS); Ciudad de México (*Bopp O. 247*, ENCB); Colima (*Padilla Velarde 1999*, CHAPA [not seen], fide Padilla Velarde et al., 2008); Durango (*González & Acevedo 1327*, ENCB); Guanajuato (*Hartweg 1614*, K-holotype); Guerrero (*Hinton et al. 14072*, US); Hidalgo (*Moore 2381*, GH); Jalisco (*McVaugh 26541*, MICH); México (*Hinton et al. 11805*, US); Michoacán (*Hinton 13676*, US); Morelos (*Vázquez S. 2141*, MEXU); Nayarit (*Paray 2677*, ENCB); Nuevo León (*Hinton et al. 22738*, TEX); Oaxaca (*García Mendoza & Torres 1968*, MEXU); Puebla (*Salinas T. et al. F-3159*, MEXU); Querétaro (*Rzedowski 42945*, IEB); San Luis Potosí (*Torres Colin 15609*, MEXU); Sinaloa (*Breedlove 15574*, DS); Sonora (*Daniel et al. 8617*, CAS); Tamaulipas (*Runyon 1053*, TEX); Tlaxcala (<https://www.inaturalist.org/observations/38372319>); Zacatecas (*Acosta 672*, ENCB).

The difficulties of circumscribing this species and distinguishing it from apparently similar ones (e.g., *P. axillare* Leonard, *P. biceps* Lindau, *P. fasciculatum* (Oerst.) Leonard, and *P. hispidulum*) were discussed by Daniel (1995, 2004) and Daniel and Acosta Castellanos (2003). The last two taxa are tentatively recognized above.

Pseuderanthemum standleyi Leonard (6)—Guerrero (*Hinton et al. 14159*, US); Jalisco (*McVaugh 23445*, MICH); México (*Moreno G. 59*, MEXU); Morelos (*Lyonnet 550400014*, MEXU); Oaxaca (*Torres C. et al. 9653*, MEXU); Querétaro (*Rzedowski 48112*, IEB).

Pseuderanthemum verapazense Donn. Sm. (3)—Chiapas (*Martínez S. 11456*, CAS); Tabasco (*Hanan A. 409*, MEXU); Veracruz (*Dorantes 2718*, XAL).

RUELLIA L. (55 species, 31 endemic)

***Ruellia amoena** Sessé & Moc. (5)—Colima (*Daniel et al. 3287*, ASU); Guerrero (*Hinton et al. 11727*, US); Jalisco (*McVaugh 23048*, MICH); Michoacán (*Daniel & Butterwick 3261*, CAS); Nayarit (*Téllez V. 9306*, MEXU).

Ruellia blechum L. (24)—Baja California Sur (*León de la Luz 4893*, MEXU); Campeche (*Lundell 902*, MICH); Chiapas (*Breedlove & Bourell 68230*, CAS); Colima (*Sanders et al. 10985*, MEXU); Durango (*González et al. 6601*, MEXU); Guerrero (*Barkley 14073*, DS); Hidalgo (*Sharp 441631*, MEXU); Jalisco (*Lott 2699*, CAS); México (*Matuda et al. 30775*, MEXU); Michoacán (*Hinton et al. 13664*, MO); Morelos (*Vázquez 770*, MEXU); Nayarit (*Daniel 2057*, CAS); Nuevo León (*Templeton s.n.*, RSA-image); Oaxaca (*Miranda 986*, MEXU); Puebla (*Ramírez C. 575*, MEXU); Querétaro (*Servín 965*, IEB); Quintana Roo (*Cabrera & de Cabrera 2174*, MEXU); San Luis Potosí (*Rzedowski 7342*, MEXU); Sinaloa (*Gentry 4932*, DS); Sonora (*Van Devender et al. 92-212*, ARIZ); Tabasco (*Croat 47882*, MO); Tamaulipas (*Pringle 6807*, F); Veracruz (*Purpus 2262*, UC); Yucatán (*Gaumer 23553*, F).

This species includes plants previously treated as *Blechum pyramidatum* (Lam.) Urb. and *B. brownei* Juss. (nom. illegit.).

***Ruellia bourgaei** Hemsl. (13)—Ciudad de México (*Rzedowski 23294*, DS); Colima (*Leger 1317*, IBUG [not seen], fide Tripp, 2010); Guanajuato (*Nicolas 6173*, P); Guerrero (*Soto-Núñez et al. 6060*, CAS); Hidalgo (*Pringle 13598*, CAS); Jalisco (*Pringle 4500*, BR); México (*Bourgeau 885*, K-lectotype); Nayarit (*Téllez V. 9306*, MEXU); Oaxaca (*Macdougall s.n.*, MO [not seen], fide Tripp, 2010); Puebla (*Bro. Nicolás s.n.*, P); Querétaro (*Arsène 10448*, US); Veracruz (*Purpus 2116*, US-image); Zacatecas (*Coulter 1189*, K).

The exact locality of the type (here treated as *Bourgeau 885* from “Montagne près Guadalupe, Vallée de Mexico” is vague and could pertain to either México or Ciudad de México. Although sometimes cited as from the latter state, it is here tentatively treated from the state of México because Bourgeau also collected from the region of Zacoalco on the northern side of the Sierra de Guadalupe (in the state of México) during the same month as he collected *R. bourgaei* (Harvard University Herbaria & Libraries, 2025).

***Ruellia breedlovei** T.F. Daniel (1)—Chiapas (*Daniel & Bartholomew 5025*, CAS-holotype).

***Ruellia californica** (Rose) I.M. Johnst. (3)—Baja California (*Carter 5821*, UC); Baja California Sur (*Palmer 190*, US-holotype); Sonora (*Johnston 4268*, CAS).

In addition to the nominate subspecies, this also includes *Ruellia californica* subsp. *peninsularis* (Rose) T.F. Daniel (Daniel, 1997).

***Ruellia cedilloi** Ramamoorthy (1)—Oaxaca (*Cedillo T. & Torres C. 1425*, MEXU-holotype).

***Ruellia comonduensis** T.F. Daniel (1)—Baja California Sur (*Brandegees s.n.*, UC-holotype).

***Ruellia konzattii** Standl. (1)—Oaxaca (*Konzatti 4240*, US-holotype).

***Ruellia corzoi** Tharp & F.A. Barkley (1)—Coahuila (*Wynd & Mueller 191*, MO-holotype-image).

The status of this species is unresolved. It was recognized as a distinct species by Turner (1991), including synonyms *Ruellia drushelii* Tharp & F.A. Barkley from Coahuila and *R. drushelii* var. *macrocarpa* Tharp & F.A. Barkley from Nuevo León. Based on images of the types, *R. corzoi* and *R. drushelii* could pertain to either *R. intermedia* or *R. puberula*. *Ruellia drushelii* var. *macrocarpa* possibly pertains to *R. nudiflora*.

***Ruellia dipteracanthus** (Nees) Hemsl. (1)—Veracruz (*Galeotti 933*, K-syntype).

Ruellia donnell-smithii Leonard (1)—Chiapas (*Matuda 123*, MEXU).

Ruellia erythropus (Nees) Lindau (4)—Oaxaca (*Juárez G. et al. 3197*, MEXU); Querétaro (*Fernández N. 2679*, IEB); Veracruz (*Ventura A. 15791*, IEB); Yucatán (*Gaumer 384*, F).

***Ruellia eumorphantha** Lindau (2)—Guerrero (*Daniel & Bartholomew 4927*, CAS); Oaxaca (*Ghiesbreght s.n.*, G-DEL-holotype).

***Ruellia foetida** Humb. & Bonpl. ex Willd. (5)—Colima (*Koelz 34241*, MICH); Guerrero (*Humboldt & Bonpland s.n.*, B-W-holotype); Jalisco (*Daniel 2081*, ASU); Nayarit (*Beechey s.n.*, K); Oaxaca (*Koch & Fryxell 78404*, MEXU).

***Ruellia foliosepala** T.F. Daniel (3)—Guerrero (*Martínez S. & Soto N. 1203*, MEXU-holotype); México (*Matuda et al. 31279*, MEXU); Michoacán (*Soto 15860*, MEXU).

***Ruellia fruticosa** Sessé & Moc. (4)—Guerrero (*Pringle 8409*, GH); Morelos (*Daniel & Jessup 5776*, CAS); Oaxaca (*Trejo 1290*, MEXU); Puebla (*Breedlove 39218*, CAS).

The type of this species is a drawing from Guerrero.

***Ruellia galeottii** Leonard (13)—Baja California Sur (*Daniel & Butterwick 6952*, CAS); Chiapas (*Sánchez Mejorada 540*, MEXU); Colima (*McVaugh & Koelz 1584*, MICH); Guerrero (*Daniel & Ton 6134*, CAS); Jalisco (*Daniel & Butterwick 3216*, CAS); México (*Matuda et al. 32119*, MEXU); Michoacán (*Soto N. 10655*, MEXU); Morelos (*Cabrera C. & de Cabrera 14608*, CAS); Nayarit (*Bravo-Bolaños 2185*, MEXU); Oaxaca (*Galeotti 510J*, US-holotype); Puebla (*Rojas-Martínez et al. 436*, MEXU); Sinaloa (*Reina G. et al. 2006-116*, ARIZ); Sonora (*Van Devender et al. 93-1495*, ARIZ).

Ruellia geminiflora Kunth (4)—Chiapas (*Breedlove 9163*, DS); Oaxaca (*Martínez C. 136*, CAS); Tabasco (*Barlow 30/30*, MICH); Veracruz (*Orcutt 5148*, DS).

***Ruellia guerrerensis** T.F. Daniel (1)—Guerrero (*Hinton et al. 11296*, K-holotype).

Ruellia harveyana Stapf (3)—Chiapas (*Martínez S. 13526*, MEXU); Oaxaca (*Hernández G. 447*, CAS); Veracruz (*Dorantes et al. 4135*, XAL).

The protologue (Stapf, 1913) was based on plants cultivated at Kew (K-holotype) that had been sent by J.C. Harvey in 1911 from his garden in Sanborn, Veracruz. Plants were originally collected by Harvey in 1904 on the Caribbean side of the Isthmus of Tehuantepec, likely in Veracruz.

***Ruellia hirsutoglandulosa** (Oerst.) Hemsl. (6)—Guanajuato (*Ventura V. & López P. 7146*, IEB); Hidalgo (*Daniel & Baker 3736*, CAS); Oaxaca (*Karwinski s.n.*, BR); Puebla (*Daniel 8353*, CAS); Querétaro (*Zamudio & Pérez C. 10016*, IEB); Veracruz (*Liebmman 10723*, C-lectotype).

Ruellia hookeriana (Nees) Hemsl. (18)—Aguascalientes (*Provance 1239*, UCR); Chiapas (*Breedlove 27264*, DS); Durango (*González-Gallegos et al. 1844*, MEXU); Guanajuato (*Galván & Galván 2638*, IEB); Guerrero (*Acevedo-Rodríguez 16181*, MEXU); Jalisco (*Pringle 4438*, K); México (*Matuda et al. 31094*, MEXU); Michoacán (*Steinmann & Zamudio 4508*, CAS); Morelos (*Flores Crespo 72*, MEXU); Nayarit (*Téllez V. & Salinas, 11932*, MEXU); Oaxaca (*Jürgensen 598*, K-hb. Hook.-holotype); Puebla (*Salas S. & Ramos M. 260*, XAL); Querétaro (*Herrera R. 160a*, IEB); San Luis Potosí (*Palmer 92*, K); Sinaloa (*Vega A. 862*, IEB); Tamaulipas (*Palmer 215*, CAS); Veracruz (*Bourgeau 2663*, P); Zacatecas (*Hernández M. et al. 9677*, MEXU).

***Ruellia intermedia** Leonard (16)—Baja California Sur (*León de la Luz 3022*, MEXU); Chiapas (*Breedlove 10617*, DS); Chihuahua (*Jenkins et al. s.n.*, ARIZ); Colima (*McVaugh 15859*, MICH); Guerrero (*Soto Núñez & Soto R. 13690*, MEXU); Hidalgo (*Broome 413*, USF); Jalisco (*Rose 2915*, US-holotype); México (*Daniel & Denham 12315*, CAS); Michoacán (*Soto N. & Lozano B. 14770*, MEXU); Morelos (*Lyonnet 2188*, US); Nayarit (*Bravo-Bolaños 2246*, MEXU); Puebla (*Caamaño Onofre 9046*, HUAP); San Luis Potosí (*Torres Colín & Ramírez de Anda 16980*, MEXU); Sinaloa (*Palmer*

1415, US); Sonora (*Wiggins 7275*, DS); Zacatecas (*Balleza C. & Adame G. 8566*, MEXU).

Ruellia inundata Kunth (7)—Campeche (*Martínez S. et al. 31999*, MEXU); Chiapas (*Breedlove & Daniel 71024*, CAS); Oaxaca (*Torres C. et al. 7854*, MEXU); Quintana Roo (*Cabrera & Torres 865*, CAS); Sinaloa (*Norris 20151*, CAS); Veracruz (*Ventura A. 2765*, DS); Yucatán (*Cabrera & de Cabrera 10801*, MEXU).

***Ruellia jaliscana** Standl. (2)—Guerrero (*Mayorga S. s.n.*, FCME [not seen], fide Cruz Durán & García Granados, 2012); Jalisco (*Nelson 4051*, US-holotype).

Ruellia jussieuoides Schtdl. & Cham. (5)—Chiapas (*Lundell 17814*, CAS); Oaxaca (*Salas M. 886*, SERO); Puebla (*Jiménez C. & Gorostiza S. 31135*, US); Tabasco (*Guadarrama et al. 5036*, MEXU); Veracruz (*Schiede & Deppe 1164*, holotype: B, destroyed).

Ruellia lactea Cav. (19)—Aguascalientes (*de la Cerda L. & García R. 1517*, HUAA); Chiapas (*Laughlin 1001*, DS); Chihuahua (*Martin et al. s.n.*, CAS); Ciudad de México (*Bourgeau 355*, K); Durango (*González 2006*, IEB); Guanajuato (*Galván & Galván 3391*, IEB); Guerrero (*Espejo 1004*, MEXU); Hidalgo (*Díaz V. & Valverde G. 924*, MEXU); Jalisco (*McVaugh 17626*, MICH); México (*Hinton 1076*, K); Michoacán (*Zamudio 4089*, IEB); Morelos (*Vásquez 410*, MEXU); Nayarit (*Norris & Taranto 12608*, CAS); Oaxaca (*Salinas T. et al. F-3340*, MEXU); Puebla (*Conzatti 2160*, MEXU); Querétaro (*González P. 712*, IEB); San Luis Potosí (*Torres C. 15780*, MEXU); Tlaxcala (*Santacruz G. 274*, MEXU); Zacatecas (*Provance et al. 1446A*, RSA).

See Daniel (1995) for a discussion of the use of this name and its typification.

***Ruellia lanatoglandulosa** (Nees) Lindau (5)—Guanajuato (*Ventura & López 8915*, CAS); Hidalgo (*Hernández M. 3666*, CAS); Puebla (*Ehrenberg s.n.*, syntype-B, destroyed); Querétaro (*Carranza 2146*, CAS); San Luis Potosí (*Purpus 5585*, US).

***Ruellia laslobasensis** E.A. Tripp (1)—Oaxaca (*Tripp et al. 317*, DUKE-holotype).

Ruellia latibracteata D.N. Gibson (2)—Chiapas (*Breedlove 49054*, CAS); Oaxaca (*Salas et al. 3651*, MEXU).

***Ruellia leucantha** Brandegees (3)—Baja California Sur (*Brandegee s.n.*, UC-lectotype); Sinaloa (*Gentry 5739*, MICH); Sonora (*Búrquez & Felger 93-32*, MEXU).

In addition to the nominate subspecies, this also includes *Ruellia leucantha* subsp. *postinsularis* (Gentry) T.F. Daniel (Daniel, 1996).

***Ruellia longepetiolata** (Oerst.) Hemsl. (5)—Hidalgo (*Cartujano P. & Mayorga S. 112*, MEXU); Puebla (*Amith & Santiago 1282*, MEXU); Querétaro (*Rzedowski 48450*, CAS); San Luis Potosí (*Fryxell & Anderson 3433*, CAS); Veracruz (*Liebmann "10729,"* C-syntype).

Collections seen from Puebla (including that cited above) show affinities with *R. longepetiolata*, but are only tentatively treated as pertaining to that species due to minor morphological differences.

Ruellia macrophylla Vahl (2)—Quintana Roo (<https://www.inaturalist.org/observations/36857887>); Yucatán (*Olmsted 334*, CICY).

This species of Central America, the West Indies, and South America has been collected and/or observed at three localities in the two states listed above. It remains to be determined whether its presence at each site represents a native or naturalized occurrence.

Ruellia matagalpae Lindau (2)—Chiapas (*Breedlove & Daniel 70899*, CAS); Oaxaca (*Torres C. et al. 4306*, MEXU).

***Ruellia matudae** Leonard ex Lundell (1)—Chiapas (*Matuda 1966*, MICH-holotype).

Ruellia maya T.F. Daniel (1)—Chiapas (*Daniel & Bartholomew 5000*, CAS-holotype).

***Ruellia mcvaughii** T.F. Daniel (2)—Jalisco (*Cowan & Nieves H. 4746*, CAS); Nayarit (*McVaugh 12148*, MICH-holotype).

Ruellia megasphaera Lindau (5)—Chiapas (*Matuda 18747*, MEXU); Guerrero (*Hinton et al. 14116*, US); Michoacán (*Hinton et al. 11934*, K); Oaxaca (*Morton & Makrinius 2376*, US); Veracruz (*Hahn 123*, P).

The holotype, *Ehrenberg 1268* from Mexico, lacked locality and date of collection; it was destroyed at B.

Ruellia metziae Tharp (1)—Coahuila (*Marsh 177*, MEXU).

Tharp & Barkley (1949) treated *White 2123* (ARIZ-image, MICH-image, US-image) with blue corollas from Chihuahua as *R. metziae* var. *marshii* Tharp & Barkley. Although that variety appears to align with the *Ruellia nudiflora* species complex, its taxonomic status remains unresolved.

***Ruellia novogaliciana** T.F. Daniel (3)—Colima (*Santana M. et al. 2668*, IEB); Jalisco (*Cuevas & Rosales 1764*, WIS); Michoacán (*Hinton et al. 12931*, MO-holotype).

Ruellia nudiflora (Engelm. & A. Gray) Urb. (19)—Baja California Sur (*Wiggins 15576*, DS); Campeche (*Davidse et al. 20580*, CAS); Chiapas (*Breedlove 10624*, DS); Coahuila (*Daniel 751*, CAS); Durango (*Correll & Johnston 20008*, US); Hidalgo (*Coulter 1182*, TCD); Morelos (*Rose et al. 8601*, US); Nuevo León (*Carranza & Ramírez 3644*, XAL); Oaxaca (*Salinas T. et al. 4138*, MEXU); Puebla (*Salinas T. & Ramos F-3916*, MEXU); Querétaro (*González P. 105*, IEB); Quintana Roo (*Gaumer 1801*, F); San Luis Potosí (*McGregor et al. 940*, US); Sinaloa (*Gentry 7103*, US); Sonora (*Felger & Reichenbacher 85-1106*, ARIZ); Tabasco (*Cowan 3295*, CAS); Tamaulipas (*Daniel 261*, MICH); Veracruz (*Liebmann 10745*, C); Yucatán (*Gaumer 759*, US).

This species was recently treated as a synonym of South American species *R. ciliatiflora* Hook. (Daniel, 2013b). Subsequent molecular phylogenetic data (Manzitto-Tripp & Daniel, 2023) suggest that, despite the absence of clear morphological differences, they should be treated as distinct. *Ruellia nudiflora* is a morphologically variable species that has been variously subdivided over its broad geographic range from the southwestern United States into Central America.

Ruellia oaxacana Leonard (6)—Guerrero (*Aguilar J. 581*, FCME); Jalisco (*Figueroa & Acosta-Pérez 1550*, IBUG); México (*Hinton 3922*, K); Michoacán (*Hinton et al. 15831*, US); Nayarit (*Benítez P. 3074*, MEXU); Oaxaca (*Nelson 2463*, US-holotype).

Ruellia paniculata L. (12)—Campeche (*Lundell 1420*, MICH); Chiapas (*Matuda 2675*, MEXU); Guerrero (*Langlassé 952*, P); Nayarit (*Váldez Hernández 27*, MEXU); Oaxaca (*Martínez R. 1207*, MEXU); Quintana Roo (*Gaumer 1441*, F); San Luis Potosí (*Alcorn 3106*, CAS); Sinaloa (*Gentry 7028*, DS); Tabasco (*De la Cruz L. et al. 553*, MEXU); Tamaulipas (*Palmer 108*, US); Veracruz (*Dorantes et al. 5347*, XAL); Yucatán (*Carnevali et al. 5988*, MEXU).

The occurrence in Tabasco noted above appears to be a new record for that state.

Ruellia parryi A. Gray (6)—Chihuahua (*Parry "722,"* NY-lectotype); Coahuila (*Daniel 897*, CAS); Durango (*Sanders et al. 4851*, CAS); Nuevo León (*Johnston et al. 11609A*, MEXU); Sonora (*Reina G. et al. 2003-957*, CAS); Zacatecas (*Lloyd 54*, UC).

Ruellia pereducta Standl. ex Lundell (6)—Campeche (*Lundell 1239*, F-holotype); Chiapas (*Martínez S. 17740*, CAS); Oaxaca (*Calzada 14494*, MEXU); Quintana Roo (*Sanders et al. 9854*, CAS); Tabasco (*Cowan 2895*, CAS); Veracruz (*Ortiz & Martiniano 26*, XAL).

***Ruellia petiolaris** (Nees) T.F. Daniel (3)—Guerrero (*Haenke s.n.*, PR-type); Michoacán (*McVaugh 22639*, ENCB);

Oaxaca (*Alexander 500*, MEXU).

***Ruellia pringlei** Fernald (3)—Guerrero (*Pringle 10071*, GH-holotype); Michoacán (*Steinmann 3000*, CAS); Oaxaca (*Daniel et al. 5860*, CAS).

Ruellia puberula (Leonard) Tharp & F.A. Barkley (7)—Chiapas (*Laughlin 838*, DS); Guerrero (*Soto Núñez & F. Solórzano G. 12923*, MEXU); Michoacán (*Rojas 518*, MEXU); Oaxaca (*Salinas T. et al. 6898*, MEXU); Puebla (*Salinas T. 7509*, MEXU); Veracruz (*Figueroa N. et al. 13*, MEXU); Yucatán (*Simá 436*, MEXU).

***Ruellia pulcherrima** T. Anderson ex Hemsl. (7)—Ciudad de México (*Lyonnet 747*, CAS); Hidalgo (*Pringle 6902*, K); México (*Rzedowski 29538*, CAS); Michoacán (*Escobedo 1670*, MEXU); Oaxaca (*Salinas T. & Martínez C. 6111*, MEXU); Puebla (*Galeotti 1042*, K-lectotype); Veracruz (*Gouin s.n.*, P).

Ruellia pulcherrima is a homotypic synonym of *Ophthalmacanthus speciosus* Nees, the basionym of *R. speciosa* (Nees) Lindau, an illegitimate name.

***Ruellia sarukhaniana** Ramamoorthy (1)—Michoacán (*Hinton et al. 12659*, GH-holotype).

Ruellia simplex C. Wright (20)—Aguascalientes (*Camarillo C. 36*, HUAA); Campeche (*Daniel et al. 10283*, CAS); Chiapas (*Solis E. & Trujillo E. 207*, MEXU); Coahuila (*Encina & Zarate L. 1832*, MEXU); Guerrero (*Palmer 570*, GH); Hidalgo (<https://www.inaturalist.org/observations/63995726>); México (<https://www.inaturalist.org/observations/210326261>); Michoacán (*Soto N. 20906*, MEXU); Nuevo León (*Barkley 16M365*, TEX); Oaxaca (*Elorsa C. 2412*, MEXU); Puebla (*Vargas P. 66*, XAL); Querétaro (*Carranza G. 3141*, IEB); Quintana Roo (*Gaumer 2277*, F); San Luis Potosí (*Fryxell & Anderson 3463*, MEXU); Sinaloa (*Jasso & Pérez 87*, MEXU); Sonora (*Sanders et al. 13579*, CAS); Tabasco (*Curriel A. 41*, MEXU); Tamaulipas (*Sharp & Hernández X. 50/50385*, GH); Veracruz (*Nevling & Gómez P. 372*, XAL); Yucatán (*Gaumer 1236*, F).

In one of its leaf (narrow or broad) or flower color (blue-purple, pink, or white) forms *Ruellia simplex* is cultivated in every state of Mexico (fide herbarium vouchers and images on iNaturalist (2025) verified by me). It appears to be either potentially native or naturalized in the states listed above. If not at least naturalized in the remaining states of Mexico, it may become so in the future given its popularity as a cultivated plant that can either persist following or escape from cultivation.

***Ruellia sororia** Standl. (3)—Guerrero (*Nelson 2160*, US-holotype); Oaxaca (*Pérez 160*, CAS); Puebla (*Vega-Flores K 2197*, HUAP).

The collection from Puebla noted above appears to be a new distribution record for the state.

Ruellia spissa Leonard (8)—Chiapas (*Breedlove 10554*, DS); Durango (*González 3180*, IEB); Guanajuato (*Galván & Galván 3297*, IEB); Jalisco (*Palmer 218*, US-holotype); México (*Hinton 1231*, MICH); Michoacán (*Escobedo 2314*, IEB); Morelos (*Vázquez 3303*, MEXU); Nayarit (*Breedlove & Almeda 45304*, CAS).

Ruellia stemonacanthoides (Oerst.) Hemsl. (7)—Chiapas (*Breedlove & Thorne 30712*, DS); Colima (*Palmer 1313*, US); Guerrero (*Langlassé 960*, P); Jalisco (*Daniel 2115*, CAS); Nayarit (*Daniel 4007*, CAS); Oaxaca (*Cortés et al. 245*, MEXU); Tabasco (*Ventura A. 21458*, MEXU).

Langlassé 960 is the type collection of *Ruellia alboviolacea* Lindau, and it appears to differ from Mexican plants of *R. stemonacanthoides* only by its white corollas. Although most collections of the latter species have varying shades of blue-purple corollas, some from other states (e.g., Jalisco) are noted to have white flowers. Pending molecular studies, *R. alboviolacea* is tentatively treated as synonymous with *R. stemonacanthoides*. It does seem odd that all of the collections from Guerrero reportedly have white flowers. The identity of the specimen cited above from Tabasco is somewhat questionable, but it appears to pertain to this species.

***Ruellia tuxtlensis** Ramamoorthy & Y.H. Uribe (2)—Oaxaca (*Torres B. 545*, CAS); Veracruz (*Lorence 4964*, MEXU-holotype).

†**SANCHEZIA** Ruiz & Pav. (2 species, 2 naturalized)

†**Sanchezia oblonga** Ruiz & Pav. (2)—Puebla (*Acevedo 16049*, CAS); Veracruz (*Rosas 960*, MEXU).

This species, native to South America, is widely cultivated and sometimes becomes naturalized, apparently including in Mexico, where plants are often noted to be growing among coffee crops. It has often been cited under other names, including: *Sanchezia nobilis* Hook., *S. speciosa* Leonard, *S. peruviana* (Nees) Rusby, and *S. flava* Leonard.

†**Sanchezia parvibracteata** Sprague & Hutch. (4)—Chiapas (*Ventura & López 2786*, MEXU); Jalisco (*Villarreal de Puga 9697*, IBUG); Oaxaca (*Velasco G. et al. 1624*, MEXU); Puebla (*Acevedo 16049*, MEXU).

This species appears to be native in southern Central America and South America. It is widely cultivated and sometimes becomes naturalized in Mexico. Another South American species, *Sanchezia tigrina* Leonard, is sometimes cultivated in Mexico, but documentation of potentially naturalized occurrences of that species have not been encountered. It is similar to *S. parvibracteata*, but has red or reddish (vs. yellow) corollas.

SCHAUERIA Nees (1 species)

Schaueria parviflora (Leonard) T.F. Daniel (2)—Oaxaca (*Ibarra M. et al. 3700*, MEXU); Veracruz (*Daniel & Wendt 5810*, CAS).

Based on molecular phylogenetic data, this species has been excluded from the South American genus *Schaueria* (Côrtes et al., 2016). It appears to be more closely aligned with North American taxa of subtribe Tetrameriinae (McDade et al., 2018). Additional studies will be necessary to determine its generic affiliation.

SPATHACANTHUS Baill. (2 species)

Spathacanthus hahnianus Baill. (4)—Chiapas (*Breedlove & Smith 21618*, DS); Oaxaca (*Hernández G. & González L. 1855*, MEXU); Puebla (*Tenorio L. & Romero de T. 11413*, MEXU); Veracruz (*Hahn 349*, P-holotype).

Daniel (1995) discussed typification of this species. No characters have been found to distinguish the recently described *Spathacanthus magdalenae* Cast.-Campos from *S. hahnianus*.

Spathacanthus parviflorus Leonard (1)—Chiapas (*Matuda 1696*, MEXU).

STAUROGYNE Wall. (1 species)

Staurogyne miqueliana Kuntze (2)—Guerrero (*Née, Exped. Malaspina, s.n.*, MA); Jalisco (*Lott et al. 3226*, UCR).

STENANDRIUM Nees (9 species, 4 endemic)

Stenandrium barbatum Torr. & A. Gray (2)—Chihuahua (*Pringle 8501*, US); Coahuila (*Johnston et al. 10589.5J*, LL).

Stenandrium chameranthemoideum Oerst. (3)—Chiapas (*Breedlove et al. 66157*, CAS); Oaxaca (*Calzada 14487*, MEXU); Veracruz (*Liebmann 10750*, C-lectotype).

Stenandrium dulce (Cav.) Nees (22)—Aguascalientes (*Rosales C. 3093*, HUAA); Chihuahua (*Chiang et al. 9003*, MEXU); Ciudad de México (*Reiche s.n.*, MEXU); Coahuila (*Johnston & C. Muller 393*, LL); Durango (*Pinkava et al. 9373*, ASU); Guanajuato (*Rzedowski 39851*, IEB); Guerrero (*Moreno Gutiérrez et al. 920*, MEXU); Hidalgo (*Equihua*

417, IEB); Jalisco (*McVaugh 17798*, MICH); México (*Hinton et al. 754*, US); Michoacán (*Rzedowski 49374*, IEB); Nayarit (*Rose 3316*, US); Nuevo León (*Correll & Johnston 19917*, LL); Oaxaca (*Chiang C. et al. F-2557*, MEXU); Puebla (*Purpus 3340*, UC); Querétaro (*Carranza 716*, IEB); San Luis Potosí (*Purpus 5229*, UC); Sinaloa (*Rose 3179*, US); Tamaulipas (*Johnston & Crutchfield 5535A*, TEX); Tlaxcala (<https://www.inaturalist.org/observations/168743754>); Veracruz (*Nevling & Gómez P. 545*, XAL); Zacatecas (*McVaugh 17694*, MICH).

**Stenandrium manchonense* T.F. Daniel (1)—Guerrero (*Hinton et al. 10460*, US-holotype).

**Stenandrium nanum* (Standl.) T.F. Daniel (2)—Quintana Roo (*Cabrera & de Cabrera 13034*, MEXU); Yucatán (*Gaumer 1305*, F-holotype).

Stenandrium pedunculatum (Donn. Sm.) Leonard (4)—Chiapas (*Ton 2990*, DS); Colima (*McVaugh 14972*, MICH); Guerrero (*Clark 6902*, NY); Jalisco (*Bullock 1366*, MEXU).

**Stenandrium pilosulum* (S.F. Blake) T.F. Daniel (2)—Chihuahua (*Palmer 317*, GH-holotype); Sonora (*Daniel et al. 8607*, CAS).

Stenandrium subcordatum Standl. (3)—Campeche (Álvarez ʻʻʻʻ, MO); Quintana Roo (*Téllez & E. Cabrera 2288*, MEXU); Yucatán (*Bequaert 20*, GH-holotype).

**Stenandrium verticillatum* Brandegees (5)—Guanajuato (*Rzedowski 53112*, IEB); Hidalgo (*Cruz D. et al. 5514*, MEXU); Oaxaca (*Purpus 3083*, UC); Puebla (*Purpus 1238*, UC-holotype); Querétaro (*Rzedowski 53132*, IEB).

STENOSTEPHANUS Nees (15 species, 10 endemic)

**Stenostephanus alushii* T.F. Daniel (1)—Chiapas (*Ton 5340*, MEXU-holotype).

**Stenostephanus breedlovei* T.F. Daniel (1)—Chiapas (*Breedlove 49995*, CAS-holotype).

**Stenostephanus chiapensis* T.F. Daniel (1)—Chiapas (*Breedlove & Burns 72688*, CAS-holotype).

Stenostephanus glaber (Leonard ex Lundell) T.F. Daniel (1)—Chiapas (*Matuda S-212*, US-holotype).

Stenostephanus gracilis (Oerst.) T.F. Daniel (1)—Chiapas (*Croat 47536*, MO).

**Stenostephanus guerrerensis* T.F. Daniel (1)—Guerrero (*Breedlove 36060*, CAS-holotype).

Stenostephanus haematodes (Schltdl.) T.F. Daniel (5)—Hidalgo (*Hernández M. 5335*, MEXU); Oaxaca (*Daniel & Acosta C. 8359*, CAS); Puebla (*Ventura A. 20491*, MEXU); San Luis Potosí (*Alcorn 3195*, TEX); Veracruz (*Schiede s.n.*, type).

Daniel et al. (2024) indicated why an earlier report of an occurrence of this species in Guerrero was likely an error. Schiede's type collection is represented at several herbaria, and designation of a lectotype is currently under study.

**Stenostephanus harleyi* (Wassh.) T.F. Daniel (1)—Guerrero (*Reveal et al. 4239*, US-holotype).

Stenostephanus latilabris (D.N. Gibson) T.F. Daniel (1)—Chiapas (*Matuda 2485*, MEXU).

**Stenostephanus madrensis* T.F. Daniel (1)—Oaxaca (*Campos V. 4736*, CAS-holotype).

Stenostephanus monolophus (Donn. Sm.) T.F. Daniel (1)—Chiapas (*Breedlove & Smith 22692*, DS).

**Stenostephanus oaxacanus* T.F. Daniel (1)—Oaxaca (*Carlson 4022*, F-holotype).

**Stenostephanus purpusii* (Brandege) T.F. Daniel (1)—Chiapas (*Purpus 6842*, UC-holotype).

**Stenostephanus silvaticus* (Nees) T.F. Daniel (4)—Chiapas (*Breedlove 49899*, CAS); Oaxaca (*Jürgensen 902*, K-lectotype); Tabasco (*Guadarrama O. et al. 6104*, ENCB); Veracruz (*Sinaca C. et al. 522*, MEXU).

**Stenostephanus tacanensis* (Acosta & R. Fernández) T.F. Daniel (1)—Chiapas (*Breedlove & Almeda 47714*, MEXU-holotype).

STREBLACANTHUS Kuntze (1 species)

Streblacanthus monospermus Kuntze (2)—Oaxaca (*Hernández G. 1060*, CAS); Veracruz (*Campos V. et al. 7600*, MEXU).

TETRAMERIUM Nees (26 species, 23 endemic)

**Tetramerium abditum* (Brandege) T.F. Daniel (6)—Chihuahua (*LeSueur 1260*, TEX); Durango (*González & Rzedowski 2416*, IEB); Michoacán (*Carranza & Steinmann 6318*, CAS); Nayarit (*Magallanes 3540*, CAS); Sinaloa (*Kinnach & Sánchez Mejorada 1988*, US); Sonora (*Brandege s.n.*, UC-holotype).

**Tetramerium barlerioides* (Nees) T.F. Daniel (3)—Guerrero (*von Humboldt s.n.*, B-W-holotype); Morelos (*González Q. 3631*, ENCB); Puebla (*Croat & Hannon 65721*, MEXU).

**Tetramerium butterwickianum* T.F. Daniel (1)—Michoacán (*Daniel & Butterwick 3267*, CAS-holotype).

**Tetramerium carranzae* T.F. Daniel (3)—Guanajuato (*Carranza & Cervantes 5470*, IEB-holotype); Hidalgo (*Guízar et al. 5325*, MEXU); Querétaro (*Carranza G. 3018*, IEB).

**Tetramerium crenatum* T.F. Daniel (1)—Oaxaca (*Morton & Makrinius 2680*, US-holotype).

**Tetramerium cruzii* T.F. Daniel (1)—Guerrero (*Cruz 8344*, FCME-holotype).

**Tetramerium diffusum* Rose (3)—Colima (*Palmer 994*, US-syntypes); Jalisco (*Daniel 2097*, ASU); Michoacán (*Daniel & Butterwick 3251*, CAS).

**Tetramerium emilyanum* T.F. Daniel (1)—Michoacán (*Daniel & Butterwick 3258*, CAS-holotype).

**Tetramerium fruticosum* Brandege (3)—Baja California (*Rebman 17226*, SD-image); Baja California Sur (*Purpus 489*, UC-holotype); Sonora (*Wiggins 6055*, DS).

**Tetramerium glandulosum* Oerst. (14)—Baja California Sur (*Dominguez León 4032*, SD-image); Chihuahua (*Bye et al. 9210*, ASU); Colima (*McVaugh & Koelz 1448*, MICH); Durango (*Breedlove & Almeda 56273*, CAS); Guerrero (*Soto N. 17546*, MEXU); Jalisco (*Daniel 2104*, ASU); México (*Daniel & Denham-Logsdon 12600*, CAS); Michoacán (*Hinton et al. 15824*, US); Morelos (*Lorence 5018*, MEXU); Oaxaca (*Liebmann 10751*, C-syntypes); Puebla (*Purpus 462*, UC); Sinaloa (*Gentry 5066*, ARIZ); Sonora (*Moran 4033*, SD); Zacatecas (*Rodríguez-Pérez 7673*, HZAC-image).

**Tetramerium glutinosum* Lindau (5)—Guerrero (*Daniel et al. 3342*, CAS); México (*Hinton 3589*, US); Michoacán (*Steinmann et al. 4116*, IEB); Morelos (*Seler & Seler 401*, B-holotype, destroyed, photo: MO); Puebla (*Boege 2715*, MEXU).

Daniel's (2000) report of this species from Nayarit (based on *Vázquez S. 1962* at MEXU) was erroneous; that collection is from Morelos.

**Tetramerium guerrerense* T.F. Daniel (1)—Guerrero (*Hinton et al. 11000*, GH-holotype).

***Tetramerium langlassei** G.B. Happ (4)—Guerrero (*Langlassé 713*, GH-holotype); Jalisco (*Villalpanto I. s.n.*, IBUG); Michoacán (*Daniel et al. 3310*, CAS); Veracruz (*Higgins 2537*, ENCB).

***Tetramerium mcvaughii** T.F. Daniel (1)—Colima (*Daniel & Butterwick 3247*, CAS-holotype).

***Tetramerium michoacanum** T.F. Daniel (1)—Michoacán (*Rojas 735*, MEXU-holotype).

Tetramerium nemorum Brandegees (4)—Chiapas (*Laughlin 2996*, DS); Oaxaca (*Yahara et al. 2856*, MEXU); Veracruz (*Purpus 6071*, UC-holotype); Yucatán (*Millspaugh 1621*, F).

Tetramerium nervosum Nees (28)—Aguascalientes (*Siqueiros 1948*, HUAA); Baja California Sur (*Moran 6925*, SD); Campeche (*Cabrera & de Cabrera 15174*, MEXU); Chiapas (*Breedlove 23416*, DS); Chihuahua (*Gentry 2886*, ARIZ); Coahuila (*Muller 3125*, US); Colima (*Palmer 1132*, GH); Durango (*Palmer 625*, US); Guanajuato (*Ventura V. & López P. 9890*, IEB); Guerrero (*Hinton et al. 9806*, GH); Hidalgo (*Chase 7104*, GH); Jalisco (*McVaugh 17789*, MICH); México (*Hinton 2991*, US); Michoacán (*Rzedowski 50410*, IEB); Morelos (*Lyonnet 2813*, ENCB); Nayarit (*Rose et al. 14277*, US); Nuevo León (*Johnston & Barkley 16011M*, TEX); Oaxaca (*Salinas T. et al. 6496*, MEXU); Puebla (*Tenorio & Frame 12025*, MEXU); Querétaro (*Carranza G. 562*, IEB); Quintana Roo (*Cabrera 16953*, MEXU); San Luis Potosí (*Purpus 5230*, UC); Sinaloa (*Gentry 4978*, ARIZ); Sonora (*Daniel et al. 8636*, CAS); Tamaulipas (*Bartlett 10709*, MICH); Veracruz (*Purpus 2259*, UC); Yucatán (*Gaumer 398*, F); Zacatecas (*Enriquez E. et al. 1315*, MEXU).

***Tetramerium oaxacanum** T.F. Daniel (2)—Chiapas (*Daniel et al. 5864*, CAS); Oaxaca (*Fryxell & Lott 3390*, CAS-holotype).

***Tetramerium obovatum** T.F. Daniel (1)—Oaxaca (*MacDougall s.n.*, NY-holotype).

***Tetramerium pauciflorum** T.F. Daniel & V.W. Steinm. (1)—Michoacán (*Steinmann, Carranza & Pérez 2310*, MEXU-holotype).

***Tetramerium rubrum** G.B. Happ (5)—Guerrero (*Hinton et al. 11318*, US); Jalisco (*Rzedowski 16639*, ENCB); México (*Hinton 3767*, K-holotype); Michoacán (*Daniel & Butterwick 3270*, CAS); Nayarit (*Benítez P. 3803*, MEXU).

***Tetramerium rzedowskii** T.F. Daniel (1)—Michoacán (*Daniel 2145*, CAS-holotype).

Tetramerium tenuissimum Rose (17)—Campeche (*Daniel et al. 10276*, CAS); Chiapas (*Martínez S. & García 21999*, MEXU); Chihuahua (*Martin s.n.*, ARIZ); Colima (*Palmer 1297*, US-syntypes); Guanajuato (*Ventura V. & López P. 7628*, IEB); Guerrero (*Hinton et al. 5841*, NY); Jalisco (*Daniel et al. 3281*, CAS); México (*Daniel et al. 12328*, CAS); Michoacán (*Hinton et al. 16196*, US); Morelos (*Dunn & D. Dunn 18630*, NY); Nayarit (*Daniel & Butterwick 3209*, CAS); Oaxaca (*Daniel et al. 11799*, CAS); Sinaloa (*Shreve 7798*, ARIZ); Sonora (*Gentry 1084*, ARIZ); Veracruz (*Dorantes et al. 1812*, XAL); Yucatán (*Carnevali et al. 6429*, CICY); Zacatecas (*Rodríguez-Pérez 7676*, HZAC-image).

***Tetramerium tetramerioides** (Lindau) T.F. Daniel (1)—Oaxaca (*Seler & Seler 1632*, K-lectotype).

***Tetramerium vargasiae** T.F. Daniel & R. Cruz-Durán (1)—Guerrero (*Vargas P. 288*, FCME-holotype).

***Tetramerium yaquianum** T.F. Daniel (1)—Sonora (*Daniel 3372*, CAS-holotype).

†**THUNBERGIA** Retz. (2 species, 2 naturalized)

†**Thunbergia alata** Bojer ex Sims (15)—Chiapas (*Ton 4636*, CAS); Ciudad de México (*Rosbach S. s.n.*, MEXU); Guerrero (*Soto Núñez & Román G. 10166*, MEXU); Hidalgo (*Hernández M. & Tenorio L. 7041*, MEXU); Jalisco (*Sánchez M. s.n.*, IBUG); México (*Hinton 5154*, US); Michoacán (*Argüelles 2042*, MEXU); Morelos (*Fuchs 1586*, MEXU); Nayarit (*Jones 23138*, POM); Oaxaca (*Conzatti 3832b*, MEXU); Puebla (*Zola B. 115*, MEXU); Querétaro (*Zamudio & Carranza 11223*, IEB); San Luis Potosí (*Rzedowski 7219*, MEXU); Tabasco (*Magaña & Zamudio 440*, MEXU); Veracruz (*Sousa & P. de*

Sousa 21, MEXU).

This species, native to eastern and southern Africa, is commonly cultivated throughout Mexico, and often becomes naturalized. The specimens cited above appear to represent naturalized occurrences. Additional images on iNaturalist (2025) reveal the occurrence of this species, largely based on cultivated plants, in all Mexican states except Baja California Sur, Campeche, Chihuahua, and Yucatán. It likely is cultivated in those states as well.

†**Thunbergia fragrans** Roxb. (15)—Campeche (*Hernández X. & Chavelas P. ES-644*, XAL); Chiapas (*Ventura & López 1164*, MEXU); Guerrero (*Soto Núñez et al. 12135*, MEXU); Hidalgo (*Hernández M. & Tenorio L. 7039*, MEXU); Jalisco (*Villarreal de Puga 16480*, IBUG); Morelos (*Torres 189*, MEXU); Nayarit (*Jenkins & Todd 96-156*, ARIZ); Oaxaca (*Pascual 609*, MEXU); Puebla (*Márquez R. et al. 748*, MEXU); Querétaro (*Rubio 1166*, MEXU); San Luis Potosí (*Alcorn 1655*, MEXU); Tabasco (*Ventura A. 21322*, MEXU); Tamaulipas (*Mora-Olivo 7777*, BRIT); Veracruz (*Chiang 309*, MEXU); Yucatán (*Narváez et al. 218*, UC).

This species, native to India, is widely cultivated in Mexico and sometimes becomes naturalized. The specimens cited above represent naturalized or potentially naturalized occurrences. Additional images on iNaturalist (2025) reveal occurrences (apparently mostly cultivated) in Colima, Michoacán, Nuevo León, and Sinaloa. Other species of *Thunbergia*, including *T. erecta* (Benth.) T. Anderson, *T. grandiflora* Roxb., and *T. laurifolia* Lindl., are cultivated, sometimes persist, and may potentially become naturalized in Mexico.

YEATESIA Small (2 species, 1 endemic)

***Yeatesia mabryi** Hilsenb. (1)—Tamaulipas (*Palmer 175*, F-holotype).

Yeatesia platystegia (Torr.) Hilsenb. (3)—Coahuila (*Palmer 258*, GH); Nuevo León (*Hinton et al. 21153*, TEX); Tamaulipas (*Bartlett 10557*, NY).

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LITERATURE CITED

- ARAGÓN-PARADA, J., A. J. GARCÍA-MENDOZA, AND G. GONZÁLEZ-ADAME. 2021. Listado florístico y comunidades vegetales del Cerro Giubldan, San Bartolomé Quialana, Oaxaca, México. *Acta Bot. Mex.* 128: e1797. <https://doi.org/10.21829/abm128.2021.1797>
- BEDDOME, R. H. 1908. Acanthaceae, with annotated list of the species known to have been in cultivation. *J. Roy. Hort. Soc.* 34: 54–96.
- CARNEVALI FERNÁNDEZ-CONCHA, G., G. A. ROMERO GONZÁLEZ, J. L. TAPIA-MUÑOZ, I. RAMÍREZ MORILLO, C. J. RAMÍREZ-DÍAZ, W. CETZAL-IX, S. MADRIÑAN, T. PINZÓN, M. P. CONTRERAS, AND R. DUNO DE STEFANO. 2024. A new species of *Justicia* (Acanthaceae) from the Mexican Yucatan Peninsula: 100 years of confusion with *Justicia carthagenensis*. *Syst. Bot.* 49: 48–67.
- CÔRTEZ, A. L. A., T. F. DANIEL, AND A. RAPINI. 2016. Taxonomic revision of the genus *Schaueria* (Acanthaceae). *Pl. Syst. Evol.* 302: 819–851. <https://doi.org/10.1007/s00606-016-1301-y>
- CRUZ DURÁN, R., AND M. E. GARCÍA GRANADOS. 2012. Presencia de *Ruellia jaliscana* Standl. (Acanthaceae. sect. *Chiropterophila*) en la flora del estado de Guerrero, México. *Bot. Sci.* 90: 353–356.
- CULLEN, J., J. C. M. ALEXANDER, C. D. BRICKELL, J. R. EDMONDSON, P. S. GREEN, V. H. HEYWOOD, P.-M. JØRGENSEN, S. L. JURY, S. G. KNEES, H. S. MAXWELL, D. M. MILLER, N. K. B. ROBSON, S. M. WALTERS, AND P. F. YEO, eds. 2000. CCXXVI. Acanthaceae. *The European Garden Flora*, 6(4): 356–370.
- DANIEL, T. F. 1984. (738) Proposal to conserve 8104 *Carlwrightia* against *Cardiakanthus* (Acanthaceae). *Taxon* 33: 122–123.
- DANIEL, T. F. 1989. The correct name, author, and type of the common *Henrya* (Acanthaceae), and neotypification of *Justicia scorpioides* L. *Taxon* 38: 265–270.
- DANIEL, T. F. 1993a. Mexican Acanthaceae: diversity and distribution. Pages 541–558 in T. P. RAMAMOORTHY, R. BYE, A. LOT, AND J. FA, eds., *Biological Diversity of Mexico: Origins and Distribution*. Oxford University Press, New York.
- DANIEL, T. F. 1993b. New and reconsidered Mexican Acanthaceae. *V. Contr. Univ. Michigan Herb.* 19: 271–291.
- DANIEL, T. F. 1995. Acanthaceae. Pages 1–158 in D. E. BREEDLOVE, ed., *Flora of Chiapas*, Pt. 4. California Academy of Sciences, San Francisco.
- DANIEL, T. F. 1996. New and reconsidered Mexican Acanthaceae. *VII. Polibotanica* 2: 1–9.
- DANIEL, T. F. 1997. The Acanthaceae of California and the peninsula of Baja California. *Proc. Calif. Acad. Sci.* 49: 309–403.
- DANIEL, T. F. 1998. Pollen morphology of Mexican Acanthaceae: diversity and systematic significance. *Proc. Calif. Acad. Sci.* 50: 217–256. <https://www.biodiversitylibrary.org/page/15659827#page/227/mode/1up>
- DANIEL, T. F. 1999. Acanthaceae A. L. Juss. Pages 5–102 in P. D. DÁVILA ARANDA, J. L. VILLASEÑOR RÍOS, R. MEDINA LEMOS, AND O. TÉLLEZ VALDÉS, eds., *Flora del Valle de Tehuacán-Cuicatlán* 23: 5–102. <https://doi.org/10.22201/ib.9786073061544e.2022>
- DANIEL, T. F. 2000 [1999]. Nuevos registros estatales de Acanthaceae en México. *Bol. Inst. Bot. Univ. Guadalajara* 7: 51–59.
- DANIEL, T. F. 2004. Acanthaceae of Sonora: taxonomy and phytogeography. *Proc. Calif. Acad. Sci.* 55: 690–805. https://www.researchgate.net/publication/292026052_Acanthaceae_of_Sonora_Taxonomy_and_phytogeography
- DANIEL, T. F. 2007. New taxa of *Justicia* (Acanthaceae) from southern Mexico and Guatemala. *Contr. Univ. Michigan Herb.* 25: 179–189.
- DANIEL, T. F. 2010. Catalog of Guatemalan Acanthaceae: taxonomy, ecology, and conservation. *Proc. Calif. Acad. Sci.* 61: 291–379. <https://www.biodiversitylibrary.org/page/63535875#page/293/mode/1up>
- DANIEL, T. F. 2011. *Justicia* (Acanthaceae) in Texas. *J. Bot. Res. Inst. Texas* 5: 595–618.
- DANIEL, T. F. 2013a. Mexican Acanthaceae: updated summary, new or noteworthy distribution records, and a list of taxa in Jalisco, Mexico. *Ibugana* 4: 3–13. http://ibugana.cucba.udg.mx/ibugana_4_integrada_2013-06-26.pdf

- DANIEL, T. F. 2013b. Taxonomic, distributional, and nomenclatural notes on North American Acanthaceae. *Mem. New York Bot. Gard.* 108: 85–114.
- DANIEL, T. F. 2016. New distribution records for Acanthaceae in Mexico. *Phytoneuron* 2016-26: 1–13. <https://www.phytoneuron.net/2016Phytoneuron/26PhytoN-AcanthaceaeDistribution.pdf>
- DANIEL, T. F. 2017. New and reconsidered Mexican Acanthaceae XII. *Proc. Calif. Acad. Sci.* 64: 131–154.
- DANIEL, T. F. 2024 [2022]. Acanthaceae of the Nueva Galicia region of west-central Mexico: key to genera, species list with distributions by state, and a new species—*Justicia wilburii*. *Rhodora* 124: 228–253.
- DANIEL, T. F., AND S. ACOSTA CASTELLANOS. 2003. Familia Acanthaceae. Pages 117–173 in J. RZEDOWSKI AND G. CALDERÓN DE RZEDOWSKI, eds., *Flora del Bajío y de Regiones Adyacentes* 117. Instituto de Ecología, Pátzcuaro.
- DANIEL, T. F., AND D. DENHAM-LOGSDON. 2025. Acanthaceae in the State of Mexico, Mexico: keys, ecological data, images, and documented occurrences. *Acta Bot. Mex.* 132: e2457. <https://doi.org/10.21829/abm132.2025.2457>
- DANIEL, T. F., AND J. HENRICKSON. 1982. On the recognition of *Anisacanthus junceus* (Acanthaceae). *Brittonia* 34: 177–180.
- DANIEL, T. F., AND E. LOTT. 1993. *Stauroyne agrestis* (Acanthaceae), a genus and species new to Mexico. *Sida* 15: 367–372. <https://www.biodiversitylibrary.org/item/34597#page/375/mode/1up>
- DANIEL, T. F., AND L. A. MCDADE. 2014. Nelsonioideae (Lamiales: Acanthaceae): revision of genera and catalog of species. *Aliso* 32: 1–45. <https://doi.org/10.5642/aliso.20143201.02>
- DANIEL, T. F., AND D. RODRÍGUEZ. 2016. New distribution records for Acanthaceae in El Salvador with a list of native and naturalized species noting occurrences by department. *Phytoneuron* 2016-31: 1–8. <https://www.phytoneuron.net/2016Phytoneuron/31PhytoN-SalvadoranAcanthaceae.pdf>
- DANIEL, T. F., AND E. A. TRIPP. 2018. *Louteridium* (Acanthaceae: Acanthoideae: Ruellieae: Trichantherinae): taxonomy, phylogeny, reproductive biology, and conservation. *Proc. Calif. Acad. Sci.* 65: 41–106.
- DANIEL, T. F., L. J. GARCÍA-MORALES, AND A. MORA-OLIVO. 2021. Taxonomic and photographic guide to the Acanthaceae of Tamaulipas, Mexico. *Proc. Calif. Acad. Sci.* 67: 185–228. <https://doi.org/10.5281/zenodo.11513051>
- DANIEL, T. F., D. DENHAM-LOGSDON, B. Y. BEDOLLA GARCÍA, J. G. GONZÁLEZ-GALLEGOS, P. CARRILLO-REYES, AND D. S. FIGUEROA. 2024. Mexican Acanthaceae: new distribution records and taxonomic notes on noteworthy species. *Phytoneuron* 2024-73: 1–15. <https://www.phytoneuron.net/wp-content/uploads/2024/11/73PhytoN-MexicanAcanthaceae.pdf>
- DARBYSHIRE, I., K. VOLLESEN, AND E. KELBESSA. 2010. Acanthaceae (Part 2). Pages 287–756 in H. J. BEENTJE, ed., *Flora of Tropical East Africa*. Royal Botanic Gardens, Kew.
- DAVIS, H. B. 1936. *Life and Work of Cyrus Guernsey Pringle*. University of Vermont, Burlington.
- HARVARD UNIVERSITY HERBARIA & LIBRARIES. 2025. Index of Botanical Specimens: Bourgeau collections from 1865, observed 5 January–22 September 2025. https://kiki.huh.harvard.edu/databases/specimen_search.php?cltrid=47763&yearcollected=1865
- HENRICKSON, J. 1986. *Anisacanthus quadrifidus* sensu lato (Acanthaceae). *Sida* 11: 286–299.
- HENRICKSON, J. 1999. Studies in the genus *Dyschoriste* (Acanthaceae): I. Plants of northern Mexico, Texas to Arizona. *Lundellia* 2: 72–99.
- INATURALIST. 2025. Observations of *Dicliptera peduncularis*, *Elytraria imbricata*, *Hypoestes phyllostachya*, *Nelsonia canescens*, *Pseuderanthemum praecox*, *Ruellia microphylla*, *Ruellia simplex*, *Stenandrium dulce*, *Thunbergia alata*, and *T. fragrans* from Mexico, observed between 5 January and 22 September 2025. <https://www.inaturalist.org>
- JACQUIN, N. J. 1760. *Enumeratio Systematica Plantarum, quas in Insulis Caribaeis Vicinaque Americae Continente Detexit Novas, aut Jam Cognitas Emendavit*. Lugduni Batavorum, Leiden.
- JARVIS, C. 2007. *Order Out of Chaos, Linnaean Plant Names and their Types*. Linnean Society of London, London.
- KARTHIKEYAN, S., M. SANJAPPA, AND S. MOORTHY. 2009. *Flowering Plants of India, Dicotyledons, Vol. 1* (Acanthaceae–Avicenniaceae). Botanical Survey of India, Kolkata.
- KIEL, C. A., AND L. A. MCDADE. 2014. The *Mirandea* clade (Acanthaceae, Justicieae, *Tetramerium* lineage): phylogenetic signal from molecular data and micromorphology makes sense of taxonomic confusion caused by remarkable diversity of floral form. *Syst. Bot.* 39: 950–964.
- KIEL, C. A., T. F. DANIEL, I. DARBYSHIRE, AND L. A. MCDADE. 2017. Unraveling relationships in the morphologically diverse and taxonomically challenging “justicioid” lineage (Acanthaceae: Justicieae). *Taxon* 66: 645–674.
- MANZITTO-TRIPP, E. A., I. DARBYSHIRE, T. F. DANIEL, C. A. KIEL, AND L. A. MCDADE. 2022. Revised classification of Acanthaceae and worldwide dichotomous keys. *Taxon* 71: 103–153. <https://doi.org/10.1002/tax.12600>
- MANZITTO-TRIPP, E. A., AND T. F. DANIEL. 2023. Phylogeny and revised classification of New World *Ruellia*. *Taxon* 72: 1034–1056. <https://doi.org/10.1002/tax.13001>
- MCDADE, L. A., T. F. DANIEL, AND C. A. KIEL. 2018. The *Tetramerium* lineage (Acanthaceae, Justicieae) revisited: phylogenetic relationships reveal polyphyly of many New World genera accompanied by rampant evolution of floral morphology. *Syst. Bot.* 43: 97–116.
- PADILLA VELARDE, E., R. CUEVAS GUZMÁN, AND S. D. KOCH. 2008. Plantas vasculares y de la parte alta del Arroyo Agua Fria, Municipio de Minatitlán, Colima, México. *Acta Bot. Mex.* 84: 25–72.
- PHILLIPSON, P. B., L. ANDRIAMAHEFARIVO, M. W. CALLMANDER, T. F. DANIEL, I. DARBYSHIRE, C. A. KIEL, R. LETSARA, L. MCDADE, AND E. TRIPP. 2022. Acanthaceae. Pages 789–799 in S. M. GOODMAN ET AL., eds., *The New Natural History of Madagascar*.

- Princeton University Press. Princeton. <https://doi.org/10.2307/j.ctv2ks6tbb.103>
- REFLORA. 2025. Acanthaceae in *Flora e Funga do Brasil*. Jardim Botânico do Rio de Janeiro. <https://floradobrasil.jbrj.gov.br/FB33>
- SCOTLAND, R. W., AND K. VOLLESEN. 2000. Classification of Acanthaceae. *Kew Bull.* 55: 513–589. <https://doi.org/10.2307/4118776>
- STANDLEY, P. C. 1930. *Flora of Yucatan*. Publ. Field Mus. Nat. Hist., Bot. Ser. 3(3): 157–492.
- STAPF, O. 1913. *Ruellia harveyana*. *Bot. Mag.* 139: t. 8485.
- THARP, B. C., AND F. A. BARKLEY. 1949. The genus *Ruellia* in Texas. *Amer. Midl. Naturalist* 42: 1–86.
- TRIPP, E. A. 2010. Taxonomic revision of *Ruellia* section *Chiropterophila* (Acanthaceae): a lineage of rare and endemic species from Mexico. *Syst. Bot.* 35: 629–661.
- TURNER, B. L. 1991. Texas species of *Ruellia* (Acanthaceae). *Phytologia* 71: 281–299.
- TURNER, B. L. 2003. New varietal and species combinations for taxa occurring in Texas. Pages 4–8 in B. L. TURNER, H. NICHOLS, G. DENNY, AND O. DORON, *Atlas of the Vascular Plants of Texas*, Vol. 1. *Sida Bot. Misc.* 24: 1–648.
- UDUPA, S., M. KUMAR, N. K. RAMESHA, S. A. THORAT, A. KANIYASSERY, H. K. CHANDRASHEKAR, V. PANDI, M. B. JOSHI, T. S. MURALI, AND A. MUTHUSAMY. 2025. Acanthaceae-derived bioactive compounds—unravelling their therapeutic potential and insights into *in silico* antiviral applications: a systematic review. *S. African J. of Bot.* 180: 219–235. <https://doi.org/10.1016/j.sajb.2025.03.008>
- VOLLESEN, K. 2008. Acanthaceae (Part 1). Pages 1–286 in H. J. BEENTJE AND S. A. GHAZANFAR, eds. *Flora of Tropical East Africa*. Royal Botanic Gardens, Kew.
- ZAKARIA, S. M., C. N. AMRI, AND R. SHAHARI. 2020. Ethnobotany and traditional knowledge of Acanthaceae in peninsular Malaysia: a review. *Pharmacogn. J.* 12: 1482–1488.