

9. *P. HELLERI* Small. Very common on limestone hills, Grand Prairie, Edwards Plateau, and Trans-Pecos, from Tarrant, McLennan, Travis, and Comal counties westward to Pecos and Reagan counties. The widely spreading stem pubescence, short thick spikes or heads, and large corollas make this a distinctive and easily recognized species.

10. *P. LANCEOLATA* L. As yet an infrequent introduction in cities. DALLAS Co.: s.e. corner of McKinney and St. Paul, Dallas, *Shinners* 9224, May 3, 1947. An additional collection extending the range of this plant to the Trans-Pecos may be cited. BREWSTER Co.: Alpine, *Cory* 53172, May 15, 1946.

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Mexican Species of *Desmanthus* (Leguminosae)

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Of the world's recognized species of *Desmanthus*, nearly half are found in Mexico. Sixteen species and three varieties are recognized in the present paper. Ten are restricted to Mexico, seven extend a relatively short distance from or inside its border, and two are weedy species widely distributed in tropical areas of North, South, and Central America.

Britton & Rose (1928) described nine new species in their treatment of *Desmanthus* (as *Acuan*). In the present paper two of these are reduced to synonymy (*A. latum* and *A. Arsenei*); in addition, 2 species and one variety are described as new. From the sparsity of herbarium material

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from Mexico, it seems not unlikely that additional new species will be found, particularly in the little-botanized areas of Michoacan and Guerrero. It is interesting to note that four shrubby species of the genus were omitted by Standley (Trees & Shrubs of Mexico, Contrib. U.S. Nat. Herb. 23: 366) as recently as 1922. Unfortunately, the genus has not been studied adequately by past workers. Britton & Rose base many of their novelties on the merest fragments, frequently using immature or abortive pods for the basis of new species. At the opposite extreme are those botanists who lump all collections under one or two convenient names.

Since the above additions and subtractions, along with the state of existing keys, may lead to difficulty in determining species of the genus, a key to all the plants occurring or expected to occur in Mexico is offered here.

I am indebted to Dr. I. L. Wiggins for permission to publish his contemplated new combinations, and to Dr. Lloyd H. Shinnars for Latin descriptions. Grateful acknowledgment is made also to the following Herbaria for the loan of material:

US United States National Herbarium
 NY New York Botanical Garden Herbarium
 M University of Michigan Herbarium
 D Dudley Herbarium, Stanford University

KEY TO MEXICAN SPECIES OF DESMANTHUS

1. Lowest flowers in head with staminodes 12-18 mm. long, conspicuously exceeding the upper anther-bearing stamens (Baja California and Sonora).
 2. Pod 5-6 mm. wide, 5-9 cm. long; petiole 10-25 mm. long.....1. *D. fruticosus*
 2. Pod 2.6-3.2 mm. wide, 3-5 cm. long; petiole 3-6 mm. long.....2. *D. Palmeri*
1. Lowest flowers in head with staminodes 5-11 mm. long or absent, scarcely exceeding the upper anther-bearing stamens.
 3. Stamens 5, pod 1- or 2-seeded.....3. *D. oligospermus*
 3. Stamens 10, pod 4-many-seeded.
 4. Leaflets pubescent and with raised reticulate veins on the lower surface.....4. *D. obtusus*
 4. Leaflets without raised reticulate veins, pubescent along the margins only.
 5. Stipules pubescent; stems conspicuously pubescent, especially along the angles, the younger terminal portions densely so.
 6. Stems densely short-pubescent throughout; pod narrow, 2-3 mm. wide, 3-9 cm. long, apex acute.....5. *D. velutinus*
 6. Stems with pubescence concentrated along

- the angles, not evenly pubescent throughout; pod 3-5 mm. wide, 2-4 cm. long, apex blunt or apiculate.....6. *D. Painteri*
5. Stipules glabrous or with but 1-5 scattered hairs; stems glabrous or with a scattered pubescence along the angles, younger terminal portions never densely white-pubescent.
7. Pod densely short-pubescent (Fig. 1); ovary, when at least 4 mm. long, densely white-pubescent.....7. *D. pubescens*
7. Pod glabrous; ovary glabrous.
8. Pod linear-oblong, incurved, 1-3 cm. long, 5 mm. wide; seeds 6-11, almost transverse in pod (Fig. 2).....8. *D. pumilus*
8. Pod linear, 3-14 cm. long, 2-4 mm. wide (rarely 5 mm. wide in *D. virgatus*); seeds 10-many, more or less oblique but not almost transverse.
9. Pinnæ 8-14 pairs; petiolar gland borne near base of the petiole, above the pulvus, subtended by 2 small stipels (Fig. 3).....9. *D. bicornutus*
9. Pinnæ 1-8 pairs; petiolar gland borne at top of petiole between the lowest pair of pinnæ, not subtended by stipels.
10. Pod apex subulate or acuminate, produced into a pronounced slender beak, tip of pod 5-10 mm. from the uppermost seed (Fig. 4a)
11. Petioles 3-6 mm. long; petiolar gland absent on most of the leaves.....10. *D. interior*
11. Petioles 6-10 mm. long (sometimes less), the petiolar gland present on all the leaves.
12. Seeds longitudinal in pod, linear or elliptic, 2.6-2.8 mm. long, 1-2 mm. wide (Fig. 4b), pod very narrow, 2 mm. wide, incurved (Fig. 4a).....11. *D. rostratus*
12. Seeds oblique in pod (sometimes only slightly so), oval or rhomboidal, 3-3.6 mm. long, 2.5-2.7 mm. wide (Fig. 4c); pod 2.5-3.5 mm. wide, scarcely incurved.....12. *D. subulatus*
10. Pod apex acute, short pointed, or merely obtuse, never subulate or produced into a slender beak, tip of pod 1-5 mm. from the uppermost seed.
13. Petiolar gland on well developed leaves small, orbicular, stipitate (Fig. 5); pinnæ 1-3 pairs only; seeds large, rectangular, pointed, often covered with a grey scurf, 4.5-5.5 mm. long, 2.5-2.8 mm. wide; older stems with thin greyish bark; plant a shrub 1 m. tall or more.....13a. *D. Covillei*
13. Petiolar gland sessile or absent; pinnæ 2-7 pairs, seed variously shaped, 2.0-4.5 mm. long; 2-2.5 mm. wide; stems reddish to green; plant herbaceous or suffrutescent (sometimes shrubby in *D. virgatus*).
14. Stipules small, 1-2 mm. long, subulate, often absent; peduncle 1-2 cm. long.....14. *D. Cooleyi*
14. Stipules 2-6 mm. long, linear, mostly persistent; peduncle 1-6 cm. long.
15. Plants erect or ascending; petiolar gland large 0.8-3 mm. long.
16. Seeds rectangular, large, 4-4.5 mm. long, 2.3-2.5 mm. wide; pinnæ 1-3 pairs; plants of southern Arizona.....13b. *D. Covillei* var. *arizonicus*
16. Seeds ovate, smaller, 2-3 mm. long; pinnæ 3-7 pairs; plants of Coahuila and southeastward.
17. Leaves with only 1 petiolar gland between the lowest pair of pinnæ; plants of the coastal

- regions.....15a. *D. virgatus*
17. Leaves (at least some of them) with 1-4 orbicular to elliptic glands between the upper pinnae; plants of mountainous areas of northern Mexico and western Texas.....15b. *D. virgatus* var. *glandulosus*
15. Plants decumbent or somewhat ascending; petiolar gland 0.4-0.8 mm. long, or absent.
18. Fruiting peduncles 1.3 cm. long; pinnae 2-4 pairs; plants of coastal areas.....15c. *D. virgatus* var. *depressus*
18. Fruiting peduncles 3.3-6 cm. long; pinnae (on well developed leaves) 4-6 pairs; plants of mountainous areas near Monterrey.....16. *D. Pringlei*

1. *D. FRUTICOSUS* Rose. Erect weak or stout shrubs, 1-3.5 m. high. Widely distributed along coastal areas of BAJA CALIFORNIA. San Jose del Cabo, *T. S. Brandegees s.n.*, Oct. 7, 1899, also Sept. 14, 1890 (NY). Todos Santos, *M. E. Jones 24090*, Feb. 11, 1923 (NY). 15 mi. west of La Paz, *B. J. Hammerly 215*, Oct. 7, 1941 (D). Coyote Bay, Bahia Concepcion, *H. S. Gentry 4069*, Nov. 24, 1938 (D). Hills south of Barril, *C. F. Harbison 41585*, March 20, 1947 (D). 24 mi. south of Mulege, *I. L. Wiggins 11422*, Nov. 15, 1946 (D).

2. *D. Palmeri* (Britton & Rose) Wiggins, comb. nov. *Acuan Palmeri* Britton & Rose, *N. Amer. Fl.* 23: 136. 1928. TYPE: SONORA, Guaymas, *Palmer 86*, 1887 (NY). Small erect shrub about 1 m. high. The leaves usually contain sessile glands between both pairs of pinnae. The type specimen has staminodes 1.2-1.8 cm. long, arising from the base of the flower head. Individual flowers are larger than those in most Mexican species (calyx 2.8-3 mm. long; petals 4-4.2 mm. long). Known to me only from the type.

3. *D. OLIGOSPERMUS* Brandegees. ISOTYPE examined, BAJA CALIFORNIA, San Jose del Cabo, *T. S. Brandegees 182*, Sept. 23, 1890 (NY). A low prostrate or somewhat ascending plant from a woody root. The isotype shows the pod as being lanceolate and glabrous. One specimen (Todos Santos, *M. E. Jones 24090*, Feb. 11, 1923, NY) shows the pod to be ovate and pubescent. Evidently a rare species confined to the southernmost part of Baja California. One other specimen seen: La Paz, *Jones 24244*, Feb. 9, 1928 (D).

4. *D. OBTUSUS* S. Wats. Photograph of type seen, "T.&P.R.R." [Texas & Pacific Railroad, western Texas], *Havard s.n.*, Aug., 1881 (NY). Low decumbent or semi-erect plants. Specimens were not seen from Mexico. The

species occurs along the Rio Grande (mouth of Pecos, Val Verde Co., *V. Bailey* 270, US) from southern Texas to the Trans-Pecos, and undoubtedly occurs across the river along the border. For distribution of the species in Texas see Turner, 1950.

5. *D. VELUTINUS* Scheele. TOPOTYPE or possible isotype examined, Texas [near New Braunfels], *Lindheimer* 385, 1847-48 (NY). Decumbent spreading perennials. Plentiful along the Rio Grande area of Texas in calcareous soils from Laredo westward. COAHUILA. "Near Diaz," *C. G. Pringle* 8308, April 20, 1900 (NY).

6. *D. PAINTERI* (Britton & Rose) Standley, Field Mus. Pub. Bot. 11: 159. 1936. *Acuan Painteri* ["*Painterii*"] Britton & Rose, N. Amer. Fl. 23: 134. 1928. ISOTYPE examined, Mexico, "state of Queretaro between Higuierillas and San Pablo," *J. N. Rose, J. H. Painter & J. S., Rose* 9810, Aug. 24, 1905 (NY)—*Acuan Arsenei* Britton & Rose, N. Amer. Fl. 23: 134. 1928. Fragment of type or isotype examined, Saltillo [Coahuila], Mexico. *Bro. G. Arsène* 3455, 1909 (NY). Stem short, decumbent or "prostrate." Britton & Rose in their key distinguish *A. Arsenei* on the basis of pubescence. This characteristic is variable, and comparisons of more stable characteristics such as pod shape, number of seeds, number of pinnae, etc., show the species to be the same as *D. Painteri*. The essential description of *D. Painteri* (including *A. Arsenei*), as I see it, should be: Petiole 5 mm. long or less. Petiolar gland 0.9 mm. long or less (rarely missing). Pinnae 2-6 pairs (on mature leaves). Leaflets 9-18 pairs. Fruiting peduncles, 3-6 cm. long. Legume 2-4.5 cm. long, 3-5 mm. wide, obtuse-apiculate (rarely acute). Seeds 10-17. HIDALGO. [Locality illegible], *Rose & Hay* 5284, July 2, 1901 (NY). COAHUILA. Parras, *Palmer* 314 (NY, US). Saltillo, *Palmer* 212, June, 1898 (NY). OAXACA. Near Oaxaca, *C. A. Purpus* 3212, July, 1908 (NY). QUERETARO. Near San Juan Del Rio. *Rose, Painter & Rose* 9574, Aug. 18, 1905 (NY).

7. *D. pubescens* Turner, sp. nov. Frutex ad 1 m. altus caule glabro. Folia 2-6 cm. longa 1-5 cm. lata petiolo breve 5-8 mm. longo glabro vel parce pubescente stipulis linearibus basi elatis 3-6 mm. longis foliolis linearibus 2-4 mm. longis 0.5-1 mm. latis acutis parce ciliatis. Flores ca. 20 in

capitulis globosis ad 1 cm. latis, staminibus 10, in floribus superioribus antheriferis, in inferioribus sterilibus; calyce petalisque glabris purpurascensibus (siccis). Pedunculi fructiferi 1-4 cm. longi glabri, leguminibus 2.5-6 cm. longis 4 mm. latis apiculatis pubescentibus 8-16-spermis.

Erect, shrubby, plant 1 m. tall or less. Stems glabrous, rounded. Leaves 2-6 cm. long, 1-5 cm. wide. Petiole short, 5-8 mm. long, glabrous or sparsely pubescent. Stipules linear, broadened at base, 3-6 mm. long. Leaflets linear, small, 2-4 mm. long, 0.5-1.0 mm. wide, apex acute, sparingly ciliate, midrib faint. Flowers in globular heads 1 cm. broad or less, about 20 per head; upper and lower flowers with 10 stamens; stamens 5-7 mm. long, the upper ones anther-bearing; the lowest 2-5 flowers small, with sterile stamens; calyx and petals glabrous, purplish or purplish-tipped (dried specimens). Bracts small, ciliate. Fruiting peduncles 1-4 cm. long, glabrous, pods 2.5-6 cm. long, about 4 mm. wide, apiculate, persistently pubescent (immature ones densely white-pubescent), 8-16-seeded (Fig. 1).

TYPE: GUATEMALA. District of Peten, Lake Peten *C. L. Lundell 3223*, May 5, 1933 (University of Michigan Herbarium). Additional specimens seen: BRITISH HONDURAS. Corozal District, *P. H. Gentle 146*, 1931-32 (M). El Cayo District, "El Cayo and vicinity," *Chanek 109*, March-June, 1933 (M). MEXICO. Campeche, Tuxpeña, *Lundell 1044*, Dec. 11, 1931 (M, D, US). GUATEMALA. El Paso, Peten, *Lundell 1503*, April 17, 1932 (D, US).

The pubescent pod and small leaflets of this species separate the plant from its closest relative, *D. virgatus* (L.) Willd. In all descriptions of the latter species, the ovary and pods are described as glabrous; however, in examining specimens from the West Indies, I noted several sheets answering the description of *D. virgatus*, with pubescent pods (e.g. HAITI near Ennery, *E. C. Leonard 9076*, Jan. 21, 1926). Extremely immature pods showed a dense white pubescence, but this pubescence is not persistent. *D. pubescens* differs from this pubescent form of *D. virgatus* in having a shorter fewer-seeded apiculate pod, smaller leaves and leaflets, and smaller petiolar glands.

8. *D. PUMILUS* (Schl.) Macbride. Plant evidently small, widely distributed in the central interior of Mexico. It much

resembles the United States species, *D. illinoensis*, in having short, somewhat falcate pods in clustered heads (Fig. 2). However, *D. pumilus* has 10 stamens, as opposed to 5 stamens in *D. illinoensis*. ZACATECAS. Near Plaluado, *J. N. Rose 2705*, Aug. 31, 1897 (NY). MEXICO STATE. Valley of Mexico, near San Angel, *J. N. Rose & J. H. Painter 6491*, Aug. 21, 1903 (NY); Valley of Mexico, *J. N. Rose 9476*, Aug. 15, 1905 (NY). MICHOACAN. Vicinity of Morelia, *Arsène 6890*, 1900 (photograph) (NY). HIDALGO. Tete-pango. *Pringle 8257*, Sept. 16, 1899.

9. *D. BICORNUTUS* S. Wats. ISOTYPE examined, southwestern CHIHUAHUA [San Jose], *Palmer 43*, Aug.-Nov., 1885 (NY). Erect or ascending, suffrutescent plants of Chihuahua, Sonora, and southeastern Arizona (according to Kearney & Peebles). Gentry (Rio Mayo Plants, Carnegie Inst. Wash. Publ. 527: 129, 1942) reports the species to have sweet glands near the leaf axils which attract a small species of black ant. Though such glands were not observed on herbarium material of *D. bicornutus*, their presence was suspected for *D. Palmeri*. This latter species shows an exudate of sappy matter near the base of the leaves in the axils, but definite glands are not evident. CHIHUAHUA. "Near Chuichupa in the Sierra Madres," *C. H. T. Townsend & C. M. Barber 418*, Sept. 13, 1899 (NY). SONORA. 31 mi. south of Nogales, *Wiggins 7014*, Sept. 8, 1934 (D).

10. *D. INTERIOR* (Britton & Rose) Bullock. TYPE, MICHOACAN. "Vicinity of Morelia," Loma Sta. Maria, *Arsène 2521*, July 29, 1909 (NY). The type specimen lacks petiolar glands, as does one other specimen examined: DURANGO. Santiago Papasquiario, *Palmer 373*, April-Aug., 1896 (NY). Fruiting material was not available to determine the identity of a specimen very similar to this one, but with distinct glands between the lowest pair of pinnae (STATE OF MEXICO, Temascaltepec, *G. B. Hinton et. al. 8218*, August 26, 1936, NY). It is possible that this distinguishing character, used by Britton & Rose, may be inconstant. In *D. Pringlei*, specimens were seen with and without the petiolar gland, this occurring on leaves of the same plant.

11. *D. rostratus* Turner, sp. nov. Frutex parvus ut vide-

tur erectus 0.5 m. altus vel ultra. Caules glabri teretes vel subtetragoni. Folia 3-6.5 cm. longa (rhachide cum petiolo 3-5 cm. longo, petiolo 4-10 mm. longo parce pubescente). Pinnae 3—13-jugae 1-3 cm. longae, glandula orbiculari vel oblonga 0.5-0.7 mm. longa 0.4-0.5 mm. lata inter geminas infimas solum ornatae, foliolis 10—25-jugis linearibus glabris vel parce ciliatis 3-4.5 mm. longis 0.5-1.5 mm. latis. Flores candidi 20-30 in capitulis globosis, calyce 2 mm. longo glabro, petalis 3 mm. longis, staminibus 10, 7-12 mm. longis (in floribus inferioribus paulum longioribus sterilibusque). Pedunculus gracilis glaber, fructifer 3-4 cm. longus, leguminibus linearibus angustissimis 5-8 cm. longis 2-2.5 mm. latis glabris rostratis 10—18-spermis, seminibus 2.6-2.8 mm. longis 1.2-1.4 mm. latis.

Small shrub, evidently erect, 0.5 m. tall or more. Stems glabrous, rounded or somewhat 4-angled. Leaves 3-6.5 cm. long; rachis and petiole 3-5 cm. long (petiole, 4-10 mm. long), sparsely pubescent. Stipules, 2-5 mm. long. Pinnae 3-13 pairs, 1-3 cm. long, with a small, somewhat elevated, orbicular to oblong gland 0.5-0.7 mm. long, 0.4-0.5 mm. wide between the lowest pair only. Leaflets linear, 10-25 pairs per pinna, 3-4.5 mm. long, 0.5-1.5 mm. wide, glabrous, or with but 1-10 ciliae along the margins, midrib faint, somewhat excentric. Flowers white, in globular heads of 20-30; calyx 2 mm. long, glabrous; petals 3 mm. long; stamens 10, 7-12 mm. long, the lower ones in the head without anthers, slightly longer than the upper anther-bearing ones. Peduncle slender, glabrous, in fruit 3-4 cm. long. Pods linear, very narrow, 5-8 cm. long, 2-2.5 mm. wide, glabrous, with 10-18 seeds. Seeds 2.6-2.8 mm. long, 1.2-1.4 mm. wide, set longitudinally or very slightly oblique in the pod. Pod beaked, the slender tip extending 5-8 mm. beyond the uppermost seed (Fig. 4a).

TYPE: SINALOA. *J. S. Ortega 8294*, 1922 (US). Similar to *D. interior*, but differing in having petiolar glands, longer petioles and larger, more conspicuous staminodes. It differs from *D. subulatus* in having a much narrower pod and smaller seeds. Mature fruiting material of *D. interior* was not available for comparison. NAYARIT. Vicinity of San Blas, *R. S. Ferris 5524*, Oct. 13, 1925 (D). SINALOA. Vicinity of Labradas, *Ferris & Mexia 5095*, Sept, 18, 1925 (NY, D).



DESMANTHUS. (For explanations, see Key, especially on p. 121.)

12. *D. subulatus* (Britton & Rose) Wiggins, comb. nov.—*Acuan subulatum* Britton & Rose, N. Amer. Fl. 23: 136. 1928. TYPE, SINALOA. Culiacan, *Palmer 1785* [not 1783 as in N. Amer. Fl.], Oct. 25–Nov. 18, 1891 (NY). Erect, shrubby plant, reported by Gentry to be a “tall herb 2 m. high” (Cerro Tecomate, w. of Pericos, *Gentry 5768*, Feb. 29, 1940, NY, D). This plant is evidently common as a forest underling along the coast. It is closely allied to *D. rostratus*, but differs considerably from that species by the shape of its larger seeds and pods (cf. Figs. 4b, 4c). SINALOA. Los Labradas, “thorny coast jungle,” *Ynes Mexia 922*, Oct. 14, 1926 (US, NY, M). SONORA. Guaymas. *Palmer 642*, 1887 (NY). “In scrub-forest on hill southwest of Villa de Seris,” *F. Drouet, D. Richards & L. D. Alvarado 3470*, Nov. 6, 1939 (US, D). Seven mi. south of La Puerca, *Wiggins & Rollins 278*, Sept. 4, 1941 (NY, D).

13a. *D. Covillei* (Britton & Rose) Wiggins, comb. nov.—*Acuan Covillei* Britton & Rose, N. Amer. Fl. 23: 135. 1928. TYPE, SONORA. Guaymas, *F. V. Coville 1670*, Feb. 11, 1903 (NY). Erect shrub 1 m. tall or more. The most abundant *Desmanthus* along the northwestern coast of Mexico. Probably closest to *D. Cooleyi* (Eat.) Trel., but differing from that species in being a larger plant with fewer pinnae, longer stipules, and consistently longer many-seeded pods. A form of this species extends into southwestern Arizona, which I have designated as var. *arizonicus* (13b, below). SINALOA. Vicinity of San Blas, *Rose, Standley & Russel 13239*, March 22, 1910 (NY). Vicinity of Fuerte, *Rose, Standley & Russel 13532*, March 26, 1910 (NY). SONORA. 20 mi. south of Hermosillo, *Wiggins & Rollins 212*, Sept. 1, 1941 (NY, D). Guaymas, “island in Harbor,” *Rose, Standley & Russel 12555*, March 10, 1910 (as to pod). Guaymas, “hills north of Miramar Beach,” *Drouet & Richards 3866*, Dec. 5, 1939 (US, D). Ciudad Obregon, *Gentry 310M*, Sept. 29, 1933 (M, D). 15 mi. south of La Palma, *Wiggins & Rollins 230*, Sept. 2, 1941 (D). Guaymas, “hills west of town,” *Gentry 4675*, Oct. 22, 1939 (NY, D). 10 mi. north of Carbo, *Wiggins 7268*, Sept. 16, 1934 (D). BAJA CALIFORNIA. “Between Rosarito and Canipoli,” *Hammerly 160*, Oct. 3,

1941 (D). Six mi. west of Canipole, *Wiggins 11444*, Nov. 17, 1946 (D).

13b. *D. COVILLEI* var. *arizonicus* Turner, var. nov. A specie differt pinnis semper 2-3-jugis, glandulis petiolaribus majoribus (1-1.5 mm. longis) sessilibusque.

Differing from the typical form of the species in having consistently 2-3 pairs of pinnae, and larger, sessile petiolar glands (1-1.5 mm. long). This is evidently the plant referred to by Kearney and Peebles in their Flowering Plants and Ferns of Arizona (U.S. Govt. Printing Office, Washington, 1942, p. 419). It possibly extends into northern Mexico. TYPE: ARIZONA. Pima Co.: Fresnal Canyon, Baboquivari Mts., *M. F. Gilman 136*, Sept. 8, 1931 (NY).

14. *D. COOLEYI* (Eat.) Trel. ISOTYPE, "sources of the Canadian," *Dr. James s.n.* (NY). Small, suffrutescent, decumbent or ascending plant, widely distributed from western Texas to Arizona, extending southward into northern Mexico. DURANGO. Tepehuanes, *Palmer 270*, June 4-25, 1906 (NY). Ramos to Inde, *E. N. Nelson 4684*, Aug., 1898 (US).

15a. *D. VIRGATUS* (L.) Willd.—*Acuan latum* Britton & Rose N. Amer. Fl. 23: 132. 1928. TYPE, PANAMA. *Hayes 765*, January, 1860 (NY). I agree with Standley and Steyermark (Flora of Guatemala, *Fieldiana 24*, pt. 5, pp. 28-29, 1946) as to the status of *A. latum*. *D. virgatus* (typical) as well as *D. virgatus* var. *depressus*, is a widely distributed species, both varieties exhibiting a great variety of pod-sizes and vegetative characteristics. Along the Texas coast the latter species is frequently found to possess a pod width of 3-4.5 mm. Specimens from the West Indies showed a range of 2-4 mm. Britton & Rose emphasize the petiolar gland in splitting *A. latum* from *A. virgatum*, the former with a gland 1.2 mm. long or less, and the latter 1.2 mm. long or more. The type specimen of *A. latum* shows petiolar glands up to 2.1 mm. long. The size of the seed (2.6 mm. long, 2.3 mm. wide) is not commensurate with the pod width. It is strongly suspected that the pod width (4-5 mm.) is due to a flattening of the valves after dehiscence, and to seasonal variation. Specimens have been seen from the states of Guerrero, Jalisco, Morelos, Vera Cruz, and Yucatan. *D. virgatus* is plentiful along the southeastern coast of Mexico.

15b. *D. VIRGATUS* var. *GLANDULOSUS* Turner. Erect suffrutescent plant up to 1 m. tall. The TYPE locality is western Texas (Brewster Co.). One specimen, which is typical of the variety, was seen from Mexico: COAHUILA. Muzquiz, Hacienda La Rosita. *F. L. Wynd & C. H. Mueller 299*, June 26, 1936 (NY).

15c. *D. VIRGATUS* var. *DEPRESSUS* (H.&B.) Turner. Low prostrate or somewhat ascending plants, mainly confined to the coastal regions of eastern Mexico from Tamaulipas to the Yucatan Peninsula. It is distinguished from the typical form of the species only by its prostrate habit, and smaller petiolar glands. This and the above species are plentifully represented in herbarium material from Mexico, West Indies, Central, and South America. Specimens were seen from the Mexican states of Coahuila, Morelos, Nuevo Leon, Oaxaca, San Luis Potosi, Tamaulipas, and Yucatan.

16. *D. PRINGLEI* (Britton & Rose) Hermann. TYPE examined, NUEVO LEON. Monterrey, "rich shady places," *Pringle 1902*, June 26, 1888 (NY). Low suffrutescent plants, stems small, foliage delicate. Also examined, NUEVO LEON. MONTERREY, *C. L. Piper s.n.*, 1902 (M).

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 TURNER, B. L. Texas species of *Desmanthus*. Field & Lab. 18: 54-65. 1950.
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Notes

CENTAURIUM CALYCOSUM (Buckley) Fernald var. *breviflorum* Shinners, var. nov.—A specie differt corollae lobis brevioribus 5-6 mm. longis, calyce florescente 6-10 mm. longo. TYPE: off U.S. [Highway] 83, northwest of Brownsville, roadside, Cameron Co., Texas, *C. L. & Amelia A. Lundell 10022*, April 6, 1941 (in Herb. Southern Methodist University). The species itself, restricted to the Edwards Plateau and Trans-Pecos, has corolla lobes 7-11 mm. long, and calyx 7-12 mm. long in flower.—LLOYD H. SHINNERS

GERARDIA TENUIFOLIA Vahl var. *leucanthera* (Raf.) Shinners, comb. nov.—*Gerardia leucanthera* Raf., Fl. Ludov. 50. 1817. *G. tenuifolia* [ssp.] *leucanthera* (Raf.) Pennell, Scrophulariaceae of Eastern Temperate N.A. (Phila. Acad. Mono. 1) 461. 1935.—*G. TENUIFOLIA* var. *polyphylla* (Small) Shinners, comb. nov. *G. polyphylla* Small, Bull. Torr. Bot. Club 25: 618. 1898. *G. tenuifolia* [ssp.] *polyphylla* Pennell, l.c. 462. 1935.—LLOYD H. SHINNERS